

NEC

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NEAX[®] 2400IMX

System Operations and Maintenance Manual

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NEC America, Inc.

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PAGE No.	ISSUE No.								PAGE No.	ISSUE No.							
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8
i	1	2	3						23	1	2	3					
ii	1	2	3						24	1	2	3					
iii	1	2	3						25	1	2	3					
iv	1	2	3						26	1	2	3					
v	1	2	3						27	1	2	3					
vi	1	2	3						28	1	2	3					
vii	1	2	3						29	1	2	3					
viii	1	2	3						30	1	2	3					
ix	1	2	3						31	1	2	3					
x	1	2	3						32	1	2	3					
xi		2	3						33	1	2	3					
xii		2	3						34	1	2	3					
xiii		2	3						35	1	2	3					
xiv		2	3						36	1	2	3					
xv		2	3						37	1	2	3					
xvi		2	3						38	1	2	3					
1	1	2	3						39	1	2	3					
2	1	2	3						40	1	2	3					
3	1	2	3						41	1	2	3					
4	1	2	3						42	1	2	3					
5	1	2	3						43	1	2	3					
6	1	2	3						44	1	2	3					
7	1	2	3						45	1	2	3					
8	1	2	3						46	1	2	3					
9	1	2	3						47	1	2	3					
10	1	2	3						48	1	2	3					
11	1	2	3						49	1	2	3					
12	1	2	3						50	1	2	3					
13	1	2	3						51	1	2	3					
14	1	2	3						52	1	2	3					
15	1	2	3						53	1	2	3					
16	1	2	3						54	1	2	3					
17	1	2	3						55	1	2	3					
18	1	2	3						56	1	2	3					
19	1	2	3						57	1	2	3					
20	1	2	3						58	1	2	3					
21	1	2	3						59	1	2	3					
22	1	2	3						60	1	2	3					
ISSUE 1				ISSUE 2				ISSUE 3				ISSUE 4					
DATE	JUNE, 1998			DATE	JULY, 1999			DATE	MAY, 2000			DATE					
ISSUE 5				ISSUE 6				ISSUE 7				ISSUE 8					
DATE				DATE				DATE				DATE					
NEAX2400 IMX																	
System Operations and Maintenance Manual														Revision Sheet 1/9			
NDA-24238																	

PAGE No.	ISSUE No.								PAGE No.	ISSUE No.							
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8
61	1	2	3						99	1	2	3					
62	1	2	3						100	1	2	3					
63	1	2	3						101	1	2	3					
64	1	2	3						102	1	2	3					
65	1	2	3						103	1	2	3					
66	1	2	3						104	1	2	3					
67	1	2	3						105	1	2	3					
68	1	2	3						106	1	2	3					
69	1	2	3						107	1	2	3					
70	1	2	3						108	1	2	3					
71	1	2	3						109	1	2	3					
72	1	2	3						110	1	2	3					
73	1	2	3						111	1	2	3					
74	1	2	3						112	1	2	3					
75	1	2	3						113	1	2	3					
76	1	2	3						114	1	2	3					
77	1	2	3						115	1	2	3					
78	1	2	3						116	1	2	3					
79	1	2	3						117	1	2	3					
80	1	2	3						118	1	2	3					
81	1	2	3						119	1	2	3					
82	1	2	3						120	1	2	3					
83	1	2	3						121	1	2	3					
84	1	2	3						122	1	2	3					
85	1	2	3						123	1	2	3					
86	1	2	3						124	1	2	3					
87	1	2	3						125	1	2	3					
88	1	2	3						126	1	2	3					
89	1	2	3						127	1	2	3					
90	1	2	3						128	1	2	3					
91	1	2	3						129	1	2	3					
92	1	2	3						130	1	2	3					
93	1	2	3						131	1	2	3					
94	1	2	3						132	1	2	3					
95	1	2	3						133	1	2	3					
96	1	2	3						134	1	2	3					
97	1	2	3						135	1	2	3					
98	1	2	3						136	1	2	3					

ISSUE 1			ISSUE 2			ISSUE 3			ISSUE 4		
DATE	JUNE, 1998		DATE	JULY, 1999		DATE	MAY, 2000		DATE		
ISSUE 5			ISSUE 6			ISSUE 7			ISSUE 8		
DATE			DATE			DATE			DATE		

NEAX2400 IMX
System Operations and Maintenance Manual

Revision Sheet 2/9

NDA-24238

PAGE No.	ISSUE No.								PAGE No.	ISSUE No.							
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8
137	1	2	3						175	1	2	3					
138	1	2	3						176	1	2	3					
139	1	2	3						177	1	2	3					
140	1	2	3						178	1	2	3					
141	1	2	3						179	1	2	3					
142	1	2	3						180	1	2	3					
143	1	2	3						181	1	2	3					
144	1	2	3						182	1	2	3					
145	1	2	3						183	1	2	3					
146	1	2	3						184	1	2	3					
147	1	2	3						185	1	2	3					
148	1	2	3						186	1	2	3					
149	1	2	3						187	1	2	3					
150	1	2	3						188	1	2	3					
151	1	2	3						189	1	2	3					
152	1	2	3						190	1	2	3					
153	1	2	3						191	1	2	3					
154	1	2	3						192	1	2	3					
155	1	2	3						193	1	2	3					
156	1	2	3						194	1	2	3					
157	1	2	3						195	1	2	3					
158	1	2	3						196	1	2	3					
159	1	2	3						197	1	2	3					
160	1	2	3						198	1	2	3					
161	1	2	3						199	1	2	3					
162	1	2	3						200	1	2	3					
163	1	2	3						201	1	2	3					
164	1	2	3						202	1	2	3					
165	1	2	3						203	1	2	3					
166	1	2	3						204	1	2	3					
167	1	2	3						205	1	2	3					
168	1	2	3						206	1	2	3					
169	1	2	3						207	1	2	3					
170	1	2	3						208	1	2	3					
171	1	2	3						209	1	2	3					
172	1	2	3						210	1	2	3					
173	1	2	3						211	1	2	3					
174	1	2	3						212	1	2	3					
ISSUE 1			ISSUE 2			ISSUE 3			ISSUE 4								
DATE	JUNE, 1998		DATE	JULY, 1999		DATE	MAY, 2000		DATE								
ISSUE 5			ISSUE 6			ISSUE 7			ISSUE 8								
DATE			DATE			DATE			DATE								

PAGE No.	ISSUE No.								PAGE No.	ISSUE No.							
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8
213	1	2	3						251	1	2	3					
214	1	2	3						252	1	2	3					
215	1	2	3						253	1	2	3					
216	1	2	3						254	1	2	3					
217	1	2	3						255	1	2	3					
218	1	2	3						256	1	2	3					
219	1	2	3						257	1	2	3					
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225	1	2	3						263	1	2	3					
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228	1	2	3						266	1	2	3					
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230	1	2	3						268	1	2	3					
231	1	2	3						269	1	2	3					
232	1	2	3						270	1	2	3					
233	1	2	3						271	1	2	3					
234	1	2	3						272	1	2	3					
235	1	2	3						273	1	2	3					
236	1	2	3						274	1	2	3					
237	1	2	3						275	1	2	3					
238	1	2	3						276	1	2	3					
239	1	2	3						277	1	2	3					
240	1	2	3						278	1	2	3					
241	1	2	3						279	1	2	3					
242	1	2	3						280	1	2	3					
243	1	2	3						281	1	2	3					
244	1	2	3						282	1	2	3					
245	1	2	3						283	1	2	3					
246	1	2	3						284	1	2	3					
247	1	2	3						285	1	2	3					
248	1	2	3						286	1	2	3					
249	1	2	3						287	1	2	3					
250	1	2	3						288	1	2	3					
ISSUE 1				ISSUE 2				ISSUE 3				ISSUE 4					
DATE	JUNE, 1998			DATE	JULY, 1999			DATE	MAY, 2000			DATE					
ISSUE 5				ISSUE 6				ISSUE 7				ISSUE 8					
DATE				DATE				DATE				DATE					
NEAX2400 IMX																	
System Operations and Maintenance Manual														Revision Sheet 4/9			
NDA-24238																	

PAGE No.	ISSUE No.								PAGE No.	ISSUE No.							
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8
289	1	2	3						327	1	2	3					
290	1	2	3						328	1	2	3					
291	1	2	3						329	1	2	3					
292	1	2	3						330	1	2	3					
293	1	2	3						331	1	2	3					
294	1	2	3						332	1	2	3					
295	1	2	3						333	1	2	3					
296	1	2	3						334	1	2	3					
297	1	2	3						335	1	2	3					
298	1	2	3						336	1	2	3					
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300	1	2	3						338	1	2	3					
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304	1	2	3						342	1	2	3					
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306	1	2	3						344	1	2	3					
307	1	2	3						345	1	2	3					
308	1	2	3						346	1	2	3					
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310	1	2	3						348	1	2	3					
311	1	2	3						349	1	2	3					
312	1	2	3						350	1	2	3					
313	1	2	3						351	1	2	3					
314	1	2	3						352	1	2	3					
315	1	2	3						353	1	2	3					
316	1	2	3						354	1	2	3					
317	1	2	3						355	1	2	3					
318	1	2	3						356	1	2	3					
319	1	2	3						357	1	2	3					
320	1	2	3						358	1	2	3					
321	1	2	3						359	1	2	3					
322	1	2	3						360	1	2	3					
323	1	2	3						361	1	2	3					
324	1	2	3						362	1	2	3					
325	1	2	3						363	1	2	3					
326	1	2	3						364	1	2	3					
ISSUE 1				ISSUE 2				ISSUE 3				ISSUE 4					
DATE	JUNE, 1998			DATE	JULY, 1999			DATE	MAY, 2000			DATE					
ISSUE 5				ISSUE 6				ISSUE 7				ISSUE 8					
DATE				DATE				DATE				DATE					

PAGE No.	ISSUE No.								PAGE No.	ISSUE No.							
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8
365	1	2	3						403	1	2	3					
366	1	2	3						404	1	2	3					
367	1	2	3						405	1	2	3					
368	1	2	3						406	1	2	3					
369	1	2	3						407	1	2	3					
370	1	2	3						408	1	2	3					
371	1	2	3						409	1	2	3					
372	1	2	3						410	1	2	3					
373	1	2	3						411	1	2	3					
374	1	2	3						412	1	2	3					
375	1	2	3						413	1	2	3					
376	1	2	3						414	1	2	3					
377	1	2	3						415	1	2	3					
378	1	2	3						416	1	2	3					
379	1	2	3						417	1	2	3					
380	1	2	3						418	1	2	3					
381	1	2	3						419	1	2	3					
382	1	2	3						420	1	2	3					
383	1	2	3						421	1	2	3					
384	1	2	3						422	1	2	3					
385	1	2	3						423	1	2	3					
386	1	2	3						424	1	2	3					
387	1	2	3						425	1	2	3					
388	1	2	3						426	1	2	3					
389	1	2	3						427	1	2	3					
390	1	2	3						428	1	2	3					
391	1	2	3						429	1	2	3					
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393	1	2	3						431	1	2	3					
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395	1	2	3						433	1	2	3					
396	1	2	3						434	1	2	3					
397	1	2	3						435	1	2	3					
398	1	2	3						436	1	2	3					
399	1	2	3						437	1	2	3					
400	1	2	3						438	1	2	3					
401	1	2	3						439	1	2	3					
402	1	2	3						440	1	2	3					
ISSUE 1			ISSUE 2			ISSUE 3			ISSUE 4								
DATE	JUNE, 1998		DATE	JULY, 1999		DATE	MAY, 2000		DATE								
ISSUE 5			ISSUE 6			ISSUE 7			ISSUE 8								
DATE			DATE			DATE			DATE								
NEAX2400 IMX																	
System Operations and Maintenance Manual										Revision Sheet 6/9							
NDA-24238																	

PAGE No.	ISSUE No.								PAGE No.	ISSUE No.							
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8
441	1	2	3						479	1	2	3					
442	1	2	3						480	1	2	3					
443	1	2	3						481	1	2	3					
444	1	2	3						482	1	2	3					
445	1	2	3						483	1	2	3					
446	1	2	3						484	1	2	3					
447	1	2	3						485	1	2	3					
448	1	2	3						486	1	2	3					
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450	1	2	3						488	1	2	3					
451	1	2	3						489	1	2	3					
452	1	2	3						490	1	2	3					
453	1	2	3						491	1	2	3					
454	1	2	3						492	1	2	3					
455	1	2	3						493	1	2	3					
456	1	2	3						494	1	2	3					
457	1	2	3						495	1	2	3					
458	1	2	3						496	1	2	3					
459	1	2	3						497	1	2	3					
460	1	2	3						498	1	2	3					
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463	1	2	3						501	1	2	3					
464	1	2	3						502	1	2	3					
465	1	2	3						503	1	2	3					
466	1	2	3						504	1	2	3					
467	1	2	3						505	1	2	3					
468	1	2	3						506	1	2	3					
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470	1	2	3						508	1	2	3					
471	1	2	3						509		2	3					
472	1	2	3						510		2	3					
473	1	2	3						511		2	3					
474	1	2	3						512		2	3					
475	1	2	3						513		2	3					
476	1	2	3						514		2	3					
477	1	2	3						515		2	3					
478	1	2	3						516		2	3					
ISSUE 1				ISSUE 2				ISSUE 3				ISSUE 4					
DATE	JUNE, 1998			DATE	JULY, 1999			DATE	MAY, 2000			DATE					
ISSUE 5				ISSUE 6				ISSUE 7				ISSUE 8					
DATE				DATE				DATE				DATE					
NEAX2400 IMX																	
System Operations and Maintenance Manual														Revision Sheet 7/9			
NDA-24238																	

PAGE No.	ISSUE No.								PAGE No.	ISSUE No.							
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8
517		2	3						555			3					
518		2	3						556			3					
519		2	3						557			3					
520		2	3						558			3					
521		2	3						559			3					
522		2	3						560			3					
523		2	3						561			3					
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540		2	3						578			3					
541		2	3						579			3					
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551			3						589			3					
552			3						590			3					
553			3						591			3					
554			3						592			3					
ISSUE 1			ISSUE 2					ISSUE 3			ISSUE 4						
DATE	JUNE, 1998		DATE	JULY, 1999					DATE	MAY, 2000			DATE				
ISSUE 5			ISSUE 6					ISSUE 7			ISSUE 8						
DATE			DATE						DATE				DATE				

PAGE No.	ISSUE No.								PAGE No.	ISSUE No.							
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8
593			3														
594			3														
595			3														
596			3														
597			3														
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614			3														
615			3														
616			3														
617			3														
618			3														
619			3														
620			3														

ISSUE 1			ISSUE 2			ISSUE 3			ISSUE 4		
DATE	JUNE, 1998		DATE	JULY, 1999		DATE	MAY, 2000		DATE		
ISSUE 5			ISSUE 6			ISSUE 7			ISSUE 8		
DATE			DATE			DATE			DATE		

NEAX2400 IMX

System Operations and Maintenance Manual

TABLE OF CONTENTS

	Page
LIST OF FIGURES	x
LIST OF TABLES	xiv
CHAPTER 1 INTRODUCTION	1
1. GENERAL	1
2. HOW TO FOLLOW THIS MANUAL	1
CHAPTER 2 SYSTEM MAINTENANCE OUTLINE	3
1. GENERAL	3
1.1 Purpose	3
1.2 Administrative Management Procedures	3
1.3 Summary of This Manual's Contents	4
2. BASIC KNOWLEDGE	4
2.1 System Configuration	5
2.2 Line Equipment Numbers (LENS)	9
2.2.1 Module Group	9
2.2.2 Unit	10
2.2.3 Group	11
2.2.4 Level	12
2.3 Local Partition (LP) Number	13
2.4 System Messages	14
2.5 Fault Detecting Function	15
2.6 Range of Faults Specification	18
2.7 Explanation of Terms	25
3. HOW TO READ PRECAUTIONS, DIAGNOSTIC, AND FAULT REPAIR INFORMATION	26
3.1 Precaution about Diagnostic Procedure/Fault Repair Procedure	26
3.2 How to Follow Diagnostic Procedure/Fault Repair Procedure	30
4. REPORTING FAULT TO NEC	33
4.1 Fault Reporting Method	33
4.2 Forwarding Faulty Circuit Card Method	35
CHAPTER 3 SYSTEM MESSAGES	37
0-C Reset Interrupt	42
0-D CPU Clock Down	44
0-E C-Level Infinite Loop	45
0-F Memory Failure	47
0-G B1-Level Infinite Loop (Permanent)	49
0-H B1-Level Infinite Loop (Temporary)	50

TABLE OF CONTENTS (CONTINUED)

	Page
0-I	Mate CPU Failure 51
0-J	Abnormal Interrupt 52
1-A	Both TSW Failure (Permanent) 53
1-B	TSW Failure (Permanent) 54
1-C	Both TSW Write Failure 55
1-D	TSW Write Failure 56
1-E	Both TSW Clock Failure 57
1-F	TSW Clock Failure 58
1-O	Both PLO Failure 59
1-P	PLO Failure 61
1-S	Module Group Down Failure 63
1-T	TSW ACT Change Report 64
1-U	DLKC Data Transfer Failure (Permanent) 66
1-V	DLKC Data Transfer Failure (Temporary) 67
1-W	PLO Restore 68
3-B	C-Level Infinite Loop (Permanent) 69
3-C	C-Level Infinite Loop (Temporary) 70
3-D	Lock-Up Failure (Permanent) 71
3-E	Lock-Up Failure (Temporary) 72
3-F	-48V Over Current 73
3-G	Ground Failure 74
3-H	Digital Line Warning 75
3-I	Digital Line Failure 76
3-J	Digital Line Restore 77
4-C	Both TSW Ready Failure 78
4-D	TSW Ready Failure 79
4-Q	DLKC Ready Failure 80
4-S	MUX Ready Failure 81
4-T	Both MUX Ready Failure 82
4-U	PCI Card Failure 83
4-V	PCI Card Failure Recovered 85
6-A	System Failure 87
6-B	RGU & Howler Failure 88
6-C	Line Load Control Start 89
6-D	Line Load Control Stop 90
6-H	Bad Call Notification 91
6-I	STA-Test Connection Data 96
6-J	Emergency Call 99
6-L	Emergency Control Start 100
6-M	Emergency Control Stop 101
6-N	Abnormal Call Duration Data 102
6-O	SMDR Output Buffer Overflow Alarm 105
6-P	SMDR Output Buffer Overflow Release 108
7-A	System Initialize With Data Load 109
7-B	System Initialize 111
7-C	CPU MBR Key Turn ON 112
7-D	CPU MBR Key Turn OFF 113
7-E	TSW MBR Key Turn ON 114
7-F	TSW MBR Key Turn OFF 115

TABLE OF CONTENTS (CONTINUED)

		Page
7-G	TSW PLO Key Turn ON	116
7-H	TSW PLO Key Turn OFF	117
7-I	ALMC MB Key Turn ON	118
7-J	ALMC MB Key Turn OFF	119
7-K	PM MB Key Turn ON	120
7-L	PM MB Key Turn OFF	121
7-M	NCU MB Key Turn ON	122
7-N	NCU MB Key Turn OFF	123
7-O	Cyclic Diagnosis Normal	124
7-P	Cyclic Diagnosis Information (Error Detected)	134
7-U	PLO MB Key Turn ON	156
7-V	PLO MB Key Turn OFF	157
13-A	CCH Clock Failure	158
13-B	CCH C-Level Infinite Loop Failure (Permanent)	159
13-C	CCH C-Level Infinite Loop Failure (Temporary)	160
13-D	CCH Lock-Up Failure (Permanent)	161
13-E	CCH Lock-Up Failure (Temporary)	162
13-F	CCH B-Level Infinite Loop Failure (Permanent)	163
13-G	CCH B-Level Infinite Loop Failure (Temporary)	164
13-H	CCS Link Failure (Permanent)	165
13-I	CCS Link Failure (Temporary)	167
13-J	Restoration From CCS Link Failure	169
13-K	CCH Reset Interrupt Failure	170
13-N	Digital Line Warning	171
13-O	Digital Line Failure	172
13-P	Digital Line Restore	173
13-Q	DRU Battery Operation	174
13-R	DRU Line Operation	175
13-Z	Power Failure	176
15-A	VPS Failure (Temporary)	177
15-B	VPS Failure (Permanent)	178
15-C	VPS Restore	179
16-A	Inside Trunk All Busy	180
16-B	Virtual Tie Line Set Report	182
16-C	Virtual Tie Line Cancel Report	183
16-E	Virtual Tie Line Set Time Out	184
16-F	Sender Start Time Out	187
16-K	I/O Port Line OFF	194
16-L	I/O Port Line Restore	195
16-M	Hard Clock Failure	196
16-N	Hard Clock Restore	197
16-T	IOC Failure (Temporary)	198
16-U	IOC Failure (Permanent)	199
16-X	Station Exchanged Report	200
17-A	CCH MBR Key Turn ON	203
17-B	CCH MBR Key Turn OFF	204
17-C	CCH MB Key Turn ON	205
17-D	CCH MB Key Turn OFF	206
17-H	Day/Night Change Information	207

TABLE OF CONTENTS (CONTINUED)

Page

17-O	IOC MB Key Turn ON	209
17-P	IOC MB Key Turn OFF	210
17-Q	IOC MBR Key Turn ON	211
17-R	IOC MBR Key Turn OFF	212
23-P	DCH Back-Up Automatic Change Start/End	213
23-Q	DCH Back-Up Manual Change Start/End	215
23-Y	MUX Clock Failure	217
23-Z	Both MUX Clock Failure	218
26-N	MAT Log	219
26-R	Call Trace	220
26-V	LAN Interface Error Report	224
26-W	LAN Interface Release Report	228
33-A	MUX Clock Restore	230
33-B	SDT Alarm Warning	231
33-C	SDT Alarm Trouble	233
33-D	SDT Alarm Restore	236
33-E	SDT Interface Change Notify	237
CHAPTER 4 UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE		239
1.	LPM ACCOMMODATING UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE	239
1.1	Precaution	239
1.2	Circuit Card Mounting Face Layout	239
1.3	Operating Procedures	241
1.3.1	CPR Replacement Procedure	242
1.3.2	EMA Card Replacement Procedure	259
1.3.3	IOC Card Replacement Procedure	261
1.3.4	Power Supply Unit Replacement Procedure	263
1.3.5	MISC Card Replacement Procedure	265
2.	TSWM ACCOMMODATING CIRCUIT CARD REPLACEMENT PROCEDURE	266
2.1	Precaution	266
2.2	Circuit Card Mounting Face Layout	266
2.3	Operating Procedures	267
2.3.1	GT Card Replacement Procedure	268
2.3.2	TSW Card Replacement Procedure	272
2.3.3	DLKC Card Replacement Procedure	277
2.3.4	PLO Card Replacement Procedure	279
2.3.5	PWR SW Card Replacement Procedure	281
2.3.6	MISC Card Replacement Procedure	282
3.	PIM ACCOMMODATING CIRCUIT CARD REPLACEMENT PROCEDURE	283
3.1	Precaution	283
3.2	Circuit Card Mounting Face Layout	283
3.3	Operating Procedures	284
3.3.1	LC/TRK Circuit Card Replacement Procedure	285
3.3.2	MUX Card Replacement Procedure	286
3.3.3	SDT Card Replacement Procedure	289
3.3.4	PWR Card Replacement Procedure	294
4.	FAN UNIT REPLACEMENT	296
5.	CPR COOLING FAN REPLACEMENT	301

TABLE OF CONTENTS (CONTINUED)

	Page
6. FUSE REPLACEMENT	304
CHAPTER 5 FAULT REPAIR PROCEDURES	309
1. LINE FAULT	311
1.1 Check Point	312
1.2 Line Control	312
1.3 Line Fault - When Dial Tone (DT) Cannot Be Heard	313
1.4 Line Fault - When Dialing Results in Wrong Connection	315
1.5 Line Fault - When Bell Does Not Ring	316
1.6 When Call Cannot Be Answered and Speech Cannot Be Made	317
1.7 D ^{term} Fault	318
2. TRUNK FAULT	320
2.1 Check Point	320
2.2 Trunk Control	323
2.3 Trunk (ORT, SND, CFT) Fault	324
2.4 Trunk (COT, TLT, DTI) Fault	325
3. ATTCON/DESKCON FAULT	329
3.1 Check Point	329
3.2 ATTCON/DESKCON Control	329
3.3 ATTCON/DESKCON Fault	331
4. UNIT FAULT	333
4.1 Check Point	334
4.2 Unit Fault - Fault Related to Speech	336
4.3 Unit Fault - When Dial Tone (DT) Cannot Be Heard	340
4.4 Unit Fault - ACT-Side MUX Card Is Faulty and System Has Changed Over	344
5. SPEECH PATH (TSW) SYSTEM FAULT	346
5.1 Check Point	346
5.2 Speech Path System Fault - Fault Related to Speech	349
5.3 Speech Path System Fault - When Dial Tone (DT) Cannot Be Heard	353
5.4 Speech Path System Fault - STBY Side Has Become Faulty	354
6. CONTROL SYSTEM FAULT	356
6.1 Check Point	356
6.2 Control System Fault - Fault Occurs Intermittently	359
6.3 Control System Fault - STBY Side Is Faulty	361
7. ALARM INDICATION FAULT	364
7.1 Check Point	364
7.2 Fault of Alarm Indicating Panel	364
7.3 Fault That Cannot Be Detected	366
8. POWER SUPPLY FAULT	367
8.1 Check Point	367
8.2 Fuse Blown Fault	371
8.3 Circuit Breaker OFF Fault in PWR Supply	372
8.4 Fault of Alarm Lamps on PWR Supply	373
9. FAN UNIT FAULT	374
9.1 Check Point	374
9.2 Fan Unit Fault	375

TABLE OF CONTENTS (CONTINUED)

Page

10. TONE FAULT	376
10.1 Check Point	376
10.2 Tone Fault	377
11. SYSTEM DOWN FAULT	379
11.1 When Cause for Fault Cannot Be Identified	380
11.2 When Faulty Circuit Cards Can Be Assumed From System Message	382
12. COMMON CHANNEL INTEROFFICE SIGNALING (CCIS) LINE FAULT	383
12.1 Check Point	383
12.2 CCIS Line Control	383
12.3 Specific CCH/CCT Card Is Faulty	384
12.4 Fault of CCH, DTI and Related Flat Cable	385
13. INTEGRATED SERVICE DIGITAL NETWORK (ISDN) LINE FAULT	386
13.1 Check Point	386
13.2 ISDN Line Control	386
13.3 Specific DCH/PRT Card Is Faulty	387
13.4 Fault of DCH, DTI, and Related Flat Cable	388
14. HARD TIME CLOCK FAULT	389
CHAPTER 6 SYSTEM OPERATIONS	391
1. ALARM INDICATIONS	391
1.1 Kinds of Alarm Indications	391
1.2 How to Stop Alarm Indications	392
1.3 Alarm Indications on TOPU	392
1.4 Variable Alarm Indication	393
2. COLLECTION OF SYSTEM MESSAGES	393
2.1 Automatic Printout to System Message Dedicated Printer	393
2.2 Display on MAT	394
3. INDICATION OF LOCKOUT STATIONS	394
3.1 Indicating Method	394
3.2 Recovery Procedure	394
4. LINE LOAD CONTROL	396
5. IOC LINE MONITOR	400
6. LINE MANAGEMENT	401
6.1 Make-Busy/Make-Busy Cancel of Station and Data Terminal	401
6.2 Class Change and Number Change of Station and Data Terminal	402
6.3 Make-Busy/Make-Busy Cancel of C.O. Line/Tie Line	402
6.4 Line Management Commands	403
7. STATION MESSAGE DETAIL RECORDING SYSTEM (SMDR)	403
7.1 Transmission Data to SMDR Equipment	404
7.2 Details on Transmission Data	409
7.2.1 Calling Party Information/Called Party Information	409
7.2.2 Call Start/Call End Time Information	410
7.2.3 Called Number	411
7.2.4 Account Code/Authorization Code	412
7.2.5 Route Advance Information	413
7.2.6 Condition B Information	413

TABLE OF CONTENTS (CONTINUED)

	Page
7.2.7 Call Metering Information	414
7.2.8 Office Code of Calling (Called) Party and Billing Process Office	414
7.2.9 Text Format of Centralized Billing - Fusion	415
7.2.10 Text Format of SMDR - TCP/IP Interface	423
8. TRAFFIC MANAGEMENT	425
8.1 Kind of Traffic Measurement	425
8.2 Operating Procedure	427
9. OFFICE DATA MANAGEMENT	433
9.1 Office Data Stored Locations	433
9.2 Office Data Preservation	433
9.3 Office Data Management Procedure	434
9.4 Call Forwarding Data/Individual Speed Calling Data Management	437
9.5 One-Touch Speed Call Memory Data Management	437
9.6 Data Management Commands	437
10. TEST OPERATIONS OF VARIOUS KINDS	438
10.1 Designated Connection Test (Station)	439
10.2 Designated Connection Test (DESKCON/ATTCON)	449
10.3 Bad Call Notification	451
11. ROUTINE DIAGNOSIS	452
11.1 Related System Data	452
11.2 Routine Diagnosis Result	454
12. SYSTEM CONTROL PROCEDURES	455
12.1 Changeover/Make-Busy/Make-Busy Cancel of Equipment	455
12.1.1 General	455
12.1.2 How to Control CPU Block	461
12.1.3 Manual System Changeover of CPU	463
12.1.4 Forced Changeover of CPU	465
12.1.5 How to Control Switching Block	466
12.1.6 Manual System Changeover of Speech Path System	467
12.1.7 Manual System Changeover of PLO	472
12.2 Initialization	474
12.2.1 General	474
12.2.2 System Initialization by Turning ON Power Supply	475
12.2.3 System Initialization by Key Operations on TOPU	476
12.2.4 System Initialization by Keys on CPU Front Panel	484
12.2.5 System Initialization by SINZ Command	485
12.2.6 Peripheral Equipment Initialization (Line/Trunk Initialization)	486
12.3 How to Turn ON/OFF Whole System	486
12.3.1 How to Turn On Whole System	487
12.3.2 How to Turn Off Whole System	488
12.4 System Start-Up	489
CHAPTER 7 ROUTINE MAINTENANCE PROCEDURE	495
1. GENERAL	495
1.1 Flow of Procedures	495
1.2 Required Test Equipment and Tools	496
2. ROUTINE MAINTENANCE PROCEDURES	497

TABLE OF CONTENTS (CONTINUED)

Page

2.1	Ambient Conditions in Switch Room Check	498
2.2	Alarm Check	499
2.3	MAT/Printer Check	500
2.4	Collection of System Messages	501
2.5	Display of Locked-out Station	502
2.6	Fan Unit Check	503
2.7	Alarm Tests	504
2.8	Main Power System Check	505
2.9	Trunk RGU Check	506
2.10	ATTCON/DESKCON Check	507
2.11	System Check	509
3.	ROUTINE MAINTENANCE CHECK LISTS	510
CHAPTER 8	MAINTENANCE COMMANDS	519
1.	GENERAL	519
ALLC	Assignment of Line Load Control	522
ALMG	Assignment of Alarm Grade Data	523
ATRF	Assignment of Traffic Measurement Order	524
ATRFN	Assignment of Traffic Measurement Order for Fusion Network	525
BOSD	Back Up One-Touch Speed Call Memory Data	526
CADSD	Continuous Assignment of Station Data	527
CATK	Continuous Assignment of Trunk Data	530
CBCN	Control of Broadcasting for NDM	537
CCSE	Change of Common Signaling Channel Equipment	538
CDBU	Change of Dch Backup	539
CMOD	Change of System Mode	540
CMWL	Control Message Waiting Lamp	541
CMWL_T	Control Message Waiting Lamps – Telephone Number	542
CPRS	Controlled Alternate PRSCs	543
CSCL	Continuous Change of Station Class	544
CSTN	Continuous Change of Station Number	545
DCBD	Display of Call Block Entry Data	546
DCEN	Display of Connection Trunk LENS Data for LDM	548
DCON	Display of Connection Status	549
DFTD	Display of System Message Details	550
DISS	Display of Program Issue	551
DLEN	Display of LENS Data	552
DLSL	Display of Lockout Station - LENS	554
DLSS	Display of Lockout Station - Number	555
DLSS_T	Display of Lock Out Station – Number – Telephone Number	556
DLTEL	Display of Telephone Number from LENS for LDM	557
DNTEL	Display of Telephone Number from LENS for NDM	558
DPKG	Display of Setting Port Package	559
DPSW	Display Package Switch Status	560
DSTN	Display of Station Data	561
DTELN	Display of Telephone Number Data for NDM	562
DTF101	Display of Terminal Traffic Data	564
DTF102	Display of Route Traffic Data	565
DTF103	Display of Station Peg Count Data	566

TABLE OF CONTENTS (CONTINUED)

	Page
DTF104	567
DTF105	568
DTF201	569
DTF301	570
DTF302	571
DTF303	572
DTF501	573
DTF601	574
DTF602	575
DTF101N	576
DTF102N	577
DTF103N	578
DTF104N	579
DTF105N	580
DTF201N	581
DTF301N	582
DTF302N	583
DTF303N	584
DTF501N	585
DTF601N	586
DTF602N	587
FLINST	588
HDD_FDD	589
HDD_MAT	591
HDD_MAT_N	592
HDFP	593
MBCT	594
MBLE	595
MBPM	596
MBRT	597
MBSM	598
MBST	599
MBST_T	600
MBTC	601
MBTK	602
MEM_HDD	603
MEM_HDD_N	604
MFCH	605
PMBU	606
RALM	607
RALMN	608
RLST	609
RLST_T	610
SINZ	612
SPTS	613
SRTS	618
XHFD	619

LIST OF FIGURES

Figure	Title	Page
Figure 2-1	Flow of Administrative Management Procedures.....	3
Figure 2-2	System Configuration.....	5
Figure 2-3	Face Layout of IMG0.....	6
Figure 2-4	Face Layout of IMG1.....	7
Figure 2-5	Face Layout of IMG2/3.....	8
Figure 2-6	LENS Format.....	9
Figure 2-7	Module Group Allocations.....	9
Figure 2-8	Unit Number Allocations.....	10
Figure 2-9	Group Number Allocations.....	11
Figure 2-10	Level Number Allocations.....	12
Figure 2-11	LP Number Allocations.....	13
Figure 2-12	System Message Example.....	14
Figure 2-13	Fault Detection General Diagram.....	15
Figure 2-14	Fault Detection Block Diagram.....	16
Figure 2-15	General System Block Diagram.....	19
Figure 2-16	CPU Controlling Block Diagram.....	20
Figure 2-17	Speech Path Block Diagram.....	22
Figure 2-18	Speech Path Range of Fault.....	24
Figure 2-19	3M [®] Model 8012 Portable Field Service Kit.....	27
Figure 2-20	How to Hold a Circuit Card.....	27
Figure 2-21	How to Set the ROM in IC Socket.....	28
Figure 2-22	How to Clean the Connector Portion.....	29
Figure 2-23	How to Clean Gold-Plated Terminal.....	29
Figure 2-24	Diagnostic Work Items and Symbols Example.....	32
Figure 2-25	Recovery Procedure Example.....	33
Figure 2-26	Circuit Card Version Number, Program Name, and Program Package Version Number.....	34
Figure 4-1	Circuit Card Mounting Face Layout of LPM.....	240
Figure 4-2	CPR Face Layout.....	242
Figure 4-3	How to Replace the CPU.....	243
Figure 4-4	Removal of Front Panel and Top Cover from CPR.....	244
Figure 4-5	Insertion of ISAGT and LANI Cards.....	245
Figure 4-6	Reattachment of CPR Top Cover and Front Panel.....	246
Figure 4-7	Accommodation of New CPR into LPM.....	247
Figure 4-8	Insertion of New HFD into CPR.....	248
Figure 4-9	Removal of Front Panel and Top Cover From CPR.....	254
Figure 4-10	Insertion of ISAGT and LANI Cards.....	255
Figure 4-11	Reattachment of CPR Top Cover and Front Panel.....	256
Figure 4-12	Location of New CPR Into LPM.....	257
Figure 4-13	Insertion of New HFD Into CPR.....	258
Figure 4-14	Circuit Card Mounting Face Layout of TSWM.....	266
Figure 4-15	System Block Diagram (Connections Between GT and CPU).....	268
Figure 4-16	System Block Diagram (TSW and Other Speech Path Echelons).....	273
Figure 4-17	LEDs and Switches for TSW Changeover.....	274
Figure 4-18	Circuit Card Mounting Face Layout of PIM.....	283
Figure 4-19	FANU Locations.....	296
Figure 4-20	Preparation for FANU Replacement (Fans on TOPU).....	297
Figure 4-21	How to Replace FANU (Fans on TOPU).....	298
Figure 4-22	Preparation for FANU Replacement (Fans in Fan Box).....	299
Figure 4-23	How to Replace FANU (Fans in Fan Box).....	300

LIST OF FIGURES (CONTINUED)

Figure	Title	Page
Figure 4-24	CPR Face Layout	301
Figure 4-25	Extraction of CPR from LPM	302
Figure 4-26	Rear View of CPR	302
Figure 4-27	How to Remove the Cooling FAN	303
Figure 4-28	Fuses Used by System	304
Figure 4-29	Blown Fault Example	304
Figure 4-30	Fuse Locations Within System	305
Figure 4-31	Fuse Location Within TSWM	306
Figure 4-32	RGU Fuse Blown Fault Flowchart	307
Figure 4-33	DC -48V Fuse Blown Fault Flowchart	308
Figure 5-1	Controlling LC/ELC Circuit Cards and Speech Path	312
Figure 5-2	Controlling Trunk Circuit Cards and Speech Path	323
Figure 5-3	ATT Connector Cabling and Connector Leads Accommodation	330
Figure 5-4	Range of Units	333
Figure 5-5	Unit Control Block Diagram (Dual Configuration)	334
Figure 5-6	Unit Control Block Diagram (Single Configuration)	335
Figure 5-7	MUX Card Locations	335
Figure 5-8	Speech Path Block Diagram	347
Figure 5-9	CPU Controlling Block Diagram	357
Figure 5-10	Alarm Bus Cable Connections Diagram	362
Figure 5-11	Cable Routing for Alarm Indications	365
Figure 5-12	Cabling Related to Alarm Indicating Panel	365
Figure 5-13	Block Diagram of Power Supply System (IMG0)	367
Figure 5-14	Block Diagram of Power Supply System (IMG1)	368
Figure 5-15	Block Diagram of Power Supply System (IMG2/3)	368
Figure 5-16	Power Supply to PIM	369
Figure 5-17	Power Supply to LPM	369
Figure 5-18	Power Supply to TSWM	370
Figure 5-19	Circuit Diagram of Fan Unit and Thermal Unit	374
Figure 5-20	Dial Tone Connection	376
Figure 5-21	External Hold Tone Supply Block Diagram	378
Figure 5-22	System Down Fault Repair Sequence	379
Figure 5-23	Controlling CCIS Line	383
Figure 5-24	Controlling ISDN Line	386
Figure 6-1	System Status Monitor	391
Figure 6-2	Alarm Indications	391
Figure 6-3	Alarm Indications on TOPU	392
Figure 6-4	Automatic Printout to System Message Dedicated Printer Operating Procedure	393
Figure 6-5	Recovery Procedure From Lockout Station	394
Figure 6-6	Line Load Control Operations on ATTCON—Setting	396
Figure 6-7	Line Load Control Operations on ATTCON—Cancelling	397
Figure 6-8	Locations of Lamps (ATTCON)	397
Figure 6-9	Line Load Control Key Operations on DESKCON—Setting	398
Figure 6-10	Line Load Control Key Operations on DESKCON—Cancelling	398
Figure 6-11	Line Load Control Indication (DESKCON)	399
Figure 6-12	Class Change and Number Change of Station and Data Terminal Procedure	402
Figure 6-13	Make-Busy/Make-Busy Cancel of C.O. Line/Tie Line Procedure	402
Figure 6-14	Message Format for Outgoing Call	406
Figure 6-15	Message Format for Incoming Call	407

LIST OF FIGURES (CONTINUED)

Figure	Title	Page
Figure 6-16	Message Format for Station-to-Station Call	408
Figure 6-17	Message Format for Outgoing Call - Fusion	417
Figure 6-18	Message Format for Incoming Call - Fusion	418
Figure 6-19	Message Format for Station-to-Station Call - Fusion	419
Figure 6-20	SMDR—TCP/IP Interface Billing Output Devices	423
Figure 6-21	IMX “MAT Menu” Display Image (Example)	428
Figure 6-22	DTFD Command Display Image (Example)	430
Figure 6-23	“Listup Report” Window when “View Database” is Selected (Example)	431
Figure 6-24	“Export” Dialog for Traffic Report Text File Saving	431
Figure 6-25	Office Data Change Procedure (for Release 1 or 2)	434
Figure 6-26	Office Data Change Procedure (for Release 3 or Later)	435
Figure 6-27	Backup Commands	436
Figure 6-28	Test Operation Method Examples	438
Figure 6-29	Register Test Procedure/Connection Diagram	440
Figure 6-30	Sender Test Procedure/Connection Diagram	441
Figure 6-31	3-Party Conference Test Procedure	442
Figure 6-32	3-Party Conference Test Connection Diagram	443
Figure 6-33	Tone Test Procedure/Connection Diagram	444
Figure 6-34	Interrupt Ringing (IR) Test Procedure/Connection Diagram	446
Figure 6-35	Trunk Test Procedure	447
Figure 6-36	Trunk Test Connection Diagram	448
Figure 6-37	Switching Network General Block Diagram	456
Figure 6-38	How to Check LEDs and SW Keys for System Changeover (IMG0)	457
Figure 6-39	How to Check LEDs and SW Keys for System Changeover (IMG1)	458
Figure 6-40	How to Check LEDs and SW Keys for System Changeover (IMG2/3)	459
Figure 6-41	How to Check STATUS LEDs	460
Figure 6-42	System Block Diagram (Switching Network Between CPU and GT)	462
Figure 6-43	CPU in ACT/STBY Mode	463
Figure 6-44	GT in ACT/STBY Mode	463
Figure 6-45	CPU Changeover via MBR Key	464
Figure 6-46	LED Indications Before and After CPU Changeover	464
Figure 6-47	Forced CPU Changeover	465
Figure 6-48	System Block Diagram (Switching Network for Speech Path System)	468
Figure 6-49	TSW/DLKC/MUX in ACT Mode	469
Figure 6-50	TSW/DLKC/MUX in STBY Mode	469
Figure 6-51	Speech Path System Changeover via Active GT MBR Key	470
Figure 6-52	LED Indications Before and After Speech Path System Changeover	470
Figure 6-53	Check of Active PLO	471
Figure 6-54	PLO in ACT/STBY Mode	472
Figure 6-55	PLO Changeover via MB Key	473
Figure 6-56	LED Indications Before and After PLO Changeover	473
Figure 6-57	Conceptual Diagram of Initial Program Load	477
Figure 6-58	Related Keys and LEDs for System Initialization	478
Figure 6-59	How to Turn ON the Whole System	487
Figure 6-60	How To Turn OFF the Whole System	488
Figure 7-1	Flow of Procedures	495
Figure 7-2	Adjusting Time on ATTCON	507
Figure 7-3	Desk Console	508
Figure 8-1	Port Status Report (MG) Display	614

LIST OF FIGURES (CONTINUED)

Figure	Title	Page
Figure 8-2	Port Status Report (MG, Unit) Display	615
Figure 8-3	Port Status Report (MG, Unit, Group) Display—Designating Group	616
Figure 8-4	Port Status Report (MG, Unit, Group) Display—Designating Group-Trunk	617

LIST OF TABLES

Table	Title	Page
Table 2-1	Summary of This Manual's Contents	4
Table 2-2	Kinds of Circuit Card Front Restart	26
Table 3-1	System Messages List	37
Table 3-2	Error Code	225
Table 3-3	Error Kind (ERRK)	227
Table 4-1	LPM Unit/Circuit Cards and Reference Items	241
Table 4-2	TSWM Circuit Cards and Reference Items	267
Table 4-3	PIM Circuit Cards and Reference Items	284
Table 5-1	Fault Repair Procedure Quick Reference	309
Table 5-2	Line Fault Situation	311
Table 5-3	Trunk Fault Situation	320
Table 5-4	Timings for Trunks	321
Table 5-5	Timings for Senders	322
Table 5-6	Unit Fault Situation	333
Table 5-7	Speech Path (TSW) System Fault Situation	346
Table 5-8	Control System Fault Situation	356
Table 5-9	Alarm Indication Fault Situation	364
Table 5-10	PWR Supply Fault Situation	367
Table 5-11	CCIS Line Fault Situation	383
Table 5-12	ISDN Line Fault Situation	386
Table 6-1	Description of Alarm Indications on TOPU	392
Table 6-2	Message Judgment Criteria	400
Table 6-3	ASCII Code	405
Table 6-4	Centralized Billing—Fusion Kinds of Data	415
Table 6-5	Traffic Measurement Types	425
Table 6-6	Designated Connection Test (Station) Operations	439
Table 6-7	Tone Numbers	445
Table 6-8	Changeover of CPU Block	461
Table 6-9	Changeover of Switching Block	466
Table 6-10	System Initialization by Turning On Power Supply Procedure	475
Table 6-11	System Initialization Procedure Types	476
Table 6-12	System Initialization Without Loading [Procedure #1]	479
Table 6-13	System Initialization With Office Data Loading From HD [Procedure #2]	480
Table 6-14	System Initialization with Program Loading From HD [Procedure #3]	481
Table 6-15	System Initialization With Office Data And Program Loading From HD [Procedure #4]	482
Table 6-16	System Initialization by Phase 1 Restart [Procedure #5]	483
Table 6-17	System Initialization by Keys on CPU Front Panel Procedure	484
Table 6-18	System Initialization by SINZ Command Procedure	485
Table 6-19	Line/Trunk Initialization Procedure	486
Table 6-20	Start-Up When Basic & Application Software Is Installed [Procedure #1]	490
Table 6-21	Start-Up When Basic, Application Software, and Office Data Installed [Procedure #2]	492
Table 7-1	Test Equipment and Tools	496
Table 7-2	List of Routine Maintenance Procedures	497
Table 8-1	Command List	519
Table 8-2	Type of Traffic Measurement Explanation	524
Table 8-3	Type of Traffic Measurement Explanation	525
Table 8-4	Telephone Equipment Number Explanation	552
Table 8-5	Internal Route Number Explanation	553
Table 8-6	Route Number Explanation	597

LIST OF TABLES (CONTINUED)

Table	Title	Page
Table 8-7	Type of Circuit Cards	614
Table 8-8	Route Number Explanation	617

This page is for your notes.

CHAPTER 1 INTRODUCTION

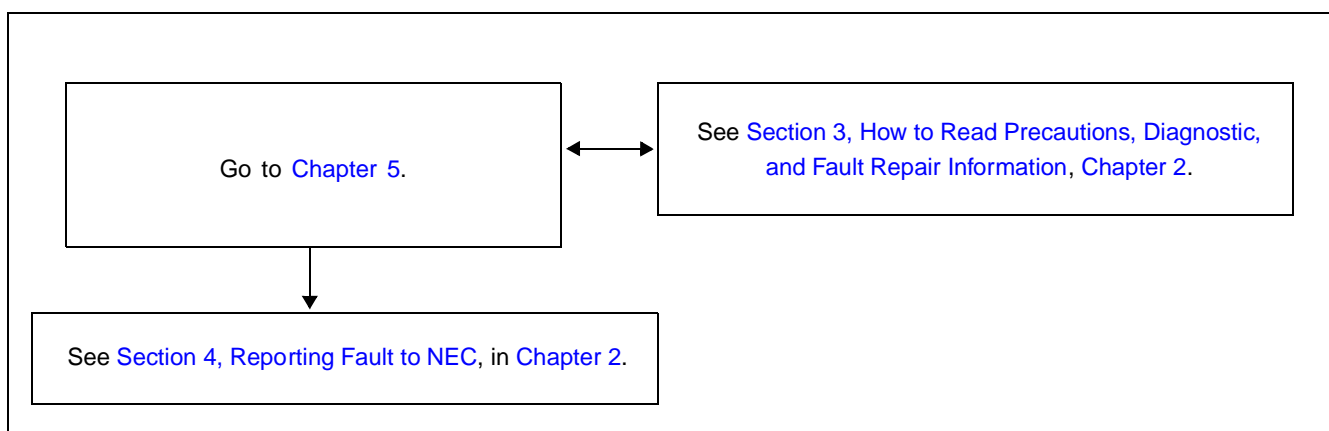
1. GENERAL

This manual describes routine system maintenance procedures and fault repair procedures. This chapter explains how to follow the manual and provides precautions pertaining to maintenance jobs as a whole. Be sure to read this chapter thoroughly before starting the required maintenance project.

2. HOW TO FOLLOW THIS MANUAL

If technicians engage in a fault repair with a sufficient amount of knowledge of the system (system configurations, controlling systems, functions, etc.), the time spent repairing the system is minimized. This manual provides explanations about the system, while placing emphasis on system configurations, controlling systems, and functions. If faults of all conceivable cases are to be assumed for the explanations, the explanations may lack reality and be more difficult to understand. Therefore, this manual provides the explanations on the basis of the following points:

- (1) It is very important to determine whether the fault occurred in the PBX or at any of the peripheral equipment.
- (2) In case the PBX is faulty, explanations are provided about the actions to take until the faulty circuit card/cards are identified.
- (3) Explanations will be omitted pertaining to the following faults:
 - Fault of peripheral equipment (MAT, telephone sets, etc.)
 - Fault due to an error in office data assignment
 - Fault due to an error in installation procedure (an error in circuit card switch setting, cross-connection, etc.)
- (4) How to Read This Manual
 - When a fault is to be repaired for the first time



INTRODUCTION

- When only the contents of a system message needs to be known, or when a fault is to be diagnosed from a system message

Chapter 5

- When the range of faulty conditions has been specified and a faulty circuit card can be assumed

Chapter 5



See [Section 4, Reporting Fault to NEC](#), in [Chapter 2](#).

- When investigating the system for the purpose of a fault repair

See [Section 2, Basic Knowledge](#), in [Chapter 2](#).



Chapter 5

- When replacing a unit/circuit card with a spare

Chapter 4

- When performing routine maintenance

Chapter 7

CHAPTER 2 SYSTEM MAINTENANCE OUTLINE

1. GENERAL

1.1 Purpose

This chapter explains the outline of fault diagnosis and duties necessary to maintain the PBX.

1.2 Administrative Management Procedures

Figure 2-1 shows the work flow of the administrative management procedures.

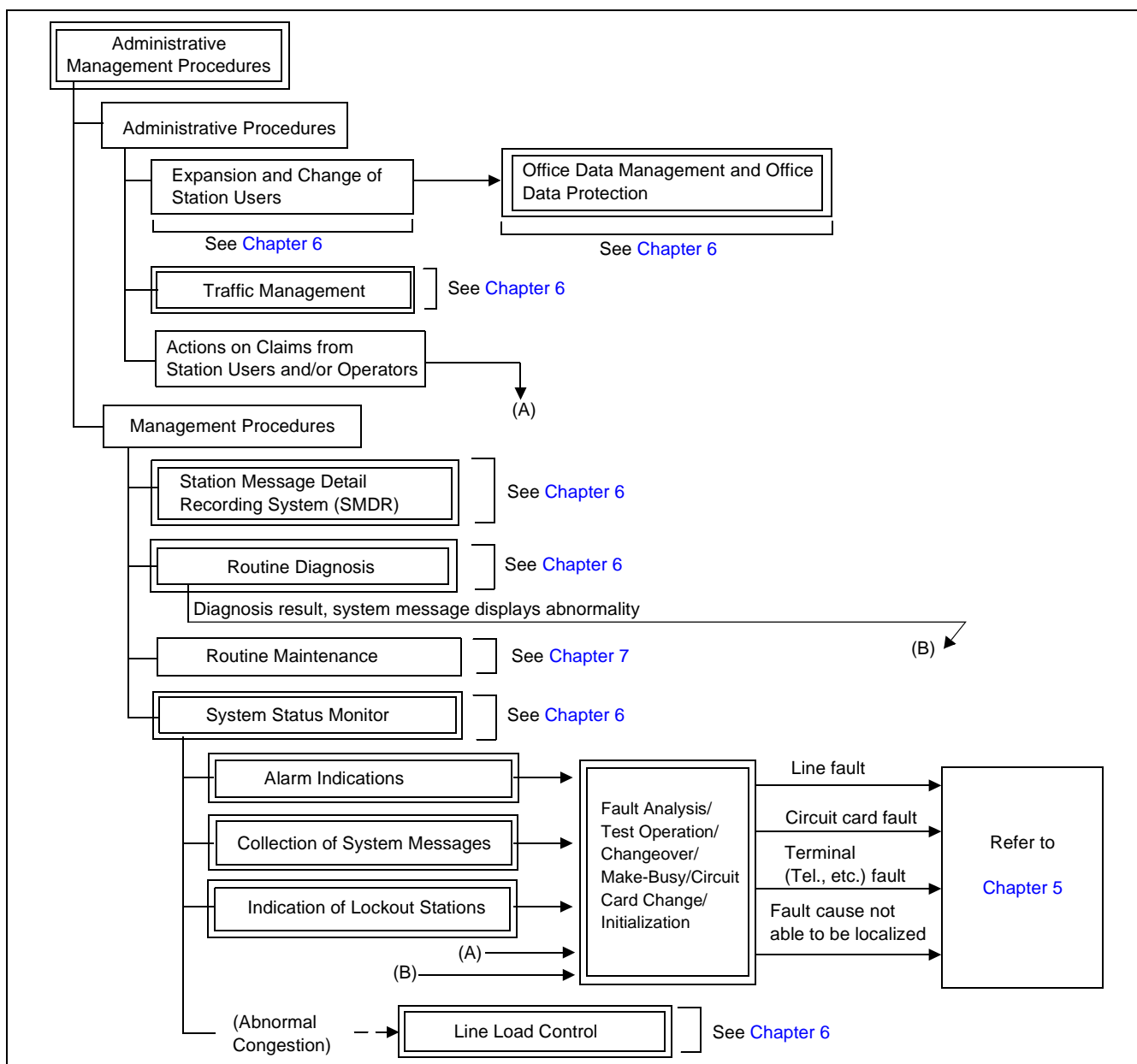


Figure 2-1 Flow of Administrative Management Procedures

SYSTEM MAINTENANCE OUTLINE

1.3 Summary of This Manual's Contents

Table 2-1 provides a brief description of the contents for each chapter in this manual.

Table 2-1 Summary of This Manual's Contents

CHAPTER	DESCRIPTION
2	See Section 2, Basic Knowledge . Explains basic knowledge of fault detection and indication, functions and fault range of the system, etc. See Section 3, How to Read Precautions, Diagnostic, and Fault Repair Information . Explains the methods of procedure performance and various symbols used in the description. See Section 4, Reporting Fault to NEC . Explains the method of forwarding faulty circuit cards, the method of creating a history record for future fault repair, and the method of reporting faults to NEC.
3	Explains how to read and analyze system messages.
4	Explains the method of replacing a unit/circuit card due to a fault.
5	Explains repair procedures corresponding to the faults of processors or equipment.
6	Explains how to control the system in service management functions and precautions required in the system control process.
7	Explains routine maintenance.
8	Explains the commands used in the system administrative management procedure.

2. BASIC KNOWLEDGE

This section identifies the information necessary for the system operations and maintenance procedures.

- [2.1 System Configuration](#)
- [2.2 Line Equipment Numbers \(LENS\)](#)
- [2.3 Local Partition \(LP\) Number](#)
- [2.4 System Messages](#)
- [2.5 Fault Detecting Function](#)
- [2.6 Range of Faults Specification](#)
- [2.7 Explanation of Terms](#)

2.1 System Configuration

Figure 2-2 shows the system configuration of the fully expanded 4-IMG type. For details on each module accommodation, see Figure 2-3 through Figure 2-5.

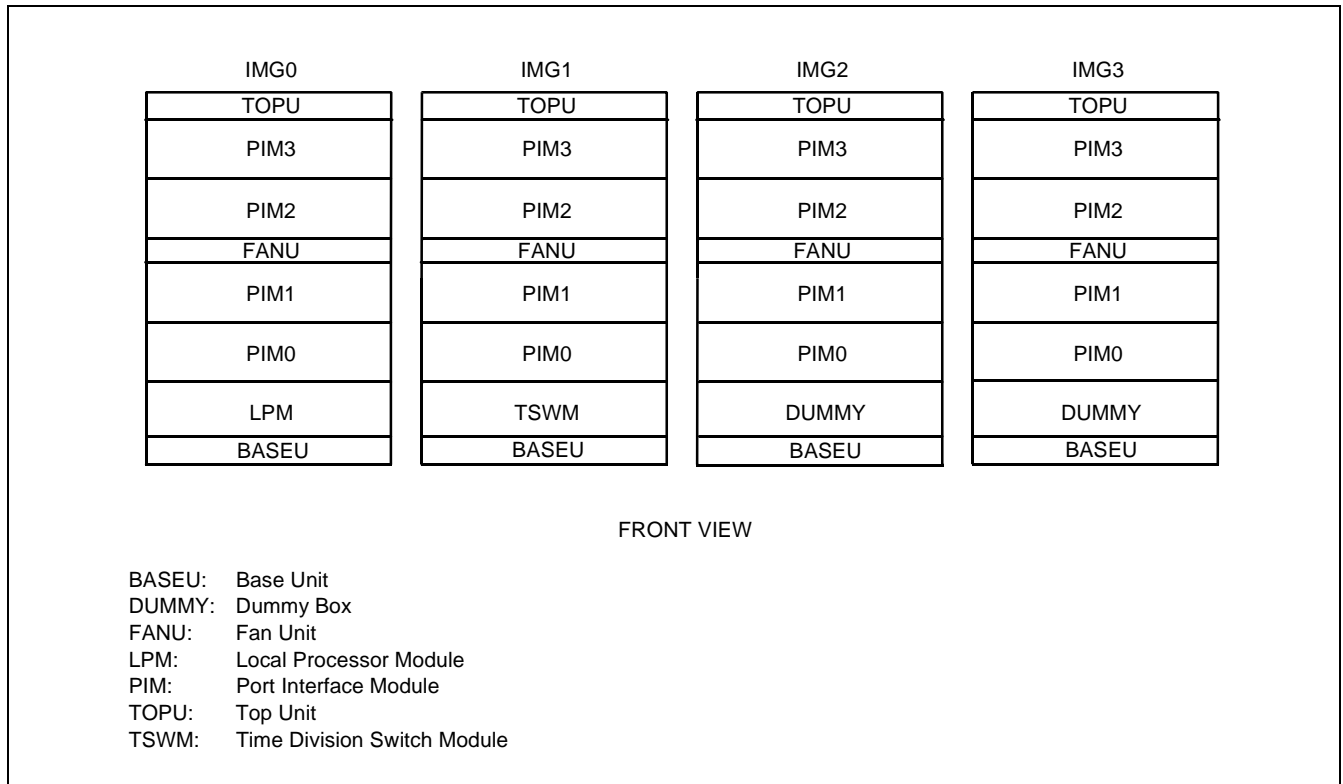
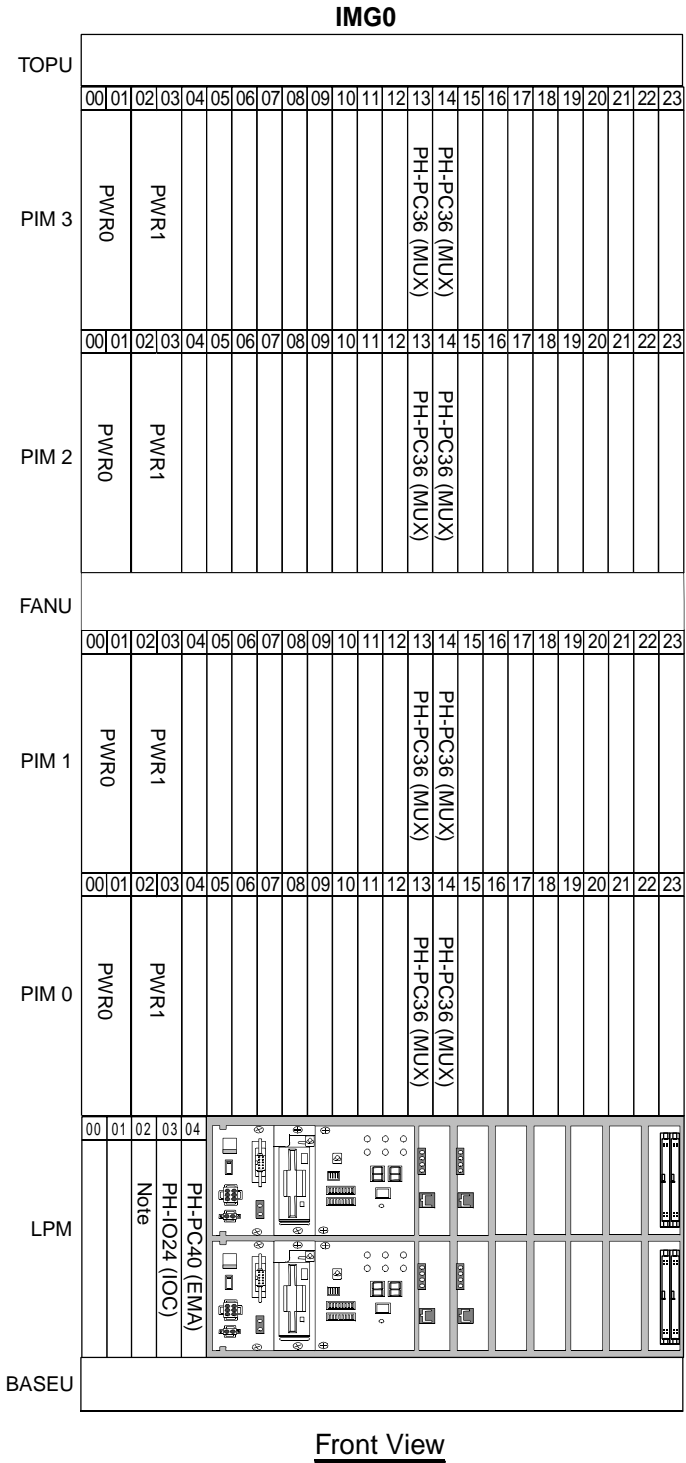


Figure 2-2 System Configuration

SYSTEM MAINTENANCE OUTLINE

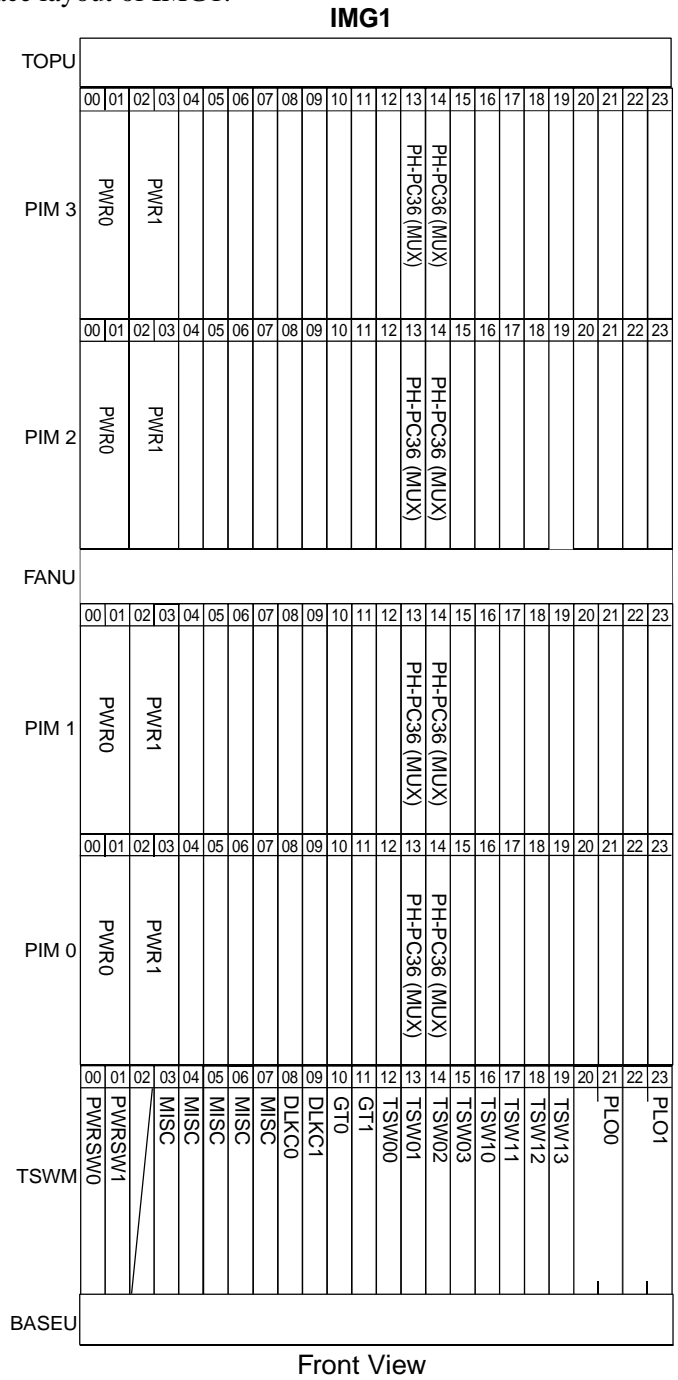
Figure 2-3 shows the face layout of IMG0.



Note: The 2nd IOC card (optional) may be mounted in this slot.

Figure 2-3 Face Layout of IMG0

Figure 2-4 shows the face layout of IMG1.



PWRSW: PH-PW14 DLKC: PH-PC20 GT: PH-GT09 TSW: PH-SW12
 PLO: PH-CK16/17/16-A/17-A

Note: No circuit card is mounted in Slot 02 of TSWM. Instead, on the backboard of this slot, a terminal resistor with a total of two in a dual system is fastened.

Figure 2-4 Face Layout of IMG1

SYSTEM MAINTENANCE OUTLINE

Figure 2-5 shows the face layout of IMG 2/3.

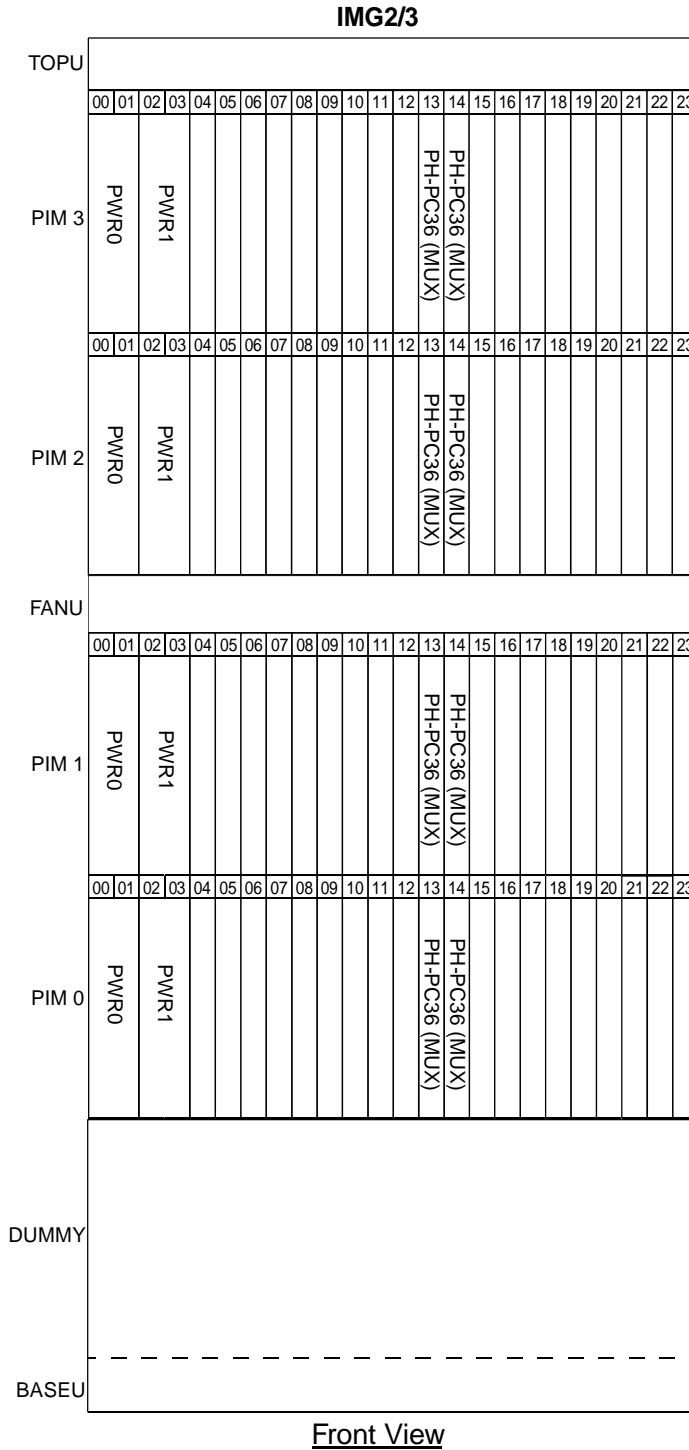


Figure 2-5 Face Layout of IMG2/3

2.2 Line Equipment Numbers (LENS)

The Line Equipment Numbers (LENS) are used to specify the location of a circuit (trunk/port) in any of the PIM universal slots. Refer to the figures in this section, and confirm the LENS format used in the system.

As shown in [Figure 2-6](#), the LENS consists of six digits: two digits for MG, one digit for U, two digits for G, and one digit for Lv.

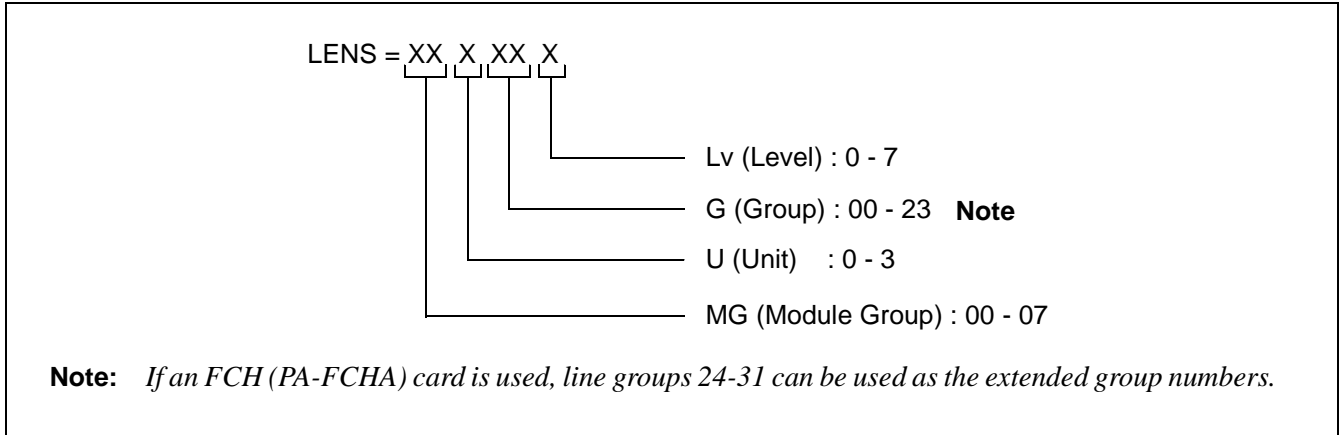


Figure 2-6 LENS Format

2.2.1 Module Group

[Figure 2-7](#) explains the Module Group (MG). In a fully expanded system, the MG number ranges from 00 to 07.

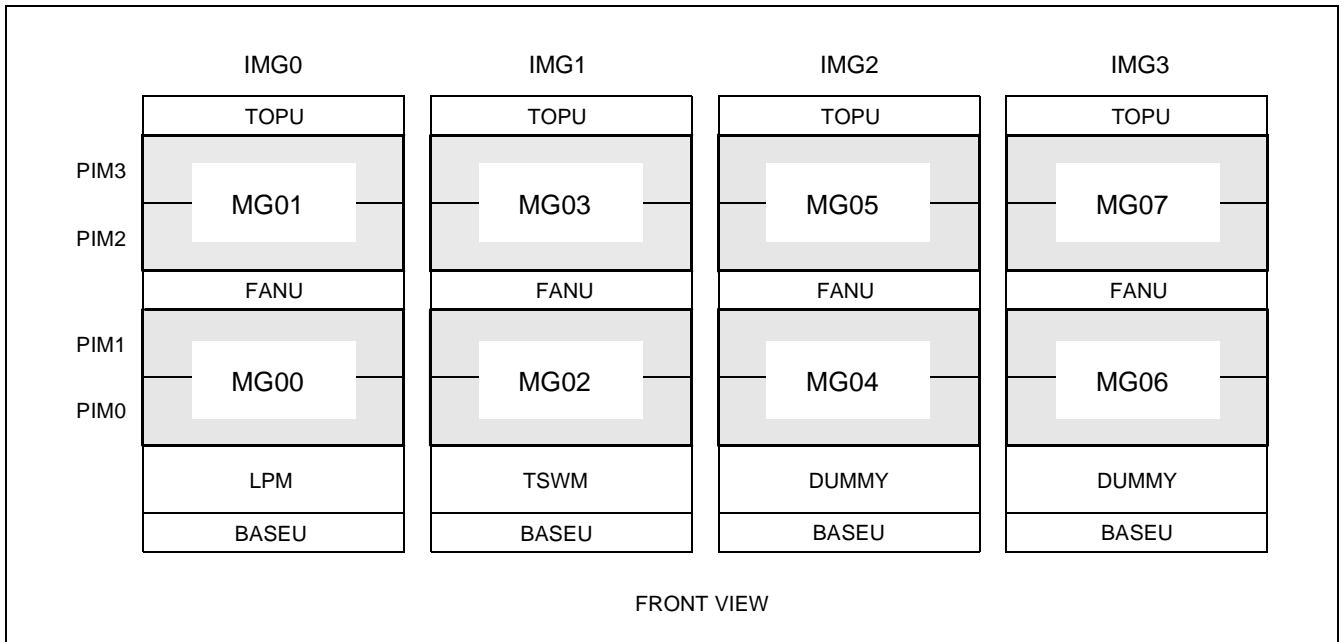


Figure 2-7 Module Group Allocations

SYSTEM MAINTENANCE OUTLINE

2.2.2 Unit

Figure 2-8, which represents a fully expanded system, explains the Unit (U) numbers. The numbers range from 0 to 3, and each unit represents the PIM universal slots, No. 04-12 (U 0/2) or No. 15-23 (U 1/3).

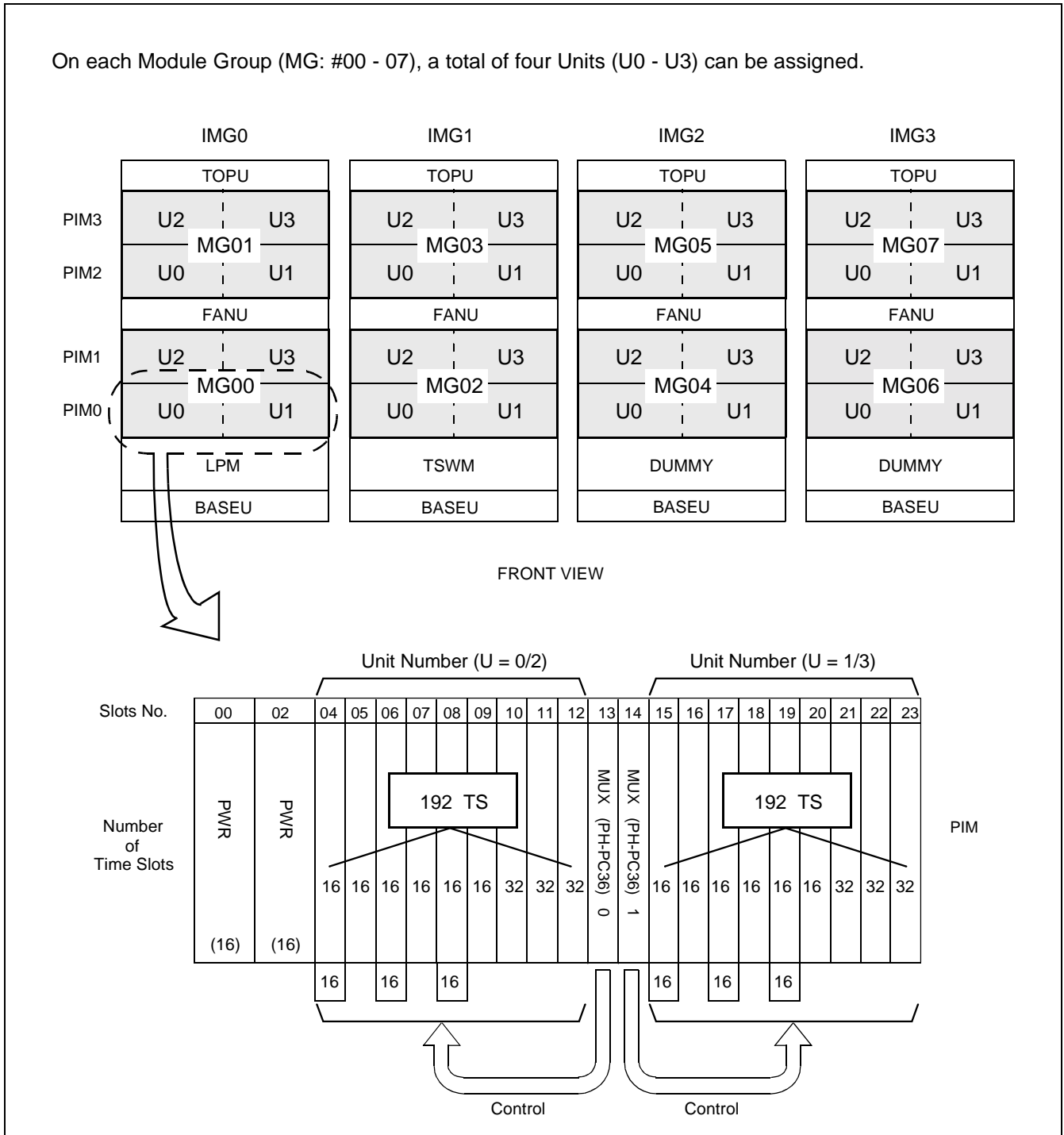


Figure 2-8 Unit Number Allocations

2.2.3 Group

The Group (G) numbers are allocated as shown in Figure 2-9. A total of two Groups are assigned on each universal slots within the PIM. Slot numbers 10, 11, 12, 21, 22, 23 can contain a total of four Groups as an exception.

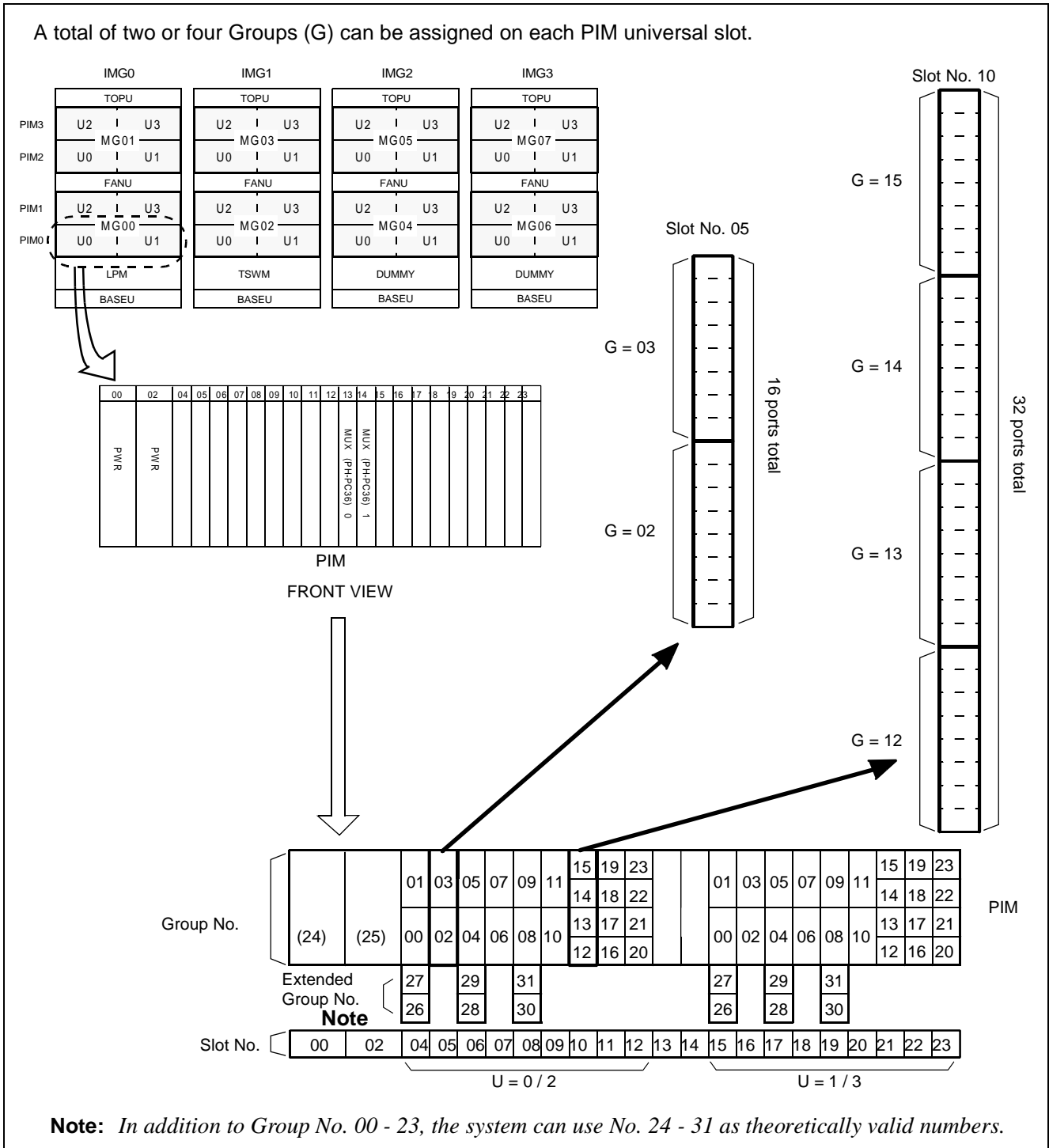


Figure 2-9 Group Number Allocations

SYSTEM MAINTENANCE OUTLINE

2.2.4 Level

Figure 2-10 explains the Level (Lv) numbers. There are a total of eight Levels (Lv0 - Lv7) on every Group number, which ranges from 00 to 31.

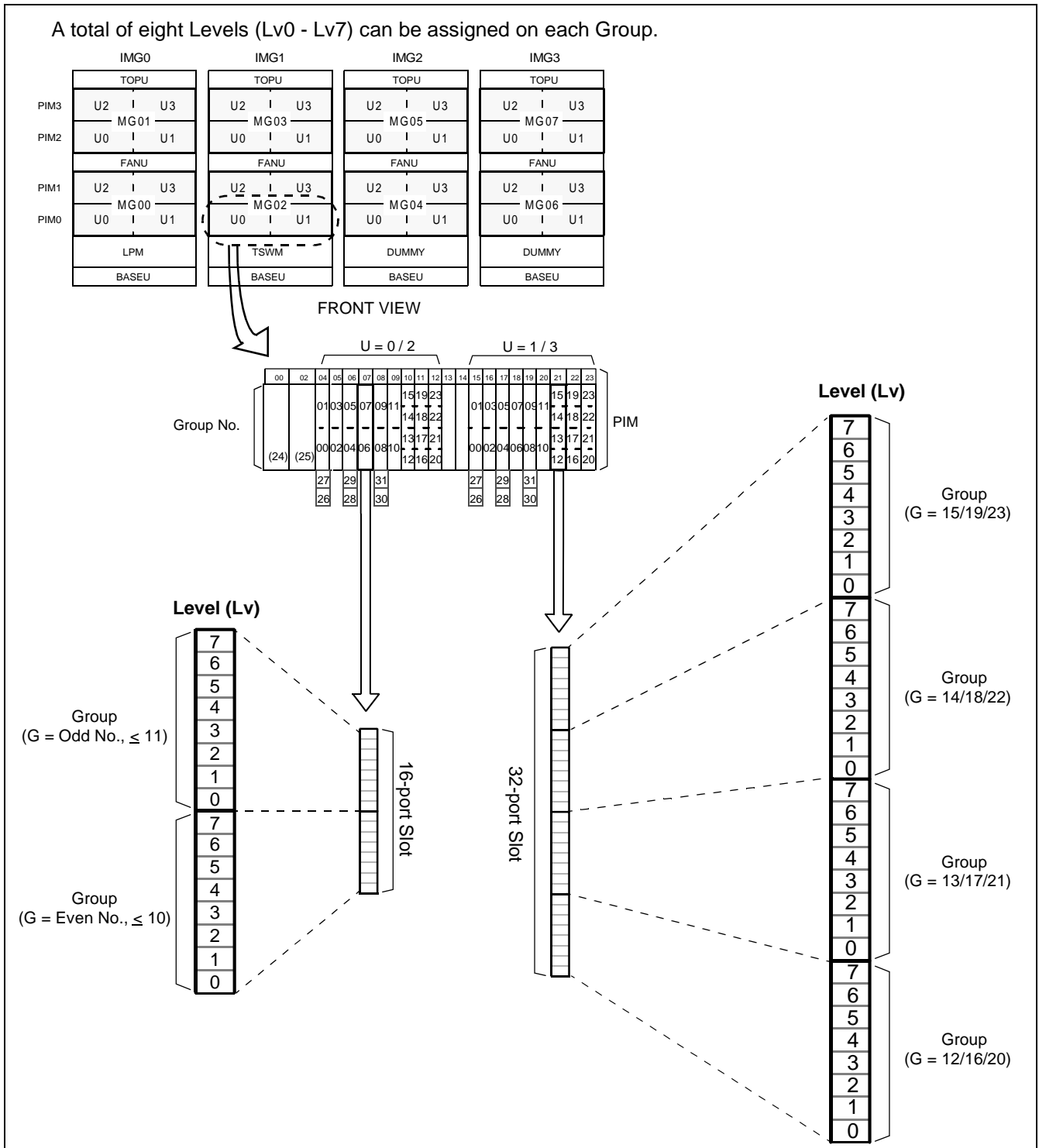


Figure 2-10 Level Number Allocations

2.3 Local Partition (LP) Number

The Local Partition (LP) number refers to a logical local processor number, theoretically assigned for each IMG that consists of four (or less) Port Interface Modules (PIM). Though the local processor does not actually exist in any of the IMGs, except for IMG0, the system can apply the two-digit LP number to each IMG (see Figure 2-11) on its data memory program. The LP numbers are used primarily in the following cases:

- Display of system messages
- Assignment of line load control data (ALLC command)
- Backup for Call Forwarding/Speed Calling data (MEM_HDD command), etc.

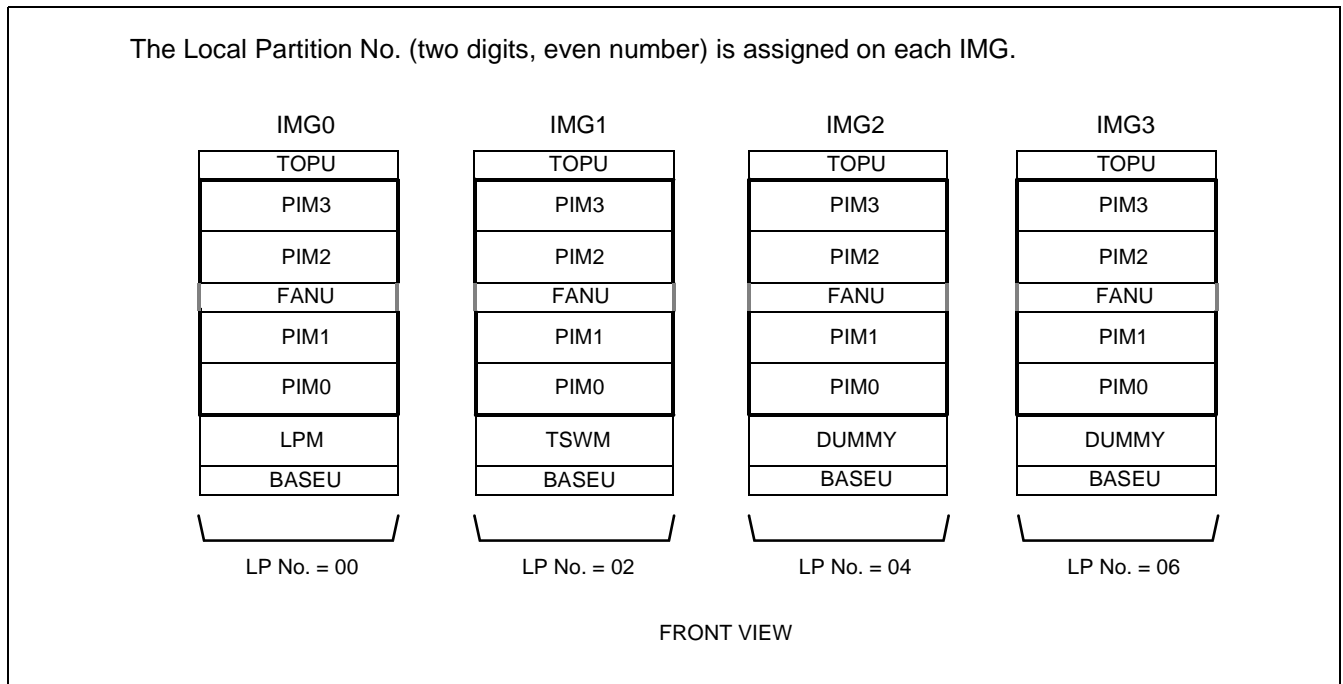


Figure 2-11 LP Number Allocations

SYSTEM MAINTENANCE OUTLINE

2.4 System Messages

System messages display during routine diagnosis, system operation status controlling, and fault occurrence. [Figure 2-12](#) shows an example of a system message.

Refer to [Chapter 3](#) for details on each message.

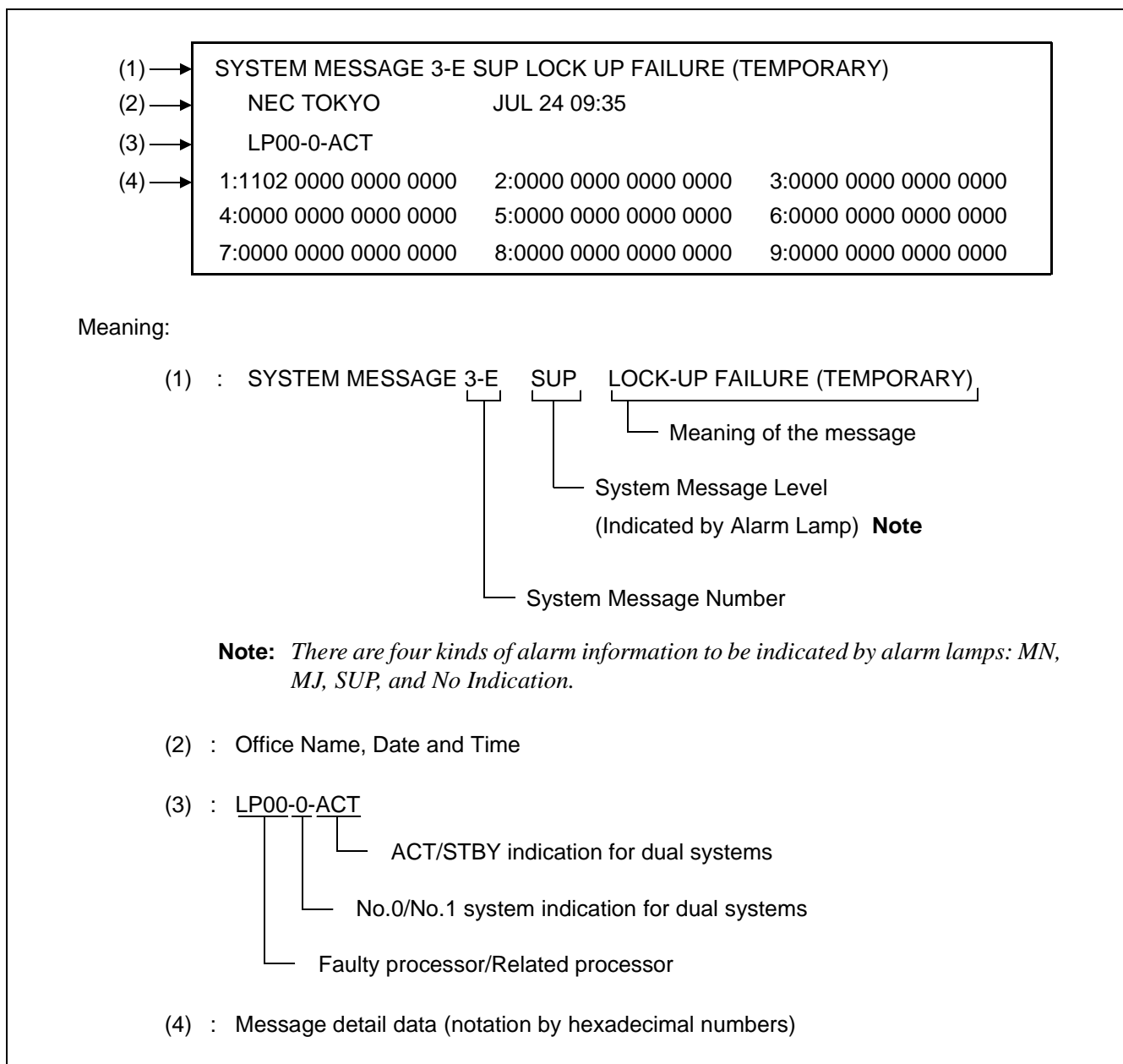


Figure 2-12 System Message Example

2.5 Fault Detecting Function

The system finds a fault by its fault detecting circuit and the fault detecting program. Once a fault occurs, the system initiates a remedial action such as system changeover, make-busy setting, or restart processing by the automatic diagnosis function. This action reduces the influence of the fault so that system servicing may be minimized. The result of the process taken and the fault situation are indicated for equipment concerned.

Among the faults, those related to speech path (noise, one-way speech, speech inability, etc.) are not detectable. Since these fault reports are to be obtained from a station or operator, periodic trunk tests must be performed without failure to detect the faults related to speech path.

Figure 2-13 shows an outline of fault detection, and Figure 2-14 shows a block diagram of fault detection.

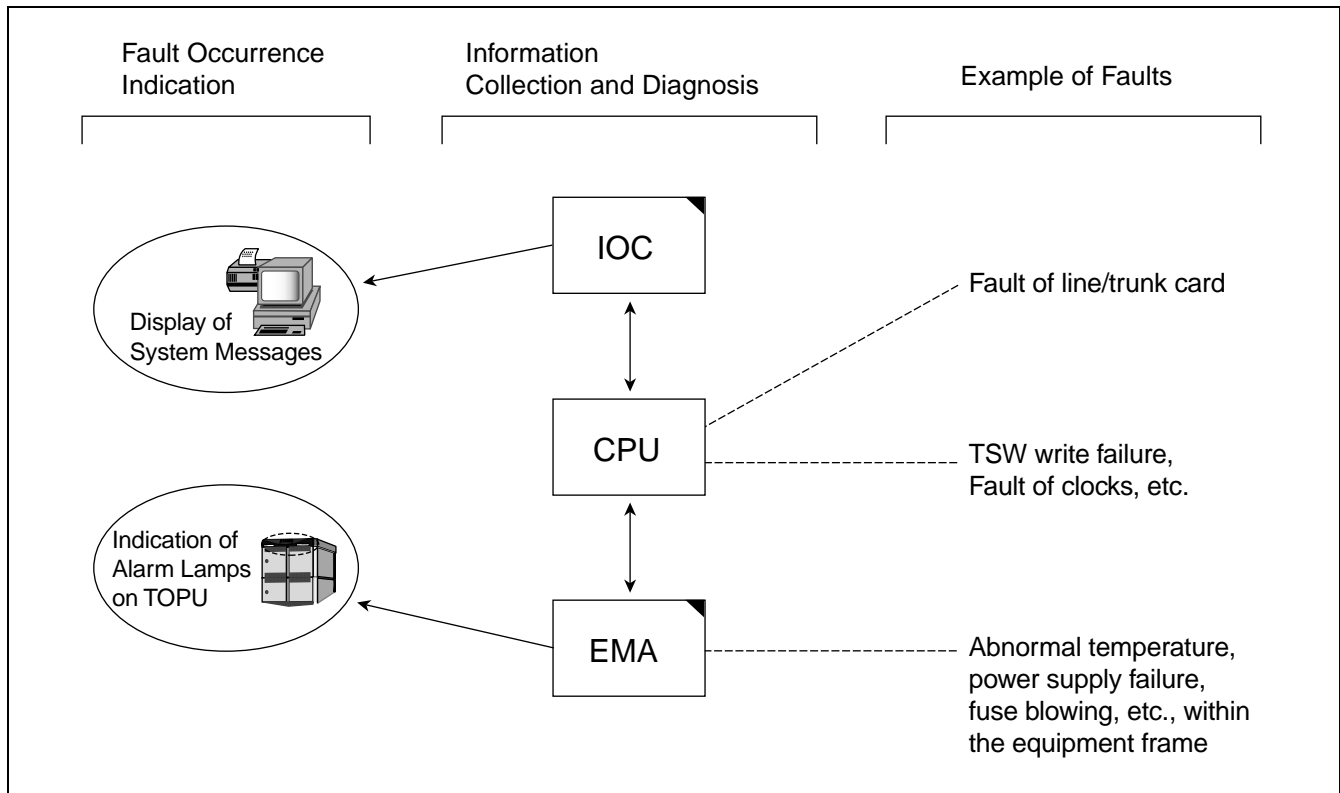


Figure 2-13 Fault Detection General Diagram

SYSTEM MAINTENANCE OUTLINE

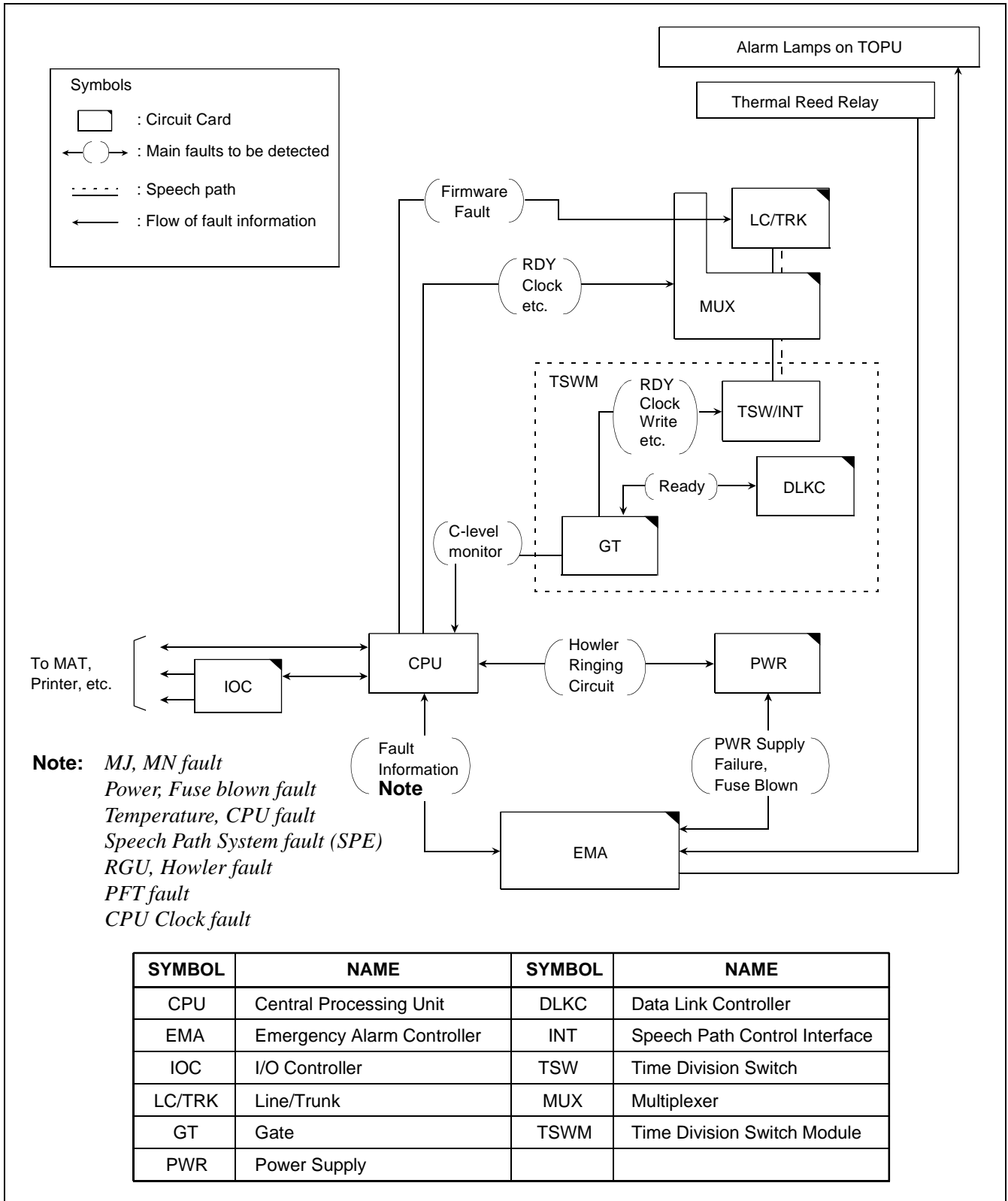


Figure 2-14 Fault Detection Block Diagram

(a) Main Faults

Faults that may occur in the system can be generally categorized into Processor System Fault, Speech Path System Fault, Line/Trunk Fault, etc.

- Processor System Fault

The CPU alarm detecting circuit continuously monitors whether the CPU is working normally. If a fault is detected, the CPU calls up the diagnostic program, which identifies the cause of the fault and determines whether the fault is temporary or permanent. When the fault affects system operations, Active/Standby status of the CPU is changed over (provided that the system has dual configuration).

- Bus System Fault

The CPU transfers line/trunk card control information to the associated peripheral circuits via IO Bus. When a parity error is detected in the transfer data or when the required information cannot be transferred from a circuit card, the CPU identifies the cause of the fault, changes over the CPU so that system operation is not affected, and executes restart processing.

- Speech Path Fault

The CPU monitors the operating status of the TSW card, the occurrence of errors in writing data to the switch memory, and the basic clocks supplied to the speech path. Upon detecting a fault, the CPU identifies the cause of the fault, determines whether the fault is temporary or permanent, and executes required processing such as changeover of the TSW card.

- Others

The alarm detecting circuit on the EMA card continuously monitors the occurrence of faults in the PWR supply cards, such as abnormal temperatures within the equipment frame, and lights the alarm lamp on the TOPU when a fault is detected.

(b) Lamp Indications on the TOPU

When a fault occurs, the corresponding lamp on the TOPU indicates the location of the fault. For the meaning of each lamp indication, refer to [Chapter 6](#).

SYSTEM MAINTENANCE OUTLINE

2.6 Range of Faults Specification

- (1) Upon receiving a fault report from a station user or an operator, the technician can assume a faulty card exists if the range to be affected by the fault can be determined. For the detailed procedure, refer to [Chapter 5](#). Use the following actions to check the MDF:
 - (a) Check the LENS of the reporter (Station or ATTCON/DESKCON).
 - (b) Check other circuits of the circuit card in which the reporter (station line or ATTCON/DESKCON) is located.
 - (c) Check the other groups (other circuit cards mounted in the same module) in the module in which the reporter is located.
 - (d) Check lines in each of the other modules on the basis of plural lines.
- (2) If the fault cannot be detected by the system (a fault related to the speech path such as noise during speech, one-way speech, speech inability), the range of (a) through (d) (itemized above) should be limited.
- (3) When a major fault is detected in the dual systems, the CPU or TSW system automatically changes over if the fault range is (c) and (d). In this case, the whole module involved is placed into make-busy status even if the fault is partial, and the station lines currently operating normally become faulty status. Diagnose the fault from the content of the system message displayed and repair the fault as required.
- (4) When limiting the range of faults, consider the system circuitry that consists of the control (see [Figure 2-16](#), where CPU 0 is active) and speech path systems (see [Figure 2-17](#)).
- (5) As seen from the block diagrams in [Figure 2-15](#) through [Figure 2-18](#), if a fault occurs within the common portions to be controlled, all other associated portions are affected by that fault occurrence. If the range of faults is outside PIM fault, CPU/TSW system changeover is executed (only when the fault is detectable by the system).

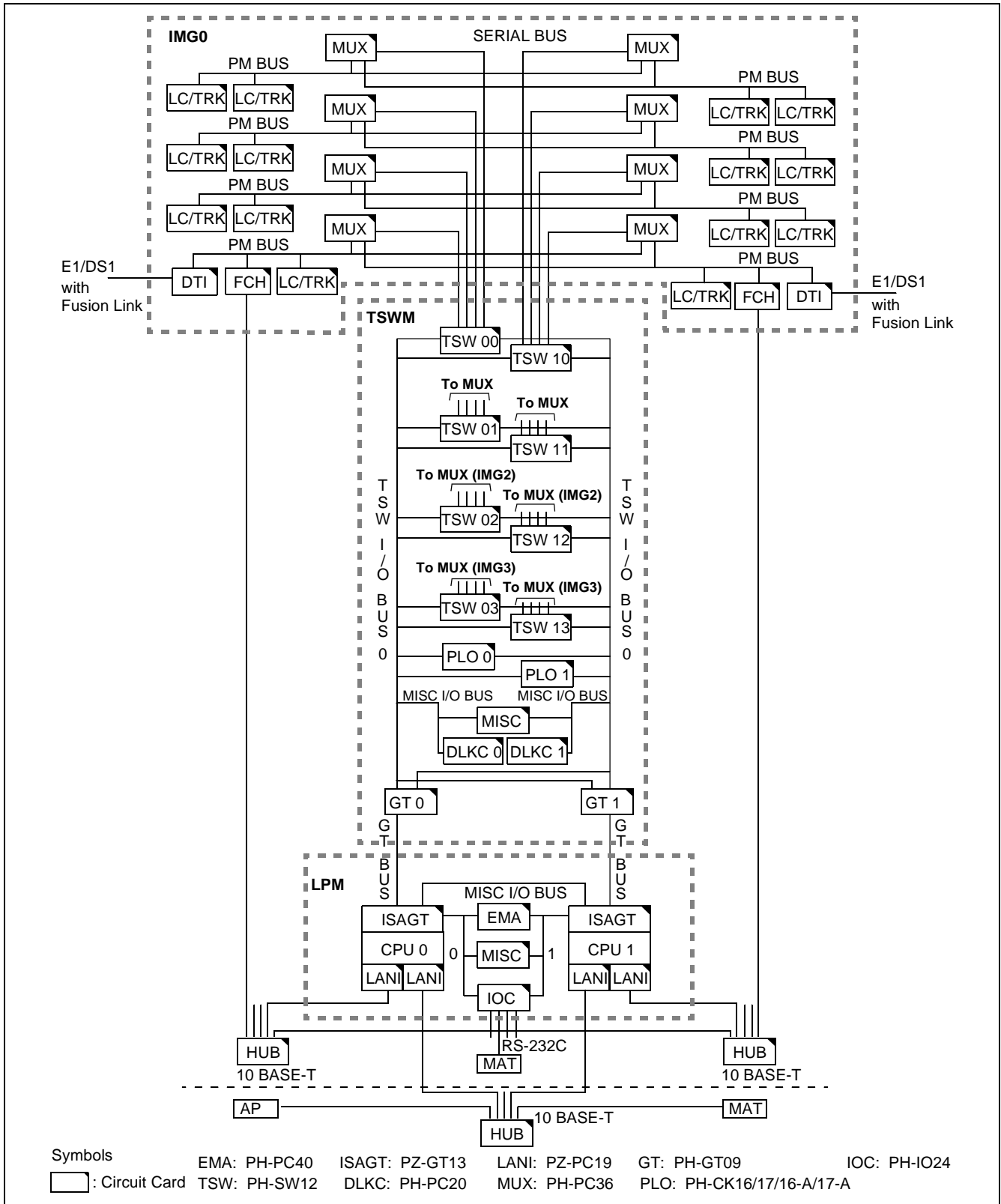


Figure 2-15 General System Block Diagram

SYSTEM MAINTENANCE OUTLINE

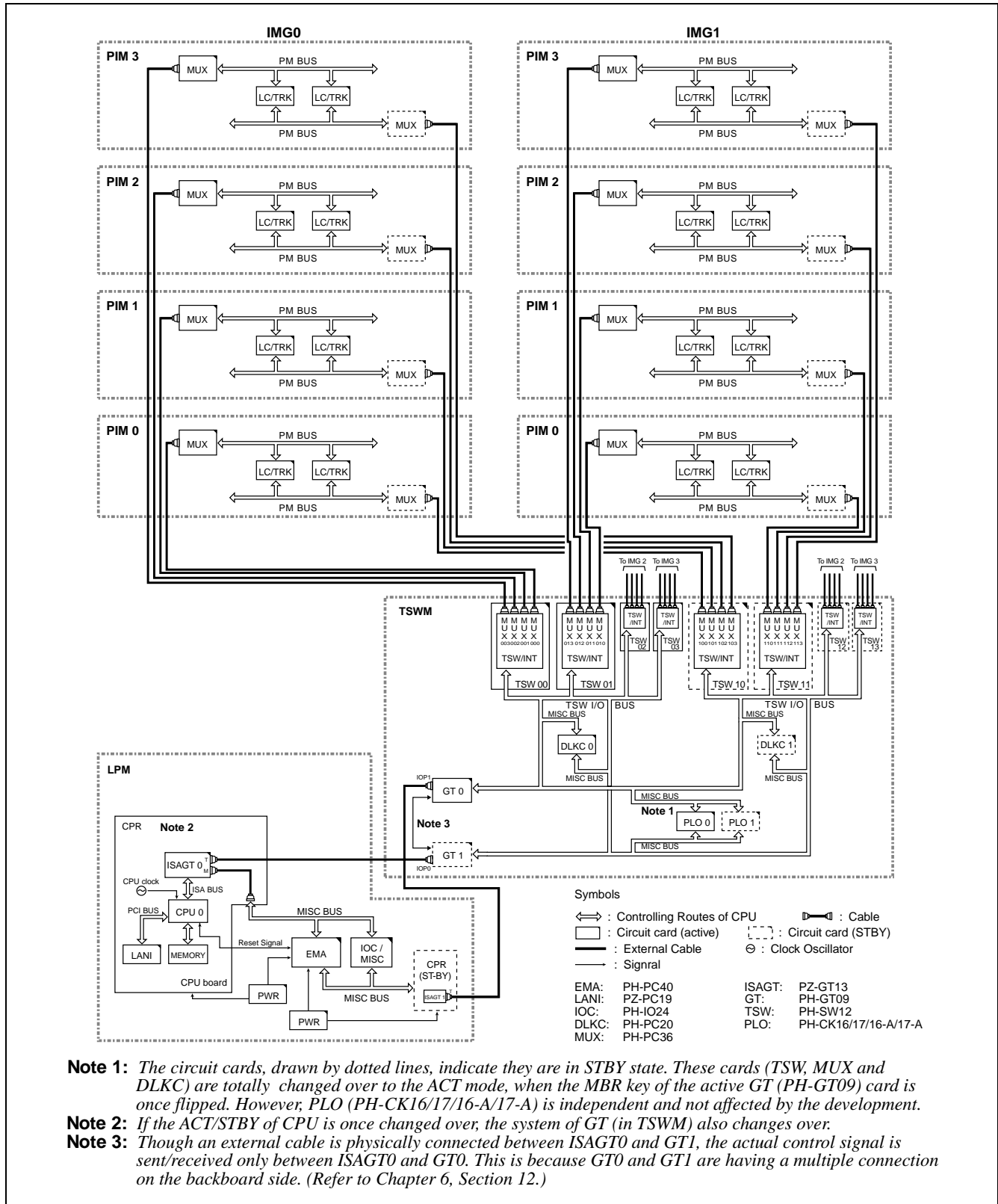
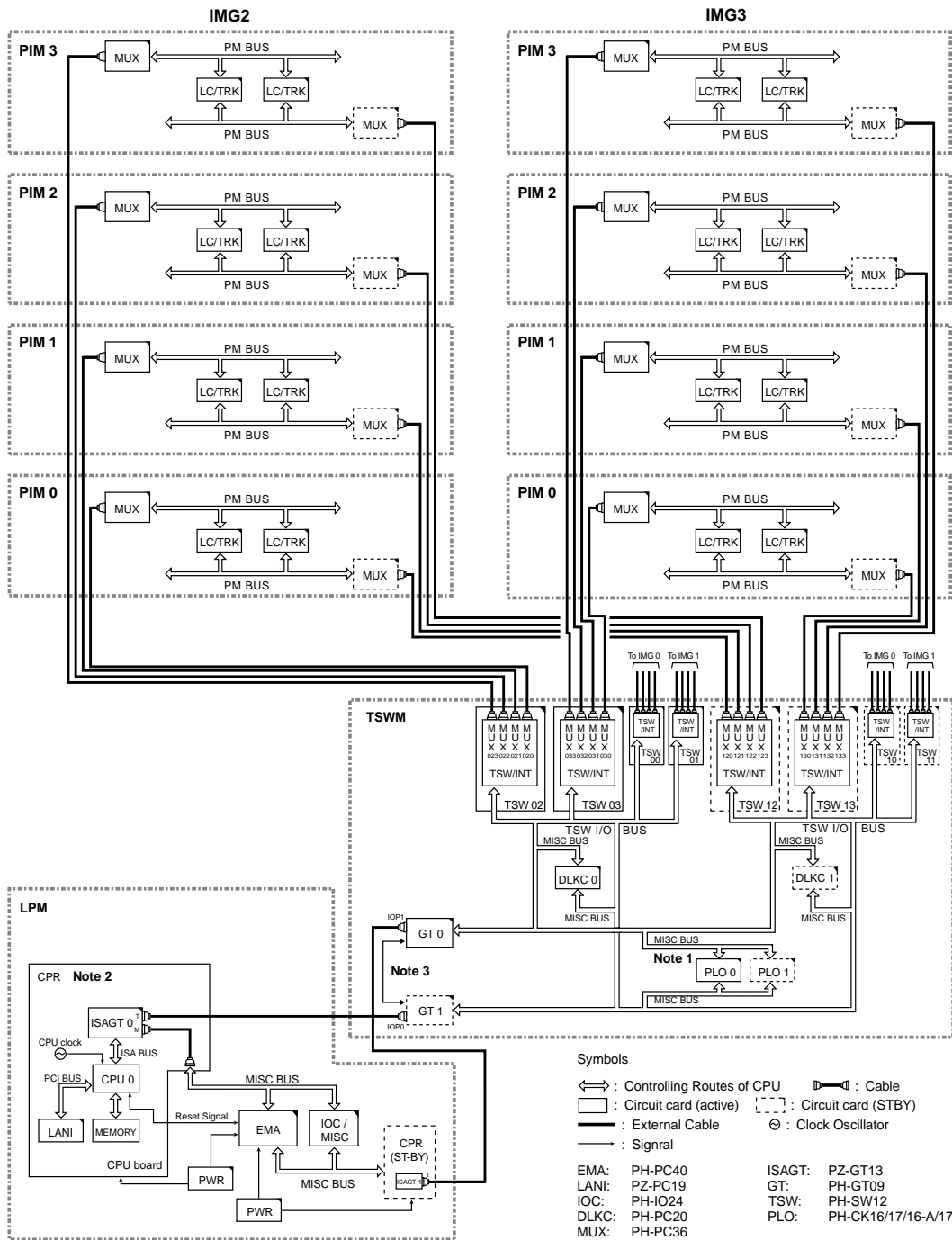


Figure 2-16 CPU Controlling Block Diagram



- Note 1:** The circuit cards, drawn by dotted lines, indicate they are in STBY state. These cards (TSW, MUX and DLKC) are totally changed over to the ACT mode, when the MBR key of the active GT (PH-GT09) card is once flipped. However, PLO (PH-CK16/17/16-A/17-A) is independent and not affected by the development.
- Note 2:** If the ACT/STBY of CPU is once changed over, the system of GT (in TSWM) also changes over.
- Note 3:** Though an external cable is physically connected between ISAGT0 and GT1, the actual control signal is sent/received only between ISAGT0 and GT0. This is because GT0 and GT1 are having a multiple connection on the backboard side. (Refer to Chapter 6, Section 12.)

Figure 2-16 CPU Controlling Block Diagram (Continued)

SYSTEM MAINTENANCE OUTLINE

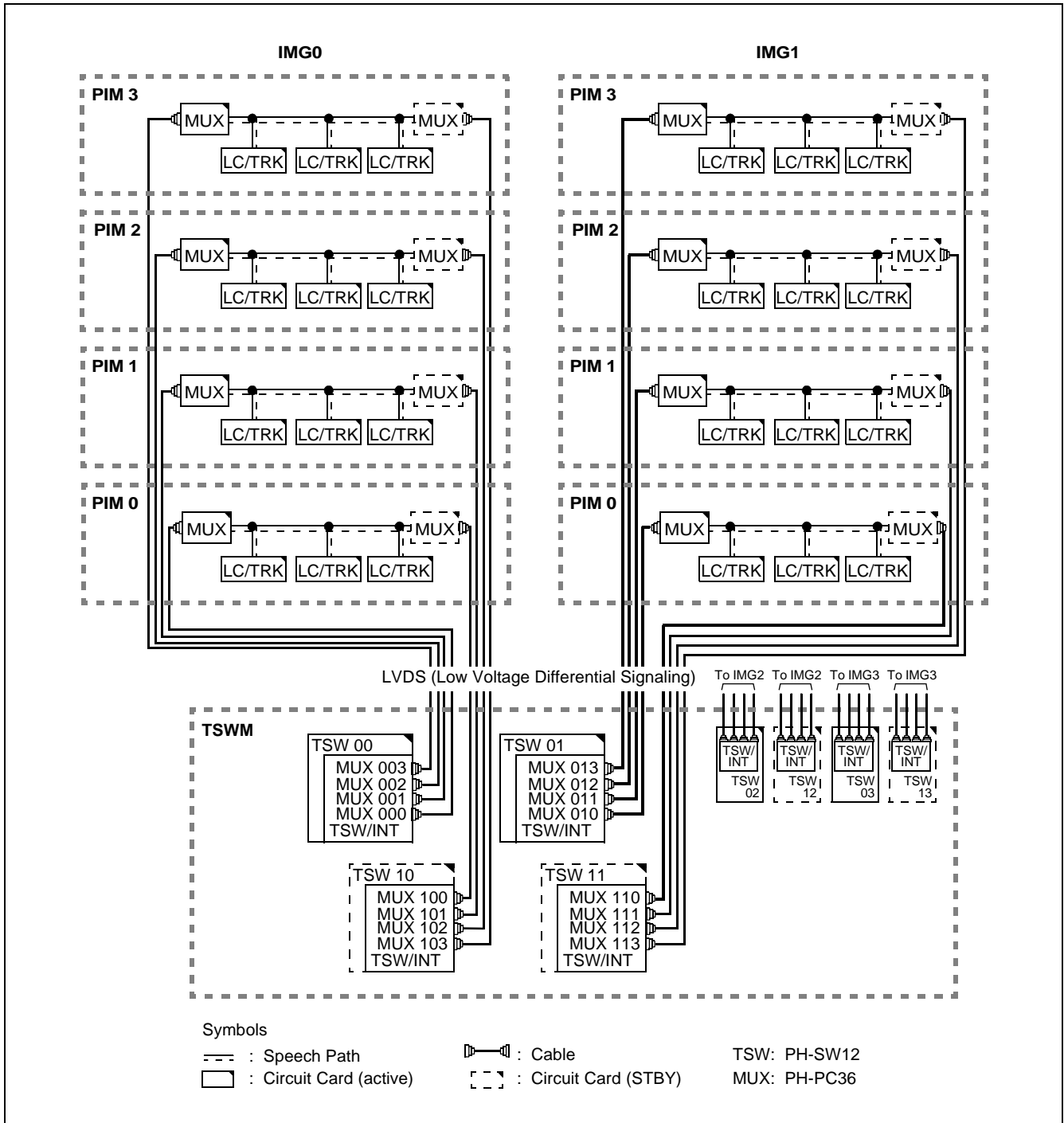


Figure 2-17 Speech Path Block Diagram

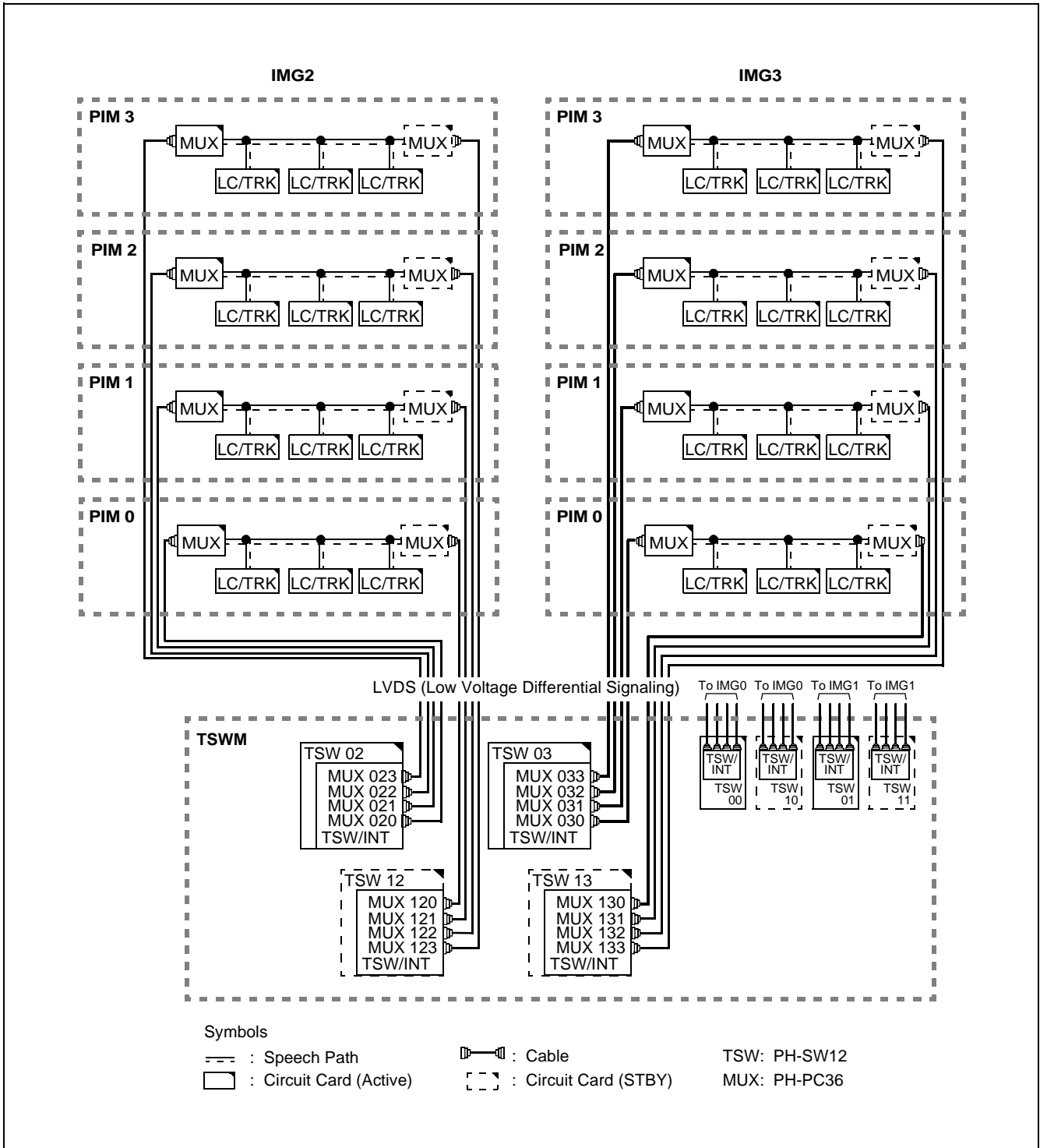


Figure 2-17 Speech Path Block Diagram (Continued)

SYSTEM MAINTENANCE OUTLINE

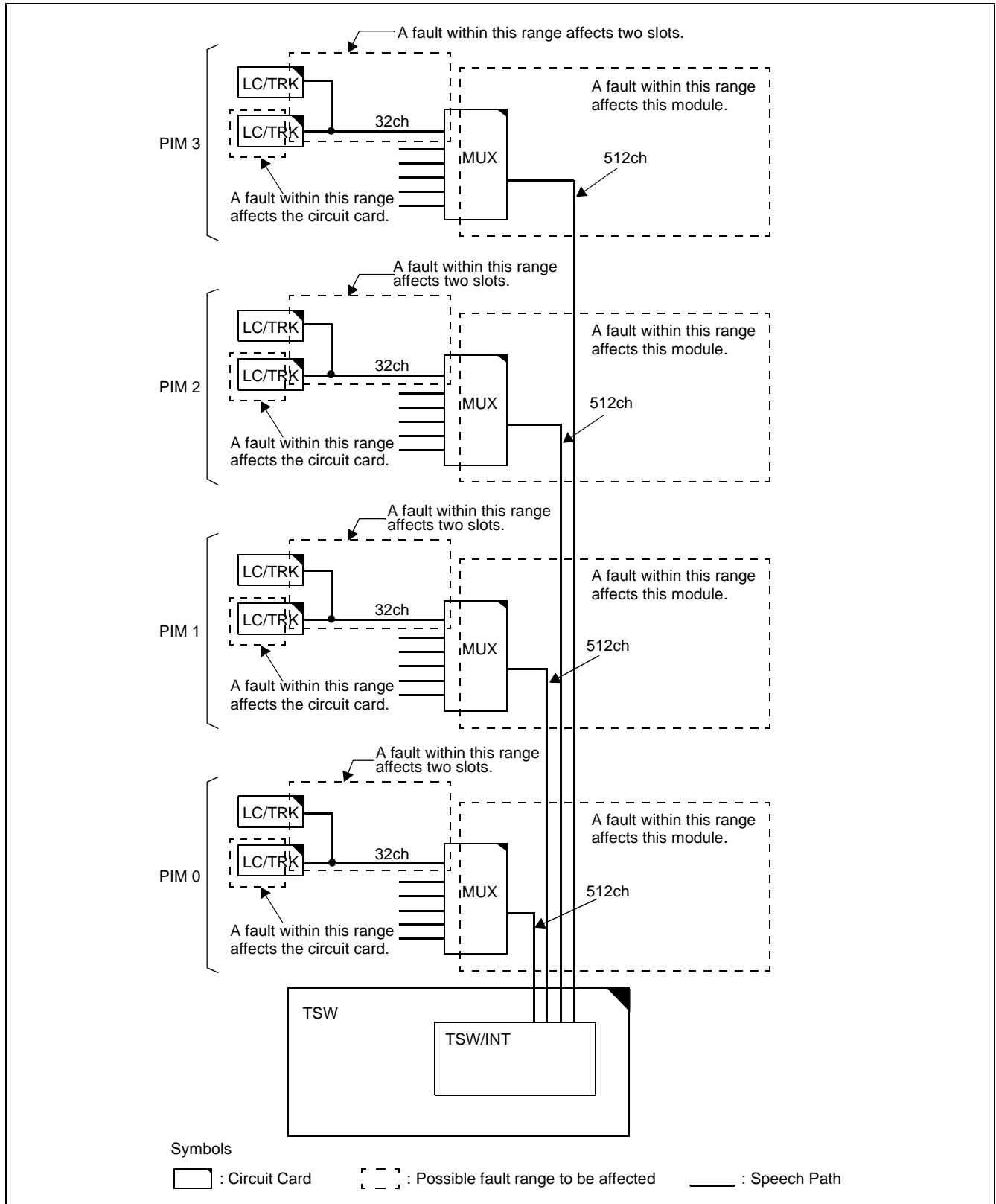


Figure 2-18 Speech Path Range of Fault

2.7 Explanation of Terms

- C-Level Infinite Loop

The program repeatedly executes specific routines due to a fault of the main memory, data destruction, etc. The program is not able to be processed normally. This faulty condition is referred to as Program Infinite Loop. C-Level infinite loop is a state where a clock-level program, which runs under clock interrupt disable state, is in an infinite loop status.

- B-Level Infinite Loop

This is a state where a program infinite loop has occurred during a connection processing and the connection for the next call is not able to be processed.

- Port Microprocessor (PM)

Each line/trunk card mounted in the PIM is equipped with a processor called Port Microprocessor (PM), which continuously supervises the lines/trunks.

- Ready Error

For acknowledging the connection between the CPU and a circuit card, an interface signal called Ready Signal is used. When the CPU has accessed a specific circuit card and the normality of the connection is acknowledged, the Ready Signal is returned to the CPU within 6 μ s. If the Ready signal is not returned to the CPU within 6 μ s after access, the situation is referred to as Ready Error.

- Parity Error

For confirming the normality of data transfer between the CPU and the circuit card under the control of the CPU, parity check is made. When an error is detected in a parity check, it is referred to as Parity Error. Parity check means to confirm the normality of data by adding an error detecting parity bit to a set of data to be transferred.

When a set of data is transferred, a parity bit is added to the data so that the data has an even-number of "1" bits (it is referred to as Even Parity). When there is an odd-number of "1" bits in the received one set of data, it is detected as an error.

- Monitor Restart

Monitor restart processing suspends current processings in progress without applying any hardware controlling, allowing the system to restart its operations from the monitor program.

The system abandons only the processings of the calls being handled by the program, and maintains all the connections that have already been established.

- Circuit Card Front Initializing Restart

The whole system is forcibly initialized. However, the initialization varies with the setting of the SENSE switch on the DSP of CPU (see [Table 2-2](#)).

SYSTEM MAINTENANCE OUTLINE

Table 2-2 Kinds of Circuit Card Front Restart

SENSE (0-F)	KIND OF RESTART	REMARKS
1	DM Clear Restart	
2	DM Load Restart	When the system is in operation
5	OAI Memory Clear Restart	
C	OFF-line Restart	

- PM (Line/Trunk Card) Make-Busy Restart

In this processing, the faulty PM (Line/Trunk Card) is isolated from the system and, at the same time, the calls associated with that faulty PM (Line/Trunk Card) are released. No calls related to the faulty PM (Line/Trunk Card) are processed and the system normally runs without the faulty PM (Line/Trunk Card).

- Data Copy Restart

In a system of dual CPU configuration, the RAM memory (including the data memory) is copied from the ACT side CPU into the STBY side CPU, and ACT/STBY is changed over and monitor restart is executed.

In the case of this restart processing, only the ACT side CPU and the STBY side CPU are changed over without any effect on the current connections. However, no call processings are executed while the restart processing is in progress (from copying until the end of the changeover).

3. HOW TO READ PRECAUTIONS, DIAGNOSTIC, AND FAULT REPAIR INFORMATION

3.1 Precaution about Diagnostic Procedure/Fault Repair Procedure

When performing diagnostic procedures/fault repair procedures, *always* adhere to the following actions:

- (1) When replacing a circuit card with a spare, handle the circuit card using the Field Service Kit.
 - (a) To protect the circuit card from static electricity, wear a wrist strap before handling the circuit card.
 - (b) Before extracting the circuit card from its mounting slot, set its MB switch to the UP side (ON).
- (2) When holding a circuit card by hand, wear gloves and be careful not to touch mounted parts, gold-plated terminal, etc., on the circuit card.

The 3M[®] Model 8012 Portable Field Service Kit, shown in [Figure 2-19](#), is recommended as an effective countermeasure against static electricity.

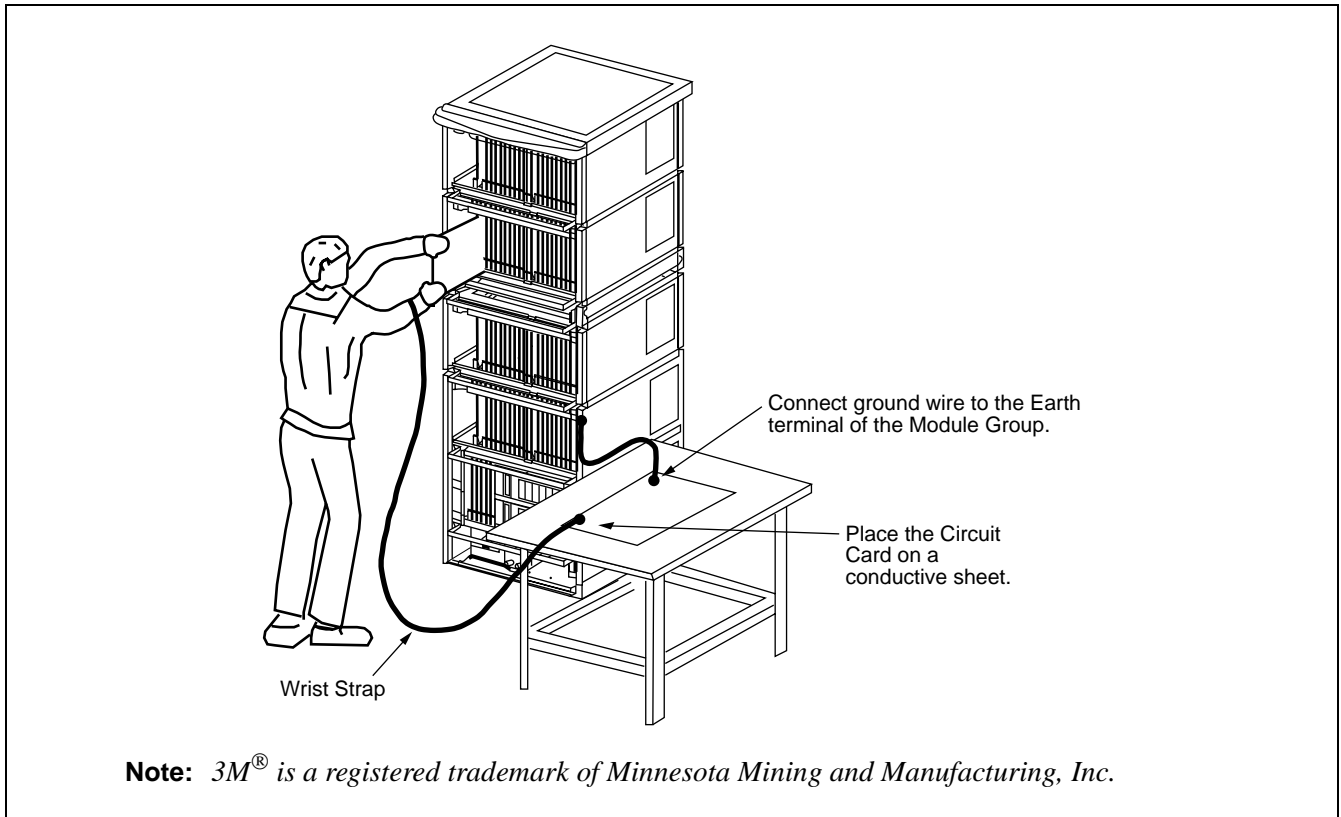


Figure 2-19 3M[®] Model 8012 Portable Field Service Kit

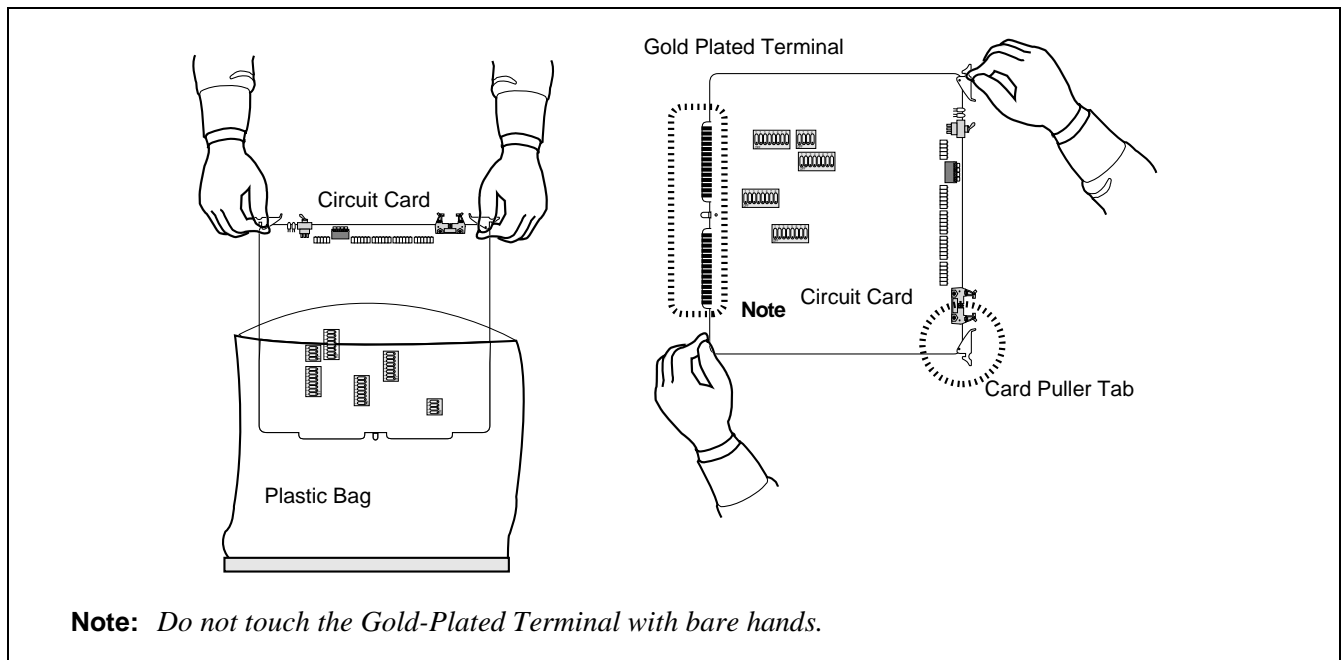


Figure 2-20 How to Hold a Circuit Card

SYSTEM MAINTENANCE OUTLINE

- (3) When a circuit card appears to be faulty, check the following items before replacing it with a spare:
 - (a) Poor connector contact at the circuit card may be responsible for the fault. Repeat insertion and extraction of the circuit card a few times. Clean the connector portion, and recheck for proper operation.
 - (b) Check the lead wires of vertically-mounted parts (resistors, capacitors, etc.) to ensure they have not shorted each other or broken.
 - (c) Check the back side of the circuit card to see if there is any short-circuited soldered portion, or modified cross connection wires erroneously left unconnected.
 - (d) Check the ROMs to ensure proper seating in the IC socket. [Figure 2-21](#) shows a leg that is bent and not set in the socket.

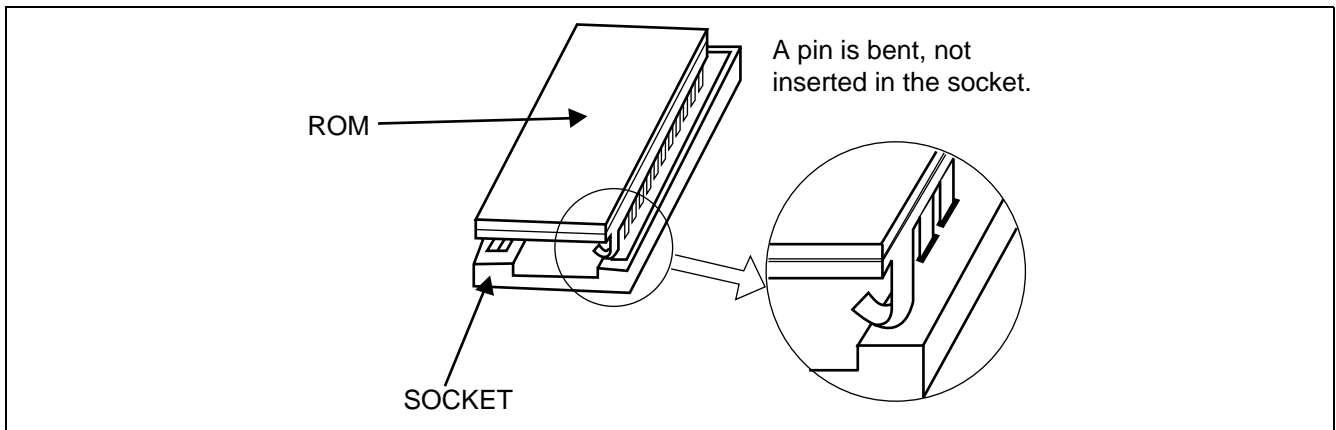


Figure 2-21 How to Set the ROM in IC Socket

- (4) How to clean the connector portion (gold-plated terminal):
- (a) Dip the gold-plated terminal portion in the cleaning fluid for 3 to 5 seconds (only PA-XX type circuit card), as shown in [Figure 2-22](#).

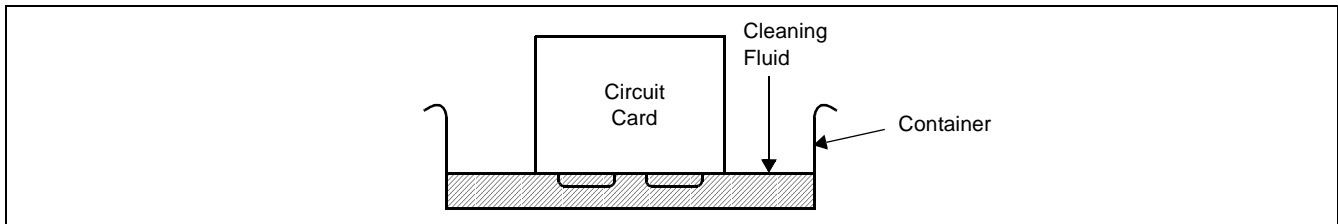


Figure 2-22 How to Clean the Connector Portion

Note 1: *Some of the parts are subject to damage if they come in contact with the cleansing liquid. Be careful to allow only the connector portion (gold-plated terminal) to contact the cleaning liquid.*

Note 2: *Be sure to use fresh cleaning fluid (FREON or isopropyl alcohol).*

- (b) Using a soft cotton cloth, wipe both sides of the connector portion (gold-plated terminal) clean (only PA-XX type circuit card), as shown in [Figure 2-23](#).

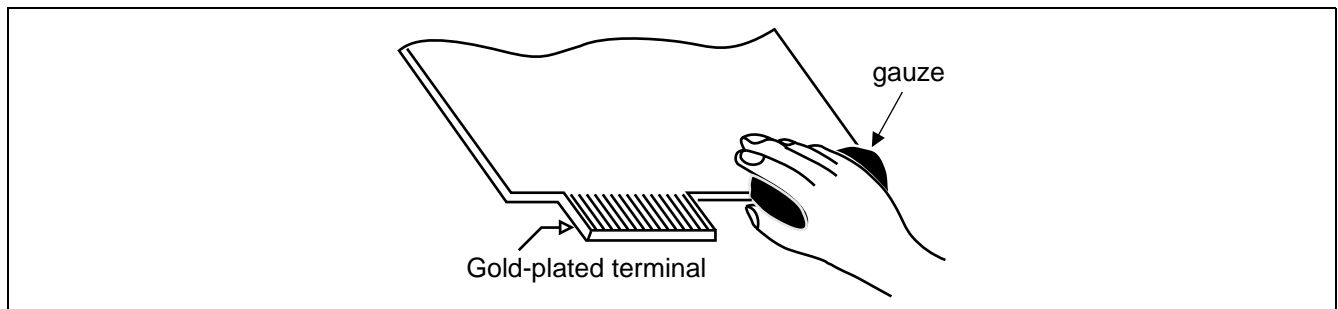


Figure 2-23 How to Clean Gold-Plated Terminal

Note 1: *Use cloth (gauze, etc.) to clean.*

Note 2: *After wiping, be careful not to leave lint on the surface of the circuit card.*

- (5) When a check on the flat cable or LT cable is directed in the tree, check the following items:
- (a) Make a visual check to see if the connector is properly connected.
- (b) Poor connector contact may be responsible for the fault. Repeat connection and disconnection a few times, and check again to see if the connector is properly connected.
- (c) Perform continuity test on the flat cable.
- (6) When replacing the circuit card is directed in the tree, replace the circuit card with a spare as per [Chapter 4](#).
- (7) When multiple circuit cards appear to be faulty, before replacing them with spares, remount them (one at a time) into their slots, to determine which cards should be replaced.

SYSTEM MAINTENANCE OUTLINE

- The following is an example where the fault was recovered after the replacement of circuit cards:

START

Set the 1st circuit card back into its mounting slot

└─ If the fault recurs: Replace the circuit card.

Set the 2nd circuit card back into its mounting slot

└─ If the fault recurs: Replace the circuit card.

Set the 3rd circuit card back into its mounting slot

└─ If the fault recurs: Replace the circuit card.

If a circuit card is found to be faulty, send the faulty circuit card for repair.

The fault may be a temporary one, or due to poor contact of the circuit card. Observe the situation for a while.

END

- (8) When a fault recovery is completed, use the RALM command to clear all the alarm indications and registered system messages. If required, restore temporary cross connections and transient data for testing to the original ones.

3.2 How to Follow Diagnostic Procedure/Fault Repair Procedure

(a) Diagnostic Work

A fault diagnostic procedure by system message is explained in the “TREE” format on an individual system message basis.

- Proceed with judgment as to whether the fault status coincides with the indicated status, following the sequence beginning from START.
- How to proceed with the diagnosis work is explained in [Figure 2-24](#).

STEP 1 Determine whether the fault coincides with the fault status (1) in [Figure 2-24](#).

STEP 2 If the fault status does coincide, the fault is indicated by (2). Repair the fault by referring to the relevant section in [Chapter 5](#). Otherwise, proceed to (3).

STEP 3 Perform the work indicated by (3). The result of the work (3) is broken down as indicated by (4).

STEP 4 Determine whether the result of work (3) coincides with the status indicated by (5). If so, the fault(s) is/are indicated either by (6) or by (7). If not, proceed to the next Step.

STEP 5 Perform the work indicated by (8), and if the result of the work is the same as the status indicated, the fault is indicated by (9). If the fault repair work indicated by (9) affects another normal line, recheck the work as indicated by (10).

(b) Fault Repair Procedure

A fault repair procedure is explained by means of “TREE” format in [Chapter 5](#). The following explains how to follow the “TREE” format and proceed with designated work. See [Figure 2-25](#).

- Begin from START and proceed with the necessary repair work following the sequence.
- When a faulty circuit card (or circuit cards) is suspected, replace the faulty circuit card with a spare in accordance with the work procedure pertaining to that specific circuit card.

STEP 1 Replace the circuit card indicated by (A) with a spare and check it. Perform the detailed work as per (B). If the fault status is beyond repair, proceed to the next step.

STEP 2 If the range of the fault or the system configuration is as indicated by (C), perform a check as indicated by (D). If the fault status is beyond repair, proceed to the next step.

STEP 3 Replace the circuit card indicated by (E) with a spare and check it. The detailed procedure indicated by (G) varies with the system configuration indicated by (F).

SYSTEM MAINTENANCE OUTLINE

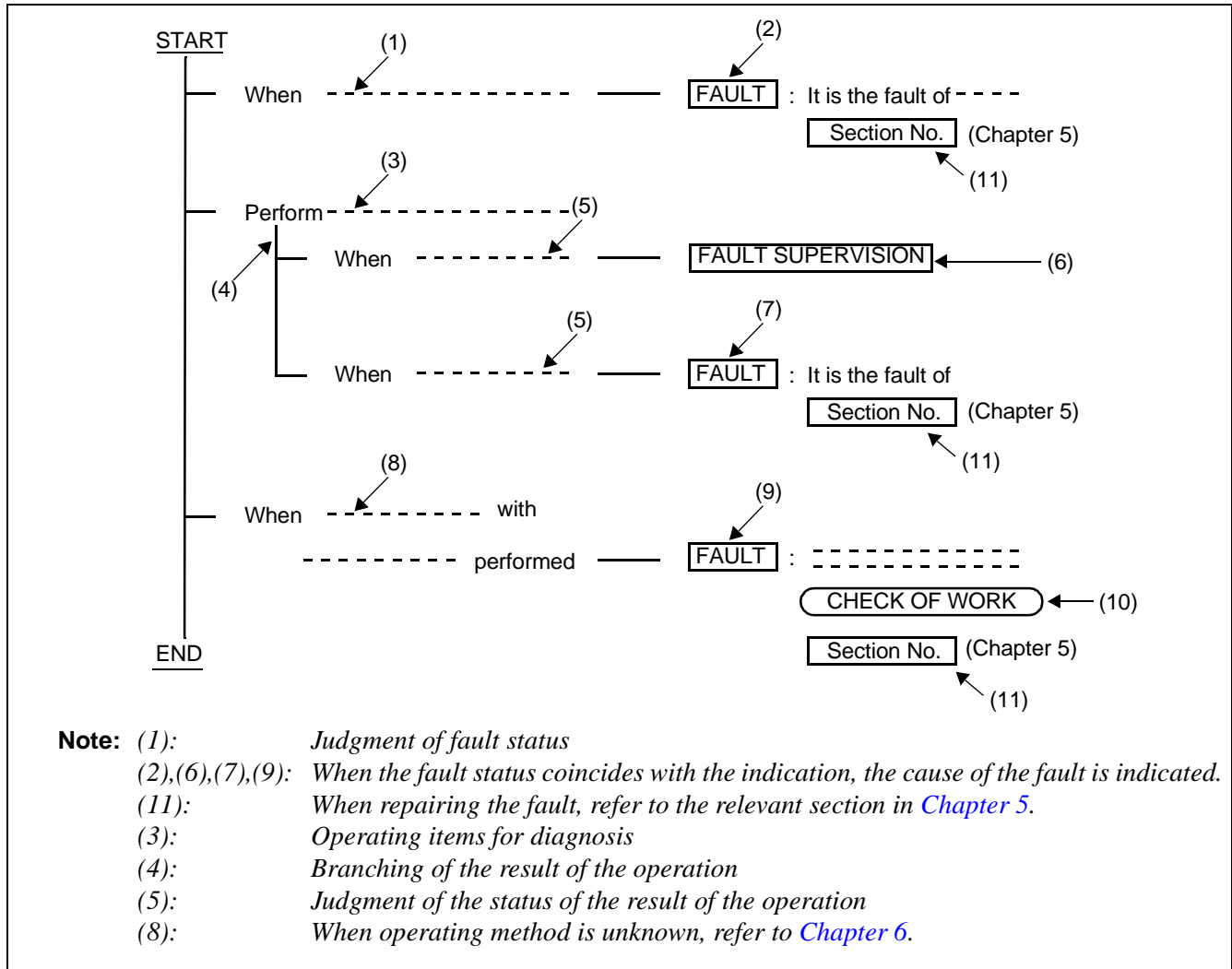


Figure 2-24 Diagnostic Work Items and Symbols Example

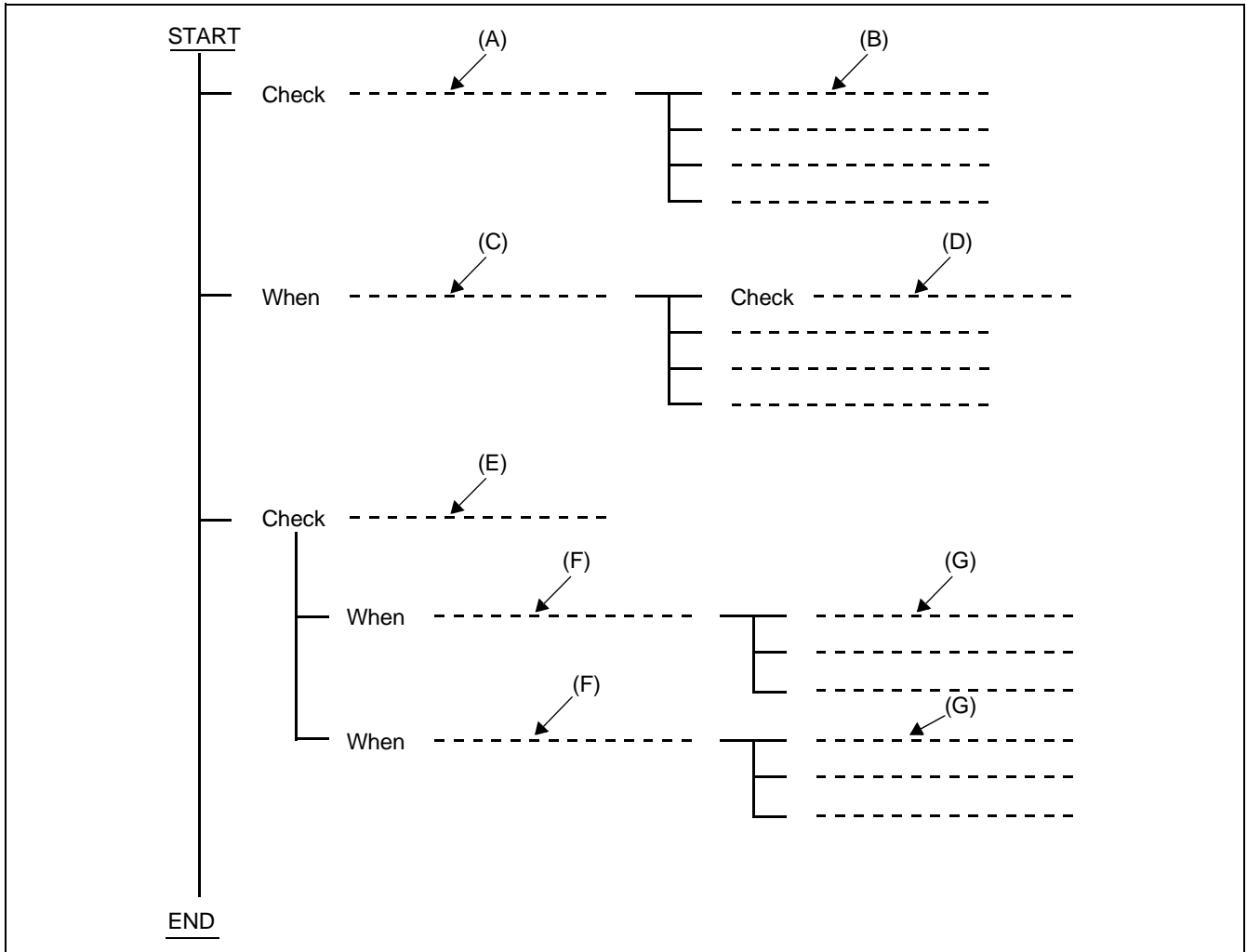


Figure 2-25 Recovery Procedure Example

4. REPORTING FAULT TO NEC

When the cause of a fault is uncertain, make note of the situation involved and report it to NEC. When forwarding faulty circuit cards to NEC, exercise caution to protect from static electricity.

4.1 Fault Reporting Method

The following three items must be included in the report without fail:

- (1) Faulty situation (reports should be similar to “dial tone is not heard only on individual lines,” “incoming C.O. line calls are not able to be terminated only to a specific ATTCON/DESKCON,” etc.)

- Faulty phenomena

On lifting the handset, dial tone is not heard but side tone is heard, etc.

SYSTEM MAINTENANCE OUTLINE

- History of fault

When did the fault occur? What kind of repair procedure has been executed? Does the fault still exist or not exist? etc.

- Range of fault

Range of fault should be reported: Single line?, Specific trunk?, Specific circuit card?, Specific PIM?, Whole system?, etc.

- (2) Circuit Card Version Number, Program Name, and Program Package Version Number of the circuit card. See [Figure 2-26](#).

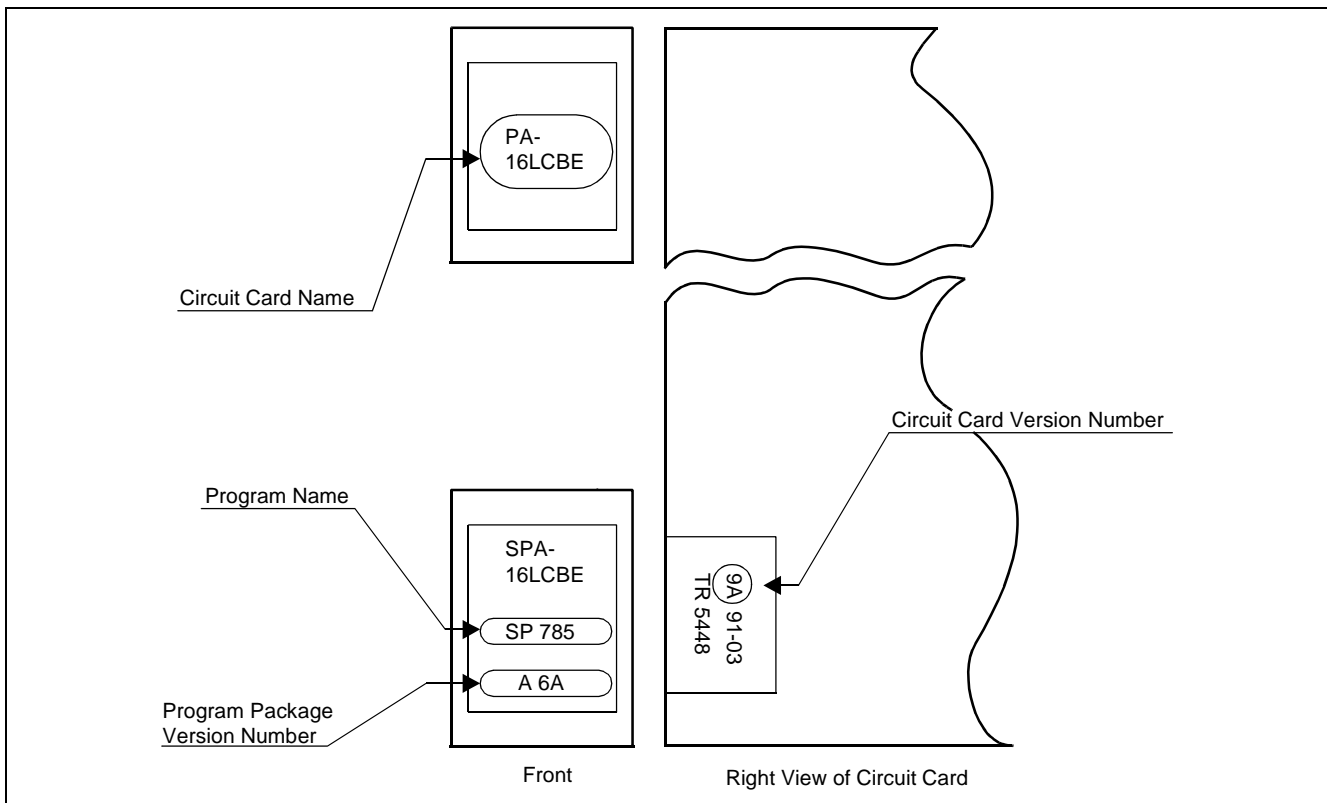


Figure 2-26 Circuit Card Version Number, Program Name, and Program Package Version Number

4.2 Forwarding Faulty Circuit Card Method

Send the faulty circuit card to the NEC agent to whom a request is made for a replacement card. Adhere to the following procedure for sending the faulty circuit card:

- (1) Insert connector covers onto the circuit card terminals.
- (2) Put the circuit card into a static electricity protective bag.
- (3) Pack the circuit card with air cap, etc.
- (4) Set the circuit card into the cardboard box for that specific circuit card.
- (5) If multiple circuit cards are to be sent, set each circuit card in a separate cardboard box and stuff the box with shock absorbing material.

Note: *When sending a faulty circuit card, put it in a static guard bag. To prevent damage, **never** place the circuit card in a vinyl bag or ship it without a protective bag.*

This page is for your notes.

CHAPTER 3 SYSTEM MESSAGES

This chapter explains how to read and analyze system messages displayed during routine diagnosis, system operation status controlling, and occurrence of a fault within the system. [Table 3-1](#) provides a list of system messages.

Table 3-1 System Messages List

MESSAGE NO.	SYSTEM MESSAGE
0-C	Reset Interrupt
0-D	CPU Clock Down
0-E	C-Level Infinite Loop
0-F	Memory Failure
0-G	B1-Level Infinite Loop (Permanent)
0-H	B1-Level Infinite Loop (Temporary)
0-I	Mate CPU Failure
0-J	Abnormal Interrupt
1-A	Both TSW Failure (Permanent)
1-B	TSW Failure (Permanent)
1-C	Both TSW Write Failure
1-D	TSW Write Failure
1-E	Both TSW Clock Failure
1-F	TSW Clock Failure
1-O	Both PLO Failure
1-P	PLO Failure
1-S	Module Group Down Failure
1-T	TSW ACT Change Report
1-U	DLKC Data Transfer Failure (Permanent)
1-V	DLKC Data Transfer Failure (Temporary)
1-W	PLO Restore
2-T	AP-INT Data Transfer Failure (Permanent) Note 4
2-U	AP-INT Data Transfer Failure (Temporary) Note 4
2-V	IP Data Transfer Failure (Permanent) Note 4
2-W	IP Data Transfer Failure (Temporary) Note 4

SYSTEM MESSAGES

Table 3-1 System Messages List (Continued)

MESSAGE NO.	SYSTEM MESSAGE
3-B	C-Level Infinite Loop (Permanent)
3-C	C-Level Infinite Loop (Temporary)
3-D	Lock-Up Failure (Permanent)
3-E	Lock-Up Failure (Temporary)
3-F	-48V Over Current
3-G	Ground Failure
3-H	Digital Line Warning
3-I	Digital Line Failure
3-J	Digital Line Restore
4-C	Both TSW Ready Failure
4-D	TSW Ready Failure
4-Q	DLKC Ready Failure
4-R	IO Ready Failure for UAP Note 4
4-S	MUX Ready Failure
4-T	Both MUX Ready Failure
4-U	PCI Card Failure
4-V	PCI Card Failure Recovered
6-A	System Failure
6-B	RGU & Howler Failure
6-C	Line Load Control Start
6-D	Line Load Control Stop
6-H	Bad Call Notification
6-I	STA-Test Connection Data
6-J	Emergency Call
6-L	Emergency Control Start
6-M	Emergency Control Stop
6-N	Abnormal Call Duration Data
6-O	SMDR Output Buffer Overflow Alarm
6-P	SMDR Output Buffer Overflow Release
7-A	System Initialize With Data Load

Table 3-1 System Messages List (Continued)

MESSAGE NO.	SYSTEM MESSAGE
7-B	System Initialize
7-C	CPU MBR Key Turn ON
7-D	CPU MBR Key Turn OFF
7-E	TSW MBR Key Turn ON
7-F	TSW MBR Key Turn OFF
7-G	TSW PLO Key Turn ON
7-H	TSW PLO Key Turn OFF
7-I	ALMC MB Key Turn ON
7-J	ALMC MB Key Turn OFF
7-K	PM MB Key Turn ON
7-L	PM MB Key Turn OFF
7-M	NCU MB Key Turn ON
7-N	NCU MB Key Turn OFF
7-O	Cyclic Diagnosis Normal
7-P	Cyclic Diagnosis Information (Error Detected)
7-U	PLO MB Key Turn ON
7-V	PLO MB Key Turn OFF
13-A	CCH Clock Failure
13-B	CCH C-Level Infinite Loop Failure (Permanent)
13-C	CCH C-Level Infinite Loop Failure (Temporary)
13-D	CCH Lock-Up Failure (Permanent)
13-E	CCH Lock-Up Failure (Temporary)
13-F	CCH B-Level Infinite Loop Failure (Permanent)
13-G	CCH B-Level Infinite Loop Failure (Temporary)
13-H	CCS Link Failure (Permanent)
13-I	CCS Link Failure (Temporary)
13-J	Restoration From CCS Link Failure
13-K	CCH Reset Interrupt Failure
13-N	Digital Line Warning
13-O	Digital Line Failure

SYSTEM MESSAGES

Table 3-1 System Messages List (Continued)

MESSAGE NO.	SYSTEM MESSAGE
13-P	Digital Line Restore
13-Q	DRU Battery Operation
13-R	DRU Line Operation
13-Z	Power Failure
15-A	VPS Failure (Temporary)
15-B	VPS Failure (Permanent)
15-C	VPS Restore
16-A	Inside Trunk All Busy
16-B	Virtual Tie Line Set Report
16-C	Virtual Tie Line Cancel Report
16-E	Virtual Tie Line Set Time Out
16-F	Sender Start Time Out
16-K	I/O Port Line OFF
16-L	I/O Port Line Restore
16-M	Hard Clock Failure
16-N	Hard Clock Restore
16-T	IOC Failure (Temporary)
16-U	IOC Failure (Permanent)
16-X	Station Exchanged Report
17-A	CCH MBR Key Turn ON
17-B	CCH MBR Key Turn OFF
17-C	CCH MB Key Turn ON
17-D	CCH MB Key Turn OFF
17-H	Day/Night Change Information
17-O	IOC MB Key Turn ON
17-P	IOC MB Key Turn OFF
17-Q	IOC MBR Key Turn ON
17-R	IOC MBR Key Turn OFF
23-J	ATM Interface Warning Note 2
23-K	ATM Interface Failure Note 2

Table 3-1 System Messages List (Continued)

MESSAGE NO.	SYSTEM MESSAGE
23-L	ATM Interface Recovered Note 2
23-P	DCH Back-Up Automatic Change Start/End
23-Q	DCH Back-Up Manual Change Start/End
23-R	ATM Interface Change Report Note 2
23-S	FCCH Failure Note 1
23-T	FCCH Failure Recovered Note 1
23-U	FCCH Status Notice Note 1
23-W	FCCH Advancing Start Note 1
23-X	FCCH Advancing End Note 1
23-Y	MUX Clock Failure
23-Z	Both MUX Clock Failure
25-J	ZT Operation Start Note 3
25-K	ZT Set Up NG Note 3
25-L	ZT Fault Note 3
25-M	ZT Fault Recovery Note 3
25-N	ZT Carrier Fault Note 3
26-N	MAT Log
26-R	Call Trace
26-V	LAN Interface Error Report
26-W	LAN Interface Release Report
27-C	ATM Interface Port MB Key ON Note 2
27-D	ATM Interface Port MB Key OFF Note 2
33-A	MUX Clock Restore
33-B	SDT Alarm Warning
33-C	SDT Alarm Trouble
33-D	SDT Alarm Restore
33-E	SDT Interface Change Notify

Note 1: Refer to Fusion Network System Manual.

Note 2: Refer to the manual related to ATM.

Note 3: Refer to Wireless System Manual.

Note 4: Refer to the manual related to OAI.

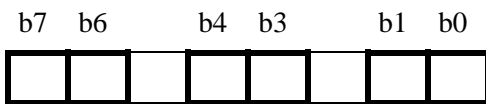
SYSTEM MESSAGES

0-C	Reset Interrupt			
	Default Alarm: MN	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the processor is reset due to a failure in the system.

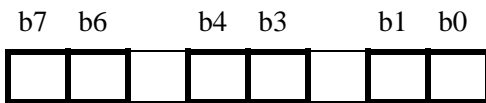
1: <u>XXXX</u> <u>XX</u> 00 <u>XXXX</u> 0000	2: 0000 0000 0000 0000	3: 0000 0000 0000 0000	4: 0000 0000 0000 0000
①② ③ ④			
4: 0000 0000 0000 0000	5: 0000 0000 0000 0000	6: 0000 0000 0000 0000	7: 0000 0000 0000 0000
8: 0000 0000 0000 0000	9: 0000 0000 0000 0000		

① Self-CPU Restart Information



- b0: 0/1 = -/Monitor Restart
- b1: 0/1 = -Phase 1 Restart **Note 1**
- b3: 0/1 = -/Initialization
- b4: 0/1 = -/Data Copy Restart executed (for Dual-CPU system only)
- b6: 0/1 = Program Load not executed/executed
- b7: 0/1 = ACT/STBY (active system indication after restart)

② Mate-CPU Restart Information (FF H: not mounted)



- b0: 0/1 = -/Monitor Restart
- b1: 0/1 = -Phase 1 Restart **Note 1**
- b3: 0/1 = -/Initialization
- b4: 0/1 = -/Data Copy Restart executed (for Dual-CPU system only)
- b6: 0/1 = Program Load not executed/executed
- b7: 0/1 = ACT/STBY (active system indication after restart)

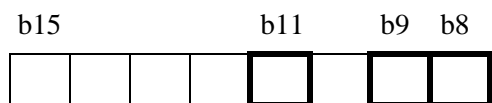
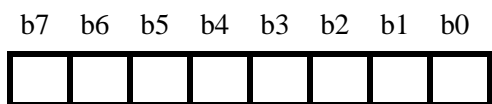
③ Related-call Release Result



- b7: 0/1 = Call Release Processing after restart ->“Normal End”/“Abnormal End”

Reference: See [Chapter 5, Section 6.2](#) and [Section 6.3](#), for the repair procedure.

④ Data Load Result after restart processing



- b0: 0/1 = Office Data Load ->“Normal End”/“Abnormal End”
- b1: 0/1 = Data Load ->“Normal End”/“Abnormal End”
- b2: 0/1 = Individual Speed Calling data load is “Normal End”/“Abnormal End”
- b3: 0/1 = PS transfer service data load is “Normal End”/“Abnormal End”
- b4: 0/1 = PS Name Display service data load is “Normal End”/“Abnormal End”
- b5: 0/1 = -/Network DM Load ->“Normal End”/“Abnormal End”
- b6: 0/1 = -/Local DM Load ->“Normal End”/“Abnormal End”
- b7: 0/1 = -/DM Non Load
- b8: 0/1 = User Assign Soft Key data load is “Normal End”/“Abnormal End”
- b9: 0/1 = Number Sharing data load is “Normal End”/“Abnormal End”
- Note 2**
- b11: 0/1 = Call Block data load is “Normal End”/“Abnormal End”

Note 1: Phase 1 Restart is executed when initializing the system without disrupting the following two-way connections that have already been established:

- Basic two-way connections (STN-STN, STN-TRK, TRK-TRK)
- Fixed connections
- Two-way connections established on a Fusion link

For more details, see [Chapter 6, Section 12.2.3](#).

Note 2: Number sharing data load also affects the data load of Dual Station Calling Over-FCCS.

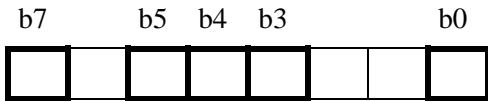
SYSTEM MESSAGES

0-D	CPU Clock Down			
	Default Alarm: MN	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when a fault has occurred to the clock oscillator in the CPU.

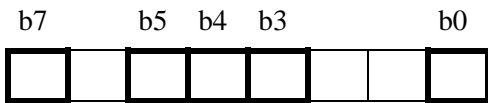
1:	<u>XXXX</u>	<u>XX</u> 00	0000	0000	2:	0000	0000	0000	0000	3:	0000	0000	0000	0000
	①	②	③											
4:	0000	0000	0000	0000	5:	0000	0000	0000	0000	6:	0000	0000	0000	0000
7:	0000	0000	0000	0000	8:	0000	0000	0000	0000	9:	0000	0000	0000	0000

① Self-CPU Restart Information



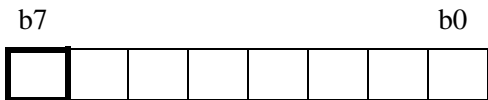
- b0: 0/1=-/Monitor Restart
- b3: 0/1=-/Initialization
- b4: 0/1=Data Copy restart (for Dual-CPU system only)
- b5: 0/1=-/MB control
- b7: 0/1=ACT/STBY (active system indication after restart)

② Male-CPU Restart Information (FF H: not mounted)



- b0: 0/1=-/Monitor Restart
- b3: 0/1=-/Initialization
- b4: 0/1=-/Data Copy restart (for Dual-CPU system only)
- b5: 0/1=-/MB control
- b7: 0/1=ACT/STBY (active system indication after restart)

③ Related Call Information



- b7: 0/1=Released/Not released

Reference: See [Chapter 5, Section 6.2](#), for the repair procedure.

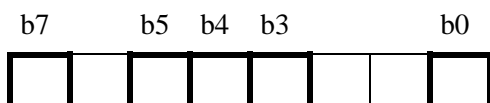
0-E	C-Level Infinite Loop			
	Default Alarm: SUP	Default Grade: 2	Grade Modified:	Lamp Modified:

C-level infinite loop is a state where a clock-level program, running under clock interrupt disable state, is in an infinite loop. This message displays when the counter value to check the normality of the processing has become abnormal.

```

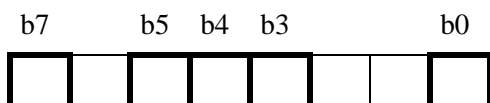
0-E C-level Infinite Loop
1:  XXXX  XXXX  XXXX  XXXX  2:  XXXX  XXXX  XXXX  XXXX  3:  XXXX  XXXX  XXXX  XXXX
   ① ② ③ ④ ⑤ ⑥ ⑦                                     ⑧
4:  XXXX  XXXX  XXXX  XXXX  5:  XXXX  XXXX  XXXX  XXXX  6:  XXXX  XXXX  XXXX  XXXX
   ─────────────────────────────────────────────────────────────────────────────────────────────────── ⑧
7:  XXXX  XXXX  XXXX  XXXX  8:  XX00  0000  0000  0000  9:  0000  0000  0000  0000
   ─────────────────────────────────────────────────────────────────────────────────────────────────── ⑧
    
```

① Self-CPU Restart Information after clock fault occurrence



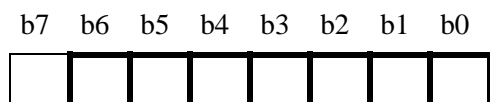
- b0: 0/1 = -/Monitor Restart
- b3: 0/1 = -/Initialization
- b4: 0/1 = -/Data Copy Restart (for Dual-CPU system only)
- b5: 0/1 = -/MBcontrol
- b7: 0/1 = ACT/STBY (active system indication after restart)

② Mate-CPU Restart Information



- b0: 0/1 = -/Monitor Restart
- b3: 0/1 = -/Initialization
- b4: 0/1 = -/Data Copy Restart (for Dual-CPU system only)
- b5: 0/1 = -/MBcontrol
- b7: 0/1 = ACT/STBY (active system indication after restart)

③ NMI Factor



- b0: 0/1 = -/Reset by Power On
- b1: 0/1 = -/Watchdog Timer timeout
- b2: 0/1 = ISAGT is mounted/ISGAT is not mounted
- b3: 0/1 = -/OSC clock interrupt on ISGAT
- b4: 0/1 = -/IO parity Alarm
- b5: 0/1 = -/IO ready Alarm
- b6: 0/1 = -/External NMI

Reference: See [Chapter 5, Section 6.2](#), for the repair procedure.

SYSTEM MESSAGES

④ System Controlling Port B

b7 b6 b5 b4 b3 b2 b1 b0



- b0: 0/1 = Timer 2 Gate ON/OFF
- b1: 0/1 = Speaker Gate ON/OFF
- b2: 0/1 = Parity Check Enable/MASK
- b3: 0/1 = Channel Check Enable/MASK
- b4: 0/1 = -/RAM Refresh Pulse Output State
- b5: 0/1 = -/Timer 2 Output State
- b6: 0/1 = -/Channel Check Error Detected
- b7: 0/1 = -/Parity Error Detected

⑤ CPU Alarm

b7 b6 b5 b4 b3 b2 b1 b0



- b0: 0/1 = -/ACT-side Processor CLK Alarm
- b1: 0/1 = -/ACT-side Processor COP Alarm
- b2: 0/1 = -/ACT-side Processor MEM Alarm
- b3: 0/1 = -/ACT-side Processor Emergency Timer Overflow
- b4: 0/1 = -/STBY-side Processor CLK Alarm
- b5: 0/1 = -/STBY-side Processor COP Alarm
- b6: 0/1 = -/STBY-side Processor MEM Alarm
- b7: 0/1 = -/STBY-side Processor Emergency Timer Overflow

⑥ CPU Changeover Factors

b7 b6 b5 b4 b3 b2 b1 b0



- b0: 0/1 = -/CLK Alarm
- b1: 0/1 = -/Emergency Timer Overflow
- b2: 0/1 = -/SOFT EMA
- b3: 0/1 = -/SOFT changeover
- b4: 0/1 = -/Emergency Counter Overflow
- b5: 0/1 = STBY/ACT
- b6: 0/1 = Dual/Single
- b7: 0/1 = CPU #0/CPU#1

⑦ System ALM

b7 b6 b5 b4 b3 b2 b1 b0



- b0: 0/1 = -/Main Power Alarm
- b1: 0/1 = -/Power Alarm
- b2: 0/1 = -/FUSE Alarm
- b3: 0/1 = -/TEMP MJ Alarm
- b4: 0/1 = -/TEMP MN Alarm
- b5: 0/1 = -/Parity Alarm
- b6: 0/1 = Card is not mounted/mounted
- b7: 0/1 = -/EMA CLK Alarm

⑧ Data Analyzed by NEC Engineers

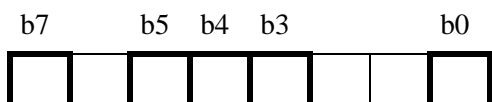
0-F	Memory Failure			
	Default Alarm: SUP	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when a CPU memory read/write error occurs.

```

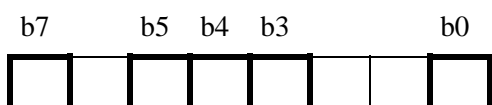
0-F Memory Failure
1:  XXXX  XXXX  XXXX  XXXX  2:  XXXX  XXXX  XXXX  XXXX  3:  XXXX  XXXX  XXXX  XXXX
   ① ② ③ ④ ⑤ ⑥ ⑦                                     ⑧
4:  XXXX  XXXX  XXXX  XXXX  5:  XXXX  XXXX  XXXX  XXXX  6:  XXXX  XXXX  XXXX  XXXX
                                       ⑧
7:  XXXX  XXXX  XXXX  XXXX  8:  xx00  0000  0000  0000  9:  0000  0000  0000  0000
   ⑧
    
```

① Information on Self-CPU Restart after detection of a clock fault



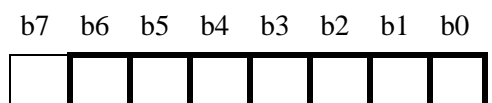
- b0: 0/1 = -/Monitor Restart
- b3: 0/1 = -/Initialization
- b4: 0/1 = -/Data Copy Restart (for Dual-CPU system only)
- b5: 0/1 = -/MBcontrol
- b7: 0/1 = ACT/STBY (active system indication after restart)

② Mate-CPU Restart Information



- b0: 0/1 = -/Monitor Restart
- b3: 0/1 = -/Initialization
- b4: 0/1 = -/Data Copy Restart (for Dual-CPU system only)
- b5: 0/1 = -/MBcontrol
- b7: 0/1 = ACT/STBY (active system indication after restart)

③ NMI Factor



- b0: 0/1 = -/Reset by Power On
- b1: 0/1 = -/Watchdog Timer timeout
- b2: 0/1 = ISGAT is mounted/ISGAT is not mounted
- b3: 0/1 = -/OSC clock interrupt on ISGAT
- b4: 0/1 = -/IO parity Alarm
- b5: 0/1 = -/IO ready Alarm
- b6: 0/1 = -/External NMI

Reference: See [Chapter 5, Section 6.2](#), for the repair procedure.

SYSTEM MESSAGES

④ System Controlling Port B

b7 b6 b5 b4 b3 b2 b1 b0



- b0: 0/1 = Timer 2 Gate ON/OFF
- b1: 0/1 = Speaker Gate ON/OFF
- b2: 0/1 = Parity Check Enable/MASK
- b3: 0/1 = Channel Check Enable/MASK
- b4: 0/1 = -/RAM Refresh Pulse Output State
- b5: 0/1 = -/Timer 2 Output State
- b6: 0/1 = -/Channel Check Error Detected
- b7: 0/1 = -/Parity Error Detected

⑤ CPU Alarm

b7 b6 b5 b4 b3 b2 b1 b0



- b0: 0/1 = -/ACT-side Processor CLK Alarm
- b1: 0/1 = -/ACT-side Processor COP Alarm
- b2: 0/1 = -/ACT-side Processor MEM Alarm
- b3: 0/1 = -/ACT-side Processor Emergency Timer Overflow
- b4: 0/1 = -/STBY-side Processor CLK Alarm
- b5: 0/1 = -/STBY-side Processor COP Alarm
- b6: 0/1 = -/STBY-side Processor MEM Alarm
- b7: 0/1 = -/STBY-side Processor Emergency Timer Overflow

⑥ CPU Changeover Factors

b7 b6 b5 b4 b3 b2 b1 b0



- b0: 0/1 = -/CLK Alarm
- b1: 0/1 = -/Emergency Timer Overflow
- b2: 0/1 = -/SOFT EMA
- b3: 0/1 = -/SOFT changeover
- b4: 0/1 = -/Emergency Counter Overflow
- b5: 0/1 = STBY/ACT
- b6: 0/1 = Dual/Single
- b7: 0/1 = CPU #0/CPU #1

⑦ System ALM

b7 b6 b5 b4 b3 b2 b1 b0



- b0: 0/1 = -/Main Power Alarm
- b1: 0/1 = -/Power Alarm
- b2: 0/1 = -/FUSE Alarm
- b3: 0/1 = -/TEMP MJ Alarm
- b4: 0/1 = -/TEMP MN Alarm
- b5: 0/1 = -/Parity Alarm
- b6: 0/1 = Card is not mounted/mounted
- b7: 0/1 = -/EMA CLK Alarm

⑧ Data Analyzed by NEC Engineers

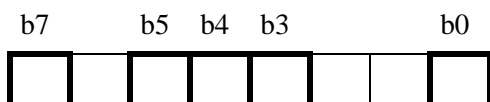
0-G	B1-Level Infinite Loop (Permanent)			
	Default Alarm: MN	Default Grade: 2	Grade Modified:	Lamp Modified:

This message displays when a B-level infinite loop failure occurs.

```

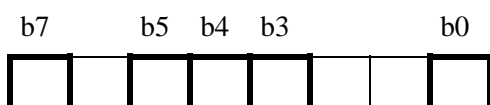
0-F Memory Failure
1:  XXXX  XXXX  XXXX  XXXX  2:  XXXX  XXXX  XXXX  XXXX  3:  XXXX  XXXX  XXXX  XXXX
   ① ② ③                                     ④
4:  XXXX  XXXX  XXXX  XXXX  5:  XXXX  XXXX  XXXX  XXXX  6:  XXXX  XXXX  XXXX  XXXX
                                       ④
7:  XXXX  XXXX  XXXX  XXXX  8:  xx00  0000  0000  0000  9:  0000  0000  0000  0000
   ④
    
```

① Information on Self-CPU Restart after detection of a clock fault



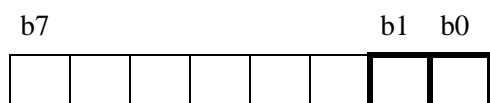
- b0: 0/1 = -/Monitor Restart
- b3: 0/1 = -/Initialization
- b4: 0/1 = -/Data Copy restart (for Dual-CPU system only)
- b5: 0/1 = -/MB control
- b7: 0/1 = ACT/STBY (active system indication after restart)

② Mate-CPU Restart Information



- b0: 0/1 = -/Monitor Restart
- b3: 0/1 = -/Initialization
- b4: 0/1 = -/Data Copy Restart (for Dual-CPU system only)
- b5: 0/1 = -/MBcontrol
- b7: 0/1 = ACT/STBY (active system indication after restart)

③ B-level Infinite Loop



- b0: 0/1 = -/B-level Infinite Loop
- b1: 0/1 = -/Task Timer Timeout

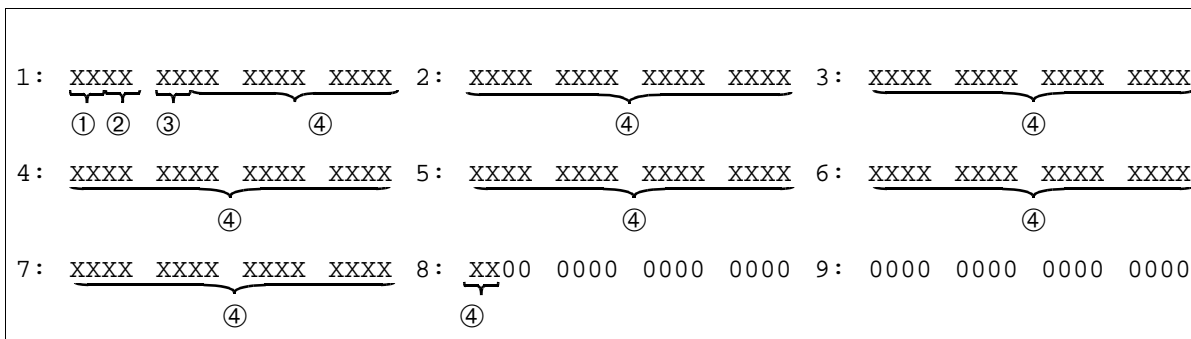
④ Data Analyzed by NEC Engineers

Reference: See [Chapter 5, Section 6.2](#), for the repair procedure.

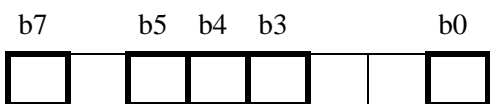
SYSTEM MESSAGES

0-H	B1-Level Infinite Loop (Temporary)			
	Default Alarm: SUP	Default Grade: 1	Grade Modified:	Lamp Modified:

This message displays when, in the CPU program processing, the counter value to check the normality of the processing has become abnormal.

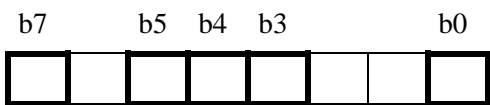


① Self-CPU Restart Information



- b0: 0/1 = -/Monitor Restart
- b3: 0/1 = -/Initialization
- b4: 0/1 = -/Data Copy restart (for Dual-CPU system only)
- b5: 0/1 = -/MB control
- b7: 0/1 = ACT/STBY (active system indication after restart)

② Mate-CPU Restart Information (FF H: not mounted)



- b0: 0/1 = -/Monitor Restart
- b3: 0/1 = -/Initialization
- b4: 0/1 = -/Data Copy restart (for Dual-CPU system only)
- b5: 0/1 = -/MB control
- b7: 0/1 = ACT/STBY (active system indication after restart)

③



- b0: 0/1 = -/B-level Infinite Loop
- b1: 0/1 = -/Task Timer Timeout

④ Data Analyzed by NEC Engineers

Reference: See [Chapter 5, Section 6.2](#) and [Section 6.3](#), for the repair procedure.

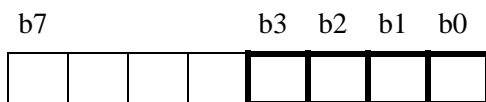
0-I	Mate CPU Failure			
	Default Alarm: SUP	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when a fault, such as the Clock down or C-level infinite loop error, has occurred.

```

1:  xx00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
  
```

① Mate-CPU Restart Information



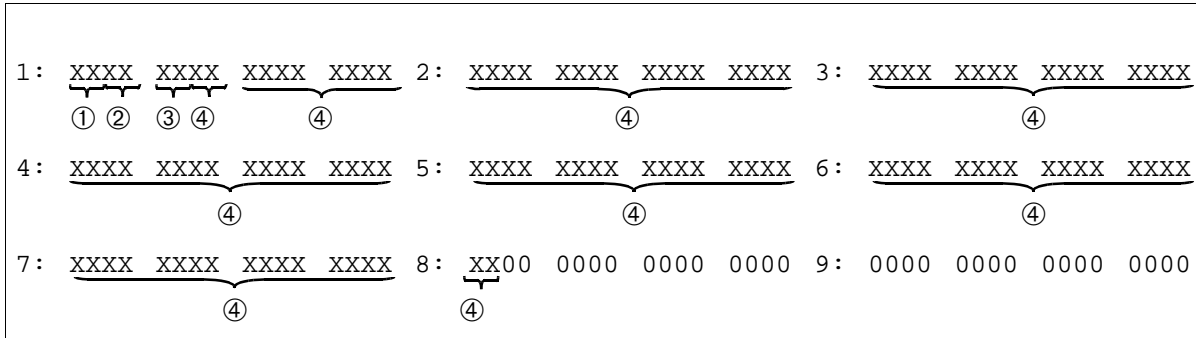
- b0: 0/1 = -/CPU clock down
- b1: 0/1 = -/C-level infinite loop
- b2: 0/1 = -/Memory error, Parity alarm
- b3: 0/1 = -/Emergency Timer Overflow

Reference: See [Chapter 5, Section 6.2](#) and [Section 6.3](#), for the repair procedure.

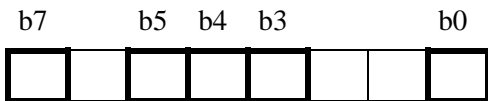
SYSTEM MESSAGES

0-J	Abnormal Interrupt			
	Default Alarm: SUP	Default Grade: 2	Grade Modified:	Lamp Modified:

This message displays when the system is interrupting abnormally in the processing.

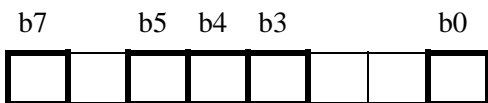


① Self-CPU Restart Information



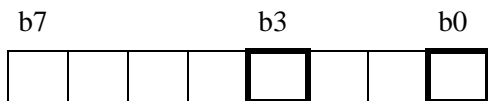
- b0: 0/1 = -/Monitor Restart
- b3: 0/1 = -/Initialization
- b4: 0/1 = -/Data Copy restart (for Dual-CPU system only)
- b5: 0/1 = -/MB control
- b7: 0/1 = ACT/STBY (active system indication after restart)

② Mate-CPU Restart Information (FF H: not mounted)



- b0: 0/1 = -/Monitor Restart
- b3: 0/1 = -/Initialization
- b4: 0/1 = -/Data Copy restart (for Dual-CPU system only)
- b5: 0/1 = -/MB control
- b7: 0/1 = ACT/STBY (active system indication after restart)

③



- b0: 0/1 = -/Abnormal Interruption (Hardware)
- b3: 0/1 = -/Program Exception

④ Data Analyzed by NEC Engineers

Reference: See [Chapter 5, Section 6.2](#) and [Section 6.3](#), for the repair procedure.

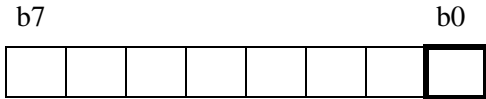
SYSTEM MESSAGES

1-B	TSW Failure (Permanent)			
	Default Alarm: MN	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when link information cannot be written into the switch memory of the TSW card in one of the dual systems.

1:	<u>XXXX</u>	<u>XXXX</u>	<u>XXXX</u>	<u>XXXX</u>	2:	0000	0000	0000	0000	3:	0000	0000	0000	0000
	①	②	③											
4:	0000	0000	0000	0000	5:	0000	0000	0000	0000	6:	0000	0000	0000	0000
7:	0000	0000	0000	0000	8:	0000	0000	0000	0000	9:	0000	0000	0000	0000

① TSW system in which a fault is detected b0: 0/1 = TSW No. 0/TSW No. 1



② Status at the time of fault detection b0: 0/1 = TSW No. 0/TSW No. 1

b7 b6 b0 b6: 0/1 = Speech Path in ACT status

No. 0 system/No. 1 system



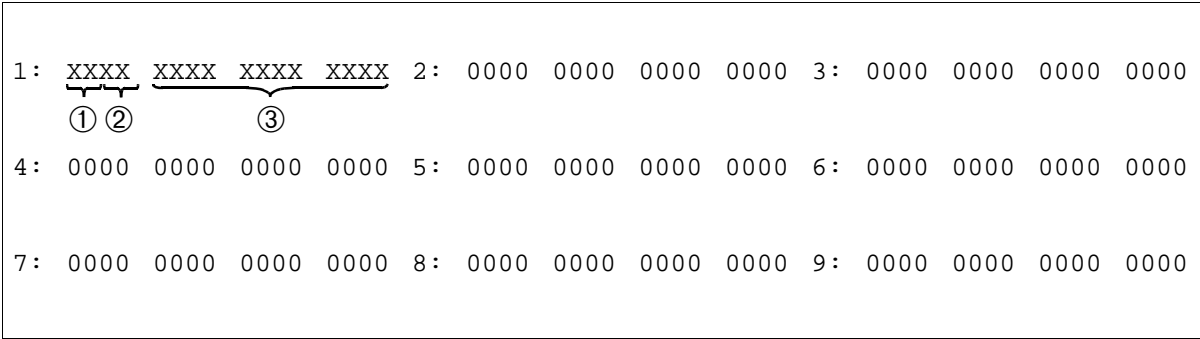
③ Data Analyzed by NEC Engineers

Reference: See [Chapter 5, Section 5.4](#), for the repair procedure.

SYSTEM MESSAGES

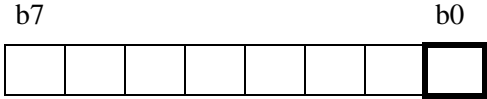
1-D	TSW Write Failure			
	Default Alarm: MN	Default Grade: 2	Grade Modified:	Lamp Modified:

This message displays when the link information cannot be written into the switch memory of the TSW card in one of the dual systems.



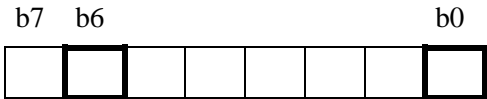
① TSW system in which a fault is detected

b0: 0/1 = TSW No. 0/TSW No. 1



② Status at the time of fault detection

b0: 0/1 = TSW No. 0/TSW No. 1
b6: 0/1 = Speech Path ACT status
TSW No. 0 system is ACT/TSW No. 1 system is ACT



③ Data Analyzed by NEC Engineers

Reference: See [Chapter 5, Section 5.2](#), [Section 5.4](#), and [Section 6.2](#), for the repair procedure.

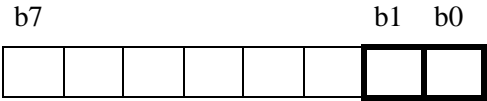
1-E	Both TSW Clock Failure			
	Default Alarm: MN	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the system detects a clock failure, such as TSW internal clock down or Frame Head down, in both systems.

1: <u>XXXX</u> <u>XX00</u> 0000 0000	2: 0000 0000 0000 0000	3: 0000 0000 0000 0000	
① ② ③			
4: 0000 0000 0000 0000	5: 0000 0000 0000 0000	6: 0000 0000 0000 0000	
7: 0000 0000 0000 0000	8: 0000 0000 0000 0000	9: 0000 0000 0000 0000	

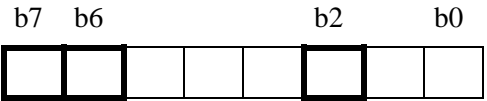
① TSW card in which a fault is detected

b0: 0/1 = -/TSW No. 0 system
 b1: 0/1 = -/TSW No. 1 system



② Clock status of No. 0 TSW

b2: 0/1 = -/DTG output down
 b6: 0/1 = -/External 32 ch Clock (PLO) No. 0 System down
 b7: 0/1 = -/External 32 ch Clock (PLO) No. 1 System down



③ Clock status of No. 1 TSW

Note: Refer to the meaning of ②.

Reference: See Chapter 5, Section 5.3, for the repair procedure.

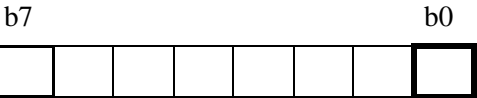
1-0	Both PLO Failure			
	Default Alarm: MJ	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the system detects a fault, such as input clock all down or output clock down in the PLO cards, at both sides.

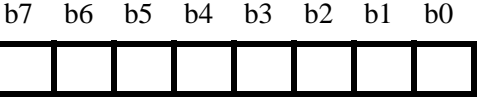
```

1:  XXXX XXXX XX00 0000  2:  0000 0000 0000 0000  3:  0000 0000 0000 0000
   ① ② ③ ④ ⑤
4:  0000 0000 0000 0000  5:  0000 0000 0000 0000  6:  0000 0000 0000 0000
7:  0000 0000 0000 0000  8:  0000 0000 0000 0000  9:  0000 0000 0000 0000
    
```

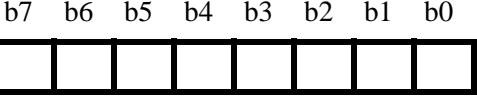
① Detected PLO number b0: 0/1 = No. 0 PLO/No. 1 PLO



② Valid Information bit for Scan Data 1 b0-b7: Bit position corresponding to the detected information in Scan Data 1 (④) is flagged "1".



③ Valid Information bit for Scan Data 2 b0-b7: Bit position corresponding to the detected information in Scan Data 2 (⑤) is flagged "1".



Reference: See [Chapter 4, Section 2.3.2](#) and [Section 2.3.4](#), for the circuit card replacement procedure.

SYSTEM MESSAGES

④ Scan Data 1: Current Status of PLO card

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

- b0: Clock status at time of detection
0/1 = STBY/ACT
- b1: Circuit Card status at time of detection
0/1 = PLO synchronizing/PLO self running or drift abnormal
- b2: 0/1 = -/Input clock down
- b3, b4: Route of Input clock

b4	b3	DCS Input Route	Route Of Input Clock
0	0	0	0
0	1	1	1
1	0	-	2
1	1	-	3

- b5: 0/1 = -/PLO input all down
- b6: 0/1 = -/PLO output down
- b7: 0/1 = -/Drifting

⑤ Scan Data 2: Current Status of PLO card

b7 b4 b1 b0

--	--	--	--	--	--	--	--

- b0: 0/1 = -/5msec Burst Clock down
- b1: 0/1 = -/Frame Synchronization from SYNC card is down
- b4: 0/1 = -/Internal OSC clock down

1-P	PLO Failure			
	Default Alarm: MN	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the system detects all the failures concerned with input clock down or output clock down in the PLO card at the ACT side. When this message is indicated, the PLO card changeover executes.

Note: *The No. 0 PLO card automatically changes over to No. 1. The changeover of No. 1 to No. 0 is not automatic.*

```

1:  XXXX XXXX XX00 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ② ③ ④ ⑤
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
    
```

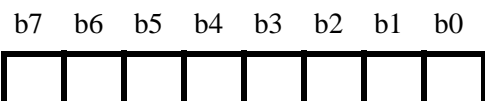
① Self-CPU Restart Information

b0: 0/1 = No. 0 PLO/No. 1 PLO



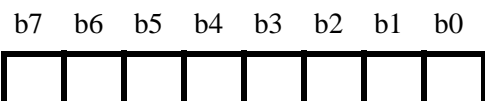
② Valid Information bit for Scan Data 1

b0-b7: Bit position corresponding to the detected information in Scan Data 1 (④) is flagged "1".



③ Valid Information bit for Scan Data 2

b0-b7: Bit position corresponding to the detected information in Scan Data 2 (⑤) is flagged "1".



Reference: See [Chapter 4, Section 2.3.2](#) and [Section 2.3.4](#), for the circuit card replacement procedure.

SYSTEM MESSAGES

④ Scan Data 1: Status of PLO card

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

- b0: Clock status at time of detection
0/1 = STBY/ACT
- b1: Circuit card at time of detection
0/1 = PLO synchronizing/PLO self running or drifting
- b2: 0/1 = -/Input clock down
- b3, b4: Route of Input clock

b4	b3	DCS Input Route	Route Of Input Clock
0	0	0	0
0	1	1	1
1	0	-	2
1	1	-	3

- b5: 0/1 = -/PLO input all down
- b6: 0/1 = -/PLO output down
- b7: 0/1 = -/Drifting

⑤ Scan Data: Status of PLO card

b7 b4 b1 b0

--	--	--	--	--	--	--	--

- b0: 0/1 = -/5msec Burst Clock down
- b1: 0/1 = -/Frame Synchronization from SYNC card is down
- b4: 0/1 = -/Internal OSC clock down

1-S	Module Group Down Failure			
	Default Alarm: MJ	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when a fault of the speech path system has occurred in a specific Module Group. The specific Module Group is placed into make-busy state.

```

1:  XXXX XX00 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ② ③
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
  
```

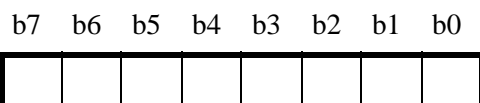
① MG number of fault detection

b0: 0/1 = Even-numbered MG/Odd-numbered MG



② Kind of failure

b0-b7: 00H/01H = -/ACT side TSW fault



③ Speech Path/Clock System

b0: ACT side speech path
0/1 = No. 0 system/No. 1 system
b1: ACT side clock
0/1 = No. 0 system/No. 1 system



Reference: See [Chapter 4, Section 2.3.2](#), for the circuit card replacement procedure.

SYSTEM MESSAGES

1-T	TSW ACT Change Report			
	Default Alarm: NON	Default Grade: 2	Grade Modified:	Lamp Modified:

This message displays when the changeover of the TSW system is executed.

```
1: XXXX 0000 XXXX XXXX 2: 0000 0000 0000 0000 3: 0000 0000 XXXX XXXX
   ① ②       ③ ④ ⑤ ⑥                               ⑦ ⑧ ⑨ ⑩
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
```

① ACT side Speech Path (TSW) after changeover b0: 0/1 = No. 0 system/No. 1 system

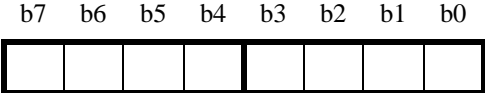
b7		b0

② Reason for changeover

b7	b6	b5	b4	b3	b2	b1	b0

b7-b4	b3-b0	Card	Contents
0	1	TSW	I/O Alarm
	2		32ch Clock down, FH down
	3		24ch Clock down, FH down
	6		TSW SW Memory write failure
	9		I/O Alarm release
	10		32ch Clock down recovered, FH down recovered
	11		24ch Clock down recovered, FH down recovered
	13		TSW MBR key OFF
	15		TSW ACT/STBY changeover by CMOD command
6	1	MUX	MUX circuit card Ready failure
	2		MUX circuit card clock failure

③~⑥ Status of ACT side TSW card

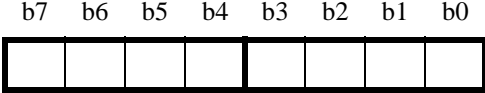


③	MG00	MG01
④	MG02	MG03
⑤	MG04	MG05
⑥	MG06	MG07

b7-b4
b3-b0

b0-b3, b4-b7: The status of TSW card in each MG (00~07)
 0000 = Normal
 0001 = Abnormal (Impossible to make links)

⑦~⑩ Status of ST-BY side TSW card



⑦	MG00	MG01
⑧	MG02	MG03
⑨	MG04	MG05
⑩	MG06	MG07

b7-b4
b3-b0

b0-b3, b4-b7: The status of TSW card in each MG (00~07)
 0000 = Normal
 0001 = Abnormal (Impossible to make links)

SYSTEM MESSAGES

1-U	DLKC Data Transfer Failure (Permanent)			
	Default Alarm: MN	Default Grade: 3	Grade Modified:	Lamp Modified:

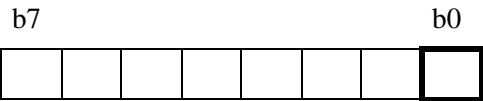
This message displays when DLKC data transfer failure (temporary), shown in message [1-V], occurs more than 16 times an hour. At this time, the faulty DLKC card is down and its switching network automatically changes over.

```

1:  XXXX XX00 0000 0000  2:  0000 0000 0000 0000  3:  0000 0000 0000 0000
   ① ② ③
4:  0000 0000 0000 0000  5:  0000 0000 0000 0000  6:  0000 0000 0000 0000
7:  0000 0000 0000 0000  8:  0000 0000 0000 0000  9:  0000 0000 0000 0000

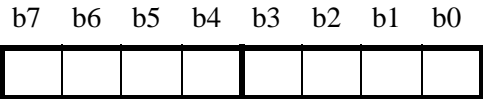
```

① System status of faulty DLKC card b0: 0/1 = No. 0 system / No. 1 system



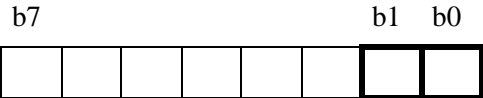
② Error Code

01H: Firmware fault
02H: Data transfer time out to DLKC
03H: No answer time out (at DLKC)
04H: Data parity error



③ Details on Switching Network

b0: Status of Speech Path System (including DLKC)
0/1 = No. 0 system is ACT/No. 1 system is ACT
b1: Status of basic clock
0/1 = No. 0 system is ACT/No. 1 system is ACT



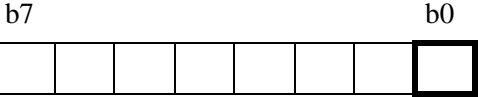
1-V	DLKC Data Transfer Failure (Temporary)			
	Default Alarm: SUP	Default Grade: 1	Grade Modified:	Lamp Modified:

This message displays when a data sending error or no answer error occurs at the time of data transfer from CPU to DLKC card.

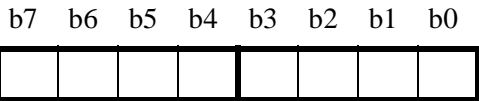
```

1:  XXXX XX00 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ② ③
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
    
```

① System status of faulty DLKC card b0: 0/1 = No. 0 system / No. 1 system



② Error Code



01H: Firmware fault
 02H: Data transfer time out to DLKC
 03H: No answer time out (at DLKC)
 04H: Data parity error

③ Details on Switching Network



b0: Status of Speech Path System (including DLKC)
 0/1 = No. 0 system is ACT/No. 1 system is ACT
 b1: Status of basic clock
 0/1 = No. 0 system is ACT/No. 1 system is ACT
 b7: Information on Reset of STBY DLKC **Note**
 0/1 = - /STBY DLKC card was reset

Note: This data displays when the STBY DLKC card is detected as faulty.

SYSTEM MESSAGES

1-W	PLO Restore			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

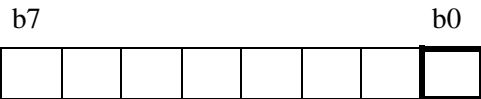
This message displays when a failure such as internal clock down occurred to PLO is restored.

```

1:  XXXX XX00 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ② ③
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
    
```

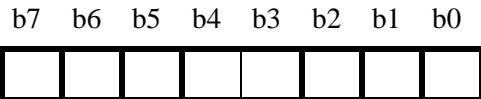
① Restoration of PLO fault

b0: 0/1 = PLO No. 0 system/PLO No. 1 system



② Current Status of PLO card

b0: 0/1 = Clock is in STBY side/ACT side
 b1: 0/1 = PLO synchronizing/PLO self running or drifting
 b2: 0/1 = -/Input clock down
 b3, b4: Route of input clock (see the table below)

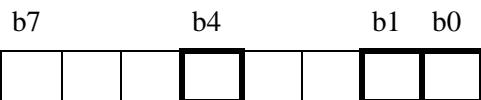


b4	b3	Connected With Primary Oscillator (M-OSC)	Connected With External Clock
0	0	No. 0 M-OSC	Route 0
0	1	No. 1 M-OSC	Route 1
1	0	-	Route 2
		-	Route 3

b5: 0/1 = -/PLO input all down
 b6: 0/1 = -/PLO output down
 b7: 0/1 = -/Drifting

③ Current Status of PLO card

b0: 0/1 = -/5msec clock down
 b1: 0/1 = -/Frame Synchronization from SYNC card is down
 b4: 0/1 = -/Internal OSC clock down



3-B	C-Level Infinite Loop (Permanent)			
	Default Alarm: MN	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when a C-level program abnormal state is detected as permanent. When the Port Microprocessor (PM) on an LC/TRK card detects the abnormal state, the PM places the card into make-busy status. If the failure occurs more than 15 times an hour, the system judges the failure as permanent and issues the this system message.

```

1: xx00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000

```

① Faulty Circuit Card Mounting Location

b0-b4: Group
b5-b6: Unit (0-3)
b7: Module Group (0/1)

b7 b6 b5 b4 b3 b2 b1 b0



SYSTEM MESSAGES

3-C	C-Level Infinite Loop (Temporary)			
	Default Alarm: SUP	Default Grade: 1	Grade Modified:	Lamp Modified:

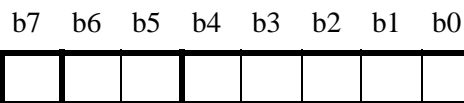
This message displays when C-level program is detected as abnormal by the Port Microprocessor (PM) mounted on an LC/TRK card. If the failure occurs less than 15 times/hour, and a B-monitor/Initial restart executes as the result, the failure is judged as temporary and this message is created.

```

1:  XX0X 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ②
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
  
```

① Faulty Circuit Card Mounting Location

b0-b4: Group
b5-b6: Unit (0-3)
b7: Module Group (0/1)



② PM Restart Type

b0: 0/1 = B-monitor/Initial Restart **Note**



Note: *B-monitor Restart: Ports whose link has already been established remain connected. Ports processing a call-origination may be released.*

Initial Restart: All ports on the circuit card are forcibly released to be placed in idle state.

3-D	Lock-Up Failure (Permanent)			
	Default Alarm: MN	Default Grade: 3	Grade Modified:	Lamp Modified:

At the periodic interval, the CPU sends diagnosis data to the Port Microprocessor (PM) on LC/TRK cards in order to monitor the PM. If the CPU cannot receive the return data within a predetermined period of time, the system displays this data. When the failure is detected more than 15 times per hour, the failure is judged as permanent.

```

1: xx00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000

```

① Faulty Circuit Card Location

b7	b6	b5	b4	b3	b2	b1	b0

b0-b4: Group
b5-b6: Unit (0-3)
b7: Module Group
0/1 = Even-numbered MG/Odd-numbered MG

Reference: See [Chapter 5, Section 6.2](#), for the repair procedure.

SYSTEM MESSAGES

3-E	Lock-Up Failure (Temporary)			
	Default Alarm: SUP	Default Grade: 1	Grade Modified:	Lamp Modified:

At the periodic interval, the CPU sends diagnosis data to the Port Microprocessor (PM) on LC/TRK cards in order to monitor the PM. If the CPU cannot receive the return data within a predetermined period of time, the system displays this data. When the failure is detected less than 15 times per hour, the failure is judged as temporary.

1:	<u>xx00</u>	0000	0000	0000	2:	0000	0000	0000	0000	3:	0000	0000	0000	0000
	①	②												
4:	0000	0000	0000	0000	5:	0000	0000	0000	0000	6:	0000	0000	0000	0000
7:	0000	0000	0000	0000	8:	0000	0000	0000	0000	9:	0000	0000	0000	0000

① Faulty Circuit Card Location

b7 b6 b5 b4 b3 b2 b1 b0

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

b0-b4: Group

b5-b6: Unit (0-3)

b7: Module Group

0/1 = Even-numbered MG/Odd-numbered MG

② PM Restart Type

b7 b6 b5 b4 b3 b2 b1 b0

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

b0: 0/1 = B-monitor/Initial Restart

3-F	-48V Over Current			
	Default Alarm: SUP	Default Grade: 3	Grade Modified:	Lamp Modified:

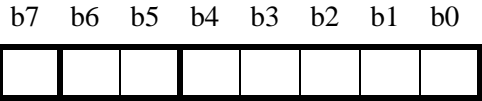
This message displays when over current of the operating power (DC-48V) is supplied from the ATI/ELC circuit card to the Attendant Console/D^{term}. When this fault occurs, the related circuit card is placed into make-busy state and stops supplying power.

```

1:  xx00 0000 0000 0000  2: 0000 0000 0000 0000  3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000  5: 0000 0000 0000 0000  6: 0000 0000 0000 0000
7: 0000 0000 0000 0000  8: 0000 0000 0000 0000  9: 0000 0000 0000 0000

```

① Location of faulty PM



b0-b4: Group
b5, b6: Unit
b7: 0/1 = Even-numbered MG/Odd-numbered MG

SYSTEM MESSAGES

3-G	Ground Failure			
	Default Alarm: SUP	Default Grade: 1	Grade Modified:	Lamp Modified:

This message displays when a wire of the line between the LC circuit card and the telephone set is short-circuited with ground.

1: <u>XXXX</u> 0000 0000 0000	2: 0000 0000 0000 0000	3: 0000 0000 0000 0000	4: 0000 0000 0000 0000
① ②			
4: 0000 0000 0000 0000	5: 0000 0000 0000 0000	6: 0000 0000 0000 0000	7: 0000 0000 0000 0000
7: 0000 0000 0000 0000	8: 0000 0000 0000 0000	9: 0000 0000 0000 0000	

① Location of faulty circuit card

b0-b2: Circuit No. (0-7)
b3-b7: Circuit card No. (0-31)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

② Location of faulty circuit card

b0, b1: Unit No. (0-3)
b2-b7: MG No. (0-1)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

Note: This message displays when the specific LC card providing the above function is used.

3-H	Digital Line Warning			
	Default Alarm: SUP	Default Grade: 2	Grade Modified:	Lamp Modified:

This message displays when the DTI card detects an abnormal state of a digital line but this failure has no influence on the speech path. When the status worsens, the system issues [3-1] Digital Line Failure message.

1: <u>XXXX</u> <u>XX</u> 00 0000 0000	2: 0000 0000 0000 0000	3: 0000 0000 0000 0000	
<div style="display: flex; justify-content: space-around; width: 100%;"> ① ② ③ </div>			
4: 0000 0000 0000 0000	5: 0000 0000 0000 0000	6: 0000 0000 0000 0000	
7: 0000 0000 0000 0000	8: 0000 0000 0000 0000	9: 0000 0000 0000 0000	

① Location of PM (LENS) with a fault

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b4: Group
 b5, b6: Unit
 b7: 0/1 = Even-numbered MG/Odd-numbered MG

② Kind of fault

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

01H = Frame alignment loss occurs three times a day
 02H = Bit error rate is over 10⁻⁶
 03H = Slip occurs twice a day
 04H = Multiframe alignment loss occurs three times a day
 08H = Fault detection on the CCIS Bch

③ Time Slot No. of fault (This data is valid only when the kind of fault is 08H.)

b7 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b4: Time slot No. in which the digital line failure occurred (1-16, 17-31)

SYSTEM MESSAGES

3-I	Digital Line Failure			
	Default Alarm: SUP	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays after [3-H] Digital Line Warning lasts in the DTI card over the particular time. This failure may cause a speech path fault to the DTI card.

1:	<u>XXXX</u>	0000	XXXX	<u>XXXX</u>	2:	<u>XXXX</u>	<u>XXXX</u>	<u>XXXX</u>	<u>XXXX</u>	3:	<u>XXXX</u>	<u>XXXX</u>	<u>XXXX</u>	<u>XXXX</u>
	① ②		③ ④			③ ④	③ ④	③ ④	③ ④		③ ④	③ ④	③ ④	③ ④
4:	<u>XXXX</u>	<u>XXXX</u>	0000	0000	5:	0000	0000	0000	0000	6:	0000	0000	0000	0000
	③ ④	③ ④												
7:	0000	0000	0000	0000	8:	0000	0000	0000	0000	9:	0000	0000	0000	0000

① Location of faulty PM

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b4: Group

b5, b6: Unit

b7: 0/1 = Even-numbered MG/Odd-numbered MG

② Kind of fault

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

01H = Frame alignment loss occurs 100 times a day

03H = Slip occurs 50 times a day

04H = Multiframe alignment loss occurs 110 times a day

06H = Frame alignment loss lasts for 2 to 3 sec.

07H = Bit error rate is over 10⁻⁴

09H = Warning signal (AIS) from the opposite office has been received for 1 sec. continuously.

0BH = Multiframe alignment loss lasts for 2 to 3 sec.

0FH = Digital Line is not restored

③ Location of faulty circuit card (This data is valid when ② is 0FH)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b3-b7: Group No.

④ Location of faulty circuit card (This data is valid when ② is 0FH)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0, b1: Unit No.

b2-b7: MG No.

3-J	Digital Line Restore			
	Default Alarm: NON	Default Grade: 0	Grade Modified:	Lamp Modified:

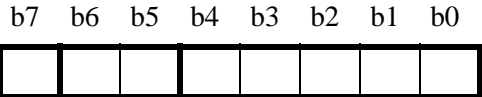
This message displays when a digital line fault is restored.

```

1: xx00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000

```

① Location of faulty line



b0-b4: Group No.
b5, b6: Unit No. (0-3)
b7: 0/1 = Even-numbered MG/odd-numbered MG

SYSTEM MESSAGES

4-C	Both TSW Ready Failure			
	Default Alarm: MN	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when a Ready Failure occurs in both systems as a result of the TSW card having a failure or the card is not mounted properly.

```

1:  XX00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
  
```

① Unit and MG number of fault detection

b0: 0/1 = TSW No. 0 system/TSW No. 1 system

b7

b0



Note: When Ready Failure occurs in both systems, the [4-C] message is separately issued twice: “0” displays in one message, and “1” in the other message.

Reference: See [Chapter 5, Section 5.3](#), for the repair procedure.

4-D	TSW Ready Failure			
	Default Alarm: MN	Default Grade: 3	Grade Modified:	Lamp Modified:

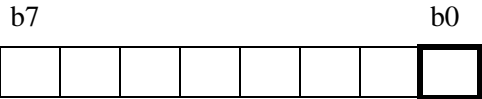
This message displays when a Ready Failure occurs in one of the dual systems because the TSW card fails or the card is not mounted properly.

```

1:  xx00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
  ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000

```

① Unit and MG number of fault detection b0: 0/1 = TSW No. 0 system/TSW No. 1 system



Reference: See Chapter 5, Section 5.4, for the repair procedure.

SYSTEM MESSAGES

4-Q	DLKC Ready Failure			
	Default Alarm: MN	Default Grade: 3	Grade Modified:	Lamp Modified:

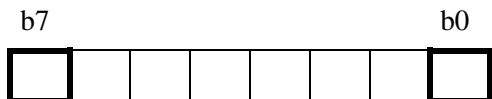
This message displays when I/O Ready Failure occurs on a DLKC card.

```

1: xx00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
  
```

① Details on faulty DLKC card

b0: 0/1 = No. 0 system/No. 1 system
 b7: 0/1 = ACT/STBY



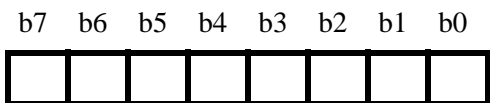
4-S	MUX Ready Failure			
	Default Alarm: MN	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the MUX (PH-PC36) card has a Ready Failure in one of the dual systems. When the card is not ready for service function because of the failure or because the card is not mounted properly, the system creates this message.

```

1:  XXXX 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ②
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
  
```

① Unit and MG number for MUX card with ready fault



- b0: 0/1 = -/MUX ready fault in even-numbered MG, Unit 0
- b1: 0/1 = -/MUX ready fault in even-numbered MG, Unit 1
- b2: 0/1 = -/MUX ready fault in even-numbered MG, Unit 2
- b3: 0/1 = -/MUX ready fault in even-numbered MG, Unit 3
- b4: 0/1 = -/MUX ready fault in odd-numbered MG, Unit 0
- b5: 0/1 = -/MUX ready fault in odd-numbered MG, Unit 1
- b6: 0/1 = -/MUX ready fault in odd-numbered MG, Unit 2
- b7: 0/1 = -/MUX ready fault in odd-numbered MG, Unit 3

② MG and system number for faulty MUX card



- b0: MG number for faulty MUX card
0/1 = Even number/Odd number
- b1: 0/1 = Ready failure in MUX No. 0 system/Ready failure in MUX No. 1 system
- b2: ACT or STBY status of faulty MUX.
0/1 = ACT/STBY

Reference: See [Chapter 5, Section 4.3](#) and [Section 4.4](#), for the repair procedure.

SYSTEM MESSAGES

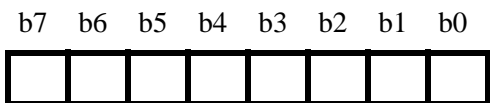
4-T	Both MUX Ready Failure			
	Default Alarm: MN	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the MUX (PH-PC36) card has a Ready Failure in both of the dual systems. When the card is not ready for service function because of the failure or because the card is not mounted properly, the system creates this system message.

```

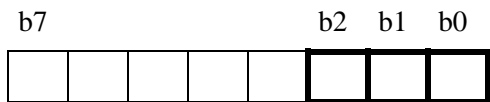
1:  XXXX 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ②
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
  
```

① Unit and MG number for MUX card with the ready fault



- b0: 0/1 = -/MUX ready fault in even-numbered MG, Unit 0
- b1: 0/1 = -/MUX ready fault in even-numbered MG, Unit 1
- b2: 0/1 = -/MUX ready fault in even-numbered MG, Unit 2
- b3: 0/1 = -/MUX ready fault in even-numbered MG, Unit 3
- b4: 0/1 = -/MUX ready fault in odd-numbered MG, Unit 0
- b5: 0/1 = -/MUX ready fault in odd-numbered MG, Unit 1
- b6: 0/1 = -/MUX ready fault in odd-numbered MG, Unit 2
- b7: 0/1 = -/MUX ready fault in odd-numbered MG, Unit 3

② MG and system number for faulty MUX card



- b0: MG number for faulty MUX card
0/1 = Even number/Odd number
- b1: 0/1 = Ready failure in MUX No. 0 system/Ready failure in MUX No. 1 system **Note 1**
- b2: ACT or STBY status of the faulty MUX **Note 2**
0/1 = ACT/STBY

Note 1: Though this message indicates the Ready Failure in both systems, the information displayed here only relates to the ACT-side MUX status. (Two messages are not displayed separately.)

Note 2: Fixed as "0 (=ACT)." See **Note 1**.

Reference: See [Chapter 5, Section 4.3](#) and [Section 4.4](#), for the repair procedure.

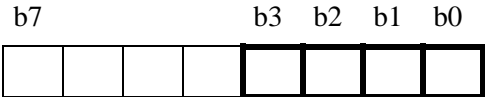
4-U	PCI Card Failure			
	Default Alarm: MN	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when a PCI card failure occurs.

```

1: 0x0x 0x0x 0x00 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ② ③ ④ ⑤
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
    
```

① Fault detection on PCI card



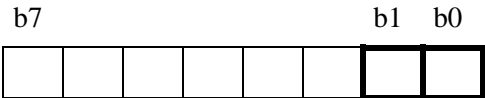
- b0: 0/1 = -/Error detection on PCI slot 0 (LANI-A)
- b1: 0/1 = -/Error detection on PCI slot 1
- b2: 0/1 = -/Error detection on PCI slot 2 (Not used)
- b3: 0/1 = -/Error detection on PCI slot 3 (LANI-B)

② Error status on PCI slot 0



- b0: 0/1 = -/Physical connection error [Note 1](#)
- b1: 0/1 = -/Hardware Fault [Note 2](#)

③ Error status on PCI slot 1



- b0: 0/1 = -/Physical connection error [Note 1](#)
- b1: 0/1 = -/Hardware Fault [Note 2](#)

④ Not used

SYSTEM MESSAGES

⑤ Error status on PCI slot 3

b0: 0/1 = -/Physical connection error **Note 1**

b1: 0/1 = -/Hardware Fault **Note 2**

b7

b1 b0



Note 1: *Physical Connection Error*

- *Ethernet cable is disconnected.*
- *Ethernet cable has short-circuited.*
- *Ethernet straight/cross cable selection error*

Note 2: *Hardware Fault*

- *Transmitter failure*
- *Controller lock-up*

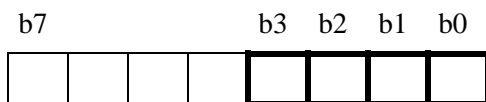
4-V	PCI Card Failure Recovered			
	Default Alarm: MN	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the PCI card, which was detected as faulty, is recovered.

```

1: 0x0x 0x0x 0x00 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ② ③ ④ ⑤
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
    
```

① Detection of PCI restoration



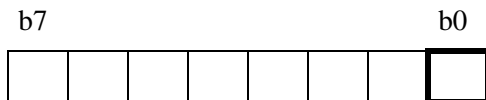
- b0: 0/1 = -/Error detection on PCI slot 0 (LANI-A)
- b1: 0/1 = -/Error detection on PCI slot 1
- b2: 0/1 = -/Error detection on PCI slot 2 (Not used)
- b3: 0/1 = -/Error detection on PCI slot 3 (LANI-B)

② Details on error restoration (PCI slot 0)



- b0: 0/1 = -/Physical connection error restoration **Note**

③ Details on error restoration (PCI slot 1)



- b0: 0/1 = -/Physical connection error restoration **Note**

④ Not used

SYSTEM MESSAGES

⑤ Details on error restoration (PCI slot 3) b0: 0/1 = -/Physical connection error restoration **Note**

b7

b0



Note: *Physical Connection Error*

- *Ethernet cable is disconnected.*
- *Ethernet cable has short-circuited.*
- *Ethernet straight/cross cable selection error*

6-A	System Failure			
	Default Alarm: NON	Default Grade: 3	Grade Modified: (FIXED) NON	Lamp Modified: (FIXED) 3

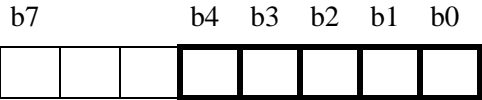
This message displays when any of the following faults are detected:

- Power failure
- Fuse blowing
- In-Frame abnormal temperature

```

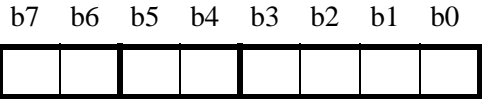
1: XX00 XXXX 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①    ② ③
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
    
```

① Probable cause for failure



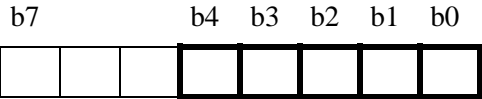
- b0: Input power (-48V) down/abnormal detected
- b1: PWR Supply abnormal detected
- b2: PWR Supply Fuse Blown detected
- b3: Abnormal temperature MJ (70°C (158°F))
- b4: Abnormal temperature MN (60°C (140°F))

② Frame in which a fault is detected



- b0-b3: Frame No. (0 Only)
0/1 = CPU is mounted/Not mounted
- b4, b5: Frame Group No.
- b6, b7: Kind of frame
00 = IMG

③ Factor of failure



- b0: 0/1 = -/OBP Alarm 0 side
- b1: 0/1 = -/OBP Alarm 1 side
- b2: 0/1 = -/OBP Alarm MISC side
- b3: 0/1 = -/Power Alarm 0 side
- b4: 0/1 = -/Power Alarm 1 side

Reference: See [Chapter 5, Section 8](#), for the repair procedure.

SYSTEM MESSAGES

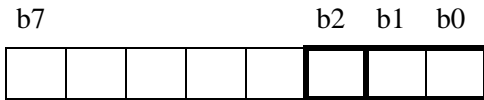
6-B	RGU & Howler Failure			
	Default Alarm: MN	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when a fault in either the ringer or howler tone occurs in the PWR card.

1: <u>XXXX</u> 0000 0000 0000	2: 0000 0000 0000 0000	3: 0000 0000 0000 0000
① ②		
4: 0000 0000 0000 0000	5: 0000 0000 0000 0000	6: 0000 0000 0000 0000
7: 0000 0000 0000 0000	8: 0000 0000 0000 0000	9: 0000 0000 0000 0000

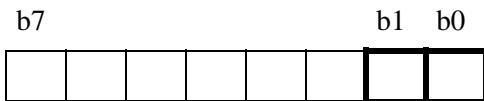
① Unit and MG number of fault detection

b0, b1: Unit No. (0-3)
b2: 0/1 = Even-numbered MG/Odd-numbered MG



② Kind of fault

b0: 0/1 = -/RGU (Ringling Unit) Fault
b1: 0/1 = -/Howler Fault



6-C	Line Load Control Start			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the CPU usage (occupancy) rate exceeds the value assigned to ASYD, SYS1, Index 56, and the call origination from the pre-selected group of stations is restricted (i.e., Line Load Control is set). This system message is always indicated as 0.

```
1: 0000 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
```

SYSTEM MESSAGES

6-D	Line Load Control Stop			
	Default Alarm:	Default Grade:	Grade Modified:	Lamp Modified:
	NON	2		

This message displays when the CPU usage (occupancy) rate becomes lower than the value assigned to ASYD, SYS1, Index 57, and Line Load Control is cancelled. This system message is always indicated as 0.

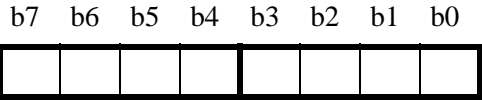
1:	0000	0000	0000	0000	2:	0000	0000	0000	0000	3:	0000	0000	0000	0000
4:	0000	0000	0000	0000	5:	0000	0000	0000	0000	6:	0000	0000	0000	0000
7:	0000	0000	0000	0000	8:	0000	0000	0000	0000	9:	0000	0000	0000	0000

6-H	Bad Call Notification			
	Default Alarm: SUP	Default Grade: 2	Grade Modified:	Lamp Modified:

This message displays to indicate the result of Bad Call Notification.

1: <u>XXXX</u> <u>XXXX</u> <u>XXXX</u> <u>XXXX</u>	2: <u>XXXX</u> <u>XXXX</u> <u>XXXX</u> <u>XXXX</u>	3: 0000 0000 0000 0000
① ② ③ ④ ⑤ ⑥ ⑦ ⑧	⑨ ⑩ ⑪ ⑫	
4: 0000 0000 0000 0000	5: 0000 0000 0000 0000	6: 0000 0000 0000 0000
7: 0000 0000 0000 0000	8: 0000 0000 0000 0000	9: 0000 0000 0000 0000

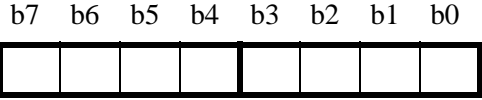
①



b0-b3: Station number digit with the fault. (This data is always indicated as "0" when Type of connection is 2 (ACD Trunk).)
 b4-b7: Type of connection
 0 = Station connection
 1 = Trunk connection
 2 = ACD Trunk connection

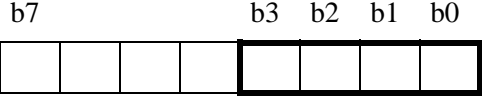
When type of connection is Station connection

② - ④ Station number (see table)



	b4-b7	b0-b3
②	DC0	DC1
③	DC2	DC3
④	DC4	DC5

⑤ The called station number



b0-b3: Number of digits for called station number

SYSTEM MESSAGES

⑥ - ⑧ Called station number (See table)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

	b4-b7	b0-b3
⑥	DC0	DC1
⑦	DC2	DC3
⑧	DC4	DC5

⑨ Time Slot Number of Link 1

⑩ Not used

⑪ Time Slot Number of Link 2

⑫ Not used

When type of connection is Trunk connection

② - ④ Station number (See table)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

	b4-b7	b0-b3
②	DC0	DC1
③	DC2	DC3
④	DC4	DC5

⑤ Remote Route No.

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b5: Route No. (1-63)

b6: OP

0/1 = Data in OPRT is invalid/valid

b7: AC

0/1 = Internal trunk/External trunk

⑥ Remote Route No.

b7 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b3: OPRT Route No. (Over 64)

⑦ Called Trunk No.

b0-b7: Trunk No.

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

⑧ Not used

⑨ Time Slot Number of Link 1

⑩ Not used

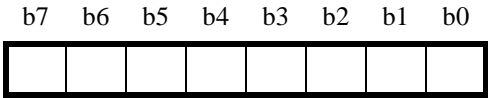
⑪ Time Slot Number of Link 2

⑫ Not used

SYSTEM MESSAGES

When type of connection is ACD Trunk connection

② ACD Trouble Kind



- b0-b7: ACD trouble kind
- 01H=ACD trunk trouble key **Note 1**
 - 14H=ACD reset start **Note 2**
 - 15H=Insufficient ACD memory
 - 16H=Insufficient ACD call record
 - 17H=Excessive business station on ACD calls
 - 18H=Excessive calls queued
 - 21H=Unknown Pilot No. called **Note 3**
 - 24H=Illegal execution of ACD timeout procedure **Note 4**
 - 30H=ACD pointer error detection and recovery **Note 5**
 - 33H=ACDP reset completion **Note 6**
 - 34H=Call recovery failure on unknown Pilot No. **Note 7**
 - 37H=ACD Traffic (incoming) Capacity Over
 - 99H=Illegal ACD processing-trace stored **Note 4**

Note 1: When “(ACD Trouble Kind)” is 01 Hex:

③-⑥ Information on Calling Party

(a) Station
My Line No.

	b4-b7	b0-b3
③	DC0	DC1
④	DC2	DC3
⑤	DC4	DC5
⑥		

(b) Trunk
Route No. + Trunk No.

	b4-b7	b0-b3	
③		DC0	} Route No.
④	DC1	DC2	
⑤		DC0	} Trunk No.
⑥	DC1	DC2	

Example: RT125,TK10
 01 25 00 10
 └─┘ └─┘ └─┘ └─┘
 ③ ④ ⑤ ⑥

- ⑦ ⑧ Not Used
- ⑨ ⑩ Information on Calling Party
Refer to ③~⑥
- ⑪ ⑫ Information on Held Party or 3rd Station/Trunk in 3-Party Connection
Refer to ③~⑥

Note 2: When “(ACD Trouble Kind)” is 14 Hex:

- ③ Issue of ACDP (First digit of decimal place)
- ④ Issue of ACDP (Second digit of decimal place)

Note 3: When “(ACD Trouble Kind)” is 21 Hex:

- ③~⑥ Information on Calling Party
Refer to ③~⑥ of **Note 1**
- ⑦ ⑧ Not used
- ⑨ ⑩ Information on Unknown Pilot No.
Refer to ③~⑥, (a) Station of **Note 1**

Note 4: When “(ACD Trouble Kind)” is 24 or 99 Hex:

- ③~⑥ Not used
- ⑦ ⑧ Error Counter

Note 5: When “(ACD Trouble Kind)” is 30 Hex:

- ③~⑥ Pointer Address
- ⑦ Not used
- ⑧ Error Kind

Note 6: When “(ACD Trouble Kind)” is 33 Hex:

- ③ ACDP Data Memory
 - 00 = Used
 - 01 = Not used
 - ④ ACDP System Capacity
 - 02 = 50 Agent Positions
 - 04 = 200 Agent Positions
 - 07 = 500 Agent Positions
 - 12 = 900 Agent Positions
 - 15 = 2,000 Agent Positions
-] **Note**

Note: *If other data is output, the ACD system may not be working correctly. In this case, be sure to install the ACD application again by using the MSVIP command.*

Note 7: When “(ACD Trouble Kind)” is 34 Hex:

- ③~⑥ Information on Unknown Pilot No.
Refer to ③~⑥, (a) Station of **Note 1**

SYSTEM MESSAGES

6-I	STA-Test Connection Data			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays to indicate the result of a designated connection test (Individual Trunk Access) from a station.

1: <u>XXXX</u> <u>XXXX</u> <u>XXXX</u> <u>XXXX</u>	2: <u>XXXX</u> <u>00XX</u> <u>XXXX</u> <u>XXXX</u>	3: <u>XXXX</u> <u>XXXX</u> <u>XXXX</u> <u>XXXX</u>	
① ② ③ ④ ⑤ ⑥ ⑦ ⑧	⑨ ⑩ ⑪ ⑫ ⑫	⑫ ⑫ ⑫ ⑫	
4: 0000 0000 0000 0000	5: 0000 0000 0000 0000	6: 0000 0000 0000 0000	
7: 0000 0000 0000 0000	8: 0000 0000 0000 0000	9: 0000 0000 0000 0000	

① Test Item (b0-b3 is valid only for Outgoing trunk test)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b2: Kind of Signal

- 2 = Second Dial Tone
- 6 = Sender (Delay Dial Start)
- 7 = Sender (Wink Start)

b3: 0/1 = Data is invalid/valid

b4-b7: Test item

- 1 = Outgoing Trunk Test
- 2 = ORT/IRT Test
- 3 = Sender Test
- 4 = Digital Conference
- 5 = Tone Test
- 6 = Ringing Signal test
- 0 = Test NG

②

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b3: Number of digits of the testing station No.
b4-b7: Error Numbers (see table below)

Error Numbers and Their Meanings

ERROR NO.	MEANING
0	---
1	The testing station is restricted from activating the service.
2	Route Number Error of the designated trunk
3	Trunk Number Error of the designated trunk
4	Trunk busy
5	Sender busy
6	SMDR failure
7	Call origination restriction
8	Register busy
9	Trunk Number Error - when the trunk has been designated by SHF.
A	Trunk busy - when the trunk has been designated by SHF.
B	Inter-digit timer expiration
C	Register or sender is defective with respect to DP, DP/PB.
D	Register of sender is faulty with respect to PB
E	Tone fault
F	Test Processing Error

③-⑤ Station number of testing station
(see table)

	b4-b7	b0-b3
③	DC0	DC1
④	DC2	DC3
⑤	DC4	DC5

⑥ Tenant No.

b7 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b3: Tenant No. (1-15)
b7: OP
0/1 = Data in OPTN (⑦) is invalid/valid

⑦ OPTN data

b7 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b3: Tenant No. (Over 15)

SYSTEM MESSAGES

⑧ Tested Route No.

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b5: Route No. (1-63) **Note**
 b6: OP
 0/1 = Data in OPRT (⑧) is invalid/valid
 b7: AC
 0/1 = Internal trunk/External trunk

Note: When Logical Routes are assigned, Logical Route Numbers are displayed here.

⑨ OPRT data

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b7: Route No. (> 64) **Note**

Note: When Logical Routes are assigned, Logical Route Numbers are displayed here.

⑩ (This data is not for Ringing Signal Test)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b7: Trunk No. for Outgoing trunk test, ORT/IRT Test, Sender Test and Digital Conference test
 Tone Slot No. for Tone Test
 0 = DT 1 = SPDT
 2 = RBT 3 = CRBT, CWT
 4 = BT 5 = RBT
 6 = SST, WT 7 = SDT
 8 = TRG 9 = SDTT
 10 = CWRBT 14 = MSC

⑪ Digit of Dialed Number (for test)

b7 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b4: Dialed number digit sent by the test Trunk/Sender
 or
 Dialed Number digit received by the test Register

⑫ Dialed Number (for test)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

(a) Dialed Number sent by the test Trunk/Sender

b4-b7	b0-b3	b4-b7	b0-b3
dc0	dc1	dc12	dc13
dc2	dc3	dc14	dc15
dc4	dc5	dc16	dc17
dc6	dc7	dc18	dc19
dc8	dc9	dc20	dc21
dc10	dc11		

(b) Dial Number received by the test Register

b4-b7	b0-b3
dc0	dc1
dc2	dc3
dc4	dc5
dc6	dc7
dc8	dc9
dc10	dc11

6-J	Emergency Call			
	Default Alarm: SUP	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when a call terminates to the Emergency Telephone.

```

1:  XXXX XXXX XXXX XXXX 2:  XXXX XXXX 0000 0000 3:  0000 0000 0000 0000
   ① ② ③ ④ ⑤ ⑥ ⑦ ⑧      ⑨ ⑩ ⑪ ⑫
4:  0000 0000 0000 0000 5:  0000 0000 0000 0000 6:  0000 0000 0000 0000
7:  0000 0000 0000 0000 8:  0000 0000 0000 0000 9:  0000 0000 0000 0000
    
```

① - ⑥ Called Station (Emergency Telephone) No. (ASCII Code)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

- ① DC0 (1st digit)
- ② DC1 (2nd digit)
- ③ DC2 (3rd digit)
- ④ DC3 (4th digit)
- ⑤ DC4 (5th digit)
- ⑥ DC5 (6th digit)

⑦ - ⑫ Calling Station No. (ASCII Code)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

- ⑦ DC0 (1st digit)
- ⑧ DC1 (2nd digit)
- ⑨ DC2 (3rd digit)
- ⑩ DC3 (4th digit)
- ⑪ DC4 (5th digit)
- ⑫ DC5 (6th digit)

SYSTEM MESSAGES

6-L	Emergency Control Start			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the LCR-Attendant Manual Override is set at the Attendant Desk Console.

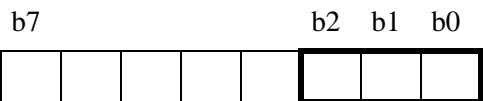
```

1: xx00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000

```

① Route Selection Time Pattern No. assigned at Attendant Desk Console

b0-b2: Pattern No. (1-7)



Note: Route Selection Time Pattern 0-7 corresponds to TDPTN No. 0-7 in the AOPR command.

SYSTEM MESSAGES

6-N	Abnormal Call Duration Data			
	Default Alarm: NON	Default Grade: 0	Grade Modified:	Lamp Modified:

This message displays when the system detects abnormal duration in the line connection between the calling and called party. When the calling and called party establish a line connection and continue the hook-up for an extremely short or long period of time (predetermined by the ASYD command (SYS1 Index 45, 46)), this message is created.

1: <u>XXXX</u> <u>XXXX</u> <u>XXXX</u> <u>XX00</u>	2: <u>XXXX</u> <u>XXXX</u> <u>XXXX</u> <u>XXXX</u>	3: <u>XXXX</u> <u>XXXX</u> <u>XXXX</u> <u>XX00</u>	
① ② ② ③ ③ ③	④ ⑤ ⑤ ⑤ ⑤ ⑤	⑤ ⑤ ⑤ ⑤ ⑤ ⑤	
4: 0000 0000 0000 0000	5: 0000 0000 0000 0000	6: 0000 0000 0000 0000	
7: 0000 0000 0000 0000	8: 0000 0000 0000 0000	9: 0000 0000 0000 0000	

① Calling party information

b0-b3: Type of Calling party

b7 b3 b2 b1 b0

0 = Station

1 = Attendant console

2 = Trunk

--	--	--	--

b7: 0/1 = Short/Long Time

② Tenant No. of Calling/Called party (Hex.)

③ Calling party Information

When calling party is Station

Calling station No. (See table)

b7 b3 b2 b1 b0

--	--	--	--

b4-b7	b0-b3
DC0	DC1
DC2	DC3
DC4	DC5

When calling party is ATTCON/DESKCON

Attendant/Desk console No. (See table.)

b7	b6	b5	b4	b3	b2	b1	b0

b4- b7	b0-b3
DC0	DC1

When calling party is Trunk

Route No. and Trunk No. (See table.)

	b0-b7
(a)	Route No. (Hex) Note
(b)	Route No. (Hex) Note
(c)	Trunk No. (Hex)
(d)	Trunk No. (Hex)

Note:

Route No. (a)

b7	b6	b5	b4	b3	b2	b1	b0

b0-b5: Route No. (1-63)
 b6: OP
 0/1 = Data in OPRT is invalid/valid
 b7: AC
 0/1 = Internal trunk/External trunk

Route No. (b)

b7				b3	b2	b1	b0

b0-b3: OPRT
 Route No. (Over 64)

④ Called party information

b7				b3	b2	b1	b0

b0-b3:
 00 = Station-to-Station call
 01 = Outgoing call to outside
 02 = Incoming call from outside

SYSTEM MESSAGES

⑤ Called Party Information

Station to Station Call

(a) Type of called party

00 = Station

01 = Attendant Console

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b4-b7	b0-b3
(a)	
Tenant No.	
Tenant No.	
DC0	DC1
DC2	DC3
DC4	DC5

OG Call to outside (IC Call from outside)

b4-b7	b0-b3
Route No. (Hex)	
Route No. (Hex)	
Trunk No. (Hex)	
Trunk No. (Hex)	
DC0	DC1
DC2	DC3
DC4	DC5
DC6	DC7
DC8	DC9
DC10	DC11
DC12	DC13
DC14	DC15
DC16	DC17
DC18	DC19

b0-b7
Route No. (Hex)
Route No. (Hex)
Trunk No. (Hex)
Trunk No. (Hex)

6-0	SMDR Output Buffer Overflow Alarm			
	Default Alarm: SUP	Default Grade: 1	Grade Modified:	Lamp Modified:

This message displays when the SMDR output buffer usage rate has exceeded the value assigned to ASYD, SYS1, Index 249.

1:	<u>XXXX</u>	<u>XXXX</u>	0000	0000	2:	0000	0000	0000	0000	3:	0000	0000	0000	0000
	①	②	③	④										
4:	0000	0000	0000	0000	5:	0000	0000	0000	0000	6:	0000	0000	0000	0000
7:	0000	0000	0000	0000	8:	0000	0000	0000	0000	9:	0000	0000	0000	0000

① Detail Information

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b3: FS
b4-b7: FE

This system message varies depending on the data.

	FS	FE	MEANING
(a)	0	0	SMDR output buffer usage rate exceeds the value assigned by ASYD, SYS1, Index 249.
(a)	0	1	After SMDR output buffer usage rate exceeds the value assigned by ASYD, SYS1, Index 249, usage rate lowered less than the value assigned by Index 250.
(b)	1	0	-
(c)	2	0	Data output is impossible due to SMDR apparatus failure.

(a) FS = 0, FE = 0/1

②

b7 b0

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

b0: 0/1 = Data assigned by the ASYD, SYS1, Index 249, 250 is valid/invalid

(c) FS = 2, FE = 0

② SMDR Group No.

b0-b3: SMDR Group No. to which failure occurred

b7					b3	b2	b1	b0

③ Port No.

b0-b7: Port No. allocated for SMDR Group to which failure occurred (0-7)

b7	b6	b5	b4	b3	b2	b1	b0

④ Not used

(d) FS = 3, FE = 0

②

b0-b3: SMDR Group No. to which failure occurred

b7					b3	b2	b1	b0

SYSTEM MESSAGES

6-P	SMDR Output Buffer Overflow Release			
	Default Alarm: NON	Default Grade: 0	Grade Modified:	Lamp Modified:

This message displays when the SMDR output buffer usage rate has been lowered to less than the value assigned in the ASYD, SYS1, Index 250 after the rate exceeds the value assigned by Index 249.

```

1:  XX00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
  
```

① Detail Information

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b7: 00H = After SMDR output buffer usage rate exceeds the value assigned by ASYD, SYS1, Index 249, the rate lowered less than the value assigned by Index 250.

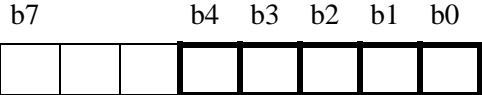
7-A	System Initialize With Data Load			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays after the office data is loaded and system initialization has executed.

```

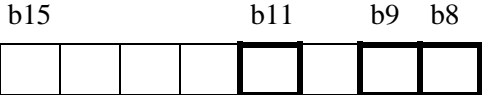
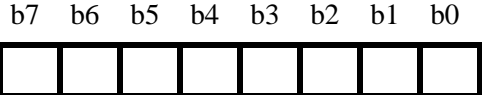
1:  XXXX XX00 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①  ②
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
    
```

①



- b0: 0/1 = IPL/PWR ON
- b1: 0/1 = Load Key OFF/ON
- b2: 0/1 = IPL KEY/MAT INITIAL
- b3: 0/1 = Program load is executed/-
- b4: 0/1 = -/Phase1 Restart **Note 1**

② Load Status



- b0: Office Data Load Status
0/1 = Load OK/NG
- b1: Call Forwarding Data Load Status
0/1 = Load OK/NG
- b2: Individual Speed Calling Data Load Status
0/1 = Load OK/NG
- b3: Wireless Call Forwarding Data Load Status
0/1 = Load OK/NG
- b4: Name Display Data Load Status
0/1 = Load OK/NG
- b5: Network DM Load Status
0/1 = Load OK/NG
- b6: Local DM Load Status
0/1 = Load OK/NG
- b7: 0/1 = DM Load/Non Load
- b8: User assign Soft Key Data Load Status
0/1 = Load OK/NG
- b9: Number Sharing Data Load Status
0/1 = Load OK/NG **Note 2**
- b11: Call Block Data Load Status
0/1 = Load OK/NG

SYSTEM MESSAGES

Note 1: *Phase I Restart is executed when initializing the system without disrupting the following two-way connections that have already been established:*

- *Basic two-way connections (STN-STN, STN-TRK, TRK-TRK)*
- *Fixed connections*
- *Two-way connections established on a Fusion link*

For more details, see Section [Chapter 6](#), [Section 12.2.3](#).

Note 2: *Number Sharing data load also affects the data load of Dual Station Calling Over-FCCS.*

7-B	System Initialize			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

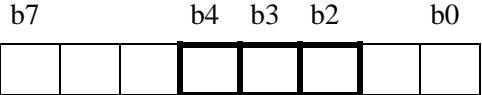
This message displays when system initialization is activated.

```

1: xx00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000

```

①



- b2: 0/1 = IPL KEY/MAT INITIAL
- b3: 0/1 = Program Load/Non Load
- b4: 0/1 = -/Phase1 Restart **Note**

Note: *Phase1 Restart is executed when initializing the system without disrupting the following two-way connections that have already been established:*

- *Basic two-way connections (STN-STN, STN-TRK, TRK-TRK)*
- *Fixed connections*
- *Two-way connections established on a Fusion link*

For more details, see [Chapter 6, Section 12.2.3](#).

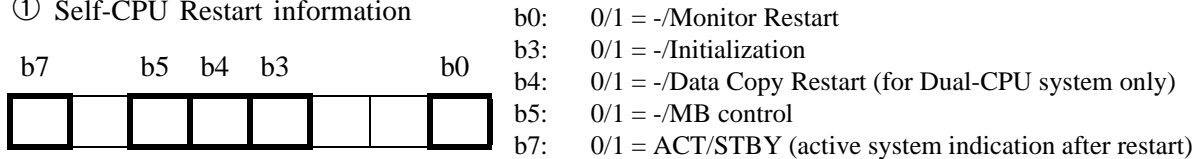
SYSTEM MESSAGES

7-C	CPU MBR Key Turn ON			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

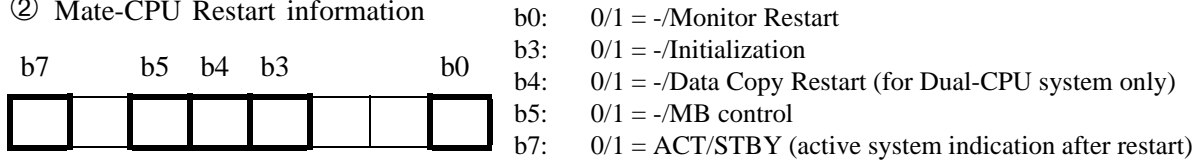
This message displays when the MBR switch on the GATE card is turned ON at the time of CPU changeover or speech path changeover.

1: <u>XXXX</u> 0000 0000 0000	2: 0000 0000 0000 0000	3: 0000 0000 0000 0000
① ②		
4: 0000 0000 0000 0000	5: 0000 0000 0000 0000	6: 0000 0000 0000 0000
7: 0000 0000 0000 0000	8: 0000 0000 0000 0000	9: 0000 0000 0000 0000

① Self-CPU Restart information



② Mate-CPU Restart information



7-D	CPU MBR Key Turn OFF			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the MBR switch on the GATE card is turned OFF at the time of CPU changeover or speech path changeover.

1: <u>XXXX</u> 0000 0000 0000	2: 0000 0000 0000 0000	3: 0000 0000 0000 0000
① ②		
4: 0000 0000 0000 0000	5: 0000 0000 0000 0000	6: 0000 0000 0000 0000
7: 0000 0000 0000 0000	8: 0000 0000 0000 0000	9: 0000 0000 0000 0000

① Self-CPU Restart information

b7	b5	b4	b3		b0	

- b0: 0/1 = -/Monitor Restart
- b3: 0/1 = -/Initialization
- b4: 0/1 = -/Data Copy Restart (for Dual-CPU system only)
- b5: 0/1 = -/MB control
- b7: 0/1 = ACT/STBY (active system indication after restart)

② Mate-CPU Restart information

b7	b5	b4	b3		b0	

- b0: 0/1 = -/Monitor Restart
- b3: 0/1 = -/Initialization
- b4: 0/1 = -/Data Copy Restart (for Dual-CPU system only)
- b5: 0/1 = -/MB control
- b7: 0/1 = ACT/STBY (active system indication after restart)

SYSTEM MESSAGES

7-E	TSW MBR Key Turn ON			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

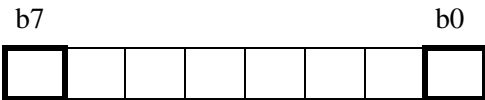
This message displays when the MBR switch on the TSW card is turned ON at CPU changeover or speech path changeover.

```

1:  xx00 0000 0000 0000  2: 0000 0000 0000 0000  3: 0000 0000 0000 0000
    ①
4: 0000 0000 0000 0000  5: 0000 0000 0000 0000  6: 0000 0000 0000 0000
7: 0000 0000 0000 0000  8: 0000 0000 0000 0000  9: 0000 0000 0000 0000
  
```

① System status of TSW card

b0: 0/1 = No. 0 system/No. 1 system
 b7: Kind of Circuit Card
 0/1 = SW12/GT19



7-F	TSW MBR Key Turn OFF			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

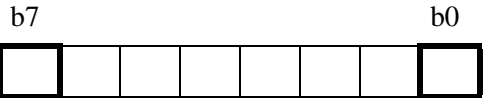
This message displays when the MBR switch on the TSW card is turned OFF at CPU changeover or speech path changeover.

```

1: xx00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000

```

① System status of TSW card



b0: 0/1 = No. 0 system/No. 1 system
b7: Kind of Circuit Card
0/1 = SW12/GT09

SYSTEM MESSAGES

7-G	TSW PLO Key Turn ON			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the PLO MBR switch is turned ON (UP).

```

1: xx00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
  
```

① Information on PLO MBR operation

b0: 0/1=System 0/System 1



7-H	TSW PLO Key Turn OFF			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the PLO MBR switch is turned OFF (DOWN).

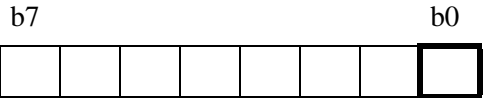
```

1: xx00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000

```

① Information on PLO MBR operation

b0: 0/1=System 0/System 1



SYSTEM MESSAGES

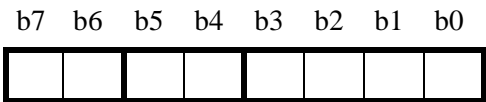
7-I	ALMC MB Key Turn ON			
	Default Alarm: SUP	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the MB switch on the EMA card is turned ON while extracting or inserting a circuit card or at PM initialization. This message displays with the [7-J]: ALMC MB Key Turn OFF message.

```

1:  XX00 0000 0000 0000  2: 0000 0000 0000 0000  3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000  5: 0000 0000 0000 0000  6: 0000 0000 0000 0000
7: 0000 0000 0000 0000  8: 0000 0000 0000 0000  9: 0000 0000 0000 0000
  
```

① Frame No. and its kind



b0-b3: Frame No. (0 only)
 b4-b5: Frame Group No. (0 only)
 b6-b7: Kind of Frame
 00=IMG

7-J	ALMC MB Key Turn OFF			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

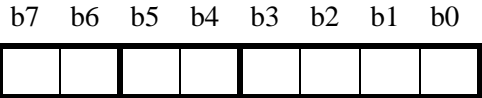
This message displays when the MB switch on the EMA card is turned OFF while extracting or inserting a circuit card or at PM initialization.

```

1: XX00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000

```

① Frame No. and its kind



b0-b3: Frame No. (0 only)
b4, b5: Frame Group No. (0 only)
b6, b7: Kind of Frame
00=IMG

SYSTEM MESSAGES

7-K	PM MB Key Turn ON			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the MB switch on the line/trunk card is turned ON while extracting or inserting a circuit card or at PM initialization.

```

1:  xx00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
  
```

① Location of faulty Line/Trunk card

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b4: Circuit card No. (0-31)

b5, b6: Unit No. (0-3)

b7: MG No.

0/1 = Even-numbered MG/Odd-numbered MG

7-L	PM MB Key Turn OFF			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the MB switch on the line/trunk card is turned OFF while extracting or inserting a circuit card or at PM initialization.

```

1: xx00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000

```

① Location of faulty Line/Trunk card

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b4: Circuit card No. (0-31)

b5, b6: Unit No. (0-3)

b7: MG No.

0/1 = Even-numbered MG/Odd-numbered MG

SYSTEM MESSAGES

7-M	NCU MB Key Turn ON			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the MB switch on the PFT card is turned ON while extracting or inserting a circuit card, or at PM initialization.

1: <u>XXXX</u> 0000 0000 0000	2: 0000 0000 0000 0000	3: 0000 0000 0000 0000	4: 0000 0000 0000 0000
① ②			
4: 0000 0000 0000 0000	5: 0000 0000 0000 0000	6: 0000 0000 0000 0000	7: 0000 0000 0000 0000
7: 0000 0000 0000 0000	8: 0000 0000 0000 0000	9: 0000 0000 0000 0000	

① Faulty PFT card No.

b0-b2: Circuit card No. (0-7)

b7	b2	b1	b0

② Location of faulty PFT card

b0-b4: Group No.

b5, b6: Unit No. (0-3)

b7: 0/1 = Even-numbered MG/Odd-numbered MG

b7	b6	b5	b4	b3	b2	b1	b0

7-N	NCU MB Key Turn OFF			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the MB switch on the PFT card is turned OFF while extracting or inserting a circuit card, or at PM initialization.

1: <u>XXXX</u> 0000 0000 0000	2: 0000 0000 0000 0000	3: 0000 0000 0000 0000	
① ②			
4: 0000 0000 0000 0000	5: 0000 0000 0000 0000	6: 0000 0000 0000 0000	
7: 0000 0000 0000 0000	8: 0000 0000 0000 0000	9: 0000 0000 0000 0000	

① Faulty PFT card No.

b0-b2: Circuit card No. (0-7)

b7						b2	b1	b0

② Location of faulty PFT card

b0-b4: Group No.

b5, b6: Unit No. (0-3)

b7: 0/1 = Even-numbered MG/Odd-numbered MG

b7	b6	b5	b4	b3	b2	b1	b0

SYSTEM MESSAGES

7-0	Cyclic Diagnosis Normal			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

In a specific time cycle, the system allows a routine diagnosis in its hardware and software to determine if they are operating properly. This message indicates that the system has been checked by the routine diagnosis program and the result of the diagnosis is normal.

1: <u>XXXX XXXX XXXX XXXX</u>	2: 0000 0000 0000 0000	3: 0000 0000 0000 0000	
①	Note		
4: 0000 0000 0000 0000	5: 0000 0000 0000 0000	6: 0000 0000 0000 0000	
7: 0000 0000 0000 0000	8: 0000 0000 0000 0000	9: 0000 0000 0000 0000	

① Performed Diagnosis Item

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

- [00H] Routine Diagnosis Start
- [10H] Program Memory Verification Normal End
- [20H] Data Memory Verification Normal End
- [30H] TSW ACT/STBY Changeover Normal End
- [40H] CPU ACT/STBY Changeover Normal End
- [50H] No Trunk Ineffective Hold
- [70H] Call Forwarding Memory Clear Normal End
- [A0H] Periodic Back-up Normal End
- [C0H] Detection of Remaining Link Normal End

Note: The data in this area will be diverse, according to the diagnosis specified in ①. For details on each item data, see the following pages.

[00H] Routine Diagnosis Start

1:	<u>00XX</u>	<u>XX00</u>	0000	0000	2:	0000	0000	0000	0000	3:	0000	0000	0000	0000
	①	②	③											
4:	0000	0000	0000	0000	5:	0000	0000	0000	0000	6:	0000	0000	0000	0000
7:	0000	0000	0000	0000	8:	0000	0000	0000	0000	9:	0000	0000	0000	0000

① Performed Diagnosis Item

[00H] Routine Diagnosis Start

② Pending Diagnosis Menu (SYS1, Index 89)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

- b0: 0/1=-/Program Memory Verification
- b1: 0/1=-/Data Memory Verification
- b2: 0/1=-/TSW ACT/STBY Changeover
- b3: 0/1=-/CPU ACT/STBY Changeover
- b4: 0/1=-/Trunk Ineffective Hold Check
- b5: 0/1=-/Trunk Ineffective Hold Detection
- b6: 0/1=-/Call Forwarding Memory clear
- b7: 0/1=-/IP ACT/STBY changeover

③ Pending Diagnosis Menu (SYS1, Index 90)

b7 b1 b0

--	--	--	--	--	--	--	--

- b0: Not used
- b1: Periodic Back-up
- b2-b7: Not used

SYSTEM MESSAGES

[10H] Program Memory Verification Normal End

1:	<u>10XX</u>	<u>XX00</u>	0000	0000	2:	0000	0000	0000	0000	3:	0000	0000	0000	0000
	①	②	③											
4:	0000	0000	0000	0000	5:	0000	0000	0000	0000	6:	0000	0000	0000	0000
7:	0000	0000	0000	0000	8:	0000	0000	0000	0000	9:	0000	0000	0000	0000

① Routine Diagnosis

[10H] Program Memory Verification Normal End

② Information on HD

b0: 0/1 = -/HFC 0 is normal

b1: 0/1 = -/HFC 1 is normal

b7

b1 b0

--	--	--	--	--	--	--	--	--	--

③ Verification of Drive Number

b0: 0/1 = -/Drive Number 0

b1: 0/1 = -/Drive Number 1

b2: 0/1 = -/Drive Number 2

b3: 0/1 = -/Drive Number 3

b7

b3 b2 b1 b0

--	--	--	--	--	--	--	--

[20H] Data Memory Verification Normal End

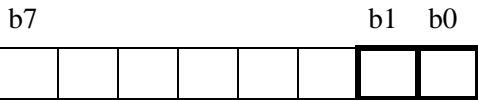
1:	<u>20XX</u>	<u>XX00</u>	0000	0000	2:	0000	0000	0000	0000	3:	0000	0000	0000	0000
	①	②	③											
4:	0000	0000	0000	0000	5:	0000	0000	0000	0000	6:	0000	0000	0000	0000
7:	0000	0000	0000	0000	8:	0000	0000	0000	0000	9:	0000	0000	0000	0000

① Routine Diagnosis

[20H] Data Memory Verification Normal End

② Verification of HD

b0: 0/1 = -/HFC 0 is normal
 b1: 0/1 = -/HFC 1 is normal



③ Verification of Data Memory

b0: 0/1 = -/Data Memory
 b1: 0/1 = -/Local Data Memory
 b2: 0/1 = -/Network Data Memory



SYSTEM MESSAGES

[30H] TSW ACT/STBY Changeover Normal End

1:	<u>30XX</u>	0000	0000	0000	2:	0000	0000	0000	0000	3:	0000	0000	0000	0000
	① ②													
4:	0000	0000	0000	0000	5:	0000	0000	0000	0000	6:	0000	0000	0000	0000
7:	0000	0000	0000	0000	8:	0000	0000	0000	0000	9:	0000	0000	0000	0000

① Routine Diagnosis

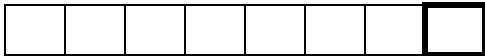
[30H] TSW ACT/STBY Changeover Normal End

② Active TSW system after
changeover

b0: 0/1 = TSW No. 0 is ACT/
TSW No. 1 is ACT

b7

b0



[40H] CPU ACT/STBY Changeover Normal End

1:	<u>40XX</u>	0000	0000	0000	2:	0000	0000	0000	0000	3:	0000	0000	0000	0000
	① ②													
4:	0000	0000	0000	0000	5:	0000	0000	0000	0000	6:	0000	0000	0000	0000
7:	0000	0000	0000	0000	8:	0000	0000	0000	0000	9:	0000	0000	0000	0000

① Routine Diagnosis

[40H] CPU ACT/STBY Changeover Normal End

② Active CPU system



b0: CPU
0/1 = #0 is ACT/#1 is ACT

b1: TSW
0/1 = #0 is ACT/#1 is ACT

SYSTEM MESSAGES

[50H] No Trunk Ineffective Hold

1:	<u>50XX</u>	0000	0000	0000	2:	0000	0000	0000	0000	3:	0000	0000	0000	0000
	① ②													
4:	0000	0000	0000	0000	5:	0000	0000	0000	0000	6:	0000	0000	0000	0000
7:	0000	0000	0000	0000	8:	0000	0000	0000	0000	9:	0000	0000	0000	0000

① Routine Diagnosis

[50H] Trunk Ineffective Hold

② MG and Unit of No. of Trunk Ineffective Hold

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

- b0: Unit 0, Even-numbered MG
1 = No Trunk Ineffective Hold
- b1: Unit 1, Even-numbered MG
1 = No Trunk Ineffective Hold
- b2: Unit 2, Even-numbered MG
1 = No Trunk Ineffective Hold
- b3: Unit 3, Even-numbered MG
1 = No Trunk Ineffective Hold
- b4: Unit 0, Odd-numbered MG
1 = No Trunk Ineffective Hold
- b5: Unit 1, Odd-numbered MG
1 = No Trunk Ineffective Hold
- b6: Unit 6, Odd-numbered MG
1 = No Trunk Ineffective Hold
- b7: Unit 3, Odd-numbered MG
1 = No Trunk Ineffective Hold

[70H] Call Forwarding Memory Clear Normal End

1:	7000	0000	0000	0000	2:	0000	0000	0000	0000	3:	0000	0000	0000	0000
	①													
4:	0000	0000	0000	0000	5:	0000	0000	0000	0000	6:	0000	0000	0000	0000
7:	0000	0000	0000	0000	8:	0000	0000	0000	0000	9:	0000	0000	0000	0000

① Routine Diagnosis

[70H] Call Forwarding Memory Clear Normal End

[C0H] Detection of Remaining Link Normal End

```

1:  C0XX  XX00  0000  0000  2:  0000  0000  0000  0000  3:  0000  0000  0000  0000
   ① ②
4:  0000  0000  0000  0000  5:  0000  0000  0000  0000  6:  0000  0000  0000  0000
7:  0000  0000  0000  0000  8:  0000  0000  0000  0000  9:  0000  0000  0000  0000

```

① Performed Diagnosis Item

[C0H] Detection of Remaining Link Normal End

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

SYSTEM MESSAGES

7-P	Cyclic Diagnosis Information (Error Detected)			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

In a specific time cycle, the system allows a routine diagnosis in its hardware and software to determine if they are operating properly. This message indicates that the system has been checked by the routine diagnosis program and the result of the diagnosis is not normal.

1: <u>XXXX XXXX XXXX XXXX</u>	2: 0000 0000 0000 0000	3: 0000 0000 0000 0000	
①	Note		
4: 0000 0000 0000 0000	5: 0000 0000 0000 0000	6: 0000 0000 0000 0000	
7: 0000 0000 0000 0000	8: 0000 0000 0000 0000	9: 0000 0000 0000 0000	

① Detected Error Item

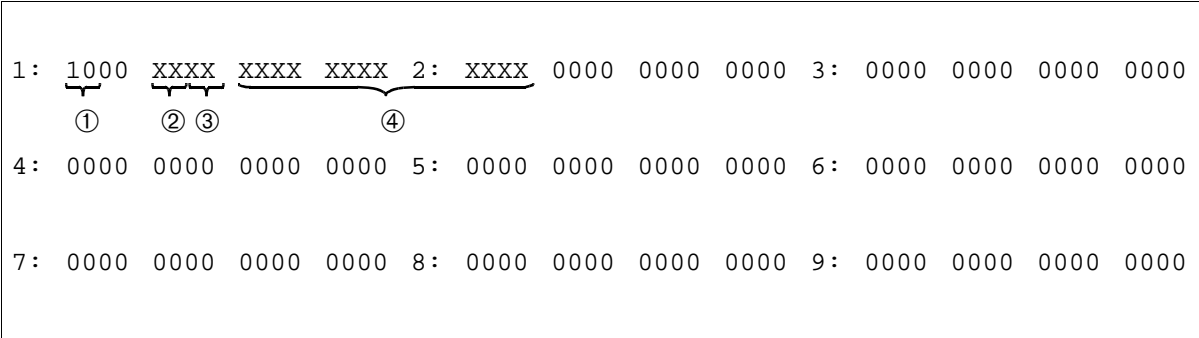
b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

- [10H] Program Memory Verification Discrepancy
- [11H] Program Memory Verification Impossible (HFD Fault)
- [12H] Program Memory Verification Impossible (Fault at CPU side)
- [20H] Data Memory Verification Discrepancy
- [21H] Data Memory Verification Impossible (HFD Fault)
- [30H] TSW ACT/STBY Changeover Failure
- [31H] TSW ACT/STBY Changeover Failure (MUX Fault)
- [41H] CPU ACT/STBY Changeover Failure (Single CPU System)
- [42H] CPU ACT/STBY Changeover Failure (DM Verification NG)
- [43H] CPU ACT/STBY Changeover Failure (PCI Fault)
- [44H] CPU ACT/STBY Changeover Failure (Changeover NG or CPU RAM Copy NG)
- [50H] Trunk Ineffective Hold Detected
- [51H] Trunk Ineffective Hold Detected and Released
- [52H] Trunk Ineffective Hold Detected Impossible
- [70H] Call Forwarding Memory Clear NG
- [A0H] Periodic Backup Abnormal End
- [C0H] Detection of Remaining Link Abnormal End
(for Release 4 or later)

Note: The data in this area will be diverse, according to the diagnosis specified in ①. For details on each item data, see the following pages.

[10H] Program Memory Verification Discrepancy



① Error detection by Routine Diagnosis

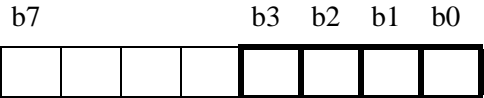
[10H] Program Memory Verification Discrepancy

② Verification of HFD number



b0: 0/1 = -/HFD 0
b1: 0/1 = -/HFD 1

③ Verification of Drive Number

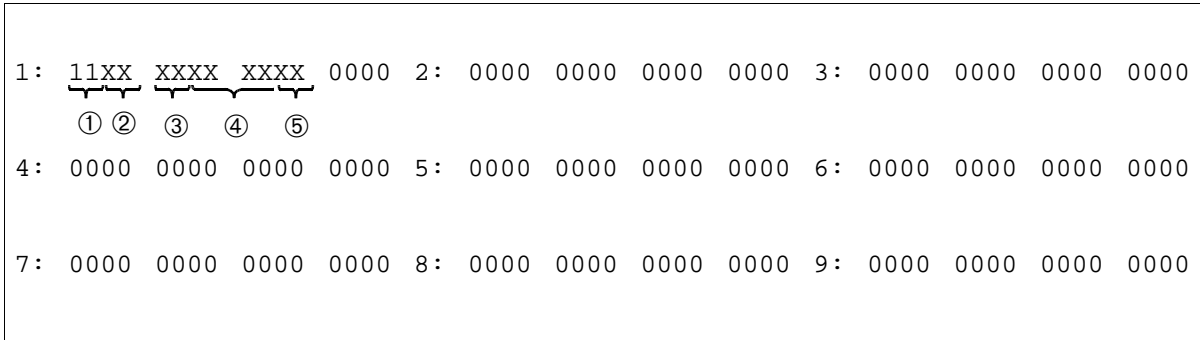


b0: 0/1 = -/Drive Number 0
b1: 0/1 = -/Drive Number 1
b2: 0/1 = -/Drive Number 2
b3: 0/1 = -/Drive Number 3

④ Data analyzed by NEC Engineers

SYSTEM MESSAGES

[11H] Program Memory Verification Impossible (HFD Fault)

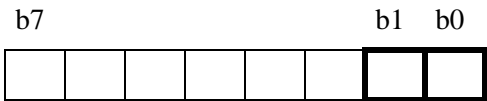


① Error detection by Routine Diagnosis

[11H] Program Memory Verification Impossible (HFC Fault)

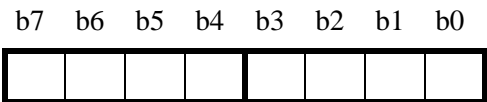
② Verification Impossible of HD

b0: 0/1 = -/HFC 0
b1: 0/1 = -/HFC 1



③ Error Type

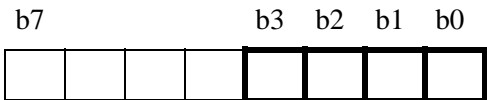
00H: HD Processing NG
01H: HD Not Connected
02H: HD Busy
03H: HD Fault (Fault processing/Not equipment, etc.)
04H: Transfer NG
05H: Response Timeout



④ Data analyzed by NEC Engineers

⑤ Error Drive

b0: 0/1 = -/Drive Number 0
b1: 0/1 = -/Drive Number 1
b2: 0/1 = -/Drive Number 2
b3: 0/1 = -/Drive Number 3



[12H] Program Memory Verification Impossible (Fault at CPU side)

1:	<u>12XX</u>	0000	0000	0000	2:	0000	0000	0000	0000	3:	0000	0000	0000	0000
	① ②													
4:	0000	0000	0000	0000	5:	0000	0000	0000	0000	6:	0000	0000	0000	0000
7:	0000	0000	0000	0000	8:	0000	0000	0000	0000	9:	0000	0000	0000	0000

① Error detection by Routine
Diagnosis

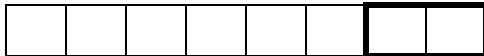
[12H] Program Memory Verification Impossible (Fault at CPU side)

② Cause for suspension of Program
Memory Verification (Error Code)

01H: CPU-to-CPU communication failed
02H: Check sum file copy failed

b7

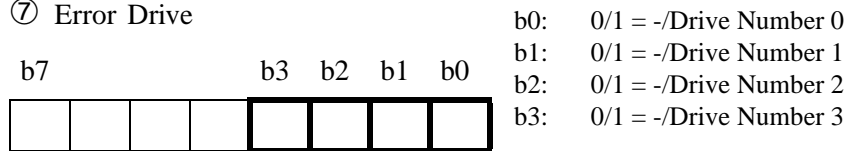
b1 b0



SYSTEM MESSAGES

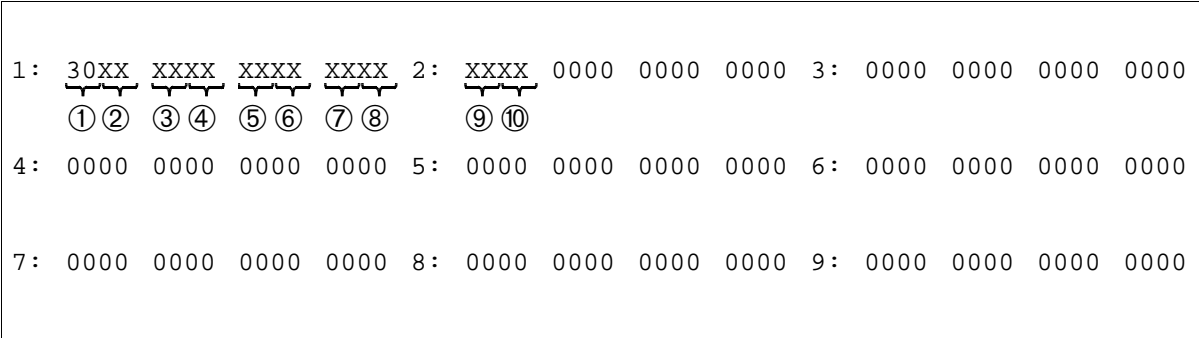
⑥ Data analyzed by NEC Engineers

⑦ Error Drive



Note: When ④ (Error Type) is 00H, ⑤ Signal Code, ⑥ and ⑦ Error Drive are valid.

[30H] TSW ACT/STBY Changeover Failure

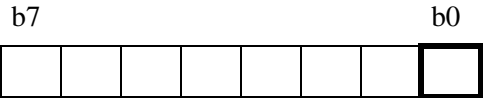


① Detected Error Item

[30H] TSW ACT/STBY Changeover Failure

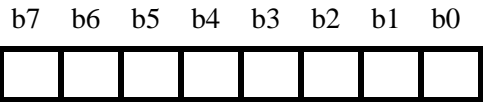
② Active TSW No.

b0: 0/1=TSW #0 is ACT/#1 is ACT



③-⑥ MUX card (ACT-side) linkage condition

As shown in the following table, each bit represents the Unit No. allocated for each MUX card in position. When “1” is set, the corresponding MUX card (status: ACT) has a functional failure or is not mounted in the proper location.



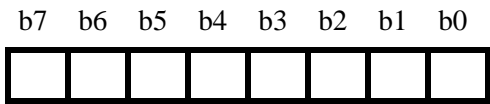
	b7	b6	b5	b4	b3	b2	b1	b0
③	Unit 3	Unit 2	Unit 1	Unit 0	Unit 3	Unit 2	Unit 1	Unit 0
	MG1				MG0			
④	Unit 3	Unit 2	Unit 1	Unit 0	Unit 3	Unit 2	Unit 1	Unit 0
	MG3				MG2			
⑤	Unit 3	Unit 2	Unit 1	Unit 0	Unit 3	Unit 2	Unit 1	Unit 0
	MG5				MG4			
⑥	Unit 3	Unit 2	Unit 1	Unit 0	Unit 3	Unit 2	Unit 1	Unit 0
	MG7				MG6			

0: -
1: MUX connection error (functional fault/not mounted)

SYSTEM MESSAGES

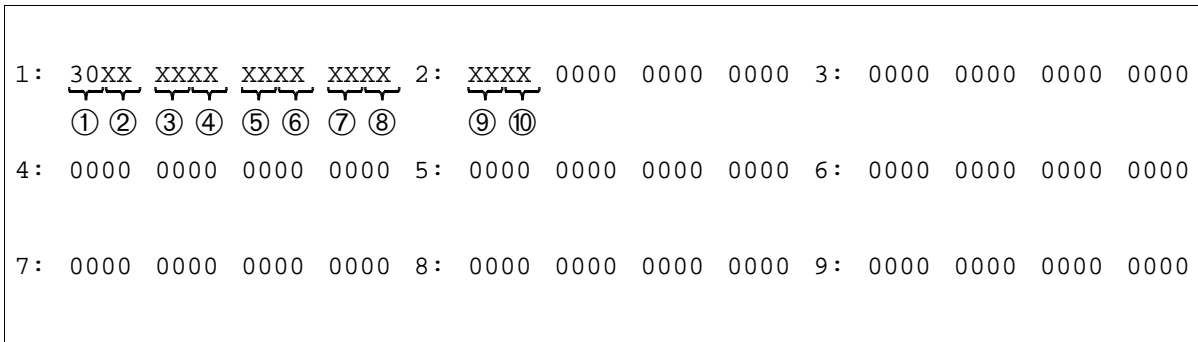
⑦-⑩ MUX card (STBY) linkage condition

As shown in the following table, each bit represents the Unit No. allocated for each MUX card in position. When “1” is set, the corresponding MUX card (status: STBY) has a functional failure or is not mounted in the proper location.



	b7	b6	b5	b4	b3	b2	b1	b0	
⑦	Unit 3	Unit 2	Unit 1	Unit 0	Unit 3	Unit 2	Unit 1	Unit 0	} 0: - 1: MUX connection error (functional fault/not mounted)
	MG1				MG0				
⑧	Unit 3	Unit 2	Unit 1	Unit 0	Unit 3	Unit 2	Unit 1	Unit 0	
	MG3				MG2				
⑨	Unit 3	Unit 2	Unit 1	Unit 0	Unit 3	Unit 2	Unit 1	Unit 0	
	MG5				MG4				
⑩	Unit 3	Unit 2	Unit 1	Unit 0	Unit 3	Unit 2	Unit 1	Unit 0	
	MG7				MG6				

[31H] TSW ACT/STBY Changeover Failure (MUX Fault)

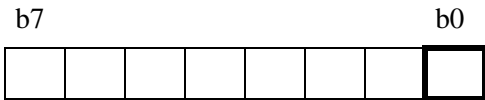


① Detected Error Item

[31H] TSW ACT/STBY Changeover Failure (MUX Fault)

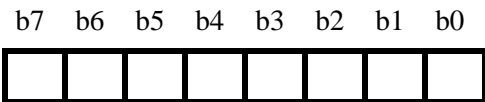
② Active TSW No.

b0: 0/1=TSW #0 is ACT/#1 is ACT



③-⑥ MUX card (ACT-side) linkage condition

As shown in the following table, each bit represents the Unit No. allocated for each MUX card in position. When “1” is set, the corresponding MUX card (status: ACT) has a functional failure or is not mounted in the proper location.



	b7	b6	b5	b4	b3	b2	b1	b0
③	Unit 3	Unit 2	Unit 1	Unit 0	Unit 3	Unit 2	Unit 1	Unit 0
	MG1				MG0			
④	Unit 3	Unit 2	Unit 1	Unit 0	Unit 3	Unit 2	Unit 1	Unit 0
	MG3				MG2			
⑤	Unit 3	Unit 2	Unit 1	Unit 0	Unit 3	Unit 2	Unit 1	Unit 0
	MG5				MG4			
⑥	Unit 3	Unit 2	Unit 1	Unit 0	Unit 3	Unit 2	Unit 1	Unit 0
	MG7				MG6			

0: -
1: MUX connection error (functional fault/not mounted)

SYSTEM MESSAGES

⑦-⑩ MUX card (STBY) linkage condition

As shown in the following table, each bit represents the Unit No. allocated for each MUX card in position. When “1” is set, the corresponding MUX card (status: STBY) has a functional failure or is not mounted in the proper location.

b7 b6 b5 b4 b3 b2 b1 b0



	b7	b6	b5	b4	b3	b2	b1	b0	
⑦	Unit 3	Unit 2	Unit 1	Unit 0	Unit 3	Unit 2	Unit 1	Unit 0	} 0: - 1: MUX connection error (functional fault/not mounted)
	MG1				MG0				
⑧	Unit 3	Unit 2	Unit 1	Unit 0	Unit 3	Unit 2	Unit 1	Unit 0	
	MG3				MG2				
⑨	Unit 3	Unit 2	Unit 1	Unit 0	Unit 3	Unit 2	Unit 1	Unit 0	
	MG5				MG4				
⑩	Unit 3	Unit 2	Unit 1	Unit 0	Unit 3	Unit 2	Unit 1	Unit 0	
	MG7				MG6				

[41H] CPU ACT/STBY Changeover Failure

1:	<u>41XX</u>	0000	0000	0000	2:	0000	0000	0000	0000	3:	0000	0000	0000	0000
	① ②													
4:	0000	0000	0000	0000	5:	0000	0000	0000	0000	6:	0000	0000	0000	0000
7:	0000	0000	0000	0000	8:	0000	0000	0000	0000	9:	0000	0000	0000	0000

① Error detection by Routine
Diagnosis

[41H] CPU ACT/STBY Changeover Failure

② ACT system after changeover

b7

b1 b0



b0: CPU
0/1 = #0 is ACT/#1 is ACT

b1: TSW
0/1 = #0 is ACT/#1 is ACT

SYSTEM MESSAGES

[42H] CPU ACT/STBY Changeover Failure (DM Verification NG or PM Verification NG)

1:	<u>42XX</u>	0000	0000	0000	2:	0000	0000	0000	0000	3:	0000	0000	0000	0000
	① ②													
4:	0000	0000	0000	0000	5:	0000	0000	0000	0000	6:	0000	0000	0000	0000
7:	0000	0000	0000	0000	8:	0000	0000	0000	0000	9:	0000	0000	0000	0000

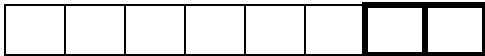
① Error detection by Routine
Diagnosis

[42H] CPU ACT/STBY Changeover Failure
(DM Verification NG)

② ACT system after changeover

b7

b1 b0



b0: CPU
0/1 = #0 is ACT/#1 is ACT
b1: TSW
0/1 = #0 is ACT/#1 is ACT

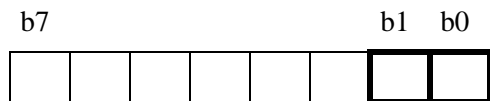
[43H] CPU ACT/STBY Changeover Failure (PCI Fault)

1:	<u>43XX</u>	0000	0000	0000	2:	0000	0000	0000	0000	3:	0000	0000	0000	0000
	① ②													
4:	0000	0000	0000	0000	5:	0000	0000	0000	0000	6:	0000	0000	0000	0000
7:	0000	0000	0000	0000	8:	0000	0000	0000	0000	9:	0000	0000	0000	0000

① Error detection by Routine
Diagnosis

[43H] CPU ACT/STBY Changeover Failure (PCI Fault)

② ACT system after changeover



b0: CPU
0/1 = #0 is ACT/#1 is ACT
b1: TSW
0/1 = #0 is ACT/#1 is ACT

SYSTEM MESSAGES

[44H] CPU ACT/STBY Changeover Failure (Changeover NG or CPU RAM Copy NG)

1:	<u>44XX</u>	0000	0000	0000	2:	0000	0000	0000	0000	3:	0000	0000	0000	0000
	① ②													
4:	0000	0000	0000	0000	5:	0000	0000	0000	0000	6:	0000	0000	0000	0000
7:	0000	0000	0000	0000	8:	0000	0000	0000	0000	9:	0000	0000	0000	0000

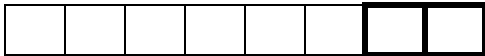
① Error detection by Routine
Diagnosis

[44H] CPU ACT/STBY Changeover Failure
Changeover NG or CPU RAM Copy NG)

② ACT system after changeover

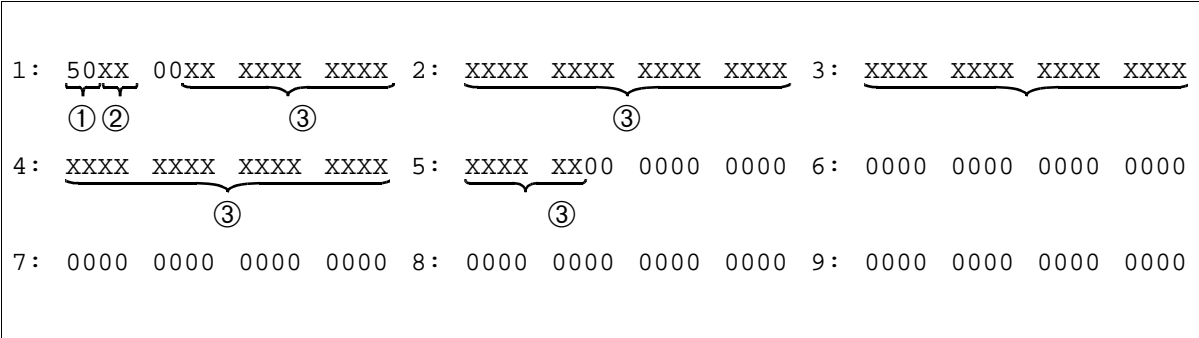
b7

b1 b0



b0: CPU
0/1 = #0 is ACT/#1 is ACT
b1: TSW
0/1 = #0 is ACT/#1 is ACT

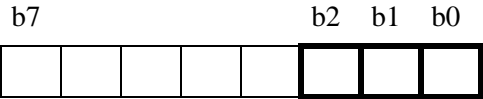
[50H] Trunk Ineffective Hold Detected



① Error detection by Routine
Diagnosis

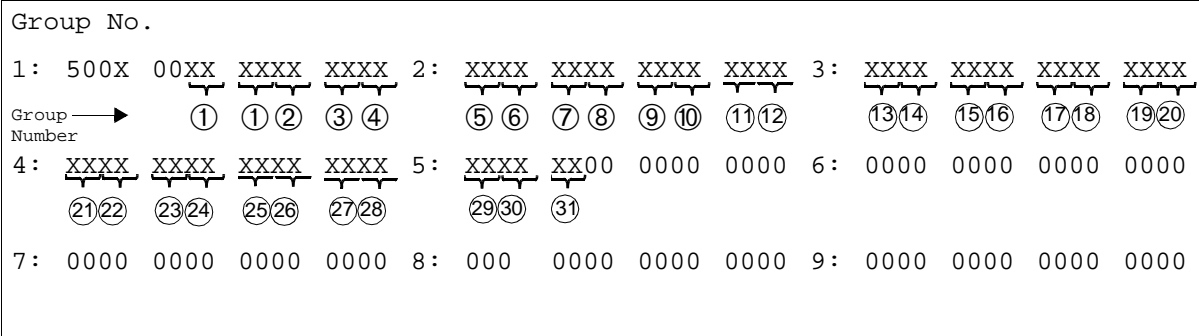
[50H] Trunk Ineffective Hold Detected

② LENS of Trunk Ineffective Hold
(MG, U)

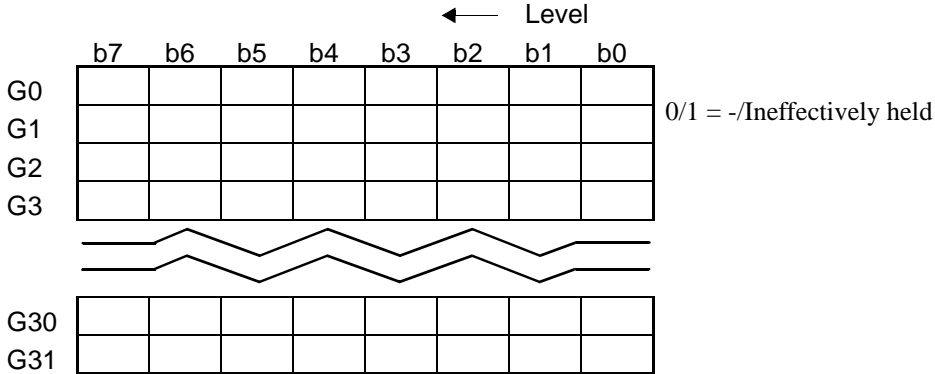


b1 b0
 0 0 = Unit 0
 0 1 = Unit 1
 1 0 = Unit 2
 1 1 = Unit 3
 b2: 0/1 = Even No./Odd No. Module

③ LENS of Ineffective Hold Trunk (G, LV)

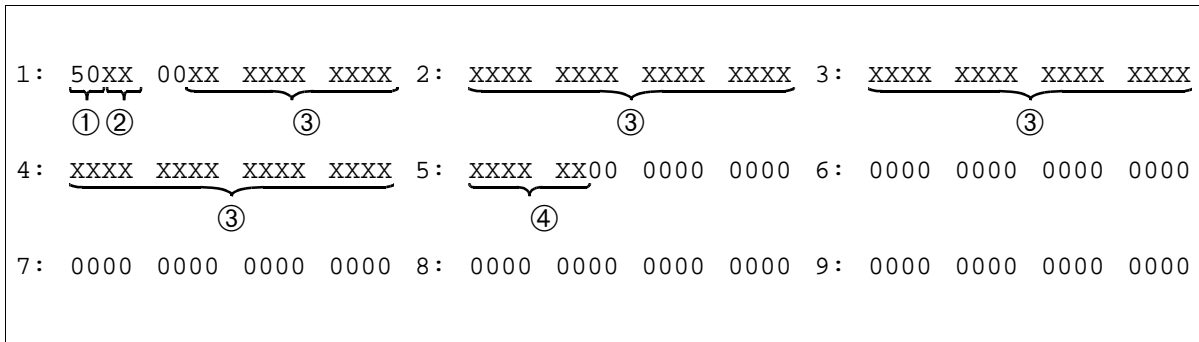


<Level>



SYSTEM MESSAGES

[51H] Trunk Ineffective Hold Detected and Released

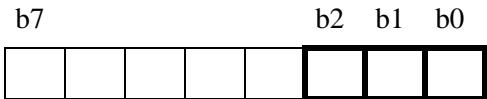


① Error detection by Routine Diagnosis

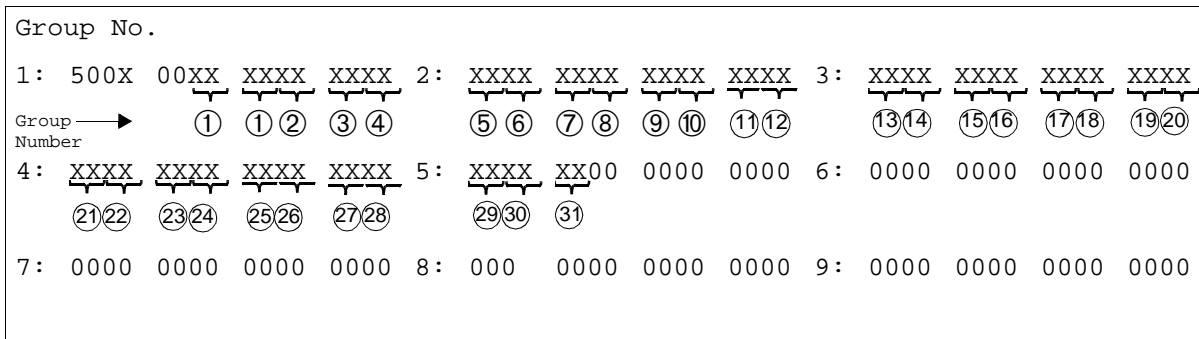
[51H] Trunk Ineffective Hold Detected and Released

② LENS of Trunk Ineffective Hold Detected and Released (MG, U)

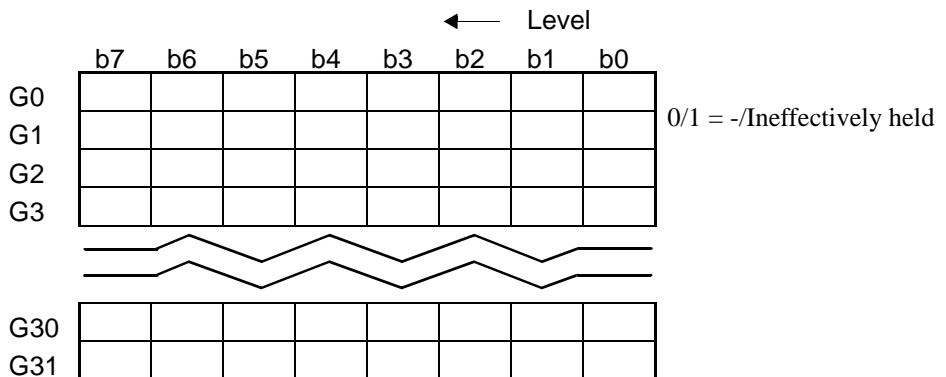
b1 b0
 0 0 = Unit 0
 0 1 = Unit 1
 1 0 = Unit 2
 1 1 = Unit 3
 b2: 0/1 = Even No./Odd No. Module



③ LENS of Ineffective Hold Trunk (G, LV)



<Level>



[52H] Trunk Ineffective Hold Detected Impossible

1:	<u>xx</u> 00	<u>xx</u> 00	0000	0000	2:	0000	0000	0000	0000	3:	0000	0000	0000	0000
	①	②												
4:	0000	0000	0000	0000	5:	0000	0000	0000	0000	6:	0000	0000	0000	0000
7:	0000	0000	0000	0000	8:	0000	0000	0000	0000	9:	0000	0000	0000	0000

① Error detection by Routine
Diagnosis

[52H] Trunk Ineffective Hold Detected Impossible

② Cause for suspended detection of
Trunk Ineffective Hold

<u>b1</u>	<u>b0</u>
0	1 = CPU to detect is abnormal
1	0 = Data transfer error
1	1 = No Answer error

b7								b1	b0

SYSTEM MESSAGES

[70H] Call Forwarding Memory Clear NG

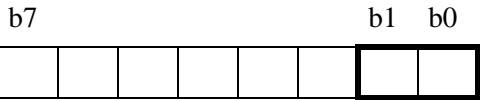
1:	<u>7</u> 000	<u>XX</u> 00	0000	0000	2:	0000	0000	0000	0000	3:	0000	0000	0000	0000
	①	②												
4:	0000	0000	0000	0000	5:	0000	0000	0000	0000	6:	0000	0000	0000	0000
7:	0000	0000	0000	0000	8:	0000	0000	0000	0000	9:	0000	0000	0000	0000

① Error detection by Routine
Diagnosis

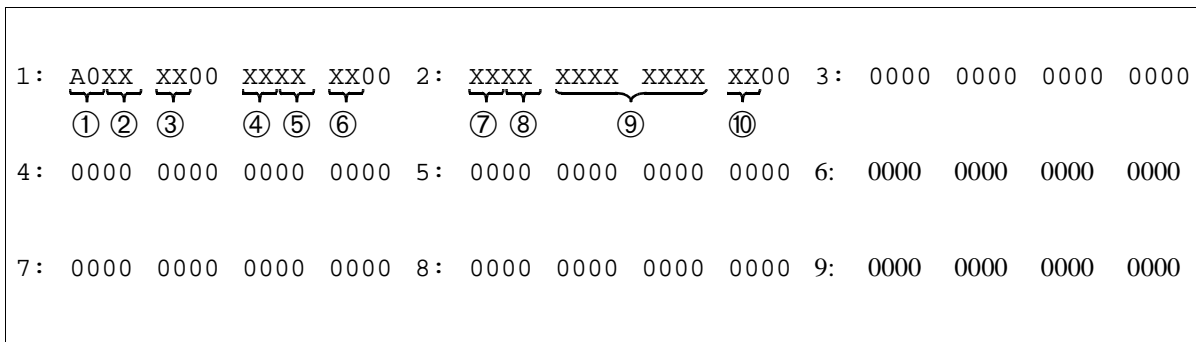
[70H] Call Forwarding Memory Clear NG

② Cause for which Transfer Memory
was stopped

<u>b1</u>	<u>b0</u>
0	1 = CPU is abnormal
1	0 = Data Transfer error



[A0H] Periodic Backup Abnormal End



① Error detection by Routine Diagnosis

[A0H] Periodic Backup Abnormal End

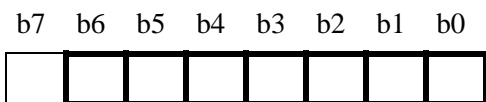
② Information of Periodic Backup Abnormal End

b0: 0/1 = HFD 0 Normal end/Abnormal end
b1: 0/1 = HFD 1 Normal end/Abnormal end

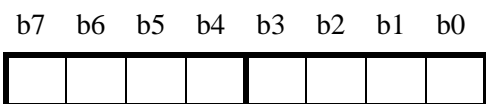


③ Backup Data to No. 0 system

b0: 0/1 = -/Individual Speed Calling Data
b1: 0/1 = -/Call Forwarding Data
b2: 0/1 = -/RCF
b3: 0/1 = -/Name Display Data
b4: 0/1 = -/User Assign Soft Key Data
b5: 0/1 = -/Number Sharing Data **Note**
b6: 0/1 = -/Call Block Data



④ Error Code of No. 0 system HD



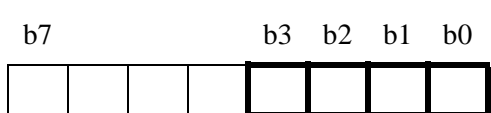
Parameter	{	21H:
		40H~47H:
		53H:
		57H:
		59H~5BH:
HD Fault	{	80H~84H:
		A0H:
		A2H~A6H:
		BDH:
		C0H: Failed installation
		01H: HD being used by another program
		02H: HD not equipped

Note: Number Sharing data load also affects the data load of Dual Station Calling Over-FCCS.

SYSTEM MESSAGES

⑤ Error Status of No. 0 system HD

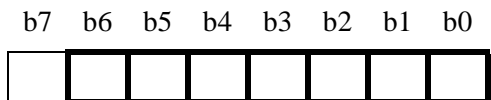
Error occurs;



b0: 0/1 = -/At the time data transfer started
b1: 0/1 = -/At the time data saved
b2: 0/1 = -/At the time data transfer ended
b3: 0/1 = -/At the time file transfer started

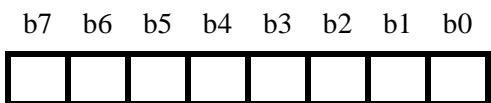
⑥ Backup data to No. 1 system

Refer to No. ③



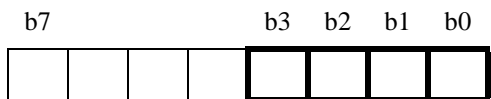
⑦ Error Code of No. 1 system HD

Refer to No.④



⑧ Error Status of No. 1 system HD

Refer to No.⑤



⑨ Data analyzed by NEC Engineers

⑩ Data analyzed by NEC Engineers

[C0H] Detection of Remaining Link Abnormal End

1:	<u>C</u> 000	<u>XX</u> 00	0000	0000	2:	0000	0000	0000	0000	3:	0000	0000	0000	0000
	①	②												
4:	0000	0000	0000	0000	5:	0000	0000	0000	0000	6:	0000	0000	0000	0000
7:	0000	0000	0000	0000	8:	0000	0000	0000	0000	9:	0000	0000	0000	0000

① Performed Diagnosis Item

[C0H] Detection of Remaining Link Abnormal End

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

② ED (Error Data)

b7

b1 b0

--	--	--	--	--	--	--	--

- b1 b0
- 0 1 = CPU is not normal
- 1 0 = Data transfer error
- 1 1 = No Answer error

SYSTEM MESSAGES

7-U	PLO MB Key Turn ON			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the MB switch on the PLO card is turned on while extracting or inserting a circuit card.

```

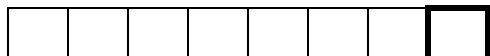
1: XX00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
  
```

① Faulty PLO card No.

b0: 0/1 = PLO No. 0 system/PLO No. 1 system

b7

b0



7-V	PLO MB Key Turn OFF			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

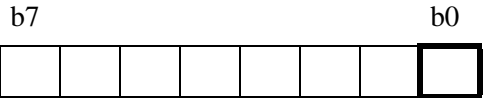
This message displays when the MB switch on the PLO card is turned off while extracting or inserting a circuit card.

```

1:  XXXX XX00 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ② ③
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
    
```

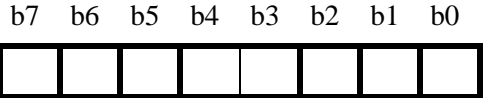
① Faulty PLO card No.

b0: 0/1 = PLO No. 0 system/PLO No. 1 system



② Status of PLO card at the time of failure detection (Scan Data 1)

b0: 0/1 = Clock STBY/ACT
 b1: 0/1 = PLO Synchronizing/PLO self-running or drifting
 b2: 0/1 = -/Input clock down
 b3, b4: Route of Input clock (see table)
 b5: 0/1 = -/PLO input all down

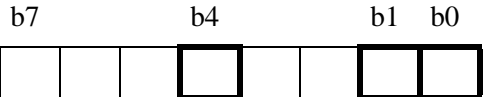


b4	b3	Connected With Primary Oscillator (M-OSC)	Connected With External Clock
0	0	NO. 0 M-OSC	Route 0
0	1	NO. 1 M-OSC	Route 1
1	0	-	Route 2
1	1	-	Route 3

b6: 0/1 = -/PLO output down
 b7: 0/1 = -/Drifting

③ Status of PLO card at the time of failure detection (Scan Data 2)

b0: 0/1 = -/n × 5msec clock down
 b1: 0/1 = -/Frame Synchronization down from SYNC card
 b4: 0/1 = -/Internal OSC clock down



SYSTEM MESSAGES

13-A	CCH Clock Failure			
	Default Alarm: SUP	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when a clock down failure occurs in the CCH/DCH circuit card. When this message is indicated, the related CCH/DCH card is placed into make-busy status.

1: <u>XX</u> 00 0000 0000 0000	2: 0000 0000 0000 0000	3: 0000 0000 0000 0000
①		
4: 0000 0000 0000 0000	5: 0000 0000 0000 0000	6: 0000 0000 0000 0000
7: 0000 0000 0000 0000	8: 0000 0000 0000 0000	9: 0000 0000 0000 0000

① Location of faulty CCH/DCH card

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b4: Group No.

b5, b6: Unit No. (0-3)

b7: 0/1 = Even-numbered MG/Odd-numbered MG

13-B	CCH C-Level Infinite Loop Failure (Permanent)			
	Default Alarm: SUP	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when C-level infinite loop of the Port Microprocessor (PM) in the CCH/DCH circuit card has occurred.

```

1: XX00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000

```

① Location of faulty CCH/DCH card

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b4: Group No.
b5, b6: Unit No. (0-3)
b7: 0/1 = Even-numbered MG/Odd-numbered MG

SYSTEM MESSAGES

13-C	CCH C-Level Infinite Loop Failure (Temporary)			
	Default Alarm: SUP	Default Grade: 1	Grade Modified:	Lamp Modified:

This message displays when C-level infinite loop of the Port Microprocessor (PM) in the CCH/DCH circuit card has occurred.

```

1:  XX00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
  
```

① Location of faulty CCH/DCH card

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b4: Group No.

b5, b6: Unit No. (0-3)

b7: 0/1 = Even-numbered MG/Odd-numbered MG

13-D	CCH Lock-Up Failure (Permanent)			
	Default Alarm: SUP	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when a Port Microprocessor (PM) of the CCH/DCH card did not send an answer to the CPU.

```

1:  xx00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000

```

① Location of faulty CCH/DCH card

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b4: Group No.

b5, b6: Unit No. (0-3)

b7: 0/1 = Even-numbered MG/Odd-numbered MG

SYSTEM MESSAGES

13-E	CCH Lock-Up Failure (Temporary)			
	Default Alarm: SUP	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when a Port Microprocessor (PM) of the CCH/DCH card did not send an answer to the CPU.

```

1:  xx00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
  
```

① Location of faulty CCH/DCH card

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b4: Group No.

b5, b6: Unit No. (0-3)

b7: 0/1 = Even-numbered MG/Odd-numbered MG

13-F	CCH B-Level Infinite Loop Failure (Permanent)			
	Default Alarm: SUP	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when B-level infinite loop of the Port Microprocessor (PM) in the CCH/DCH circuit card has occurred.

```

1: XX00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000

```

① Location of faulty CCH/DCH card

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b4: Group No.
b5, b6: Unit No. (0-3)
b7: 0/1 = Even-numbered MG/Odd-numbered MG

SYSTEM MESSAGES

13-G	CCH B-Level Infinite Loop Failure (Temporary)			
	Default Alarm: SUP	Default Grade: 1	Grade Modified:	Lamp Modified:

This message displays when B-level infinite loop of the Port Microprocessor (PM) in the CCH/DCH circuit card has occurred.

```

1:  XX00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
  
```

① Location of faulty CCH/DCH card

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b4: Group No.

b5, b6: Unit No. (0-3)

b7: 0/1 = Even-numbered MG/Odd-numbered MG

13-H	CCS Link Failure (Permanent)			
	Default Alarm: SUP	Default Grade: 1	Grade Modified:	Lamp Modified:

This message displays when a failure has occurred numerous times to a common channel signaling link and the link has been placed into make-busy state.

```

1:  XXXX XX00 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ② ③
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000

```

① Location of faulty CCH/DCH card

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b4: Group No.
b5, b6: Unit No. (0-3)
b7: 0/1 = Even-numbered MG/Odd-numbered MG

② Data Analyzed by NEC Engineers

13-I	CCS Link Failure (Temporary)			
	Default Alarm: NON	Default Grade: 1	Grade Modified:	Lamp Modified:

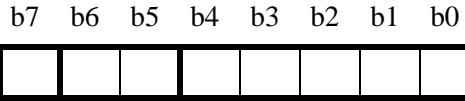
This message displays when a failure has occurred numerous times to a common channel signaling link and the link has been placed into make-busy state. When this fault lasts over three minutes, the system message changes to [13-H] CCS Link Failure (Permanent).

```

1:  XXXX XX00 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ② ③
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000

```

① Location of faulty CCH/DCH card



b0-b4: Group No.
b5, b6: Unit No. (0-3)
b7: 0/1 = Even-numbered MG/Odd-numbered MG

② Data Analyzed by NEC Engineers

13-J	Restoration From CCS Link Failure			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the faults pertaining to CCIS/ISDN Link are restored to normal.

```

1:  XXXX 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ②
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
    
```

① Location of faulty CCH/DCH card

b0-b4: Group No.

b7 b6 b5 b4 b3 b2 b1 b0

b5, b6: Unit No. (0-3)

b7: 0/1 = Even-numbered MG/Odd-numbered MG

--	--	--	--	--	--	--	--

② CKT No. of faulty circuit

b0-b7: CKT No. (0-3)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

SYSTEM MESSAGES

13-K	CCH Reset Interrupt Failure			
	Default Alarm: SUP	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when a fault occurred to the Port Microprocessor (PM) within the CCH/DCH circuit card and the restart processing is executed.

```

1:  xx00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
  
```

① Location of faulty CCH/DCH card

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b4: Group No.

b5, b6: Unit No. (0-3)

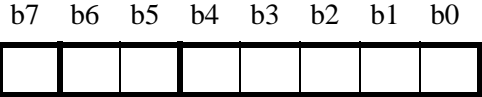
b7: 0/1 = Even-numbered MG/Odd-numbered MG

13-N	Digital Line Warning			
	Default Alarm: SUP	Default Grade: 1	Grade Modified:	Lamp Modified:

This message displays when a digital line failure occurs.

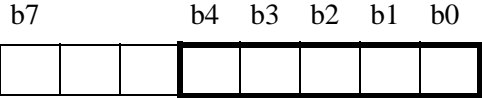
1: <u>XXXX</u> 0000 0000 0000	2: 0000 0000 0000 0000	3: 0000 0000 0000 0000	4: 0000 0000 0000 0000
① ②			
4: 0000 0000 0000 0000	5: 0000 0000 0000 0000	6: 0000 0000 0000 0000	7: 0000 0000 0000 0000
7: 0000 0000 0000 0000	8: 0000 0000 0000 0000	9: 0000 0000 0000 0000	

① Accommodated location



b0-b4: Group No.
 b5, b6: Unit No. (0-3)
 b7: MG No.
 0/1 = Even-numbered MG/Odd-numbered MG

② Kind of Fault



b0-b4: Kind of Fault (HEX)
 00 = -
 01 = Frame alignment loss PCM down
 02 = Bit error rate is over 10⁻⁶
 03 = Slip is detected
 04 = -
 05 = Dch down
 06 = Multi-frame alignment loss
 07 = -
 10 = -
 11 = Frame alignment loss PCM down (frequently)
 12 = Bit error rate is over 10⁻⁴
 13 = Slip is detected (frequently)
 14 = Opposite office alarm is detected
 15 = -
 16 = Multi-frame alignment loss (frequently)
 17 = Frame alignment loss PCM down (continuously)
 18 = Multi-frame alignment loss (continuously)

13-0	Digital Line Failure			
	Default Alarm: SUP	Default Grade: 2	Grade Modified:	Lamp Modified:

This message displays when a digital line failure occurs.

1: <u>XXXX</u> 0000 0000 0000	2: 0000 0000 0000 0000	3: 0000 0000 0000 0000	4: 0000 0000 0000 0000
① ②			
4: 0000 0000 0000 0000	5: 0000 0000 0000 0000	6: 0000 0000 0000 0000	7: 0000 0000 0000 0000
7: 0000 0000 0000 0000	8: 0000 0000 0000 0000	9: 0000 0000 0000 0000	

① Accommodated location

b7	b6	b5	b4	b3	b2	b1	b0

b0-b4: Group No.
 b5, b6: Unit No. (0-3)
 b7: MG No.
 0/1 = Even-numbered MG/Odd-numbered MG

② Kind of Fault

b7			b4	b3	b2	b1	b0

b0-b4: Kind of Fault (HEX)
 00 = -
 01 = Frame alignment loss PCM down
 02 = Bit error rate is over 10⁻⁴
 03 = Slip is detected
 04 = Opposite office alarm (AIS) is detected
 05 = -
 06 = Multi-frame alignment loss
 07 = Frame alignment loss PCM down (continuously)
 08 = Multi-frame alignment loss (continuously)

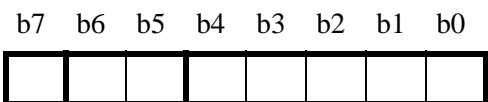
13-P	Digital Line Restore			
	Default Alarm: NON	Default Grade: 0	Grade Modified:	Lamp Modified:

This message displays when a digital line failure is restored to normal.

```

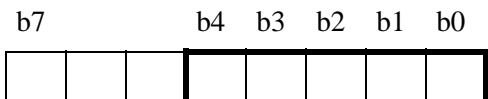
1:  XXXX 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ②
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
    
```

① Accommodated location



b0-b4: Group No.
b5, b6: Unit No. (0-3)
b7: MG No.
0/1 = Even-numbered MG/Odd-numbered MG

② Kind of Fault



b0-b4: Kind of Fault (HEX)
00 = -
01 = Frame alignment loss PCM down
02 = Bit error rate is over 10⁻⁴
03 = -
04 = Opposite office alarm (AIS) is detected
05 = Dch restores to normal
06 = Multi-frame alignment loss

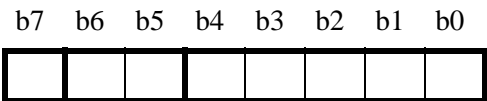
13-Q	DRU Battery Operation			
	Default Alarm: SUP	Default Grade: 1	Grade Modified:	Lamp Modified:

This message displays when the battery is operated in the DRU system.

```

1: xx00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
    
```

① Accommodated location



b0-b4: Group No.

b5, b6: Unit No. (0-3)

b7: MG No.

0/1 = Even-numbered MG/Odd-numbered MG

13-R	DRU Line Operation			
	Default Alarm: NON	Default Grade: 0	Grade Modified:	Lamp Modified:

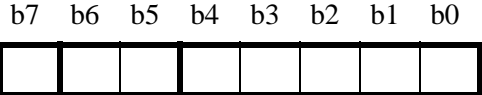
This message displays when the main power of the DRU system is restored to normal.

```

1: xx00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000

```

① Accommodated location



b0-b4: Group No.
b5, b6: Unit No. (0-3)
b7: 0/1 = Even-numbered MG/Odd-numbered MG

15-A	VPS Failure (Temporary)			
	Default Alarm: SUP	Default Grade: 1	Grade Modified:	Lamp Modified:

This message displays when a VPS failure is detected.

```

1:  XXXX XX00 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ② ③
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
    
```

① Probable cause for failure

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b7: 0 = -
 1 = Sector error
 FF = Other than above

② LENS of VPS with the failure

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b2: Level
 b3-b7: Group

③ LENS of VPS with the failure

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0, b1: Unit No.
 b2-b7: MG No.

SYSTEM MESSAGES

15-B	VPS Failure (Permanent)			
	Default Alarm: MN	Default Grade: 2	Grade Modified:	Lamp Modified:

This message displays when a VPS failure is detected.

```

1:  XXXX XX00 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ② ③
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
  
```

① Probable cause for failure

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b7: 0 = -

1 = Sector error

FF = Other than above

② LENS of VPS with the failure

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b2: Level

b3-b7: Group

③ LENS of VPS with the failure

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0, b1: Unit No.

b2-b7: MG No.

15-C	VPS Restore			
	Default Alarm: NON	Default Grade: 2	Grade Modified:	Lamp Modified:

This message displays when a VPS failure is restored to normal.

```

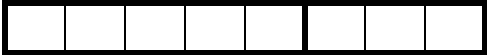
1: XXXX 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ②
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000

```

① LENS of VPS with the failure

b0-b2: Level
b3-b7: Group

b7 b6 b5 b4 b3 b2 b1 b0



② LENS of VPS with the failure

b0, b1: Unit No.
b2-b7: MG No.

b7 b6 b5 b4 b3 b2 b1 b0



SYSTEM MESSAGES

16-A	Inside Trunk All Busy			
	Default Alarm: SUP	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when Intra-Office Trunks (ATI, RST, etc.) have all become busy.

```

1: xx00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
  
```

① Intra-Office trunks that have become all busy

b0-b7: Intra-Office trunks that have become all busy (01-1F)
(See table on the following page)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

ROUTE NO.	DATA (HEX.)	TRUNK NAME	ROUTE NO.	DATA (HEX.)	TRUNK NAME
901	01	Attendant Console	917	11	MFC Sender
902	02	Originating Register Trunk	918	12	Not used
903	03	Incoming Register Trunk	919	13	MODEM
904	04	MF Receiver	920	14	MODEM
905	05	Sender Trunk DP/PB	921	15	MODEM
906	06	PB Receiver for Automated Attendant Service	922	16	MODEM
907	07	AMP	923	17	MODEM
908	08	Not used	924	18	MODEM
909	09	Three-Way Conference Trunk	925	19	MODEM
910	0A	Not used	926	1A	MODEM
911	0B	Not used	927	1B	Not used
912	0C	Originating Register Trunk for ATTCON/DESKCON	928	1C	Not used
913	0D	Three-Way Conference Trunk for ATTCON/DESKCON	929	1D	Data Signaling Trunk-Option
914	0E	Not used	930	1E	Rate Adaptation Conversion Trunk
915	0F	Night ATTCON/DESKCON	931	1F	Not used
916	10	MFC Register			

SYSTEM MESSAGES

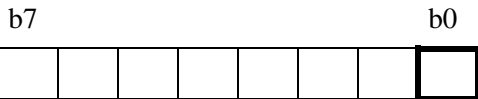
16-B	Virtual Tie Line Set Report			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when virtual tie line setup has completed.

1: <u>XXXX</u> <u>XX</u> 00 0000 0000	2: 0000 0000 0000 0000	3: 0000 0000 0000 0000	
① ② ③ ↓ ↓ ↓			
4: 0000 0000 0000 0000	5: 0000 0000 0000 0000	6: 0000 0000 0000 0000	
7: 0000 0000 0000 0000	8: 0000 0000 0000 0000	9: 0000 0000 0000 0000	

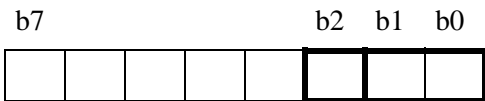
① Counter

b0: 00=-
01=Re-setup



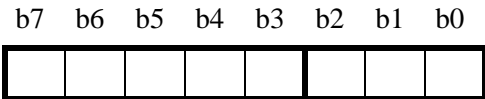
② Virtual Tie Line Call Header
Accommodated Location

b0,b1: Unit No.
b2: Module Group No.



③ Virtual Tie Line Call Header
Accommodated Location

b0-b2: Level
b3-b7: Group No.



16-C	Virtual Tie Line Cancel Report			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when virtual tie line cancel has completed.

```

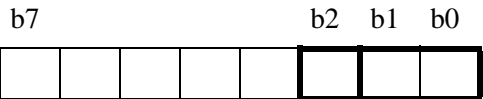
1:  XXXX XX00 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ② ③
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000

```

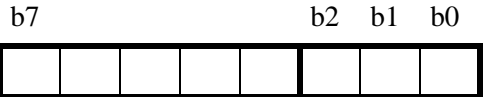
① Counter b0: 0/1=-/Re-setup



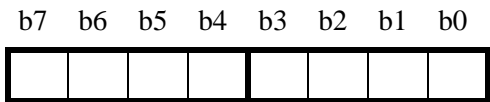
② Virtual Tie Line Call Header Accommodated Location b0,b1: Unit No.
b2: Module Group No.



③ Virtual Tie Line Call Header Accommodated Location b0-b2: Level
b3-b7: Group No.



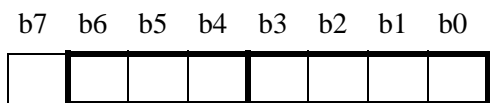
③ Virtual Tie Line Call Header
Accommodated Location



b3-b7: Call Source

DATA	CALL SOURCE
0	User
1	Private network to which the user is directly connected. (Self side)
2	National network to which the user is directly connected. (Self side)
3	Tie-Line Network
4	National network to which the opposite party is directly connected. (Opposite party's side)
5	Private network to which the opposite party is directly connected. (Opposite party's side)
7	International Network
A	Network from Interworking
Other	Spare

④ Fault Cause



b4-b7: "8" is always indicated.

b0-b3: Reason Kind

b4-b6: Class

0=No Answer

Other than 0=Refer to the following table

	CLASS	REASON KIND VALUE	DATA	REASON KIND
	000	0001	1	Dead Number
	000	0010	2	No route to the designated transit network
	000	0011	3	No route to the opposite Party
	000	0110	6	Use of channel not allowed
	000	0111	7	Call terminated to a setup channel
Class X	001	0000	16	Normal disconnection
	001	0001	17	Called user busy
	001	0010	18	No response from called user
	001	0011	19	Called party being rung/no answer
	001	0101	21	Communication denied
	001	0110	22	Opposite party's terminal number changed
	001	1010	26	Disconnection and release of the user not selected
	001	1011	27	Opposite party's terminal out of order
Normal Event Class	001	1100	28	Invalid number format (Incomplete Number)
	001	1101	29	Facility denied
	001	1110	30	Answer to status inquiry
	001	1111	31	Other normal class

Reason Kind Value: 4321 (bit)

Class: 8765

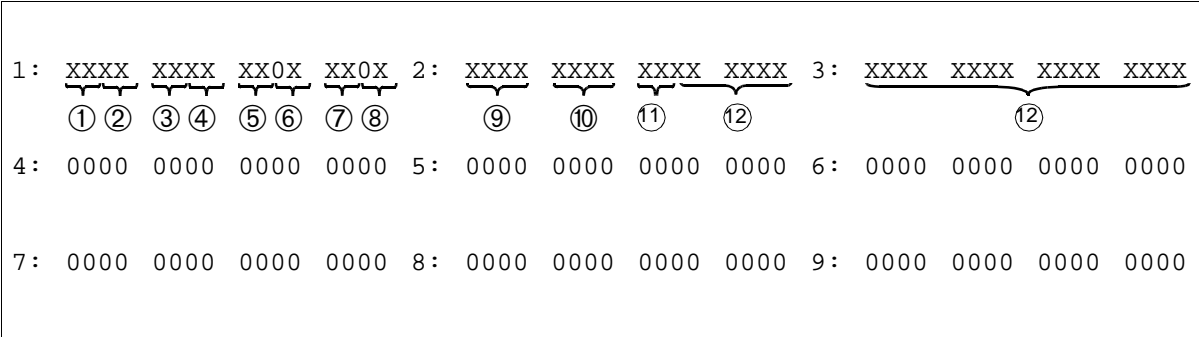
xxxx

SYSTEM MESSAGES

	CLASS	REASON KIND VALUE	DATA	REASON KIND
010 xxxx Classes not allowed use of resources	010 010 010 010 010 010	0010 0110 1001 1010 1011 1100 1111	34 38 41 42 43 44 47	No usable channel/line Network failure Temporary failure Switching system congested Access information discarded Use of requested line/channel not allowed Class not allowed use of other resources
Class X Reason Kind Value X 8765 4321(bit) 011 xxxx Classes not allowed use of services	011 011 011 011 011	0001 0010 1001 1010 1111	49 50 57 58 63	Use of QOS not allowed Requested facility not contracted Bearer capability not allowed Bearer capability not allowed at present Class not allowed to use other services or options
100 xxxx Classes not provided with services	100 100 100 100 100	0001 0010 0101 0110 1111	65 66 69 70 79	Unprovided bearer capability designated Unprovided channel kind designated Unprovided facility requested Restricted digital information bearer capability Class unprovided with other services or options
101 xxxx Invalid message class	101 101 101 101 101 101 101 101 101	0001 0010 0011 0100 0101 0110 1000 1011 1111	81 82 83 84 85 86 88 91 95	Invalid call number used Invalid channel number used Designated transit call ID number unused Transit call ID number being used No transit call Designated transit call disconnected and released Terminal attributes unmatch Invalid transit network selected Other invalid message class
110 xxxx Procedure error (ex: unrecognized message) class	110 110 110 110 110 110 110	0000 0001 0010 0011 0100 0101 0110 1111	96 97 98 99 100 101 102 111	Mandatory information elements inadequate Message kind undefined or unprovided Call status and message unmatching or message kind undefined Information element undefined Content of information element invalid Call status and message unmatching Recovery due to timer over Class of other procedure errors
111 xxxx Interworking class	111	111	127	Other interworking class
Others	Reserved			

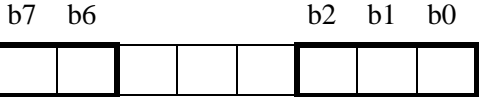
16-F	Sender Start Time Out			
	Default Alarm: NON	Default Grade: 0	Grade Modified:	Lamp Modified:

This message indicates that an outgoing call (by connection acknowledge system) has not received an acknowledgment signal from the opposite office. As a result, the attempted outgoing call is routed to Reorder Tone (ROT) connection.



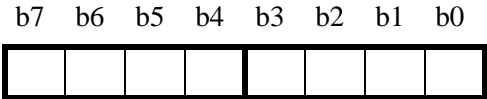
In Case of Station OG/ATT OG/ATT Tandem Connection

① Type of connection and station number digits



b0-b2: Digits of station number (origination)
 b6-b7: 0H=Station OG connection
 4H=ATT OG connection
 CH=ATT Tandem connection

②-④ Calling station number
 (See table)



	b4-b7	b0-b3
②	DC0	DC1
③	DC2	DC3
④	DC4	DC5

SYSTEM MESSAGES

⑫ Number dialed by caller (See table)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b4-b7	b0-b3
DC0	DC1
DC2	DC3
DC4	DC5
DC6	DC7
DC8	DC9
DC10	DC11
DC12	DC13
DC14	DC15
DC16	DC17
DC18	DC19
DC20	DC21

In Case of Tandem Connection

① Type of connection

b7 b6 b0

--	--	--	--	--	--	--	--

b7 b6
 1 0 = Tandem connection

② IC route number (Hex.)

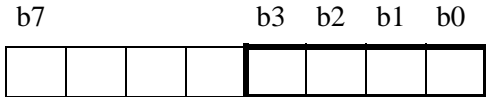
b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

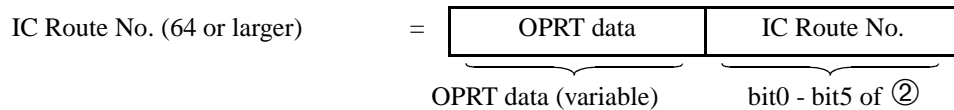
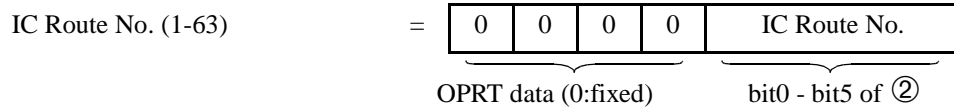
- b7: AC data
0/1=Internal trunk/External trunk
- b6: OP data (0/1)
When OPRT data of ③ is valid, "1" displays.
- b0-b5: IC route number
- bit 6=0 → Route No.<64
 - bit 6=1 → <63 Route No.
-] Refer to the OPTN data of ③

③ OPRT data

b0-b3: OPRT data **Note**

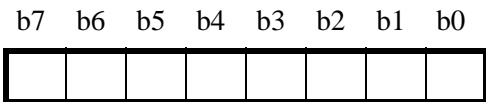


Note: This data displays when the IC Route No. is larger than 63, and bit6 of ② displays as “1” (otherwise, “1” displays at any time). While the six-bit data of ② is self-sufficient in verifying the Route No. “1-63,” this OPRT data provides a supportive role to cover the Route No., which is larger than 63. Use the following method to analyze the data:



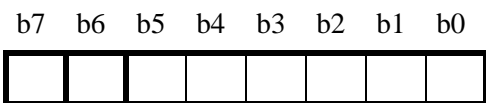
④ - ⑤ Trunk No. of IC trunk

b0-b7: Trunk No. of IC trunk



⑥ Not used

⑦ OG route number (Hex.)



- b7: AC data
0/1=Internal trunk/External trunk
 - b6: OP data (0/1)
When OPRT data of ⑧ is valid, “1” displays,
 - b0-b5: OG route number
 - bit 6=0 → Route No.<64
 - bit 6=1 → <63 Route No.
- } Refer to the OPTN data of ⑧

SYSTEM MESSAGES

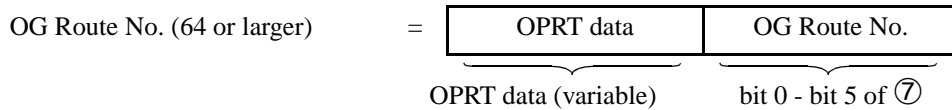
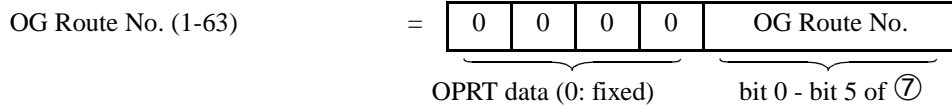
⑧ OPRT data

b0-b3: OPRT data **Note**

b7 b3 b2 b1 b0



Note: This data displays when the OG Route No. is larger than 63, and bit6 of ⑦ displays as “1” (otherwise, “0” is displays at any time). While the six bit data of ⑦ is self-sufficient in verifying the Route No. “1-63,” this OPRT data provides a supportive role to cover the Route No., which is larger than 63. Use the following method to analyze the data:



⑨ Trunk No. of OG trunk

b0-b7: Trunk No. of OG trunk

b7 b6 b5 b4 b3 b2 b1 b0



⑩ Trunk No. of sender

b0-b7: Trunk No. of sender

b7 b6 b5 b4 b3 b2 b1 b0



⑪ Number of digits dialed by caller

b0-b4: Number of digits dialed by caller

b7 b4 b3 b2 b1 b0



⑫ Number dialed by caller (See table)

b7	b6	b5	b4	b3	b2	b1	b0

b4-b7	b0-b3
DC0	DC1
DC2	DC3
DC4	DC5
DC6	DC7
DC8	DC9
DC10	DC11
DC12	DC13
DC14	DC15
DC16	DC17
DC18	DC19
DC20	DC21

SYSTEM MESSAGES

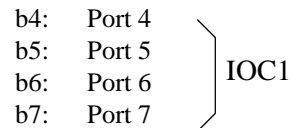
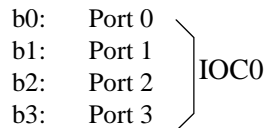
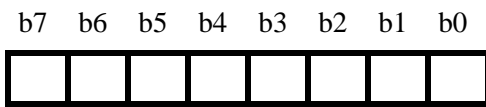
16-K	I/O Port Line OFF			
	Default Alarm: NON	Default Grade: 1	Grade Modified:	Lamp Modified:

This message displays when the DR signal of the RS-232C, connected to the port designated by the system data, remains off for 30 consecutive seconds while the system is in service (immediately after startup in the case of system start-up).

1: <u>xx</u> 00 0000 0000 0000	2: 0000 0000 0000 0000	3: 0000 0000 0000 0000
①		
4: 0000 0000 0000 0000	5: 0000 0000 0000 0000	6: 0000 0000 0000 0000
7: 0000 0000 0000 0000	8: 0000 0000 0000 0000	9: 0000 0000 0000 0000

① Faulty Port No.

0/1 = -/Link Down



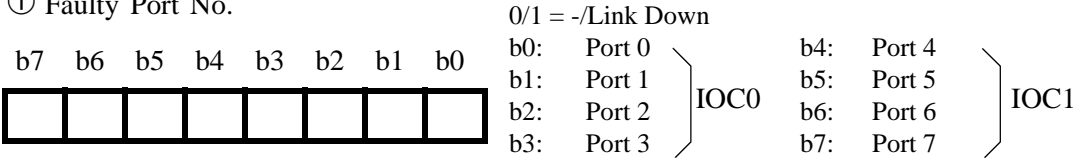
16-L	I/O Port Line Restore			
	Default Alarm: NON	Default Grade: 1	Grade Modified:	Lamp Modified:

This message displays when [16-K] I/O Port Line Down Failure is restored to normal.

```

1: xx00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
    
```

① Faulty Port No.



SYSTEM MESSAGES

16-M	Hard Clock Failure			
	Default Alarm: SUP	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the timer circuit in the EMA card becomes faulty and stops functioning and 64-Hz clock alarm is output.

1: <u>0000</u> 0000 0000 0000	2: 0000 0000 0000 0000	3: 0000 0000 0000 0000
①		
4: 0000 0000 0000 0000	5: 0000 0000 0000 0000	6: 0000 0000 0000 0000
7: 0000 0000 0000 0000	8: 0000 0000 0000 0000	9: 0000 0000 0000 0000

① Message Detail Data

This system message is always indicated as 0000.

16-N	Hard Clock Restore			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when [16-M] 64 Hz Clock Down Detected is restored to normal.

```
1: 0000 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
```

① Message Detail Data

This system message is always indicated as 0000.

SYSTEM MESSAGES

16-T	IOC Failure (Temporary)			
	Default Alarm: SUP	Default Grade: 1	Grade Modified:	Lamp Modified:

This message displays when the IOC card fails.

```

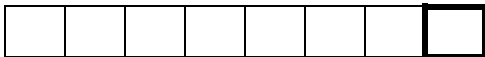
1:  XXXX 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
    ① ②
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
  
```

① IOC circuit card No.

b0: 0/1 = No. 0/No. 1

b7

b0



② Cause for fault

b0: 0/1 = -/COP Alarm

b1: 0/1 = -/CLK Alarm

b2: 0/1 = -/MEM bus CLK Alarm

b3: 0/1 = -/Abnormal Interruption

b4: 0/1 = -/Infinite Loop Detected

b7

b4

b3

b2

b1

b0

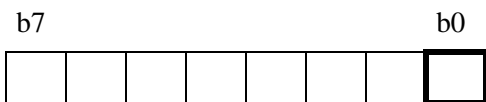


16-U	IOC Failure (Permanent)			
	Default Alarm: SUP	Default Grade: 2	Grade Modified:	Lamp Modified:

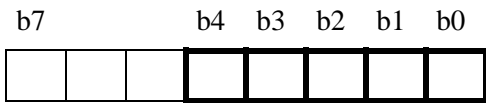
This message displays when the IOC card failure, observed in the message [16-T], is detected more than 8 times a day.

1: <u>XXXX</u> 0000 0000 0000	2: 0000 0000 0000 0000	3: 0000 0000 0000 0000	4: 0000 0000 0000 0000
① ②			
4: 0000 0000 0000 0000	5: 0000 0000 0000 0000	6: 0000 0000 0000 0000	7: 0000 0000 0000 0000
7: 0000 0000 0000 0000	8: 0000 0000 0000 0000	9: 0000 0000 0000 0000	

① IOC circuit card No. b0: 0/1 = No. 0/No. 1



② Cause for fault b0: 0/1 = -/COP Alarm
b1: 0/1 = -/CLK Alarm
b2: 0/1 = -/MEM bus CLK Alarm
b3: 0/1 = -/Abnormal Interruption
b4: 0/1 = -/Infinite Loop Detected



Reference: See [Chapter 4, Section 1.3.3](#), for the circuit card replacement procedure.

SYSTEM MESSAGES

16-X	Station Exchanged Report			
	Default Alarm: NON	Default Grade: 0	Grade Modified:	Lamp Modified:

This message displays when the user uses Follow Phone (SWAP) service.

```

1:  XXXX XXXX XXXX XX00 2:  XXXX XXXX XXXX 00XX 3:  XXXX 0000 0000 0000
   ①② ③④ ⑤⑥ ⑦      ⑧⑨ ⑩⑪ ⑫⑬ ⑭      ⑭
4:  0000 0000 0000 0000 5:  0000 0000 0000 0000 6:  0000 0000 0000 0000
7:  0000 0000 0000 0000 8:  0000 0000 0000 0000 9:  0000 0000 0000 0000
    
```

① Error code b0-b7: See table

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

ERROR CODE (HEX)	FAILURE
00	Normal End
01	MG unmatched
02	Called party is not the station
03	TEC of Calling or Called station is abnormal
04	TEC unmatched
05	Hunting group unmatched
06	Call Pick Up group unmatched
07	Calling or Called station is Night station
08	Call Pick Up Expand group unmatched
09	-
10	Calling or Called D ^{term} has Data Line
11	Calling or Called D ^{term} has OAI function key
12	Calling or Called station is Agent/Supervisor (ACD)
13-15	-
16	Called station is busy
17	MW has been set to Calling or Called station

ERROR CODE (HEX)	FAILURE
18	Call Back/OG queuing has been set to Calling or Called station
19	Call Forwarding - All Calls has been set to Calling or Called station
20	Call Forwarding - Busy Line has been set to Calling or Called station
21	Call Forwarding - Don't Answer has been set to Calling or Called station
22-31	-
32	Under processing of Data Memory Back Up
33	<ul style="list-style-type: none"> • Collision of swap service • Under swapping of One Touch Memory • Memory overflow (Max. 4 stations)
34	Data Memory read error
35	Data Memory swap failure
36	OAI Terminal Information swap failure (CM Data)
37	OAI Terminal Information swap failure (LP Data)
38	SST Time out

② Tenant No. of calling station

b0-b3: Tenant No. (1-15)
 b4-b7: Tenant No. (over 15)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

③ Accommodated location of calling station after Follow Phone service

b0-b2: Level
 b3-b7: Group (0-22)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

④ Accommodated location of calling station after Follow Phone service

b0, b1: Unit No. (0-3)
 b2-b7: MG No.

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

SYSTEM MESSAGES

⑤-⑦ Station No. of calling station

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

	b4-b7	b0-b3
⑤	DC0	DC1
⑥	DC2	DC3
⑦	DC4	DC5

⑧ Tenant No. of called station

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b3: Tenant No. (1-15)
b4-b7: Tenant No. (over 15)

⑨ Accommodated location of called station

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b2: Level
b3-b7: Group

⑩ Accommodated location of called station

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0, b1: Unit No. (0-3)
b2-b7: MG No.

⑪ - ⑬ Station No. of called station

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

	b4-b7	b0-b3
⑪	DC0	DC1
⑫	DC2	DC3
⑬	DC4	DC5

⑭ Data Analyzed by NEC Engineers

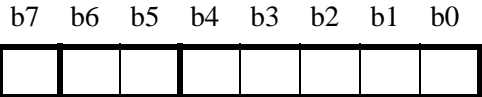
17-A	CCH MBR Key Turn ON			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the MBR switch on the CCH/DCH card is turned ON.

```

1:  XXXX 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ②
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
    
```

① Location of CCH/DCH card



b0-b4: Group No.
 b5, b6: Unit No. (0-3)
 b7: MG No.
 0/1 = Even-numbered MG/Odd-numbered MG

② CKT No.



b0, b1: CKT No. (0-3)

SYSTEM MESSAGES

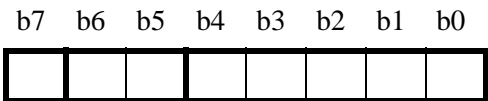
17-B	CCH MBR Key Turn OFF			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the MBR switch on the CCH/DCH card is turned OFF.

```

1:  XXXX 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ②
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
  
```

① Location of CCH/DCH card



b0-b4: Group No.
b5, b6: Unit No. (0-3)
b7: MG No.
0/1 = Even-numbered MG/Odd-numbered MG

② CKT No.



b0, b1: CKT No. (0-3)

17-C	CCH MB Key Turn ON			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the MB switch on the CCH/DCH card is turned ON while extracting or inserting a circuit card or at PM initialization, etc.

1: <u>xx</u> 00 0000 0000 0000	2: 0000 0000 0000 0000	3: 0000 0000 0000 0000
①		
4: 0000 0000 0000 0000	5: 0000 0000 0000 0000	6: 0000 0000 0000 0000
7: 0000 0000 0000 0000	8: 0000 0000 0000 0000	9: 0000 0000 0000 0000

① Location of CCH/DCH card

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b4: Group No.

b5, b6: Unit No. (0-3)

b7: MG No.

0/1 = Even-numbered MG/Odd-numbered MG

SYSTEM MESSAGES

17-D	CCH MB Key Turn OFF			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the MB switch on the CCH/DCH card is turned OFF while extracting or inserting a circuit card or at PM initialization, etc.

```

1:  xx00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
  
```

① Location of CCH/DCH card

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b4: Group No.

b5, b6: Unit No. (0-3)

b7: MG No.

0/1 = Even-numbered MG/Odd-numbered MG

17-H	Day/Night Change Information			
	Default Alarm: NON	Default Grade: 0	Grade Modified:	Lamp Modified:

This message displays when the NIGHT switch on the ATTCON/DESKCON is operated or when the DAY/NIGHT change is executed by the external switch operation.

```

1:  XXXX XXXX 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ② ③ ④ ⑤
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
    
```

① Tenant No.

b0-b3: Tenant No. (1-15)
b4-b7: Tenant No. (over 15)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

② Changing Method

b0-b7:
1=Night Key onATTCON/DESKCON
2=External Key

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

SYSTEM MESSAGES

③ Day/Night Mode Specification

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b3: Mode after changing

b4-b7: Mode before changing

Note: *This data is programmed as initial data.*

b0	b1	b2	b3	MEANING
b4	b5	b6	b7	
0	0	0	0	Day Mode
0	0	0	1	Night Mode 1
0	0	1	0	Night Mode 2 <i>available only for Japan</i>
0	0	1	1	Night Mode 3 (DIT-Night Connection Fixed) Note

④ External Switch Status

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b7:

01=Not used

02=Day/Night Change

03=Not used

17-O	IOC MB Key Turn ON			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the MB switch on the IOC card is turned ON while extracting or inserting a circuit card.

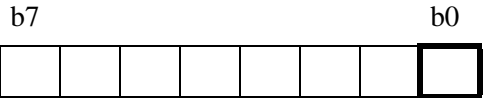
```

1: XX00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000

```

① Circuit Card No.

b0: 0/1 = IOC 0/IOC 1



SYSTEM MESSAGES

17-P	IOC MB Key Turn OFF			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the MB switch on the IOC card is turned OFF.

```

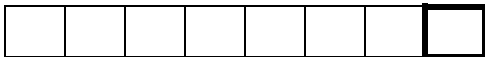
1: xx00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
  
```

① Circuit Card No.

b0: 0/1 = IOC 0/IOC 1

b7

b0



17-Q	IOC MBR Key Turn ON			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the MBR switch on the IOC card is turned on at the time of CPU changeover or speech path changeover.

```

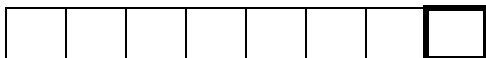
1: XX00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
  
```

① Circuit Card No.

b0: 0/1 = IOC 0/IOC 1

b7

b0



SYSTEM MESSAGES

17-R	IOC MBR Key Turn OFF			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the MBR switch on the IOC card is turned off at the time of CPU changeover or speech path changeover.

```

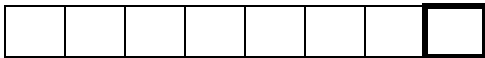
1: XX00 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ①
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
  
```

① Circuit Card No.

b0: 0/1 = IOC 0/IOC 1

b7

b0



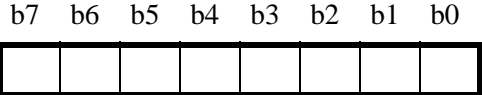
23-P	DCH Back-Up Automatic Change Start/End			
	Default Alarm: NON	Default Grade: 1	Grade Modified:	Lamp Modified:

This message displays when the Primary Dch fails, and the Dch Back-Up function is operated automatically.

```

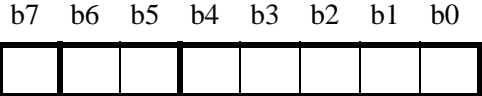
1:  XXXX XXXX XXXX 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ② ③ ④ ⑤ ⑥
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
    
```

① Condition of Dch



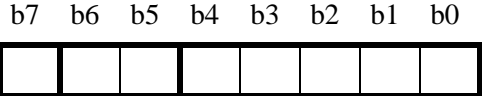
b0-b7:
 1 = Back-up Start
 2 = Back-up End
 3 = Back-up Failed

② Location of Dch (Primary)



b0-b4: Group No.
 b5, b6: Unit No. (0-3)
 b7: 0/1 = Even-numbered MG/Odd-numbered MG

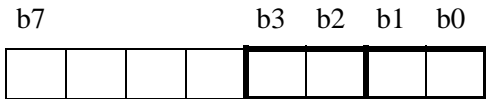
③ Location of Dch (Back-up)



b0-b4: Group No.
 b5, b6: Unit No. (0-3)
 b7: 0/1 = Even-numbered MG/Odd-numbered MG

SYSTEM MESSAGES

④ Changeover Information



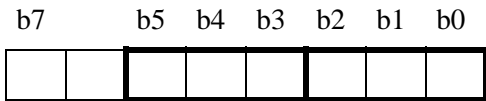
b0, b1:

- 00 = Change from Primary Dch to Dch for Back-up
- 01 = Change from Dch for Back-up to Primary Dch
- 10 = Place Primary Dch to ACT status
- 11 = Place Dch for Back-up to ACT status

b2, b3:

- 00 = Change signal is received
- 01 = Change signal is sent

⑤ Status of the Primary/Back-up Dch



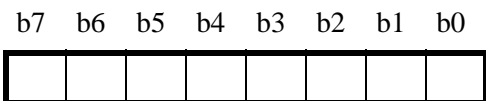
b0-b2: Status of Primary Dch

- 0 = In service
- 1 = Standby
- 2 = Out of Service
- 3 = Make Busy
- 4 = Changing status from STBY to In Service
- 5 = Manual out of service

b3-b5: Status of Primary Dch

- 0 = In service
- 1 = Standby
- 2 = Out of Service
- 3 = Make Busy
- 4 = Changing status from STBY to In Service
- 5 = Manual out of service

⑥ EVENT No.



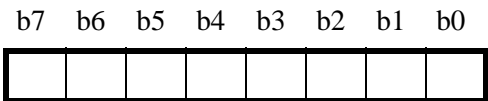
b0-b7: EVENT No.

23-Q	DCH Back-Up Manual Change Start/End			
	Default Alarm: NON	Default Grade: 1	Grade Modified:	Lamp Modified:

This message displays when the Primary Dch fails, and the Dch Back-Up function is operated manually.

1: <u>XXXX</u> <u>XXXX</u> <u>XXXX</u> 0000	2: 0000 0000 0000 0000	3: 0000 0000 0000 0000	
① ② ③ ④ ⑤ ⑥			
4: 0000 0000 0000 0000	5: 0000 0000 0000 0000	6: 0000 0000 0000 0000	
7: 0000 0000 0000 0000	8: 0000 0000 0000 0000	9: 0000 0000 0000 0000	

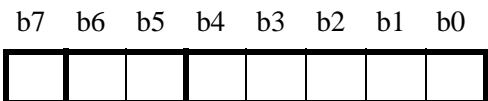
① Condition of Dch



b0-b7:

- 1 = Back-up Start
- 2 = Back-up End
- 3 = Back-up Failed

② Location of Dch (Primary)

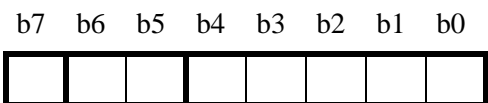


b0-b4: Group No.

b5, b6: Unit No. (0-3)

b7: 0/1 = Even-numbered MG/Odd-numbered MG

③ Location of Dch (Back-up)



b0-b4: Group No.

b5, b6: Unit No. (0-3)

b7: 0/1 = Even-numbered MG/Odd-numbered MG

SYSTEM MESSAGES

④ Detailed information on changing Dch

b7 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0, b1:

- 00 = Change from Primary Dch to Dch for Back-up
- 01 = Change from the Dch for Back-up to Primary Dch
- 10 = Place Primary Dch to ACT status
- 11 = Place Dch for Back-up to ACT status

b2, b3: Way of changing

- 00 = Changed by the MAT
- 01 = Changed by the MB switch of the circuit card
- 02 = Changed by placing Dch to Make-Busy
- 03 = Unknown

⑤ Status of Primary/Back-up Dch

b7 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b2: Status of Primary Dch

- 0 = In service
- 1 = Standby
- 2 = Out of Service
- 3 = Make Busy
- 4 = Changing status from STBY to In Service
- 5 = Manual out of service

b3-b5: Status of Back-up Dch

- 0 = In service
- 1 = Standby
- 2 = Out of Service
- 3 = Make Busy
- 4 = Changing status from STBY to In Service
- 5 = Manual out of service

⑥ EVENT No.

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b7: EVENT No.

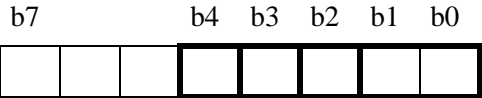
23-Y	MUX Clock Failure			
	Default Alarm: MN	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the MUX (PH-PC36) card has a clock failure in one of the dual systems.

```

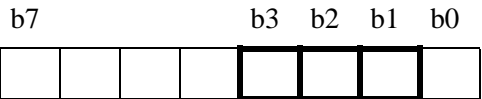
1:  XXXX 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ②
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
    
```

① Unit, MG, system number for MUX card with a clock failure



b0-b1: Unit number where a clock failure occurred
b2: MG number where a clock failure occurred
b3: 0/1 = a clock failure in MUX No. 0 system/
 a clock failure in MUX No. 1 system
b4: 0/1 = Faulty MUX is in ACT/
 Faulty MUX is in STBY

② Scan Data



Scan Data: Clock alarm information on the faulty MUX card
b1: 0/1 = -/FH failure for 2M PCM Highway
b2: 0/1 = -/CLK failure for 2M PCM Highway
b3: 0/1 = -/4M CLK failure for PM

Reference: See [Chapter 5](#), [Section 4.3](#), [Section 4.4](#), and [Section 5.3](#), for the repair procedure.

SYSTEM MESSAGES

23-Z	Both MUX Clock Failure			
	Default Alarm: MN	Default Grade: 3	Grade Modified:	Lamp Modified:

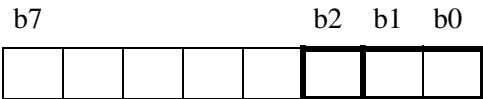
This message displays when the MUX (PH-PC36) card has a clock failure in both of the dual systems.

```

1:  XXXX XX00 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ② ③
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
    
```

① MUX card location

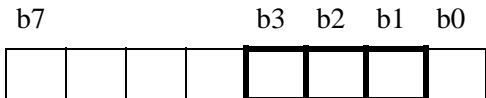
b0-b1: Unit No.
b2: MG No.



② Scan Data 1

Scan Data 1: Details on clock alarm information (ACT mode)

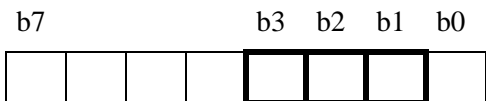
b1: 0/1 = -/FH failure for 2M PCM Highway
b2: 0/1 = -/CLK failure for 2M PCM Highway
b3: 0/1 = -/4M CLK failure for PM



③ Scan Data 2

Scan Data 2: Details on clock alarm information (STBY mode)

b1: 0/1 = -/FH failure for 2M PCM Highway
b2: 0/1 = -/CLK failure for 2M PCM Highway
b3: 0/1 = -/4M CLK failure for PM



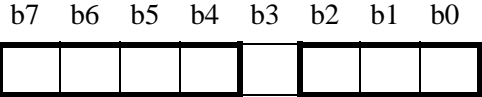
Reference: See [Chapter 4, Section 3.3.2](#), for the circuit card replacement procedure.

26-N	MAT Log			
	Default Alarm: NON	Default Grade: 0	Grade Modified:	Lamp Modified:

This message displays when the MAT is log-in or log-out.

1: <u>xx00</u> <u>xxxx</u> <u>xxxx</u> <u>xxxx</u>	2: <u>xxxx</u> <u>xxxx</u> <u>xxxx</u> <u>xxxx</u>	3: <u>xxxx</u> <u>xxxx</u> <u>xxxx</u> <u>xxxx</u>	
① ② ② ② ② ② ②	③ ③ ③ ③ ③ ③ ③ ③	③ ③ ③ ③ ③ ③ ③ ③	
4: 0000 0000 0000 0000	5: 0000 0000 0000 0000	6: 0000 0000 0000 0000	
7: 0000 0000 0000 0000	8: 0000 0000 0000 0000	9: 0000 0000 0000 0000	

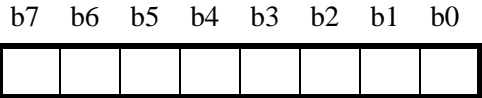
① Port No. of the MAT logged in/out



b0-b2: I/O Port No.
 000 = Port 0 001 = Port 1
 010 = Port 2 011 = Port 3
 100 = Port 4 101 = Port 5
 110 = Port 6 111 = Port 7

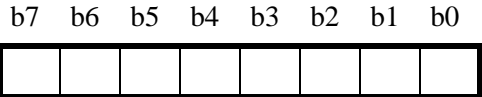
b4-b7: 0000 = Login
 0001 = Logout
 0010 = Command is startup
 0011 = Command END

② Command Name



b0-b7: Command name

③ User Name



b0-b7: User name entered by the MAT

SYSTEM MESSAGES

26-R	Call Trace			
	Default Alarm: NON	Default Grade: 2	Grade Modified:	Lamp Modified:

This message is issued when a call, originated via a station/trunk, is judged as malicious, and then, the details on the call is traced with the called party pressing an access code or the “Call Trace” key.

[When a call is originated from a station]

1: <u>XXXX</u> <u>XXXX</u> <u>XXXX</u> <u>XXXX</u>	2: <u>XXXX</u> <u>XXXX</u> <u>XXXX</u> <u>XXXX</u>	3: <u>XXXX</u> <u>XXXX</u> <u>XXXX</u> <u>XXXX</u>	
① ② ③ ④	⑤	⑥ ⑦ ⑧ ⑨	
4: <u>XXXX</u> <u>XXXX</u> <u>XXXX</u> <u>XXXX</u>	5: <u>XXXX</u> <u>XX00</u> <u>0000</u> <u>0000</u>	6: <u>0000</u> <u>0000</u> <u>0000</u> <u>0000</u>	
⑩	⑪		
7: <u>0000</u> <u>0000</u> <u>0000</u> <u>0000</u>	8: <u>0000</u> <u>0000</u> <u>0000</u> <u>0000</u>	9: <u>0000</u> <u>0000</u> <u>0000</u> <u>0000</u>	

- Information on Called Party (Informer)

① Fusion Point Code (FPC) (Hex.) **Note**

b7	b6	b5	b4	b3	b2	b1	b0

	b4 - b7	b0 - b3
①	dc0	dc1
	dc2	dc3

② Tenant No. (Hex.) **Note**

b7	b6	b5	b4	b3	b2	b1	b0

	b4 - b7	b0 - b3
②	dc0	dc1
	dc2	dc3

③ Physical Station No. (Hex.) **Note**

b7	b6	b5	b4	b3	b2	b1	b0

	b4 - b7	b0 - b3
③	dc0	dc1
	dc2	dc3
	dc4	dc5

④ User Group No. (UGN) (Hex.) **Note**

b7	b6	b5	b4	b3	b2	b1	b0

	b4 - b7	b0 - b3
④	dc0	dc1
	dc2	dc3

⑤ Telephone No. (Hex.) **Note**

b7	b6	b5	b4	b3	b2	b1	b0

	b4 - b7	b0 - b3	b4 - b7	b0 - b3
⑤	dc0	dc1	dc8	dc9
	dc2	dc3	dc10	dc11
	dc4	dc5	dc12	dc13
	dc6	dc7	dc14	dc15

• Information on Malicious call

⑥ Kind of Call (Hex.)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

⑦ Fusion Point Code (FPC) (Hex.) **Note**

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

⑧ Tenant No. (Hex.) **Note**

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

⑨ Physical Station No. (Hex.) **Note**

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

⑩ User Group No. (UGN) (Hex.) **Note**

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

⑪ Telephone No. (Hex.) **Note**

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

10H=Call from a station

	b4 - b7	b0 - b3
⑦	dc0	dc1
	dc2	dc3

	b4 - b7	b0 - b3
⑧	dc0	dc1
	dc2	dc3

	b4 - b7	b0 - b3
⑨	dc0	dc1
	dc2	dc3
	dc4	dc5

	b4 - b7	b0 - b3
⑩	dc0	dc1
	dc2	dc3

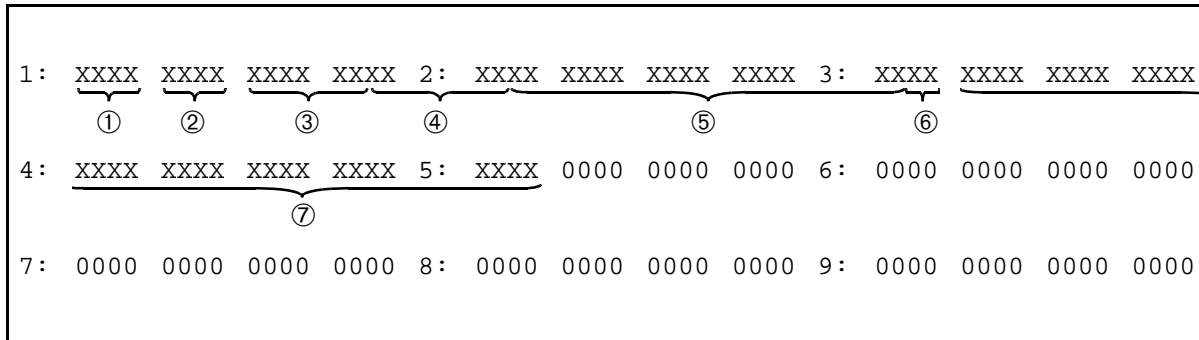
	b4 - b7	b0 - b3	b4 - b7	b0 - b3
⑪	dc0	dc1	dc8	dc9
	dc2	dc3	dc10	dc11
	dc4	dc5	dc12	dc13
	dc6	dc7	dc14	dc15

Note: Each No./code is output in hexadecimal. Detailed meanings are as follows:

Output Data (Hex.)		Actual Meaning
1~9	→	1~9
A	→	0
B	→	*
C	→	#
0	→	blank

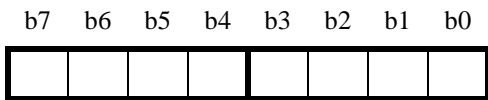
SYSTEM MESSAGES

[When a call is originated from a trunk]



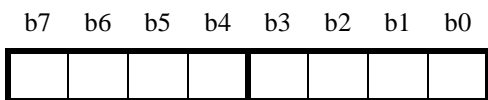
• Information on Called Party (Informer)

① Fusion Point Code (FPC) (Hex.) **Note**



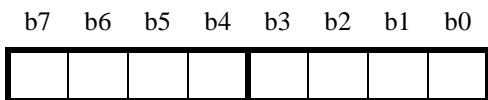
	b4 - b7	b0 - b3
①	dc0	dc1
	dc2	dc3

② Tenant No. (Hex.) **Note**



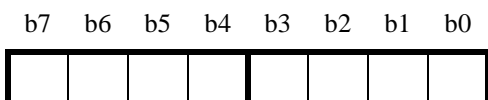
	b4 - b7	b0 - b3
②	dc0	dc1
	dc2	dc3

③ Physical Station No. (Hex.) **Note**



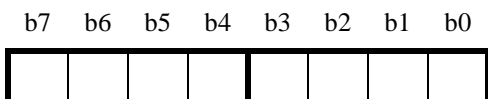
	b4 - b7	b0 - b3
③	dc0	dc1
	dc2	dc3
	dc4	dc5

④ User Group No. (UGN) (Hex.) **Note**



	b4 - b7	b0 - b3
④	dc0	dc1
	dc2	dc3

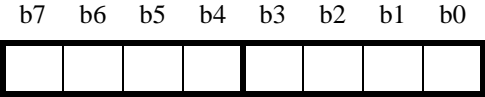
⑤ Telephone No. (Hex.) **Note**



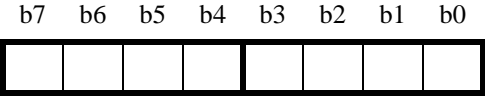
	b4 - b7	b0 - b3
⑤	dc0	dc1
	dc2	dc3
	dc4	dc5
	dc6	dc7
	dc8	dc9
	dc10	dc11
	dc12	dc13
	dc14	dc15

• Information on Malicious Call

⑥ Kind of Call (Hex.) **Note** 20H=Call from a trunk



⑦ Calling No. of Trunk Call (Caller ID) (Hex.) **Note, Note 1**



	b4 - b7	b0 - b3
⑦	dc0	dc1
	dc2	dc3
	dc4	dc5
	dc6	dc7
	dc8	dc9
	dc10	dc11
	dc12	dc13
	dc14	dc15
	dc16	dc17
	dc18	dc19
	dc20	dc21
	dc22	dc23
	dc24	dc25
	dc26	dc27
dc28	dc29	
dc30	dc31	

Note: Each No./Code is output in hexadecimal.
Detailed meanings are as follows:

Output Data (Hex.)	→	Actual Meaning
1~9	→	1~9
A	→	0
B	→	*
C	→	#
0	→	blank

Note 1: If the number of the trunk call (Caller-ID) cannot be identified, the data here is output as "0".

SYSTEM MESSAGES

26-V	LAN Interface Error Report			
	Default Alarm: SUP	Default Grade:	Grade Modified:	Lamp Modified:

This message is issued when the connection error related to external LAN Interface equipment occurs in the system.

TCP/IP Part				Application Part										
1:	XXXX	XXXX	XXXX	XXXX	2:	XXXX	XXXX	XXXX	XXXX	3:	XXXX	XXXX	XXXX	XXXX
	① ②	③ ④	⑤ ⑥	⑦ ⑧		⑨ ⑩	⑪ ⑫	⑬ ⑭	⑮ ⑯		⑰ ⑱	⑲ ⑳	㉑ ㉒	㉓ ㉔
4:	0000	0000	0000	0000	5:	0000	0000	0000	0000	6:	0000	0000	0000	0000
7:	0000	0000	0000	0000	8:	0000	0000	0000	0000	9:	0000	0000	0000	0000

①~④ IP Address for external equipment in which error has been detected. (Hex.)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--

⑤, ⑥ Port No. (Client Port No.) (Hex.)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--

⑦ Socket No. (Used Socket No.) (Hex.)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--

⑧ Error Code (TCP/IP Error Code) (Hex.)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--

See [Table 3-2](#).

Table 3-2 Error Code

Output Data (Hex.)	Definition	Output Data (Hex.)	Definition
BSD SOCKET ERROR		58	Address family not supported
10	User parameter error	PROTOCOL FAMILY	
11	Host not reachable	59	Address already in use
12	Timeout	60	Can't assign requested address
14	Protocol error	61	Network is down
15	No buffer space	*//62	Network is unreachable
16	Connection block invalid	63	Network dropped connection
17	Invalid pointer argument	RESET	
18	Operation would block	65	Connection reset by peer
19	Message too long	67	Socket is already connected
20	Protocol not available	68	Socket is not connected
50	Destination address required	69	Can't send after socket shutdown
52	Protocol wrong type for socket	72	Connection refused
54	Protocol not supported	73	Host is down
55	Socket type not supported	76	Operation already in progress
56	Operation not supported on socket	77	Operation now in progress
57	Protocol family not supported		

SYSTEM MESSAGES

⑨ Application Type

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

[When ⑨=03 (SMDR) / 04 (MCI)]

⑩ Device Number of Error detected client PC

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

⑪ Kind of Error

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

⑫ Details on Detected Error

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

⑬~⑭ Not used

b0-b7 : (Hex)
 01=SUPER SERVER
 02=MAT
 03=SMDR
 04=MCI
 05=OAI
 06=PMS
 07=MIS

b0-b7: (Hex)
 Device Number of error detected Client PC.
 If the Machine Number is not determined, "FF"
 is output.

b0-b7: (Hex)
 01=SEND Execution Error
 02=RECEIVE Execution Error
 03=SEND Execution Count Over
 04=RECEIVE Execution Count Over
 05=System Data is not assigned
 06=Time Over
 07=Parity Error
 08=Connection Error
 09=Connection Port Capacity Over
 0A=Detection of B-level Infinite Loop
 0B~FF=Not Used

- When 01/02 is output at ⑪
 b0-b7: Cause of error (Hex)
- When 05 is output at ⑪
 b0-b7: 01=Data (Data Output via LAN) not assigned
 02=Device No. not assigned
- When 07 is output at ⑪
 b0-b7: 00H=No Parity is set
 01H=Odd Parity is set
 02H=Even Parity is set
- When 08 is output at ⑪
 b0-b7: Cause of error (Hex)

[When ⑨=05 (OAI) / 07 (MIS)]

⑩ Faulty Logical Port No. (Hex)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

⑪ Error Kind (ERRK)

b0-b7 : Error Kind (Hex)
Refer to [Table 3-3](#):

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

Table 3-3 Error Kind (ERRK)

Output Data	Error Situation	Required Check
01H	SEND Execution Error TCP/IP connection is down because the text is not transmitted continuously.	[1] Check the TCP/IP Transmission capacity on the UAP side is proper or not.
		[2] Check the operation status on the UAP side is normal.
02H	RECEIVE Execution Error Incorrect text format is received.	[1] Check the software operation on the MIS or Host side.
		[2] Check the LAN cable connection status.
03H	TCP/IP Connection Error TCP/IP connection is released due to the TCP port disconnection order from the MIS or Host.	Re-start the MIS or HOST computer.
04H	Connection Error (B-level Infinite Loop, etc.) TCP port is released due to the detection of abnormal state in the MIS or HOST operation.	Re-check the operation status of MIS or Host.
05H	TCP/IP Port Capacity Over TCP/IP connection cannot be established due to the connection port capacity over.	The number of allowed ports for application use via TCP/IP must be 16 or less. Adjust the used application number not to exceed "16" in total.

⑫~⑭ Not used

SYSTEM MESSAGES

26-W	LAN Interface Release Report			
	Default Alarm: NON	Default Grade:	Grade Modified:	Lamp Modified:

This message displays when the LAN Interface Connection Failure, detected in Message [26-V], recovers. The message displays when the LAN Interface Connection Failure is restored. The first data is normally sent/received by the recovered application equipment.

TCP/IP Part								Application Part							
1:	XXXXX	XXXXX	XXXXX	XXXXX	2:	XXXXX	XXXXX	XXXXX	XXXXX	3:	XXXXX	XXXXX	XXXXX	XXXXX	
	①	②	③	④		⑨	⑩	⑪	⑫		⑰	⑱	⑲	⑳	
4:	0000	0000	0000	0000	5:	0000	0000	0000	0000	6:	0000	0000	0000	0000	
7:	0000	0000	0000	0000	8:	0000	0000	0000	0000	9:	0000	0000	0000	0000	

①-④ IP Address for external equipment in which error has been detected. (Hex.)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--

⑤, ⑥ Port No. (Client Port No.) (Hex.)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--

⑦ Socket No. (Used Socket No.) (Hex.)

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--

⑧ Error Code (TCP/IP Error Code) (Hex.)

See [Table 3-2](#).

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--

⑨ Application Type

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b7: (Hex)
 01=SUPER SERVER
 02=MAT
 03=SMDR
 04=MCI
 05=OAI
 06=PMS
 07=MIS

[When ⑨=03 (SMDR) / 04 (MCI)]

⑩ Device Number of recovered client PC

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b7: (Hex)
 Device Number of recovered Client PC
 for external LAN Interface.

⑪ Recovery Information

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

b0-b7: (Hex)
 01=Recovered
 02~FF=Not defined

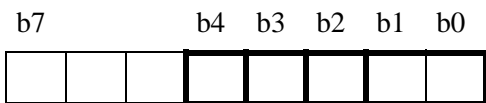
SYSTEM MESSAGES

33-A	MUX Clock Restore			
	Default Alarm: NON	Default Grade: 3	Grade Modified:	Lamp Modified:

This message displays when the MUX (PH-PC36) card, whose clock function was detected as faulty, is recovered.

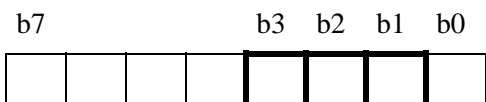
1: <u>XXXX</u> 0000 0000 0000	2: 0000 0000 0000 0000	3: 0000 0000 0000 0000	4: 0000 0000 0000 0000
① ②			
4: 0000 0000 0000 0000	5: 0000 0000 0000 0000	6: 0000 0000 0000 0000	7: 0000 0000 0000 0000
8: 0000 0000 0000 0000	9: 0000 0000 0000 0000		

① Unit, MG number for MUX card, which recovered from a clock failure



b0-b1: Unit number for the recovered MUX card
 b2: MG number for the recovered MUX card
 b3: 0/1 = fault recovery in the MUX No. 0 system / fault recovery in MUX No. 1 system
 b4: 0/1 = faulty MUX is in ACT/
 Faulty MUX is in STBY

② RLS Data



RLS Data: Clock alarm information on the recovered MUX card
 b1: 0/1 = -/FH failure for 2M PCM Highway
 b2: 0/1 = -/CLK failure for 2M PCM Highway
 b3: 0/1 = -/4M CLK failure for PM

33-B	SDT Alarm Warning			
	Default Alarm: NON	Default Grade: 2	Grade Modified:	Lamp Modified:

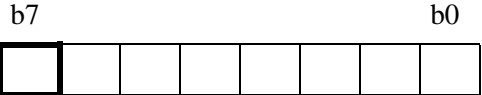
This message displays when an abnormal state is detected temporarily on the SDT (PA-SDTA/B) card.

```

1:  X0XX 00XX XXXX XX00  2:  0000 0000 0000 0000  3:  0000 0000 0000 0000
   ① ②          ③
4:  0000 0000 0000 0000  5:  0000 0000 0000 0000  6:  0000 0000 0000 0000
7:  0000 0000 0000 0000  8:  0000 0000 0000 0000  9:  0000 0000 0000 0000
    
```

① MG (Module Group)

b7: 0/1 = Even-number MG/Odd-number MG



② Details on alarm

	b7	b4	b3	b2	b1	b0			
							b4, b3	b2-b0	
							00	000	—
							00	001	Hardware Failure
							00	010	Optical Line Failure
							00	011	Onboard Power Alarm
							01	000	—
							01	001	PCM Loss
							01	010	Frame Alignment Loss
							01	011	Receiving Section Failure
							01	100	Mistake Rate Degradation
							01	101	Sending Section Failure
							01	110	Mistake Detection
							10	000	—
							10	001	Receiving Path Failure
							10	010	Pointer Failure
							10	011	Sending Path Failure
							10	100	Receiving Path Error
							10	101	Sending Path Error

SDT Card Trouble

52M Interface Alarm

VC-11 Path Trouble

Note

b7: SDT Card Status
0/1=No. 0 System/No.1 System

Note: Alarm-detected HW is specified in ③ (next page).

SYSTEM MESSAGES

③ Alarm-detected HW

b7 b6 b5 b4 b3 b2 b1 b0

--	--	--	--	--	--	--	--

The data here specifies the HW, on which any of the VC-11 Path Trouble was detected in data ② (see **Note**). Refer to the table below:

b7 b6 b5 b4 b3 b2 b1 b0

-	-	-	-	28	27	26	25
24	23	22	21	20	19	18	17
16	15	14	13	12	11	10	9
8	7	6	5	4	3	2	1

} 0/1=-/VC-11 Path Trouble

Note: This data displays only when b4 is "1" and b3 is "0" in data ②.

Repair Procedure

Basically, fault repair work is not required by the display of this message. However, if the message is created frequently, it is recommended that the repair work be performed as shown in the message [33-C] SDT Alarm Trouble.

33-C	SDT Alarm Trouble			
	Default Alarm: MN	Default Grade: 3	Grade Modified:	Lamp Modified:

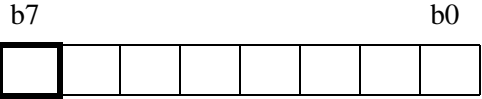
This message displays when a grave failure occurs on the SDT (PA-SDTA/B) card. If this is issued, remember the ACT/STBY change of the SDT card may be followed, as a result of fault detection in the optical fiber line (see [33-E] message).

```

1:  XXXX 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ②
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
    
```

① MG (Module Group)

b7: 0/1 = Even-number MG/Odd-number MG



② Details on alarm

b7	b4	b3	b2	b1	b0	b4, b3	b2-b0		
						00	000	—	}
						00	001	Hardware Failure	
						00	010	Optical Line Failure	
						00	011	Onboard Power Alarm	
						00	100	Abnormal MB Key Operation	}
						01	000	—	
						01	001	PCM Loss	
						01	010	Frame Alignment Loss	
						01	011	Receiving Section Failure	}
						01	100	Mistake Rate Degradation	
						01	101	Sending Section Failure	
						01	110	Mistake Detection	
						10	000	—	}
						10	001	Receiving Path Failure	
						10	010	Pointer Failure	
						10	011	Sending Path Failure	
						10	100	Receiving Path Error	
						10	101	Sending Path Error	

SDT Card Trouble

52M Interface Alarm

VC-11 Path Trouble

Note

b7: SDT Card Status
0/1=No. 0 System/No.1 System

Note: Fault repair procedure on each alarm is shown on the next page.

SYSTEM MESSAGES

Repair Procedure

Depending on the fault status shown in data ②, perform necessary repair work:

(1) Hardware Failure/Onboard Power Alarm

SDT (PA-SDTA/B) card is faulty. Replace the card with a spare by referring to [Chapter 4, Section 3.3.3, SDT Card Replacement Procedure](#).

(2) Optical Line Failure

Diagnosis: In addition to this alarm, is the “PCM Loss” alarm also indicated?

YES → Optical line side is faulty.

Verify that the SDT card in the distant node is not placed into make-busy state. Also, perform the light level check of the optical fiber cables.

NO → SDT card is faulty.

Replace the SDT card with a spare by referring to [Chapter 4, Section 3.3.3, SDT Card Replacement Procedure](#).

(3) Abnormal MB Key Operation

This alarm is indicated when the MB key on the PA-SDTA card is turned ON, even though the MBR key has been on the OFF side. Place the MBR key UP (=ON) and then turn ON the MB key.

(4) PCM Loss

Abnormal state is detected on the optical line side. Verify that the SDT card in the distant node is not placed into make-busy state. Also, perform the light level check of the optical fiber cables.

(5) 52M Interface Alarm

- Frame Alignment Loss
- Receiving Section Failure
- Mistake Rate Degradation
- Sending Section Failure
- Mistake Detection

Clock synchronization with the distant node might be lost, or a trouble might occur on the optical line side. Check the PLO cards first in both self-node and distant node. When no fault is found, proceed with the light level check of the optical fiber cables.

(6) Receiving Path Failure/Receiving Path Error

Abnormal state is detected in the process of multiplexing the “Receive” signals. To restore this, perform the following:

STEP 1 Initialization of SDT card (distant node)

Initialize the SDT card in the distant node, and observe the situation. If the fault is not restored, proceed with STEP 2.

STEP 2 Initialization of SDT card (self-node)

Initialize the SDT card in the self-node, and observe the situation. If the fault is not restored, proceed with STEP 3.

STEP 3 Replacement of SDT card

It cannot be confirmed which node side (self-node or distant node) is faulty. By referring to [Chapter 4, Section 3.3.3, SDT Card Replacement Procedure](#), first replace the SDT card only in one of the nodes. When the fault does not recover, then also replace the SDT card in other side of the nodes.

(7) Pointer Failure/Sending Path Failure/Sending Path Error

Abnormal state is detected in the process of multiplexing the “Send” signals. To restore this, perform the following:

STEP 1 Initialization of SDT card

Initialize the SDT card in the self-node, and observe the situation. If the fault is not restored, proceed with STEP 2.

STEP 2 Replacement of SDT card

By referring to [Chapter 4, Section 3.3.3, SDT Card Replacement Procedure](#), replace the SDT card in the self-node with a spare.

SYSTEM MESSAGES

33-D	SDT Alarm Restore			
	Default Alarm: NON	Default Grade: 1	Grade Modified:	Lamp Modified:

This message displays when the SDT (PA-SDTA/B) card or optical fiber line, which was once detected as faulty, recovers.

```

1:  X0XX 0000 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ②
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000
  
```

① MG (Module Group)

b7: 0/1 = Even-number MG/Odd-number MG



② Details on the fault

b7	b4	b3	b2	b1	b0	b4, b3	b2-b0		
						00	000	—	
						00	001	Hardware Failure	}
						00	010	Optical Line Failure	
						00	011	Onboard Power Alarm	
						00	100	Abnormal MB Key Operation	
						01	000	—	
						01	001	PCM Loss	}
						01	010	Frame Alignment Loss	
						01	011	Receiving Section Failure	
						01	100	Mistake Rate Degradation	
						01	101	Sending Section Failure	
						01	110	Mistake Detection	}
						10	000	—	
						10	001	Receiving Path Failure	
						10	010	Pointer Failure	
						10	011	Sending Path Failure	
						10	100	Receiving Path Error	}
						10	101	Sending Path Error	

b7: SDT Card Status
0/1=No. 0 System/No.1 System

33-E	SDT Interface Change Notify			
	Default Alarm: NON	Default Grade: 2	Grade Modified:	Lamp Modified:

This message displays when the ACT/STBY of the SDT (PA-SDTA) card is changed over as a result of fault detection in the optical fiber line. When the ACT/STBY change cannot be performed, this message also indicates the cause for the changeover execution failure.

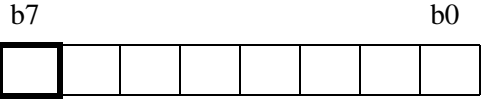
```

1:  X0XX XX00 0000 0000 2: 0000 0000 0000 0000 3: 0000 0000 0000 0000
   ① ②
4: 0000 0000 0000 0000 5: 0000 0000 0000 0000 6: 0000 0000 0000 0000
7: 0000 0000 0000 0000 8: 0000 0000 0000 0000 9: 0000 0000 0000 0000

```

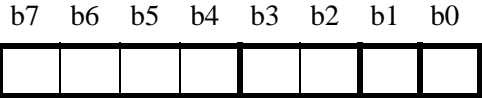
① MG (Module Group)

b7: 0/1 = Even-number MG/Odd-number MG



② Detailed information

b0: Active SDT after Changeover
0/1=No.0 System/No.1 System
b1: Operating Status of SDT
0/1=In service/Out of service
b2, b3: Result of Changeover
0/1=Success/Failure
b7-b4 Cause for Changeover
0001 SDT had a serious failure
0010 MB key on SDT card was turned ON



③ Cause for changeover execution failure

b7 b6 b5 b4 b3 b2 b1 b0
0H: (Changeover Success)
1H: Optical interface isn't dual
2H: Optical interface has a serious failure in each No.0/No.1 system



Repair Procedure

Once this message displays, be sure to check other messages, such as [33-C] SDT Alarm Trouble, and review the cause for the changeover. If any fault is implicated, repair the whole fault(s) according to the situation.

This page is for your notes.

CHAPTER 4 Unit/Circuit Card Replacement Procedure

1. LPM Accommodating Unit/Circuit Card Replacement Procedure

This section explains how to replace unit/circuit cards mounted in the LPM.

1.1 Precaution

- Use this procedure to replace a faulty unit/circuit card with a spare or to check a spare card.
- There are functional switches (having set the default switch) on some of the circuit cards to be replaced. As for switch setting on the circuit cards, confirm the circuit card mounting face layout for the LPM. When a circuit card with a default switch setting is replaced with a spare card, always make the switch setting on the new circuit card the same as on the replaced card. Otherwise, electronic components on the circuit card may be destroyed, or the circuit card itself may fail to function normally.
- When handling a circuit card, always use the field service kit for countermeasures against static electricity. Touching a circuit card without using the field service kit may destroy the card due to static electricity on the human body.

1.2 Circuit Card Mounting Face Layout

[Figure 4-1](#) shows the face layout of circuit cards mounted in the LPM. The circuit cards marked with * are optional.

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

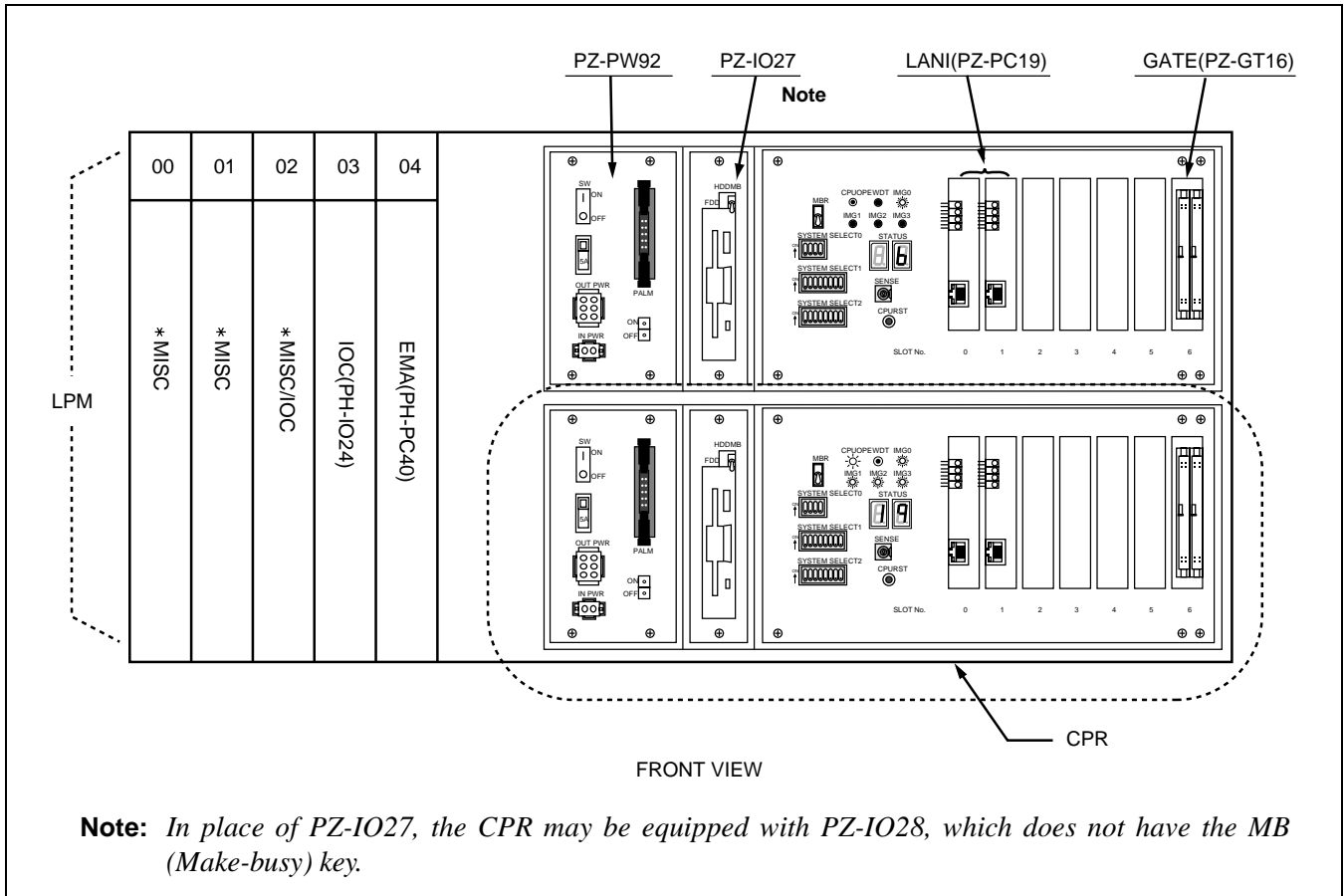


Figure 4-1 Circuit Card Mounting Face Layout of LPM

1.3 Operating Procedures

The following paragraphs provide operating procedures to replace unit/circuit cards of the LPM. Perform the operations that correspond to each Reference Item specified in [Table 4-1](#).

Table 4-1 LPM Unit/Circuit Cards and Reference Items

UNIT/CIRCUIT CARD	REFERENCE ITEM	REMARKS
CPR	Section 1.3.1, CPR Replacement Procedure	CPU, ISAGT, LANI
EMA Card	Section 1.3.2, EMA Card Replacement Procedure	
IOC Card	Section 1.3.3, IOC Card Replacement Procedure	
PWR Unit	Section 1.3.4, Power Supply Unit Replacement Procedure	
MISC Card	Section 1.3.5, MISC Card Replacement Procedure	

WARNING

Improper key operations may result in a system down. Operate the key using extreme care. During replacement of a circuit card, the system issues system messages and activates the related alarm. Reset the indicated alarm after completing the replacement procedure.

If the indicated alarm is cleared via the RALM command, the system also clears the contents of the system message. *Before* using the RALM command, print the messages using the DFTD command.

Use the ALM RST button only to reset the alarm lamps.

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

1.3.1 CPR Replacement Procedure

This section explains how to replace the Control Processor Rack (CPR). Before starting the procedures, make a backup copy of the main data, such as office data, Call Forwarding (CF) data and Speed Calling (SPD) data, on to the hard disk of the HFC. [Figure 4-2](#) shows the front view of the CPR. Operate the related keys and connectors to replace the CPU with a new one. Using a Phillips screwdriver, remove the four screws and extract the CPR with care, as shown in [Figure 4-3](#).

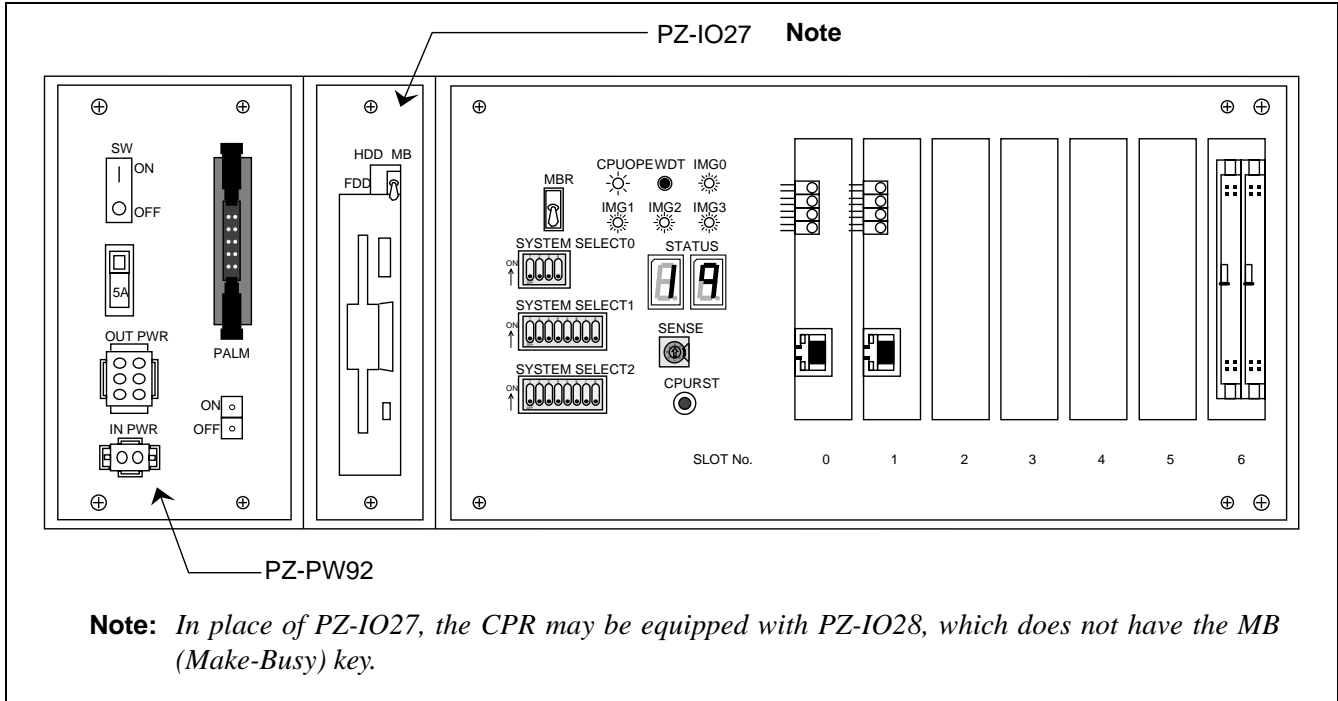


Figure 4-2 CPR Face Layout

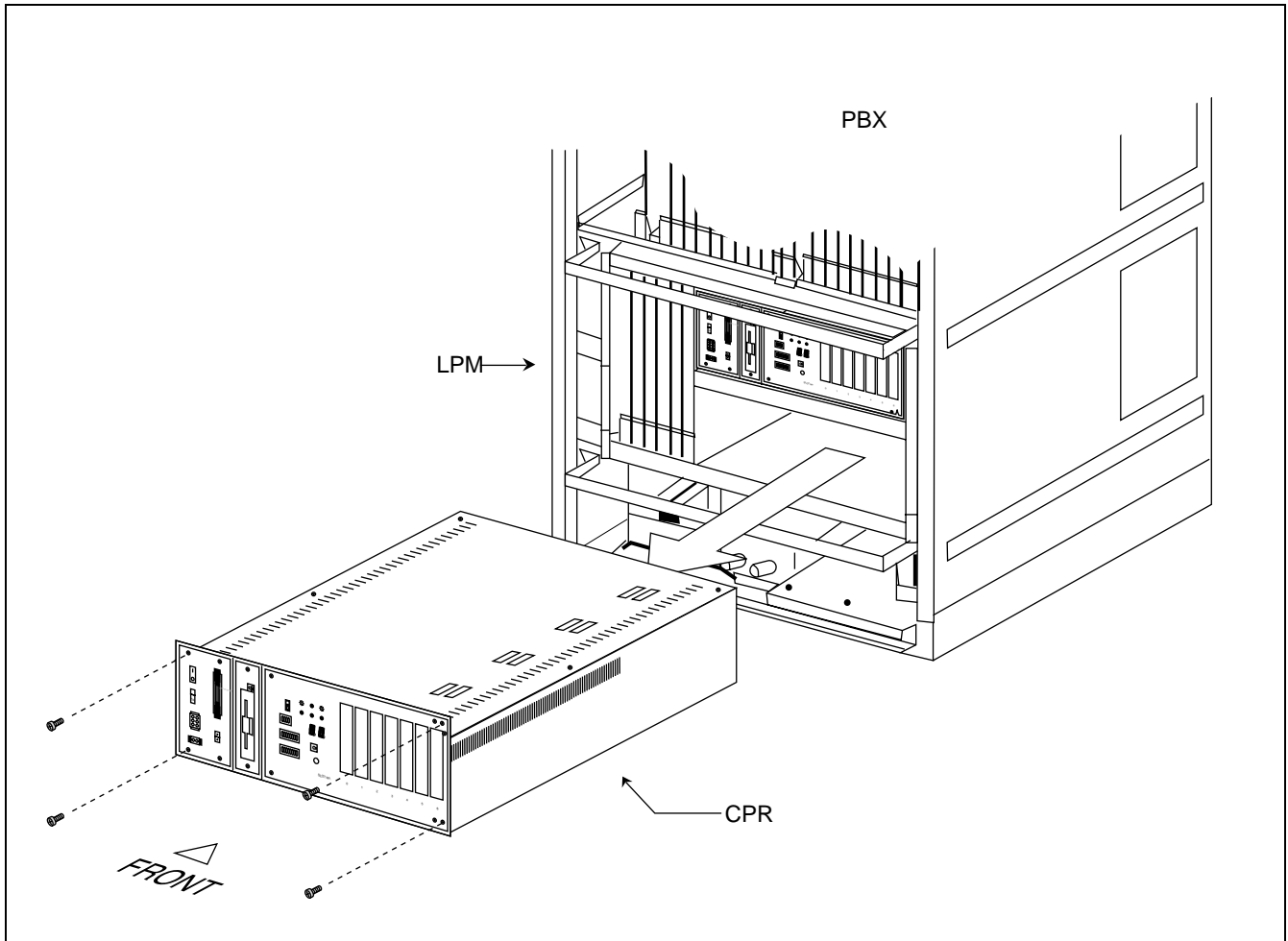


Figure 4-3 How to Replace the CPU

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

[Circuit Card Accommodation into the New CPR]

The steps below show the procedure to install the new CPR into the LPM.

- STEP 1 Using the Phillips Screwdriver, remove the 4 + 8 screws. Then, detach the front panel and top cover from the new CPR. (Refer to [Figure 4-4](#))



As shown in [Figure 4-4](#), detach the front panel of the new CPR by removing the 4 screws. Then, also lift away the top cover by removing the 8 screws.

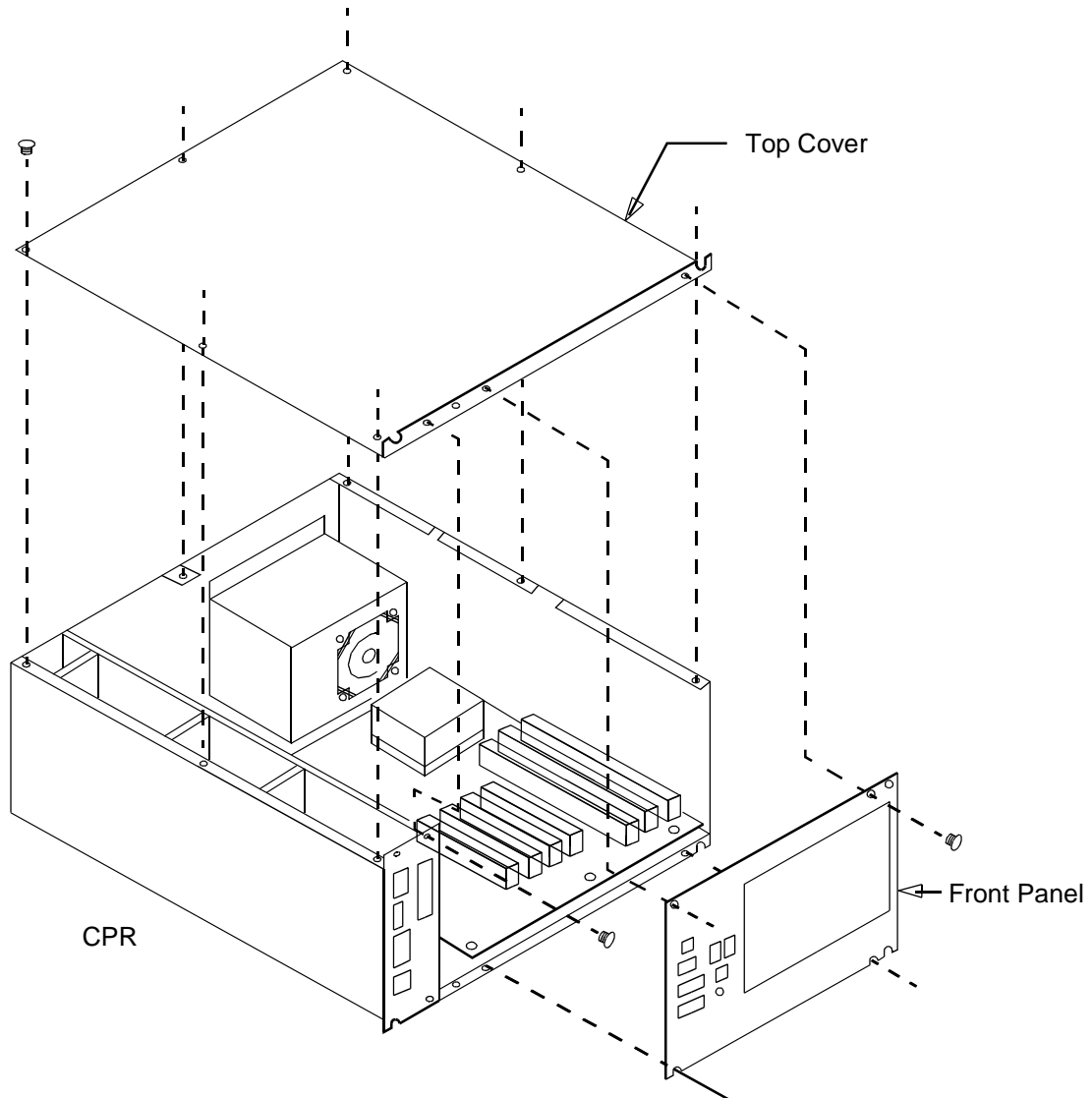


Figure 4-4 Removal of Front Panel and Top Cover from CPR

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

STEP 2 Insert the ISAGT (PZ-GT13) and LANI (PZ-PC19) cards into the following slots of the new CPR (refer to [Figure 4-5](#)):

ISAGT (PZ-GT13) → Slot #6 (ISA)

LANI (PZ-PC19) → Slot #0 (PCI)(For Fusion Link)

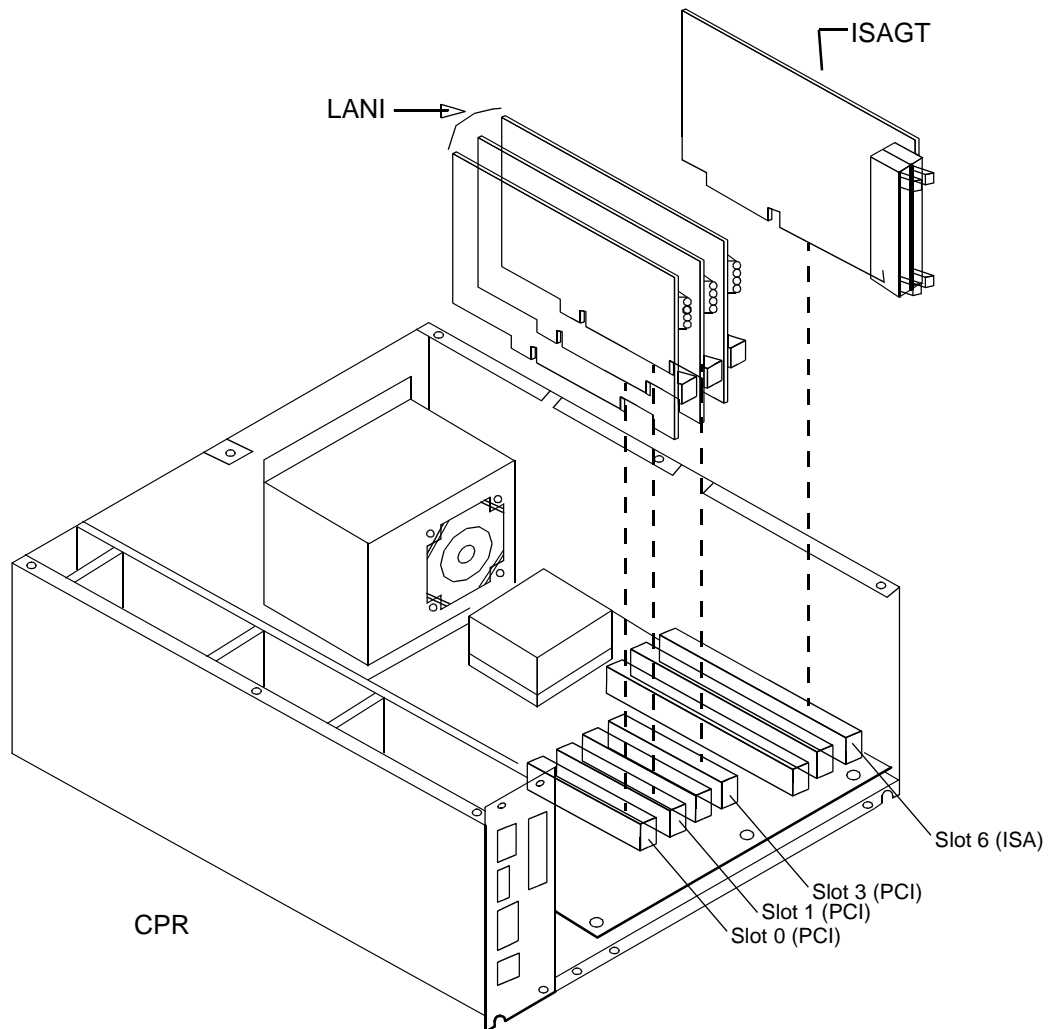
LANI (PZ-PC19) → Slot #1 (PCI)(When connecting MAT via 10-BASE T and PCI buses)

LANI (PZ-PC19) → Slot #3 (PCI)(When LANI for Fusion Link is in dual configuration)

Note



[Figure 4-5](#) shows how to insert the ISAGT and LANI cards into CPR slots #6 (ISA), and #0, #1 and #3 (PCI), respectively.



Note: Accommodation of the second LANI (in PCI Slot 3) is optional.

Figure 4-5 Insertion of ISAGT and LANI Cards

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

- STEP 3 Reattach the top cover and front panel by fastening the removed screws.
(Refer to [Figure 4-6](#))



After mounting the ISAGT/LANI cards, reattach the top cover by tightening the 8 screws.
Then, attach the Front Panel by fastening the 4 screws.

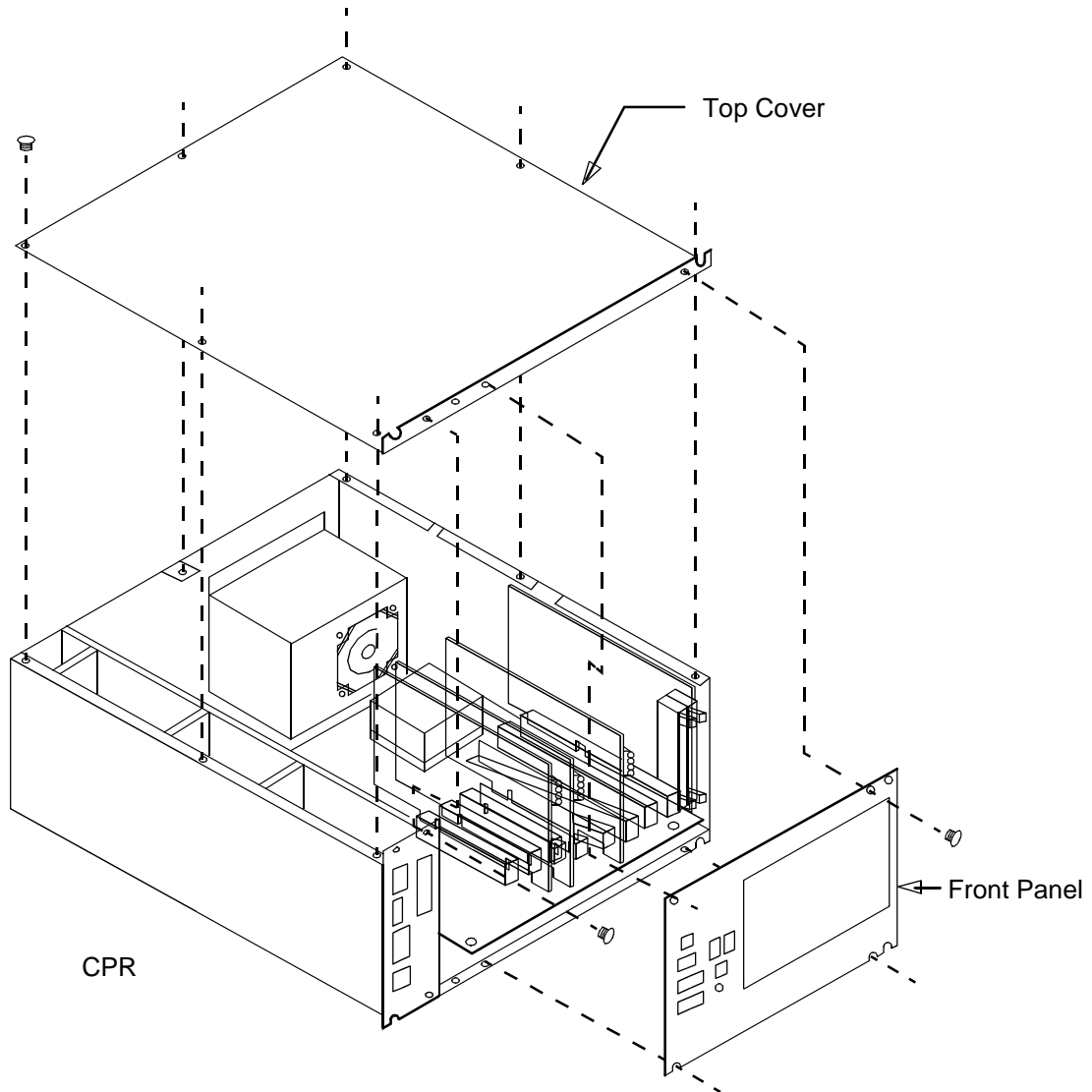


Figure 4-6 Reattachment of CPR Top Cover and Front Panel

- STEP 4 After turning “ON” the MBR key on the DSP of the new CPR, insert the new CPR into the LPM. Then, fasten the retained four screws. (Refer to [Figure 4-7](#))



As shown in [Figure 4-7](#), insert the new CPR into the LPM. Then, fasten the four screws.

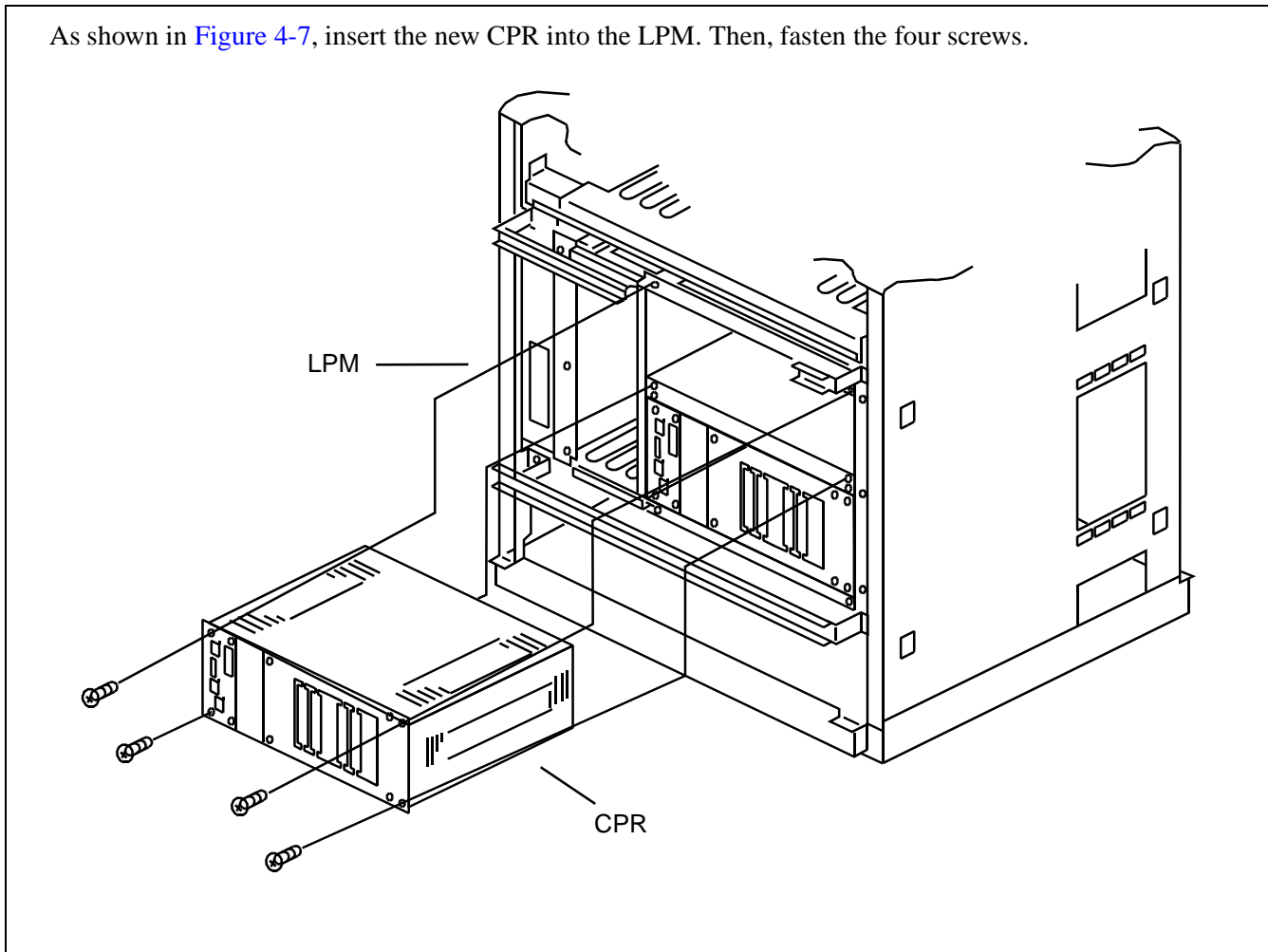


Figure 4-7 Accommodation of New CPR into LPM

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

- STEP 5 Insert the new HFD into the CPR. Then, fasten the two screws.
(Refer to [Figure 4-8](#))



By using the two screws, fasten the new HFD onto the CPR.

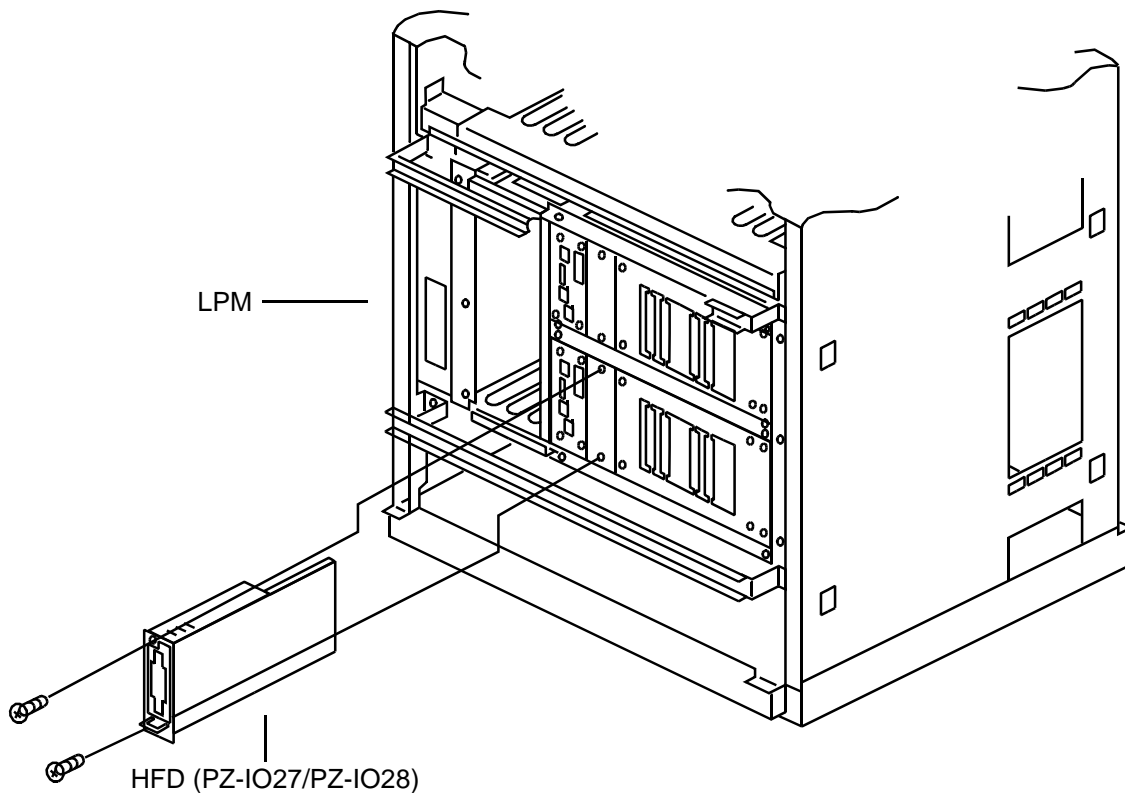
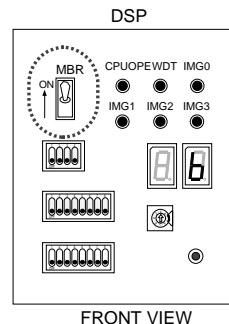
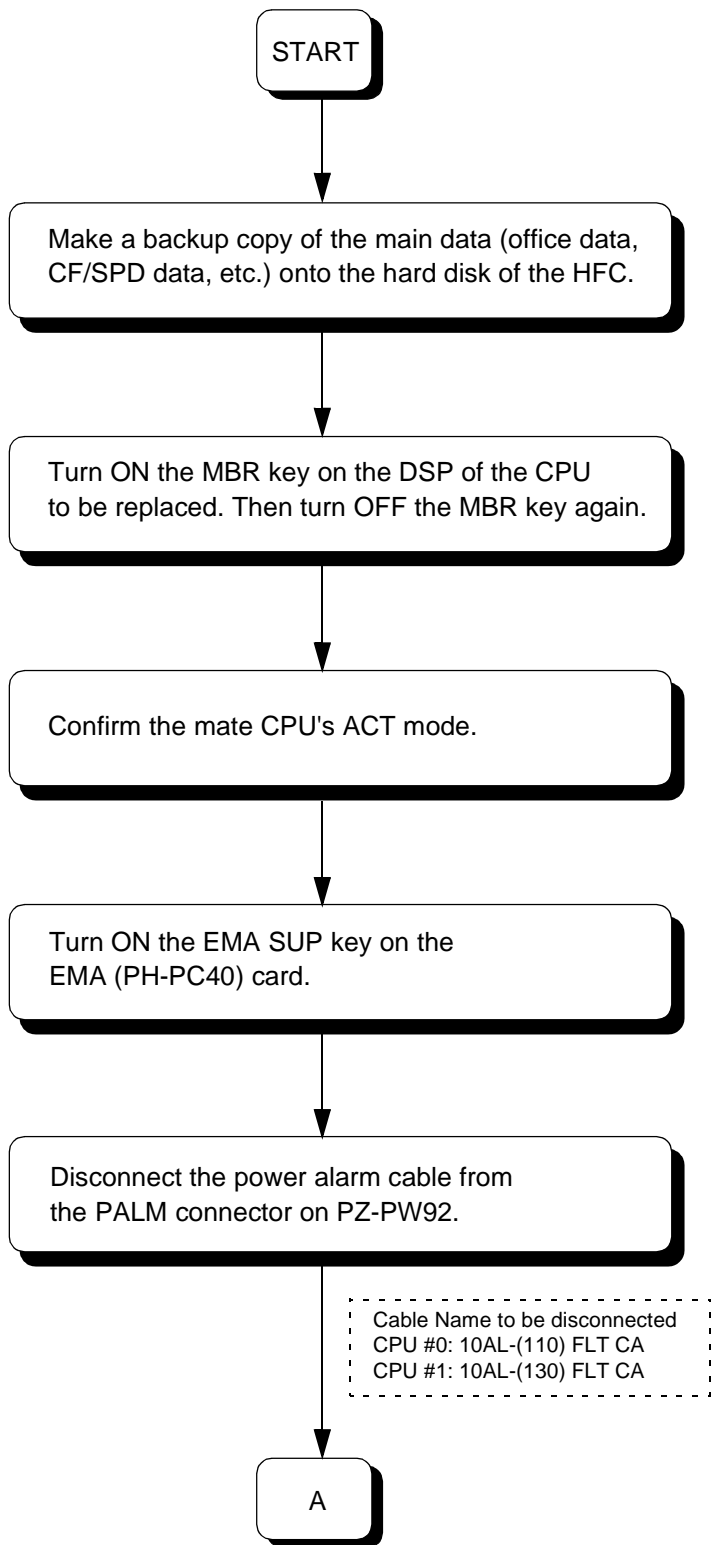
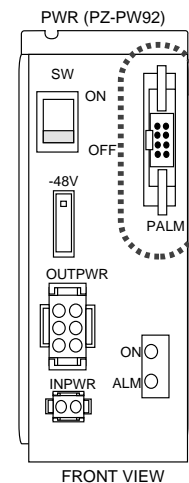


Figure 4-8 Insertion of New HFD into CPR

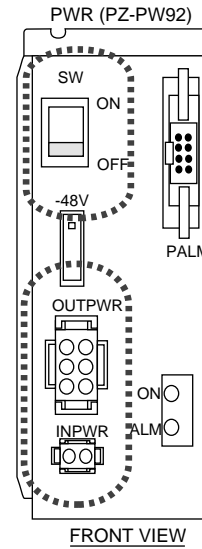
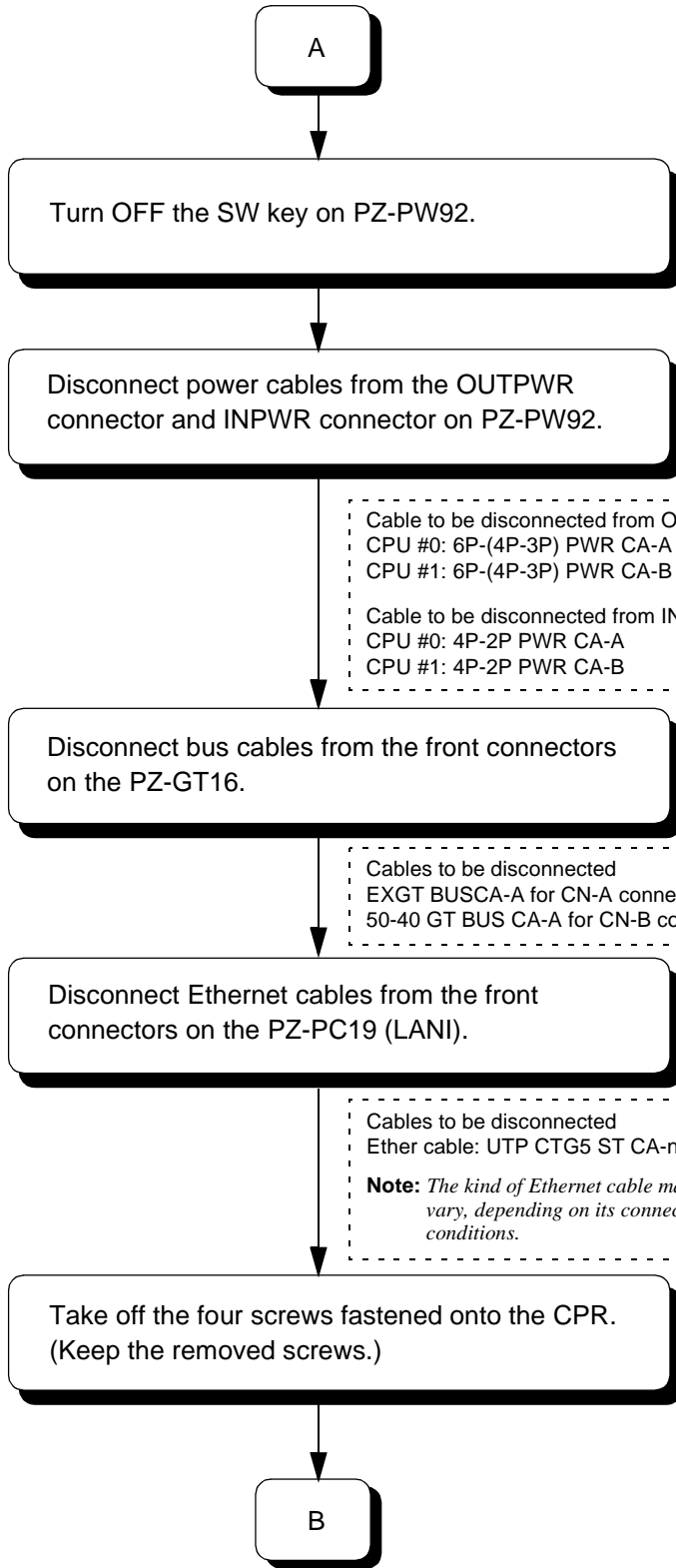
Replacement Procedure



- System Changeover of the CPU from ACT to STBY mode.
- ↓
- IMG0 lamp on the DSP begins to flash green.
 - Check the mate CPU's lamp indications:
- ↓
- CPU OPE=Steady green
 IMG0, IMG1, IMG2, IMG3=Flash green
- EMA SUP lamp on the EMA card is green.



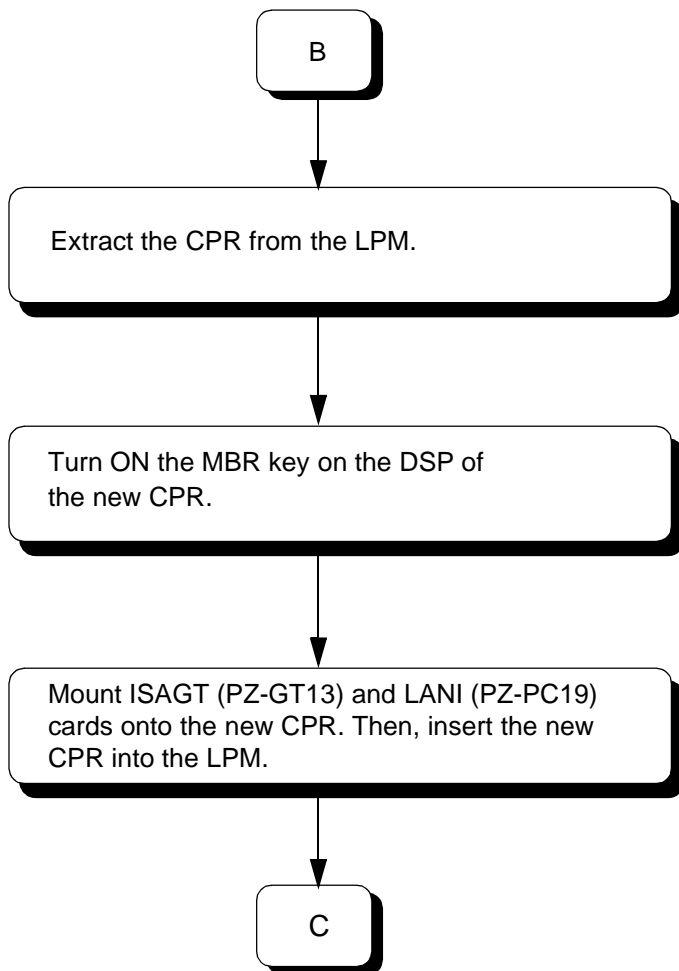
UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE



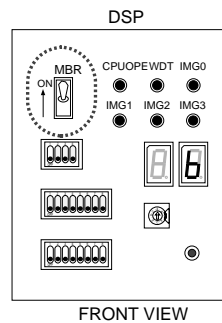
- Refer to [Figure 4-2](#) for CPR face layout.

- Refer to [Figure 4-2](#) for CPR face layout.

- Refer to [Figure 4-3](#) to replace the CPU.

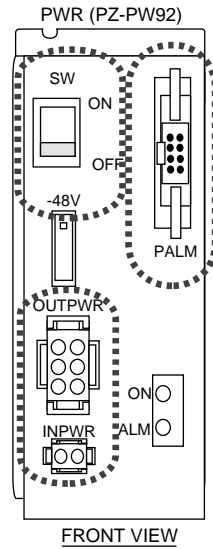
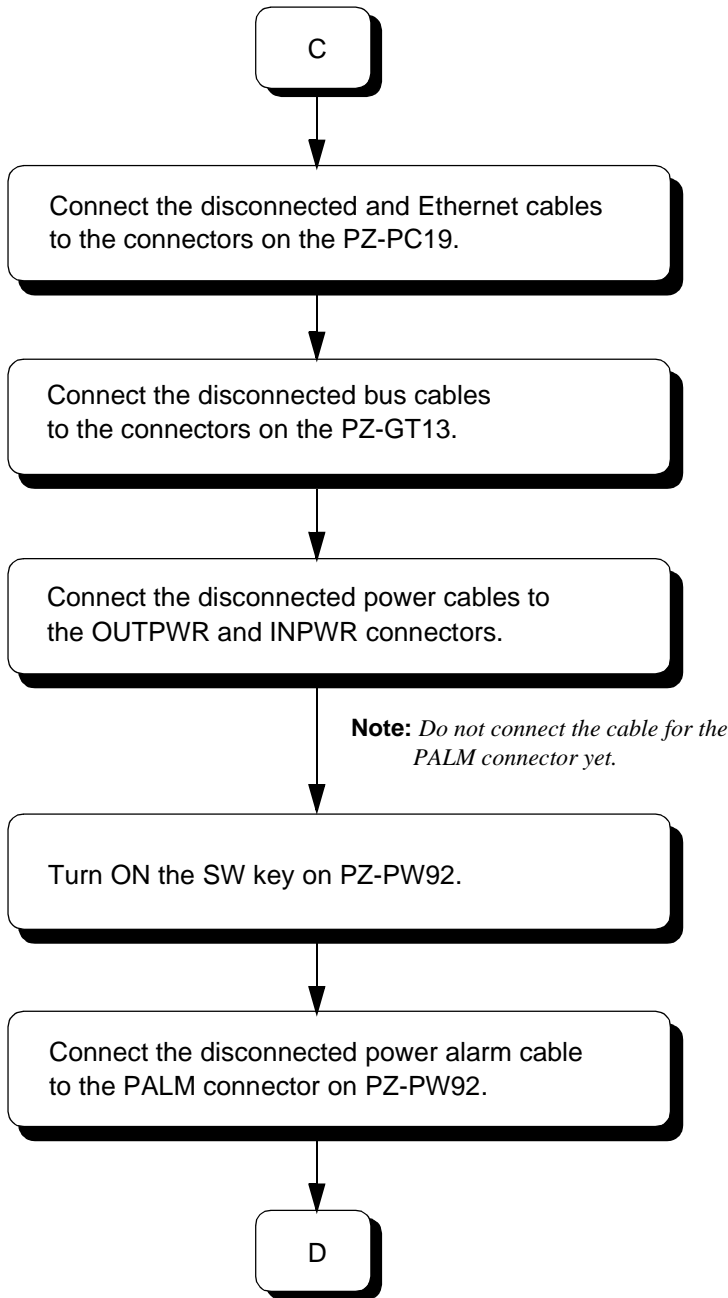


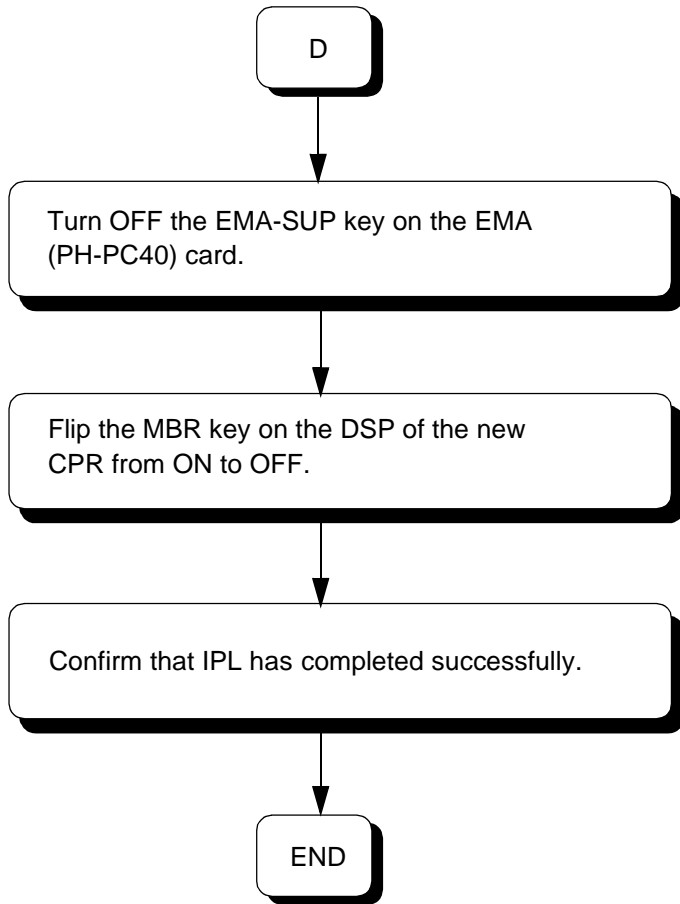
- Refer to [Figure 4-3](#) to replace the CPU.



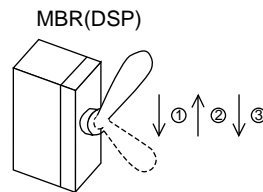
- Refer to [Circuit Card Installation Into New CPR](#) procedure in this section.

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE



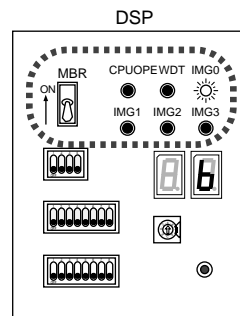


- EMA SUP lamp on the EMA card goes OFF.



Initial Program Load (IPL) starts automatically.

- IMG0 lamp on the DSP flashes green.



FRONT VIEW

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

Circuit Card Installation Into New CPR

This procedure shows how to install the new CPR into the LPM.

- (1) Detach the front panel of the new CPR by using the Phillips screwdriver to remove the four screws, as shown in [Figure 4-9](#). Then, lift the top cover by removing the eight screws.

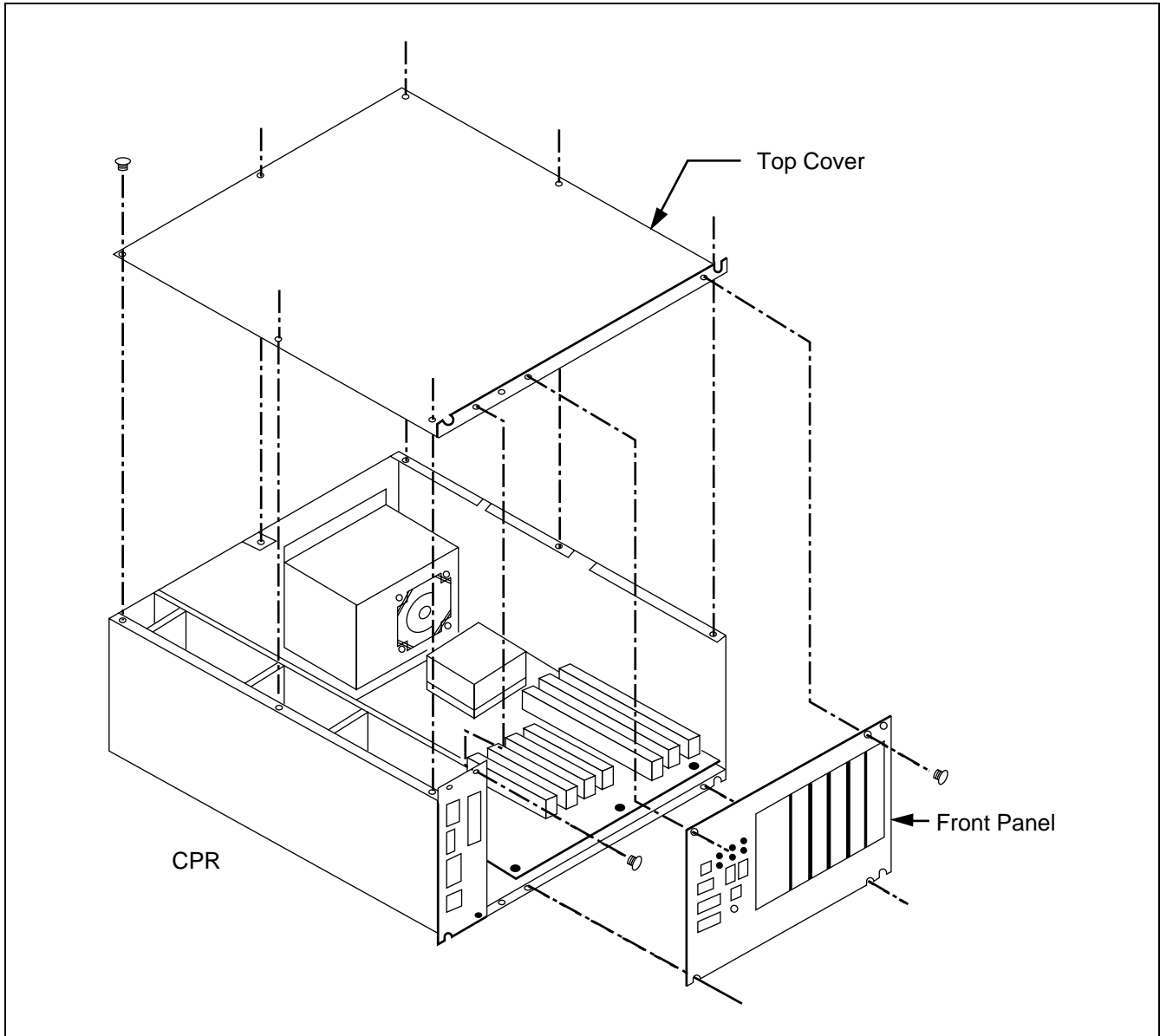


Figure 4-9 Removal of Front Panel and Top Cover From CPR

- (2) Insert the ISAGT (PZ-GT13) and LANI (PZ-PC19) cards into the following slots of the new CPR (refer to [Figure 4-10](#)):



ISAGT (PZ-GT13) → Slot #6 (ISA)

LANI (PZ-PC19) → Slot #0 (PCI) (For Netfusing Link)

LANI (PZ-PC19) → Slot #1 (PCI) (When connecting MAT via 10-BASE T and PCI buses)

LANI (PZ-PC19) → Slot #3 (PCI) (When LANI for Netfusing Link is in dual configuration)

Note: *The location of the second LANI (PCI Slot 3) is optional.*

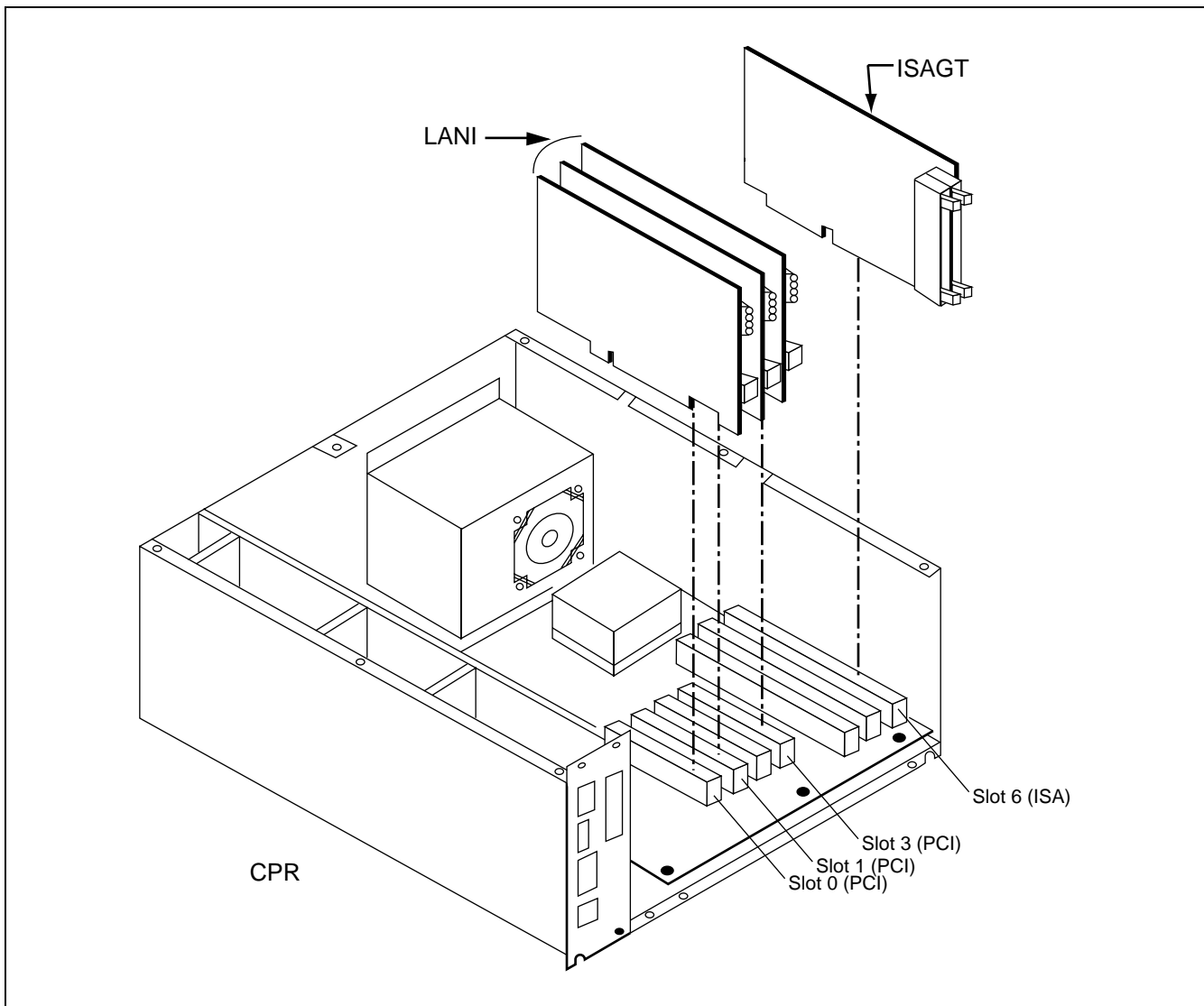


Figure 4-10 Insertion of ISAGT and LANI Cards

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

- (3) Reattach the top cover by fastening the removed eight screws. Then, reattach the front panel by fastening the removed four screws. Refer to [Figure 4-11](#).

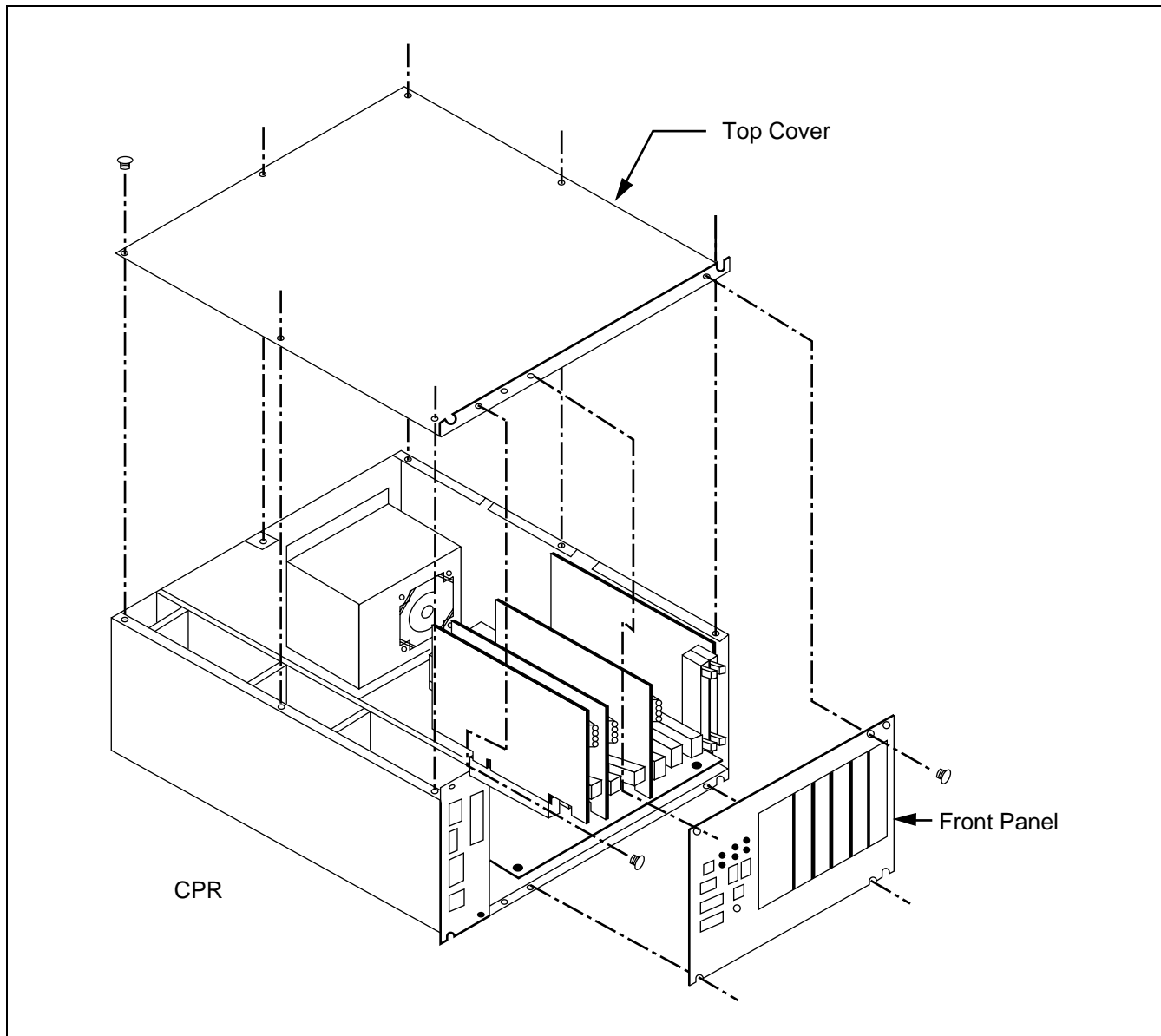


Figure 4-11 Reattachment of CPR Top Cover and Front Panel

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

- (4) After turning ON the MBR key on the DSP of the new CPR, insert the new CPR into the LPM as shown in [Figure 4-12](#). Then, fasten the retained four screws.

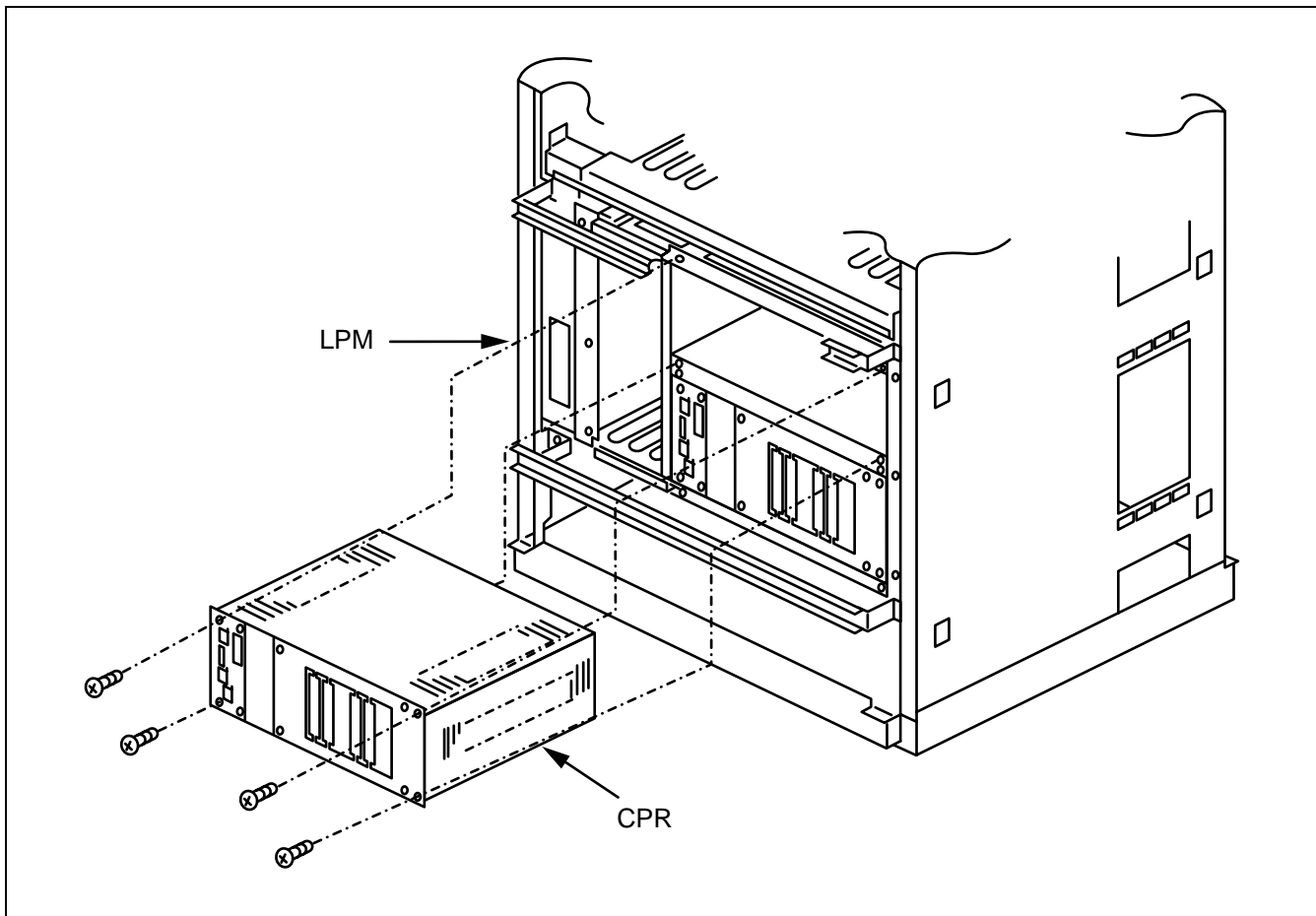


Figure 4-12 Location of New CPR Into LPM

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

- (5) Lastly, insert the new HFD into the CPR. Then, fasten the two screws as shown in [Figure 4-13](#).



By using the two screws, fasten the new HFD onto the CPR.

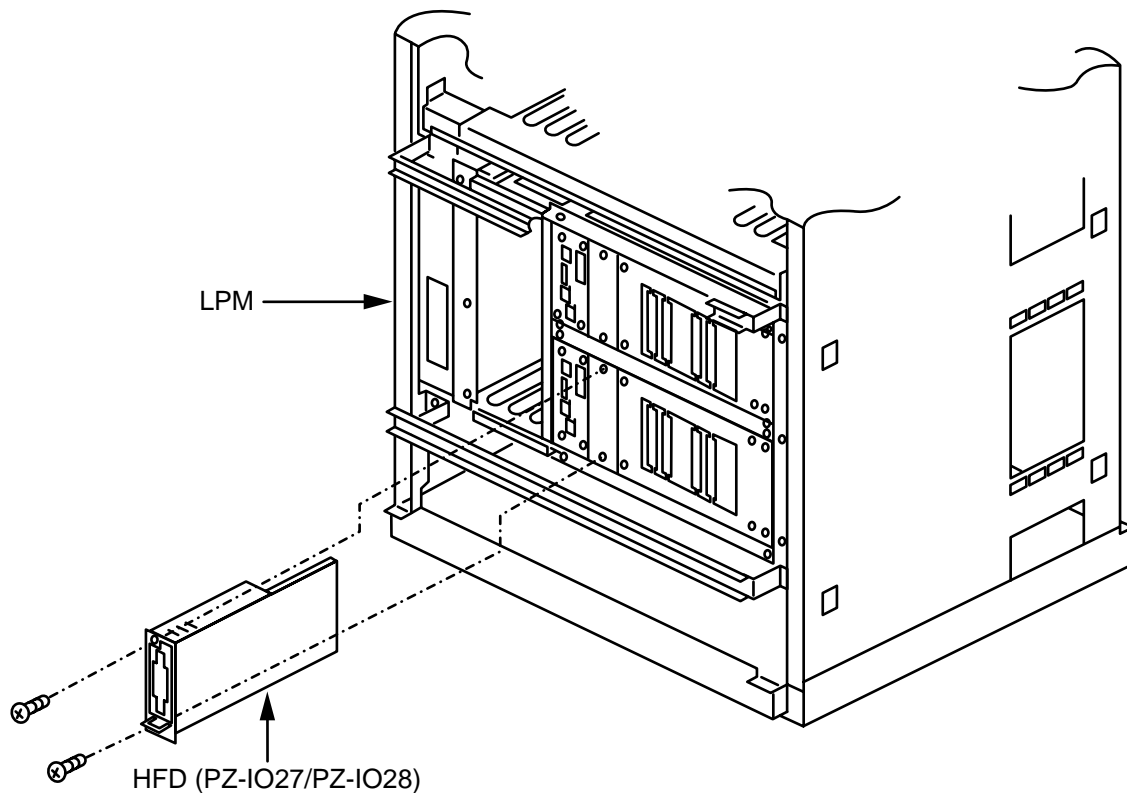


Figure 4-13 Insertion of New HFD Into CPR

1.3.2 EMA Card Replacement Procedure

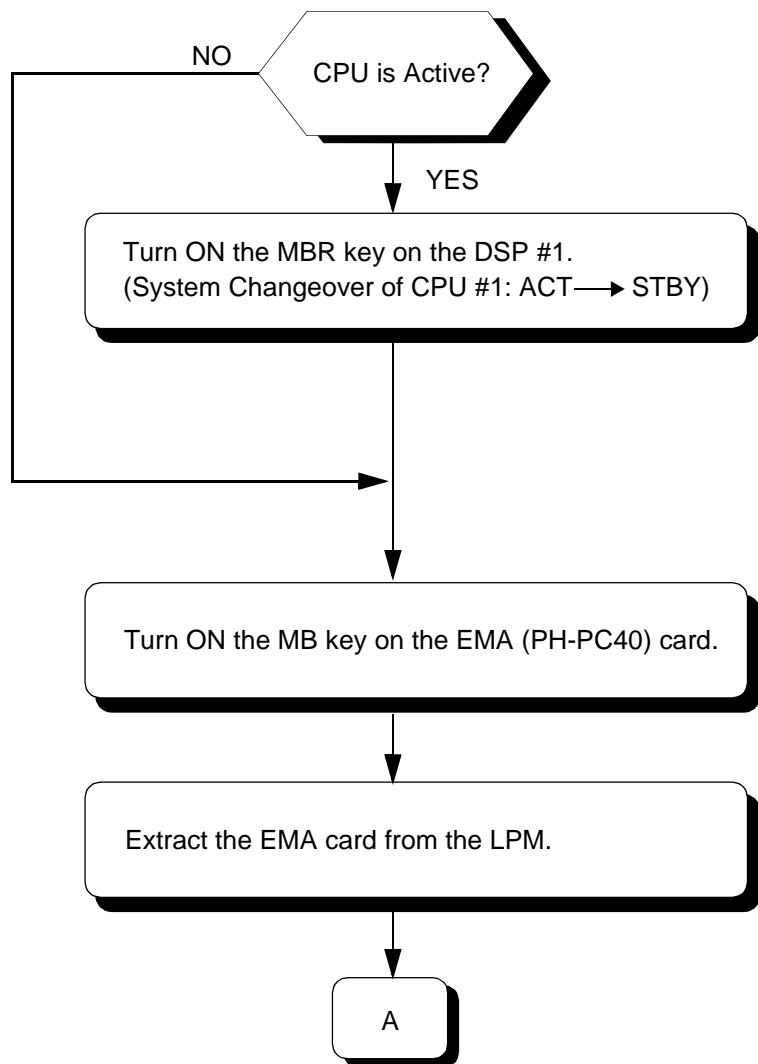
The EMA (PH-PC40) card is mounted in Slot No. 04 of the LPM. The main functions of the card are as follows:

- Designation of ACT/STBY status of the CPU and forced changeover of the system
- Shutoff of the system's power supply and detection of rising temperature within the system
- Music source for Music-On-Hold (for 1-IMG system only)
- Control of the NCU (PA-M53) card



WARNING Before replacing the EMA card, check the CPU #0's ACT mode. Attempting to replace the card when the CPU is active will result in the system being initialized.

Replacement Procedure



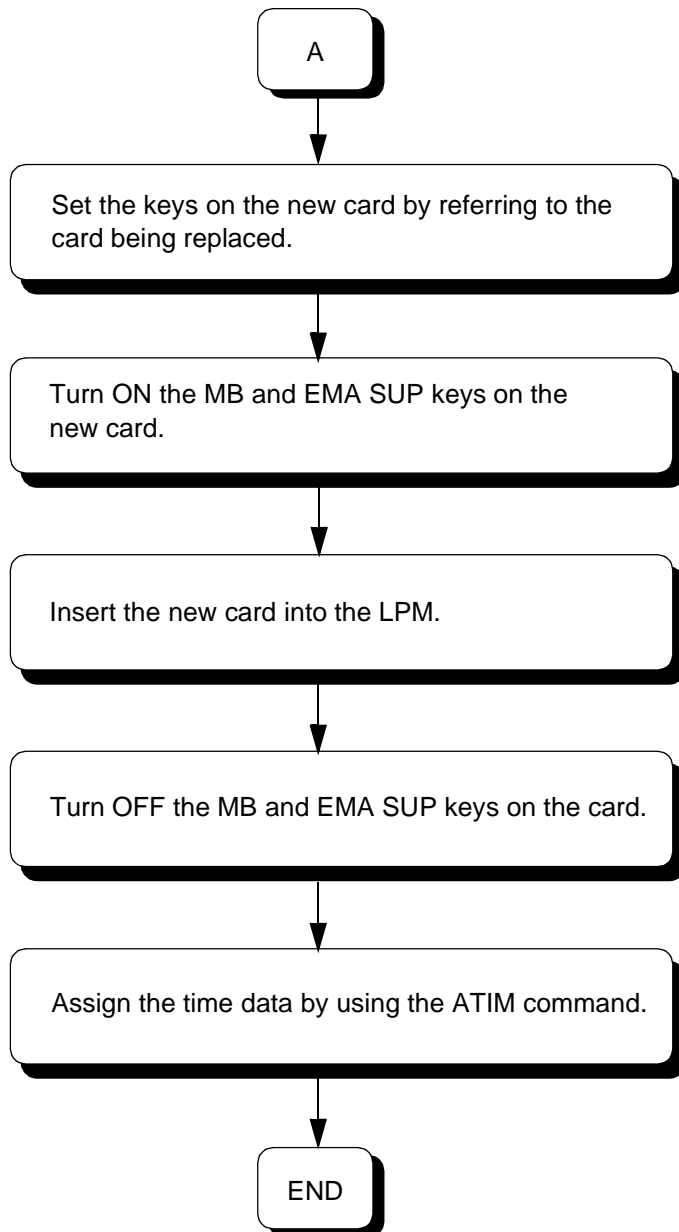
- Check the CPU OPE lamp of DSP #1. When the lamp is steady-green, perform the system changeover.

- OPE/MB lamp on the EMA card lights red from green.



- When NCU (PA-M53) cards are mounted, Power Failure Transfer (PFT) is activated.

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE



- OPE/MB lamp on the EMA card is steady-green.



- PFT service is cancelled:
resumption of normal operation.

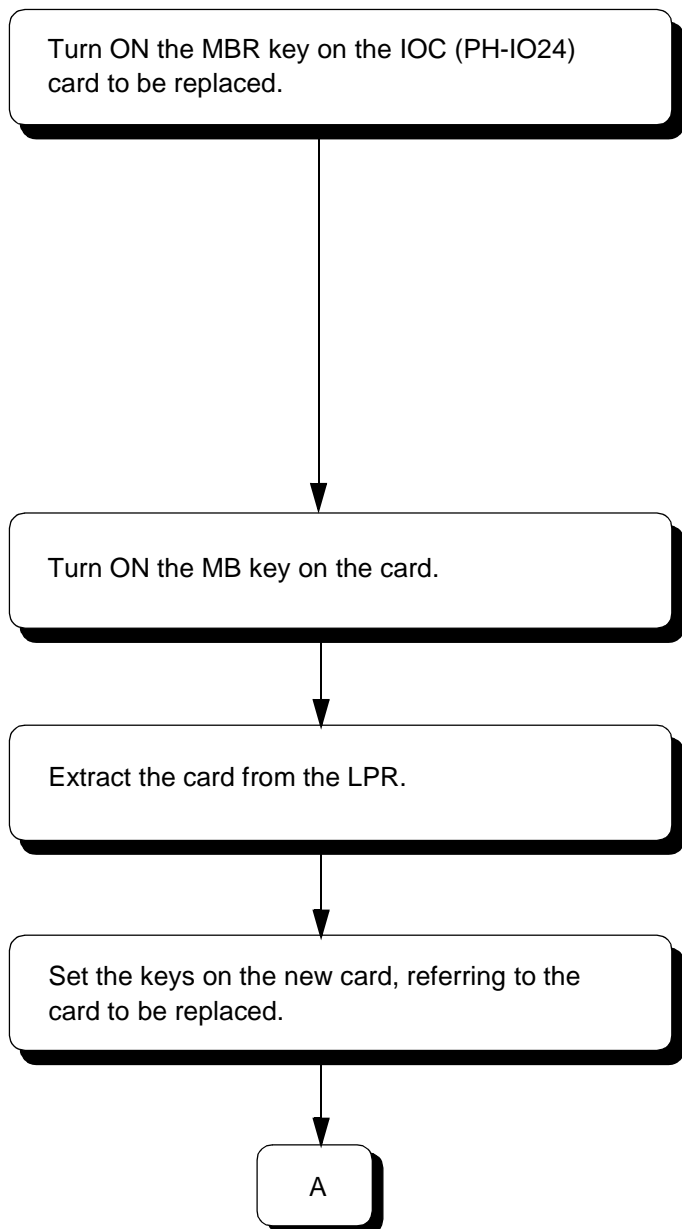
1.3.3 IOC Card Replacement Procedure

The IOC (PH-IO24) card is mounted in Slot No. 02 and/or 03 of the LPM. The card's main function is to provide a serial interface between the system and its external equipment, such as the Maintenance Administration Terminal (MAT), Station Message Detail Recording System (SMDR), Message Center Interface (MCI), Property Management System (PMS), etc.



ATTENTION The equipment connected to the I/O ports of each card (MAT, SMDR, etc.) cannot be used while replacing the IOC card.

Replacement Procedure



- OPE lamp on the IOC card first flashes and then becomes red.

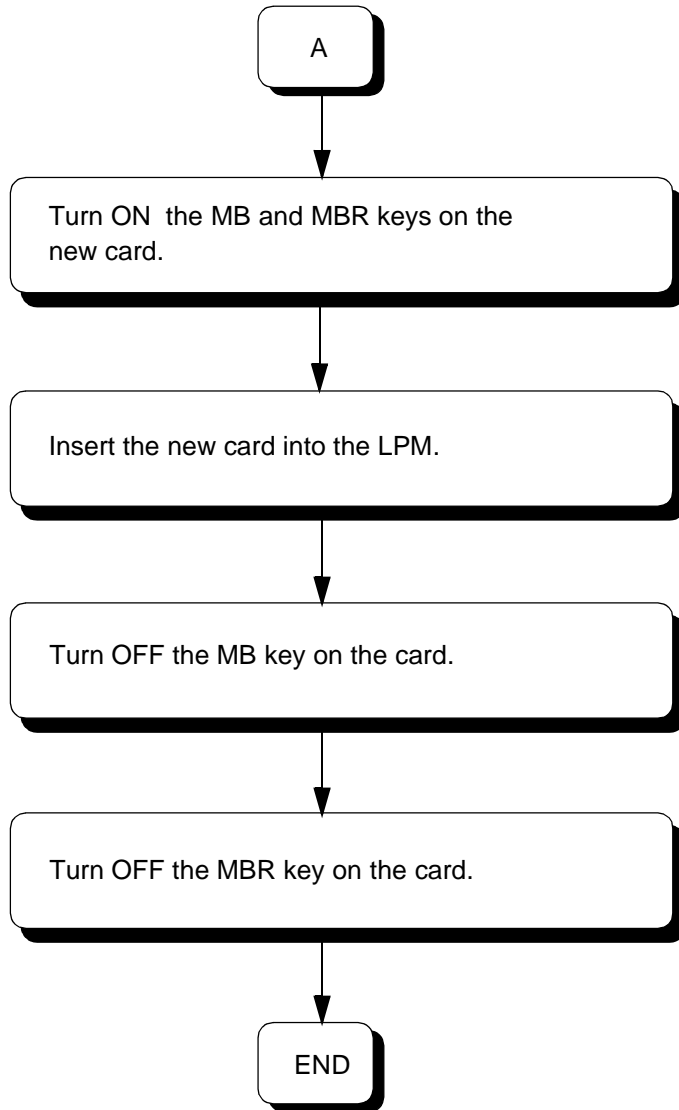


- All I/O ports are closed and the equipment, such as MAT and SMDR, loses connections.

Note: *The text data (such as billing information), registered before this step, will be safely transmitted later. However, the data, recorded after this step, will not be sent out, and instead is stored in the buffer.*

- OPE lamp on the IOC card goes

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

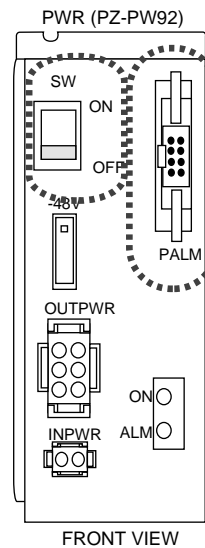
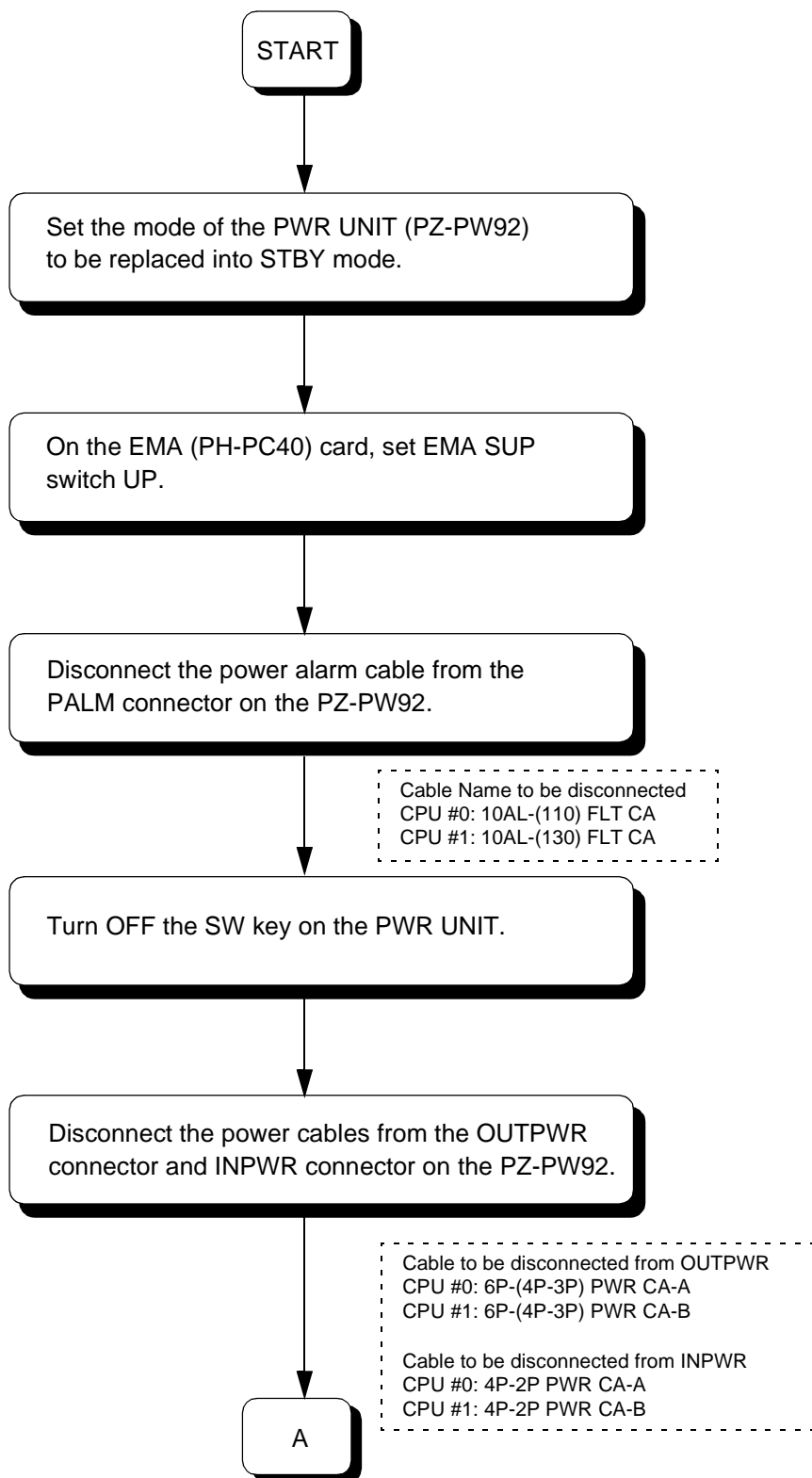


- OPE lamp on the IOC card is red.
 - Release of I/O ports: new IOC card is initialized, and I/O port channels reopens.
- ↓
- OPE lamp is green.

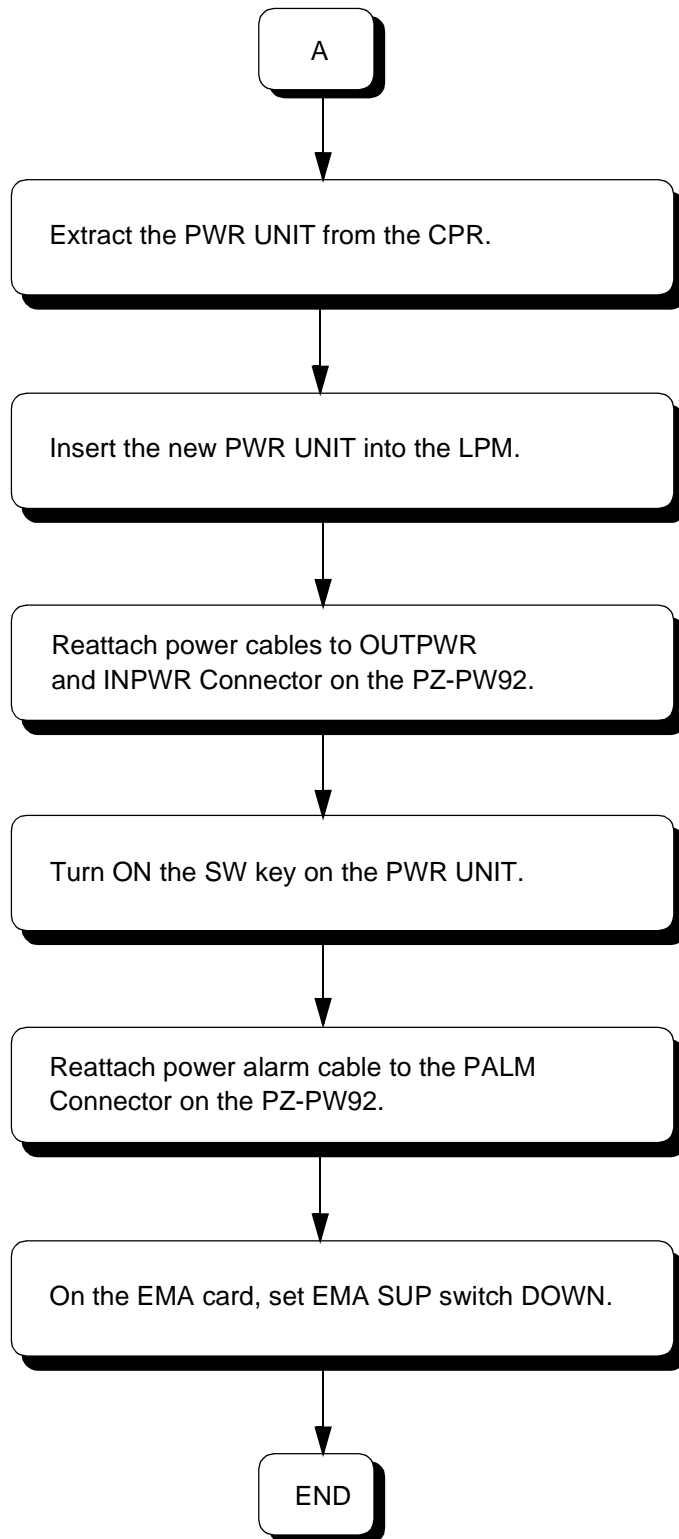
1.3.4 Power Supply Unit Replacement Procedure



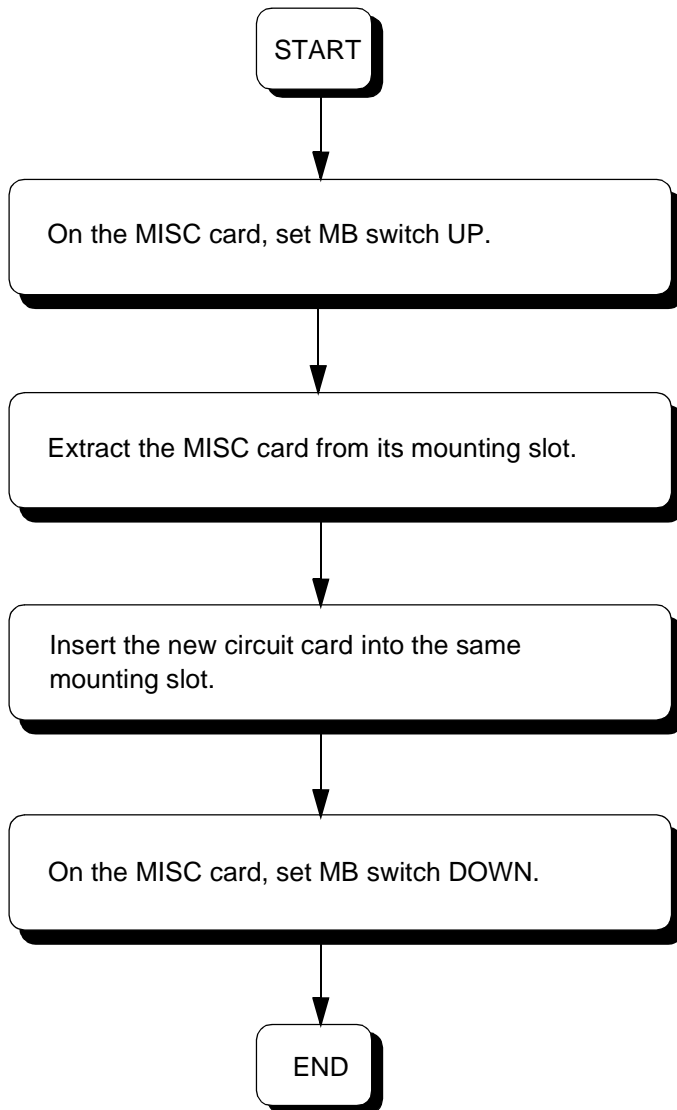
- CPU System Changeover Refer to [Section 12.1.2](#) in [Chapter 6](#).



UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE



1.3.5 MISC Card Replacement Procedure



- Keep MB switch UP.

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

2. TSWM ACCOMMODATING CIRCUIT CARD REPLACEMENT PROCEDURE

This section explains the procedure for replacing circuit cards accommodated in the TSWM.

2.1 Precaution

- This procedure is applied when replacing a faulty circuit card with a spare. It is also able to be applied when checking a spare card.
- There are the functional switches (having set the default switch) on some of the circuit cards to be replaced. As for switch setting on the circuit cards, confirm the circuit card mounting face layout for the PIM. When a circuit card that has default switch settings has been replaced with a spare card, be sure to make switch settings on the new circuit card the same as on the replaced card. Otherwise, electronic components on the circuit card may be destroyed, or the circuit card itself may fail to function normally.
- When handling a circuit card, be sure to use the field service kit for countermeasures against static electricity. If you touch a circuit card without using the field service kit, electronic components like an IC on the card may be destroyed by the static electricity on the human body.

2.2 Circuit Card Mounting Face Layout

The face layout of the circuit cards housed in the TSWM is shown in Figure 4-4 Circuit Card Mounting Face Layout of TSWM. Note that the circuit cards marked with * are optional.

TSWM																								
Slot No.	0	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	PWR SW0	PWR SW1	(RES)	MISC	MISC	MISC	MISC	MISC	DLKC0	DLKC1	GT0	GT1	TSW00	TSW01	TSW02	TSW03	TSW10	TSW11	TSW12	TSW13	PLO0		PLO1	(RES)
	PWRSW: PH-PW14				DLKC: PH-PC20				GT: PH-GT09			TSW: PH-SW12				PLO: PH-CK16/17								

Figure 4-14 Circuit Card Mounting Face Layout of TSWM

WARNING Improper key operations may result in a system down. Operate the key, using extreme care.

By replacing a circuit card, the system will issue system messages and activate the related alarm. Be sure to reset the indicated alarm after the replacement procedure is complete.

If the indicated alarm is cleared via the RALM command, the system also clears the contents of the system message. Be sure to print out the messages (using the DFTD command) BEFORE using the RALM command.

The ALM RST button is used to reset the alarm lamps only.

2.3 Operating Procedures

The following paragraphs explain the operating procedures to replace circuit cards located in the PIM. Perform the operations corresponding to each Reference Item specified in [Table 4-2](#).

Table 4-2 TSWM Circuit Cards and Reference Items

CIRCUIT CARD FUNCTION NAME	REFERENCE ITEM	REMARKS
GT	Section 2.3.1, GT Card Replacement Procedure	
TSW	Section 2.3.2, TSW Card Replacement Procedure	
DLKC	Section 2.3.3, DLKC Card Replacement Procedure	
PLO	Section 2.3.4, PLO Card Replacement Procedure	
PWR SW	Section 2.3.5, PWR SW Card Replacement Procedure	
MISC	Section 2.3.6, MISC Card Replacement Procedure	

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

2.3.1 GT Card Replacement Procedure

The GT (PH-GT09) card is located in Slot No. 10 or 11 within the TSWM. The card's main function is to provide both MISC and I/O Local bus interface between the microprocessor of CPU and other lower echelons, such as DLKC, TSW and MUX cards. Follow the procedures below to replace a GT card with a spare.

Note: To replace the GT card, the ACT/STBY status of GT must be changed over first. This must be done by operating the MBR key (or by using the CMOD command) on the DSP of active CPR. [Figure 4-15](#) shows a system block diagram centering upon the CPU and its controlling GT. If the ACT/STBY of GT is to be changed over, the system of CPU must be manually changed over. For more details on the GT changeover, refer to [Section 12.1.2, How to Control CPU Block](#), in [Chapter 6](#).

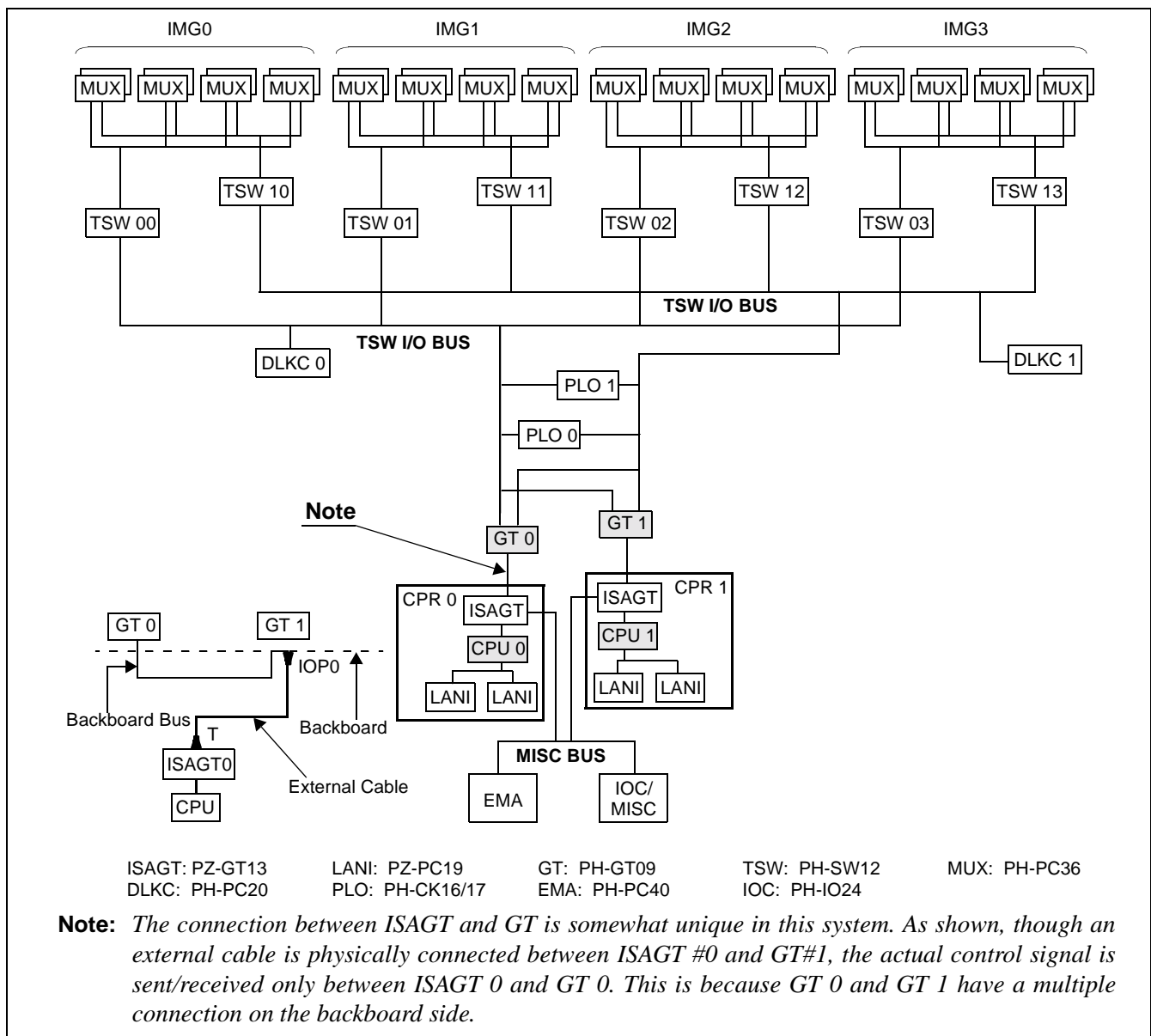
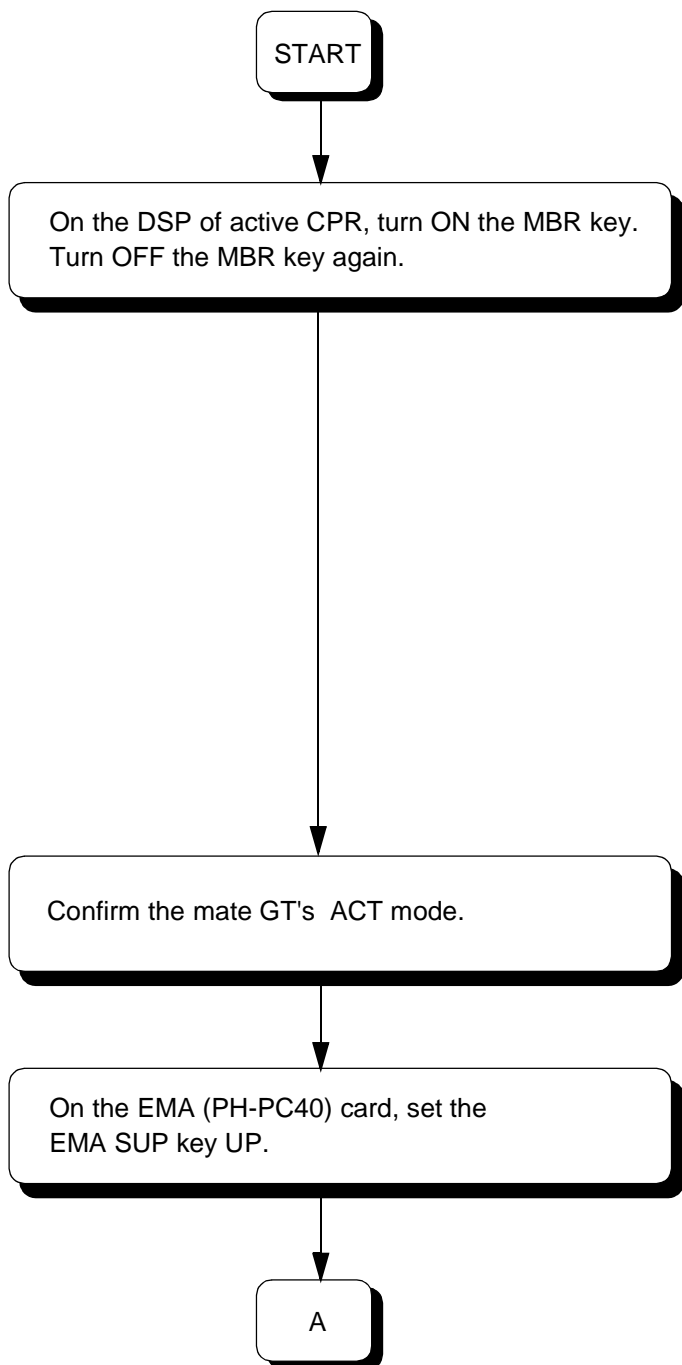


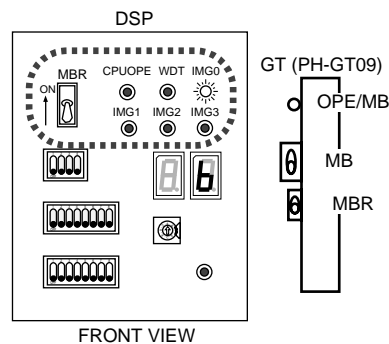
Figure 4-15 System Block Diagram (Connections Between GT and CPU)

GT Card Replacement Procedure

WARNING Use extreme care when operating the keys on the DSP of CPR and PH-GT09 card.



- System changeover of GT from ACT to STBY mode



Check the following lamp indications on the GT card to be replaced and on the DSP of CPR that controls the GT:

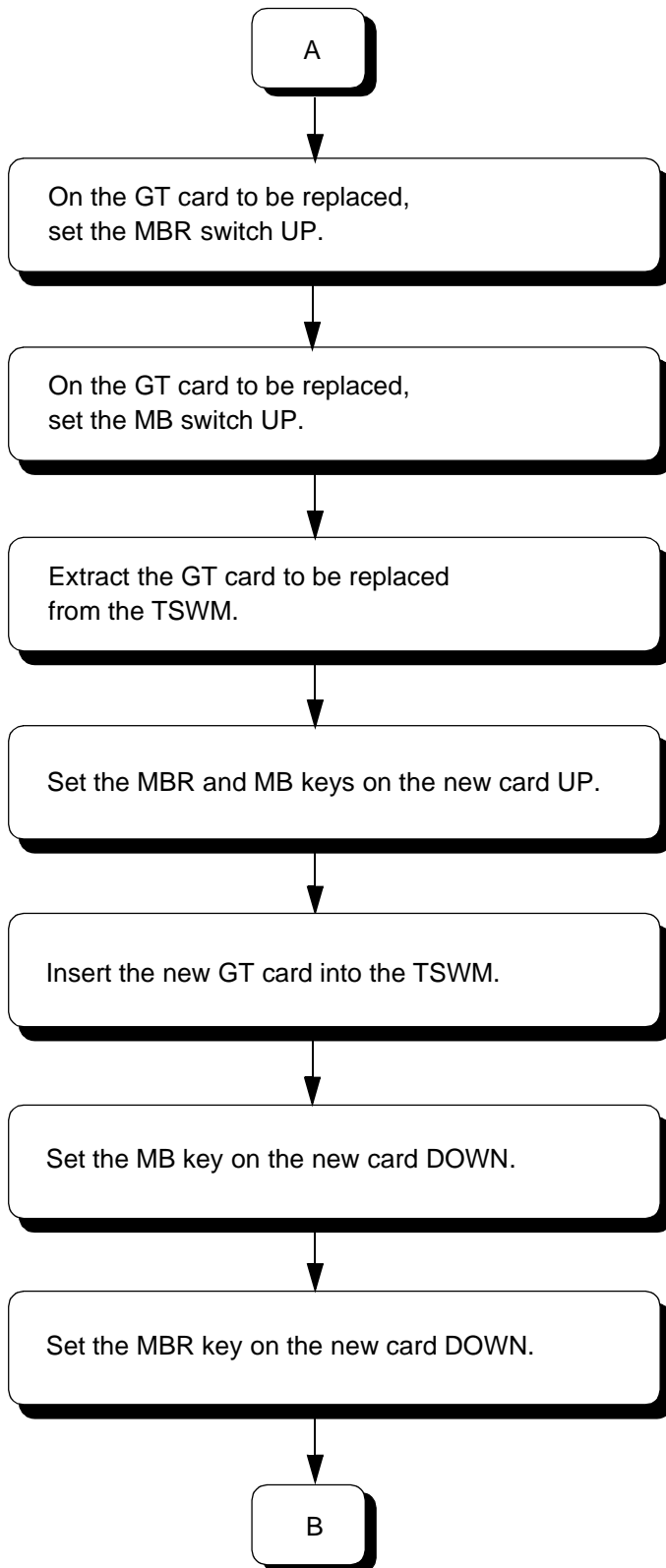
- OPE/MB (GT card) = OFF
- CPU OPE (CPU DSP) = OFF
- IMG0 (CPU DSP) = Flash (green)
- IMG1-3 (CPU DSP) = OFF

Check the following lamp indications on the mate GT card and the DSP of the mate CPR:

- OPE/MB (GT card) = Steady-green
- CPU OPE (CPU DSP) = Steady-green
- IMG0-3 (CPU DSP) = Flash (green)

EMA SUP lamp on the EMA card is steady-green.

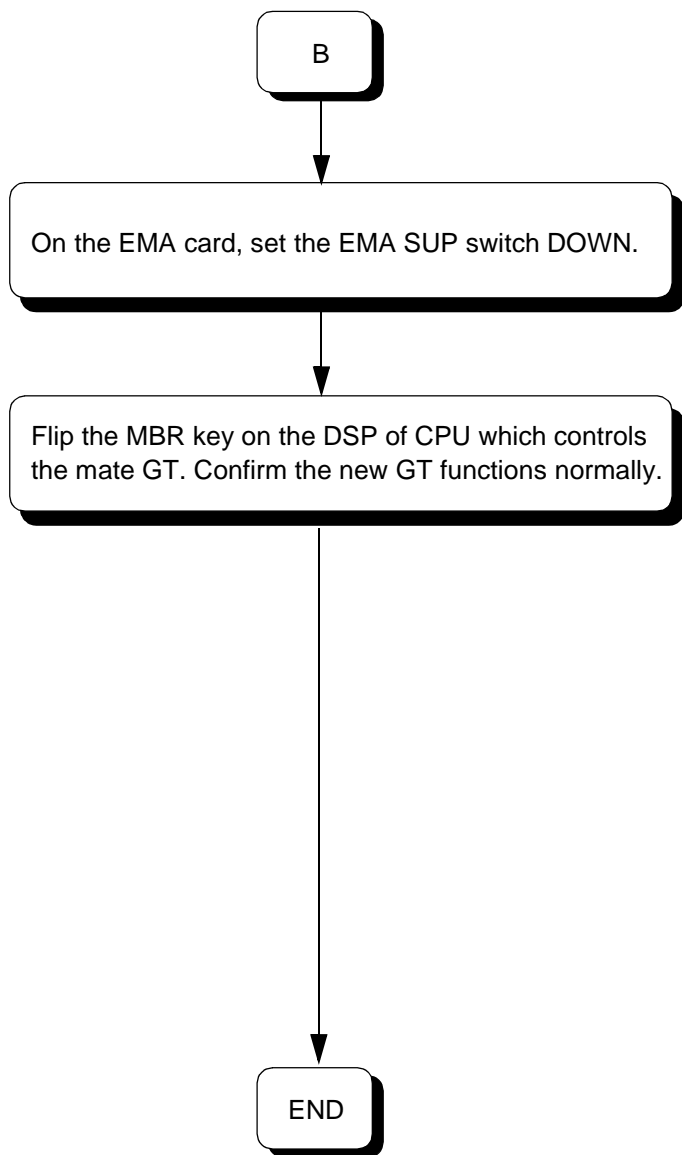
UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE



- OPE/MB lamp on the GT card remains OFF.

- OPE/MB lamp on the new card is OFF.

- OPE/MB lamp on the new card remains OFF.



EMA SUP lamp on the EMA card goes OFF.

System Changeover

- Replaced GT: STBY to ACT
- Mate GT: ACT to STBY



Check the following lamp indications on the new GT card and the DSP of the CPR which controls the GT.

- OPE/MB (GT card) = Steady-green
- CPU OPE (CPU DSP) = Steady-green
- IMG0-3 (CPU DSP) = Flash (green)

Note: *IMG2~3 lamp indications may vary depending on the system configuration.*

Check the following lamp indications on the mate GT card and the DSP of the mate CPR:

- OPE/MB (GT card) = OFF
- CPU OPE (CPU DSP) = OFF
- IMG0 (CPU DSP) = Flash (green)
- IMG1-3 (CPU DSP) = OFF

Note: *The system changeover of GT can be executed also by using the CMOD command. For details, refer to Chapter 8, Maintenance Commands.*

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

2.3.2 TSW Card Replacement Procedure

The TSW (PH-SW12) card is located in the Slot Nos. ranging from 12 to 19 within the TSWM. Equipped with the Time Division Switch (TSW) and Speech Path Controlling Interface (INT), the card's main function is to provide a maximum of 8192×2048 Time Slot (TS) switching for a designated single IMG. Because a single TSW card only enables the TS switching associated with a single, individual IMG alone, note that the fully expanded 4-IMG system requires a total of 4 TSW cards when it adopts a single configuration, or as many as 8 in the case of dual configuration. If your system adopts the latter's dual configuration, the card's replacement procedures are as follows:

Note: *To replace a TSW card in dual configuration, the system of the card must be changed over from ACT to STBY mode. The changeover can be done by flipping the MBR key on the active GT (PH-GT09) card or by using the CMOD command. For more details, refer to [Section 12, System Control Procedures](#), in [Chapter 6](#).*

[Figure 4-16](#) provides the system block diagram centering upon the TSW cards. If the system of TSW/INT is changed over, the ACT/STBY of DLKC and MUX in the same switching block are also totally changed over. The changeover can be performed by flipping the MBR key on the active GT (PH-GT09) card, or by using the CMOD command.

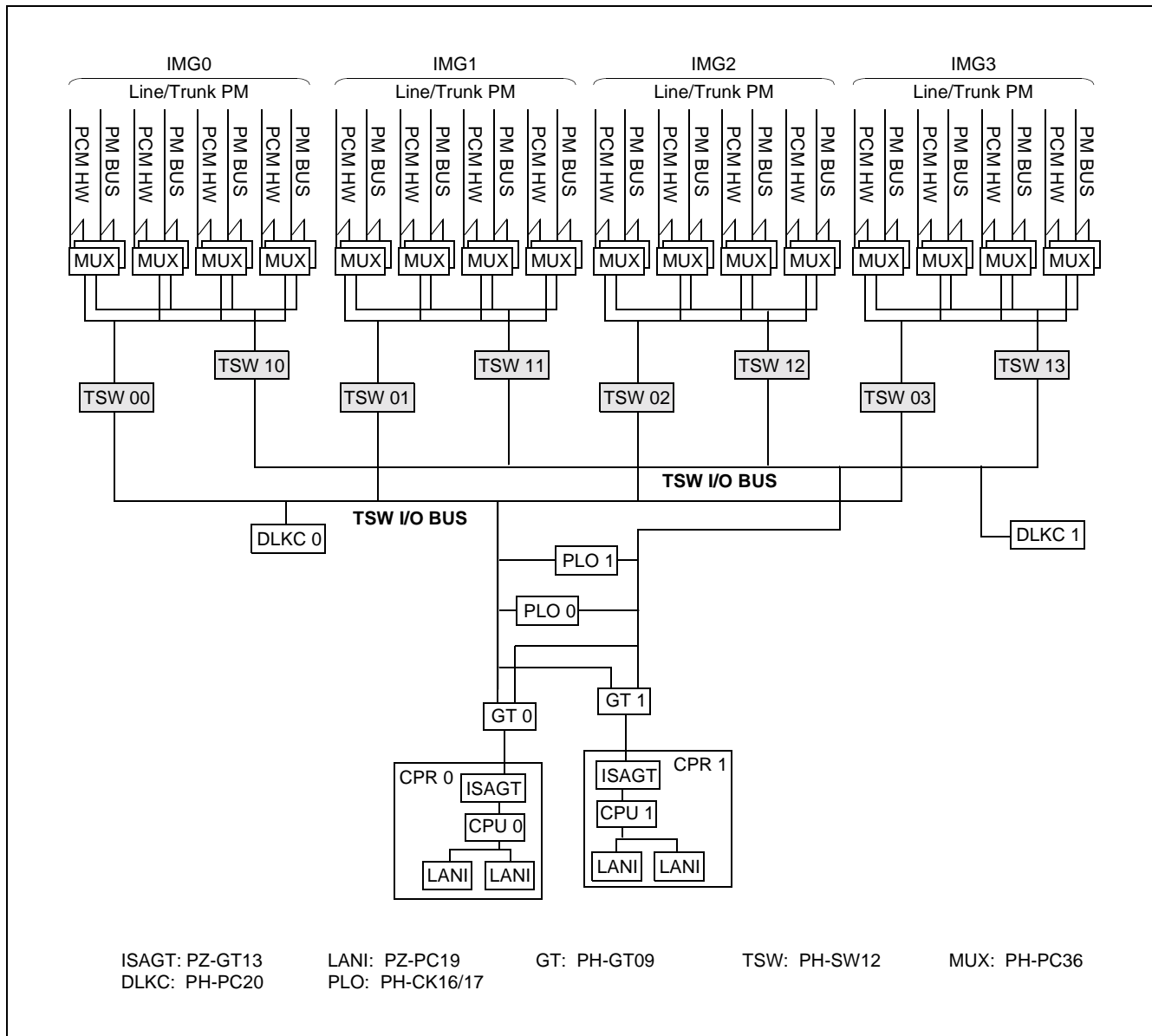
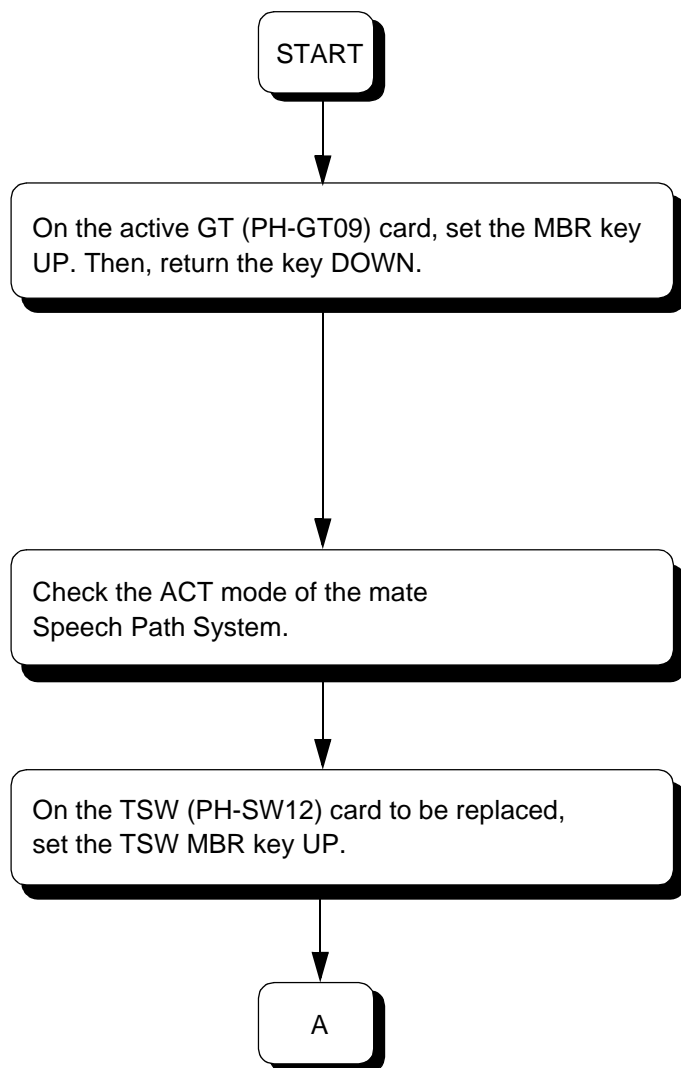


Figure 4-16 System Block Diagram (TSW and Other Speech Path Echelons)

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

TSW Card Replacement Procedure

WARNING Use extreme care when operating the keys on the circuit card.



System Changeover. Check the following lamp indications on the circuit cards to be affected and ensure that they are all OFF:

- TSW ACT (TSW cards)
- OPE/MB (DLKC card) **Note**
- MUX ACT (MUX cards)

Note: *If the TSW card to be replaced represents system status #0, all the circuit cards with #0 status are totally affected. Check the whole cited cards' lamp indications. (See Figure 4-16 and Figure 4-17.)*

Check the following lamp indications on the mate Speech Path block and ensure that they are all steady-green:

- TSW ACT (TSW cards)
- OPE/MB (DLKC card)
- MUX ACT (MUX cards)

TSW ACT lamp on the TSW card remains OFF.

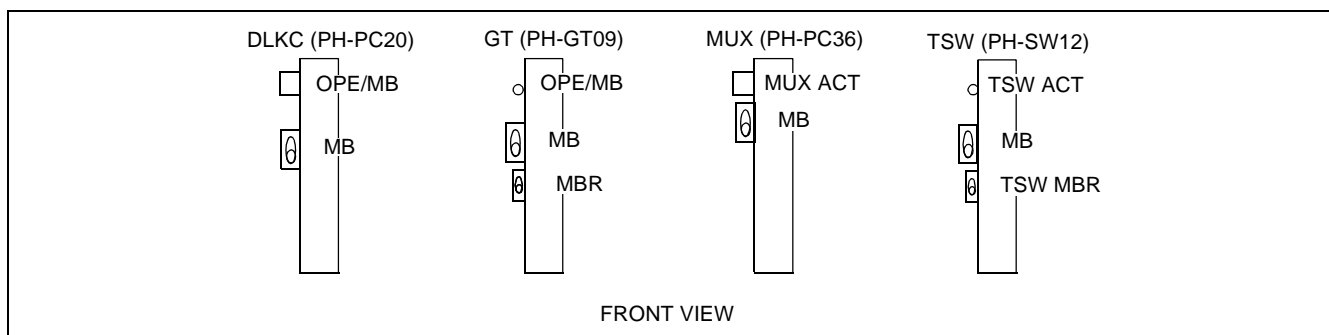
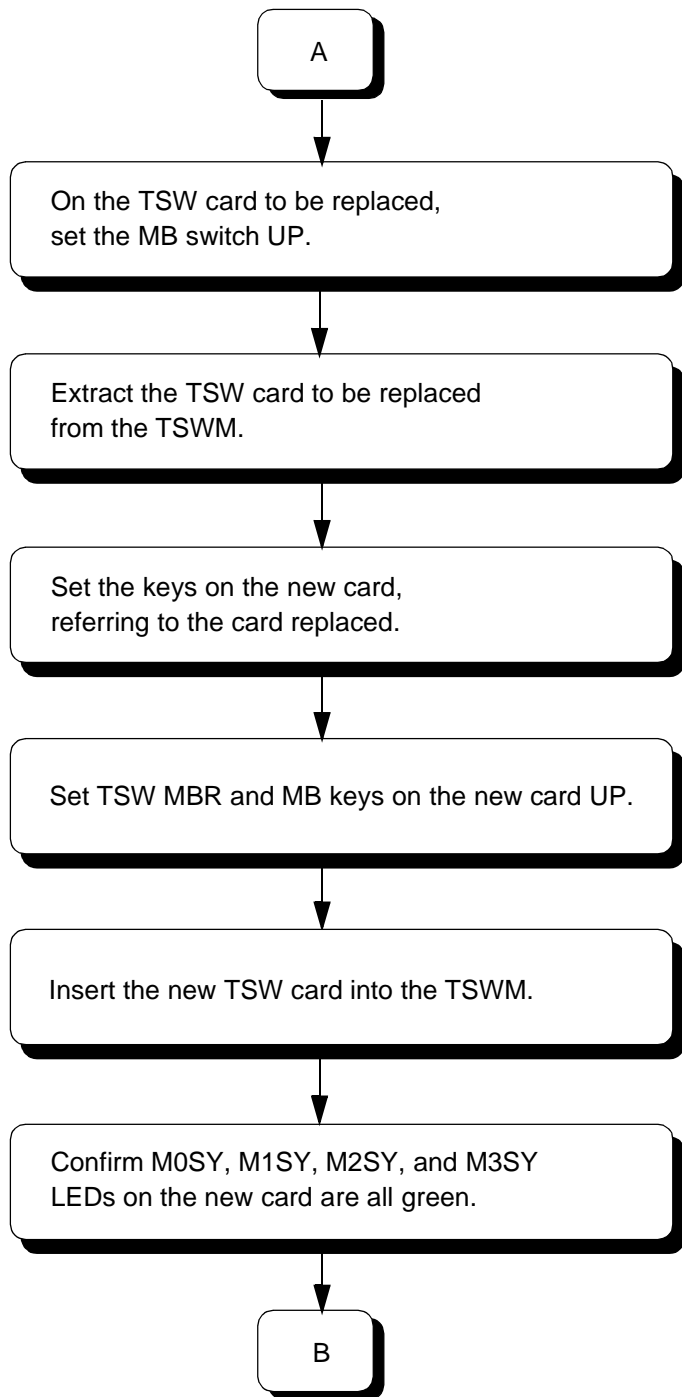


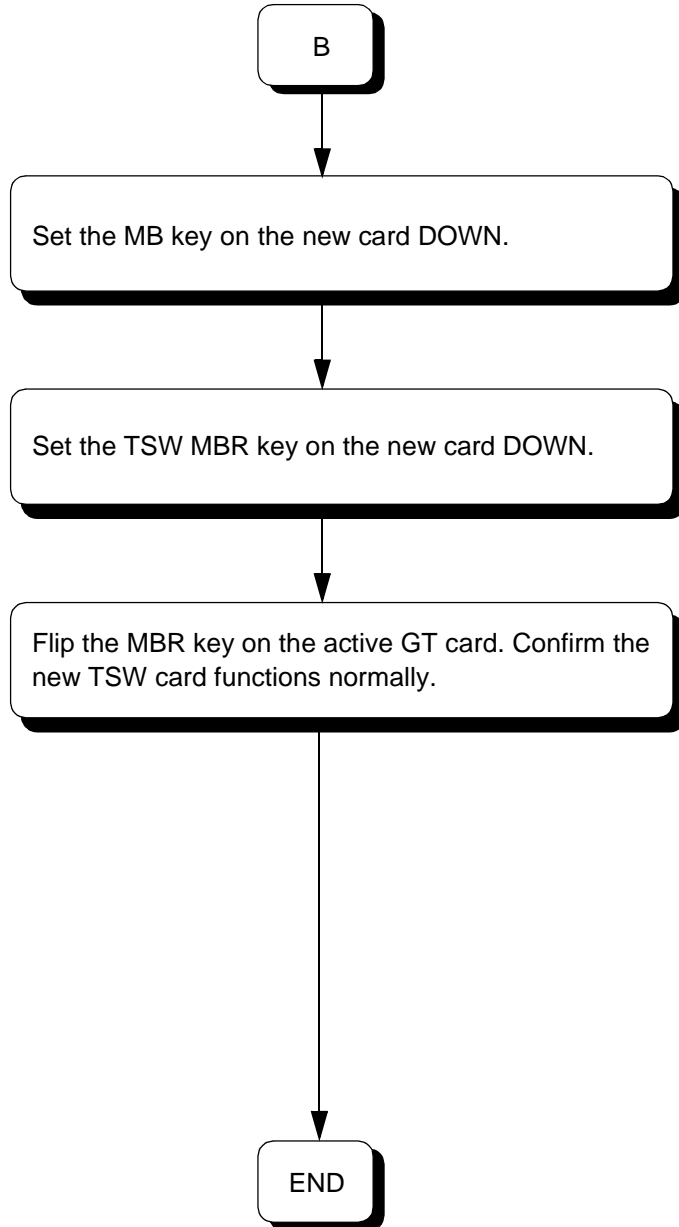
Figure 4-17 LEDs and Switches for TSW Changeover



- TSW ACT lamp on the TSW card is red.

- TSW ACT lamp on the new card is red.

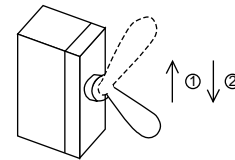
UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE



- TSW ACT lamp on the new card goes OFF.

- TSW ACT lamp on the new card remains OFF.

MBR (on the active GT card)



System Changeover

- Replaced TSW: STBY to ACT
- Mate TSW: ACT to STBY



Check the following lamp indications on the Speech Path block to which the new TSW card belongs and ensure that they are all steady-green:

- TSW ACT (TSW cards)
- OPE/MB (DLKC card)
- MUX ACT (MUX cards)

Check the following lamp indications on the mate Speech Path block and ensure that they are all OFF:

- TSW ACT (TSW cards)
- OPE/MB (DLKC card)
- MUX ACT (MUX cards)

Note: The system changeover of TSW card can be executed also by using the *CMOD* command. For details, refer to *Chapter 8, Maintenance Commands*.

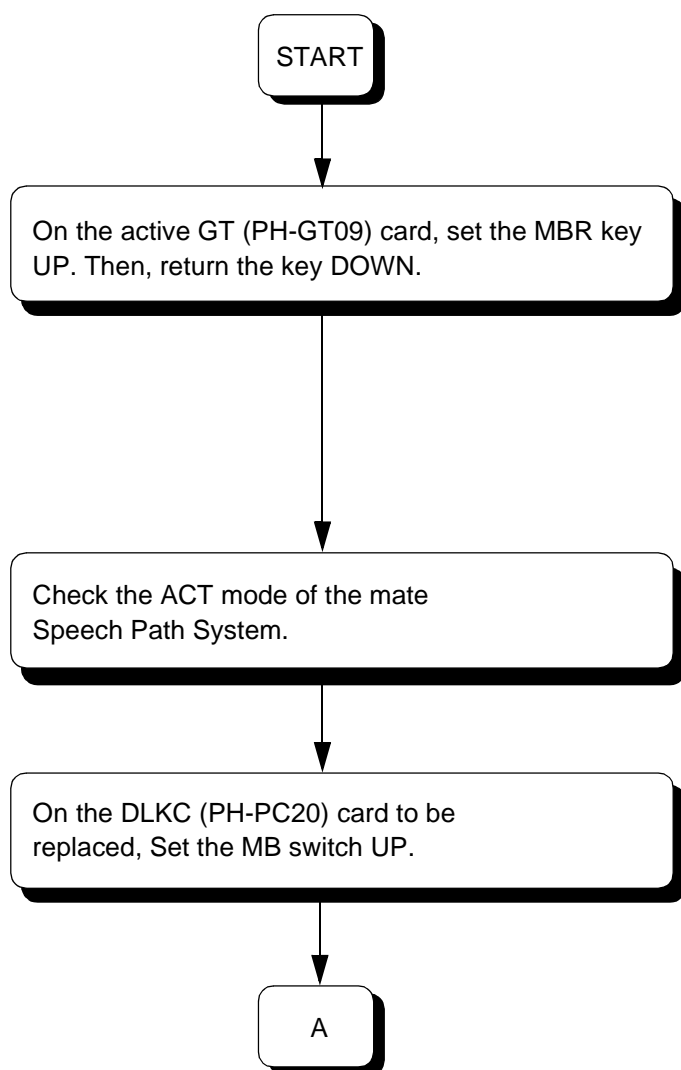
2.3.3 DLKC Card Replacement Procedure

The DLKC (PH-PC20) card is located in Slot No. 08 or 09 within the TSWM. The card's main function is to provide all the Attendant/Desk Consoles with information such as termination/answer/release (abandoned) of ATT calls or idle/busy status of a station via the link of the TSW system. Use the following procedures to replace the DLKC card with a spare.

Note: *The system changeover of DLKC must be executed by the MBR key operation on the active GT (PH-GT09) card or by using the CMOD command. Before starting this work, confirm the system block diagram shown in [Figure 4-16](#), or [Section 12, System Control Procedures](#), in [Chapter 6](#).*

Replacement Procedure

WARNING Use extreme care when operating the keys on the circuit card.



System Changeover

Check the following lamp indications on the circuit cards to be affected and ensure that they are all OFF:

- TSW ACT (TSW cards)
- OPE/MB (DLKC card) **Note**
- MUX ACT (MUX cards)

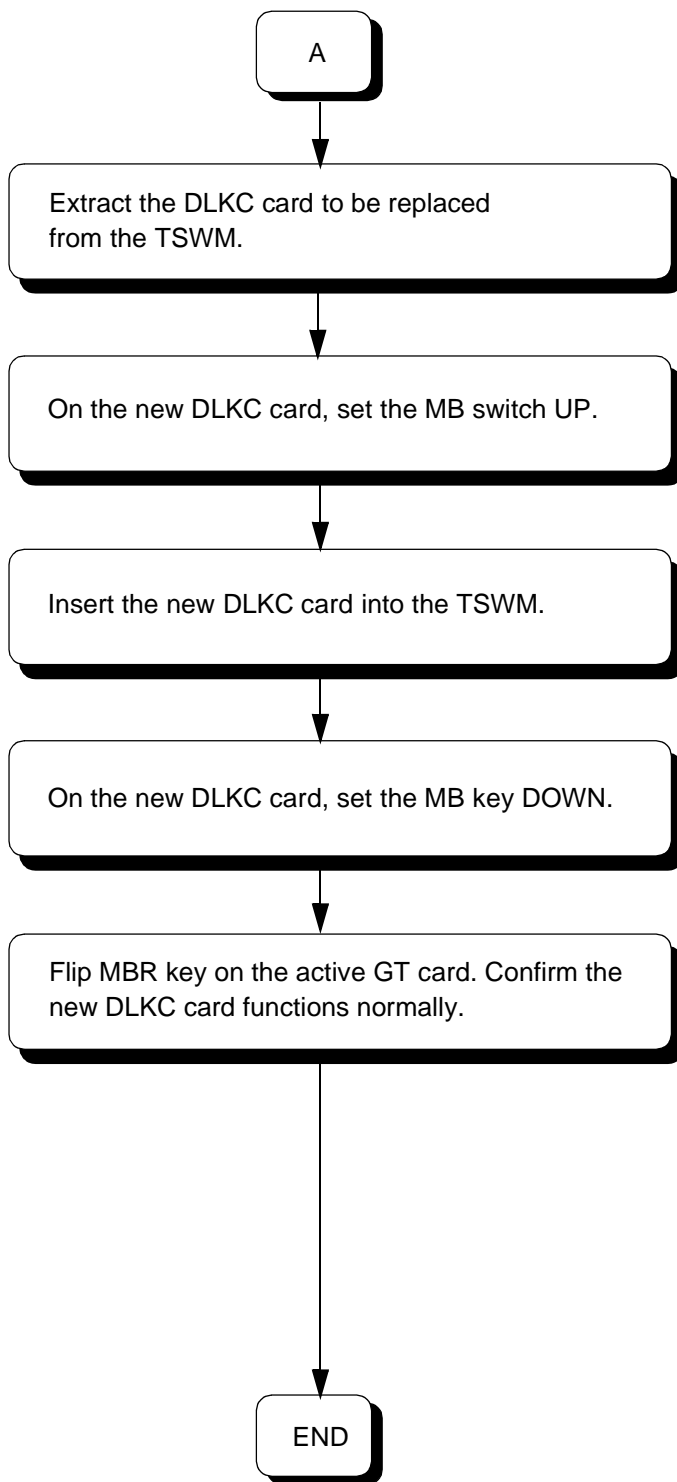
Note: *If the DLKC card to be replaced represents system status #0, all circuit cards with #0 status are totally affected. Check the cited cards' lamp indications. See [Figure 4-16](#) and [Figure 4-17](#).*

Check the following lamp indications on the mate Speech Path Block and ensure that they are all steady-green:

- TSW ACT (TSW cards)
- OPE/MB (DLKC card)
- MUX ACT (MUX cards)

OPE/MB lamp on the DLKC card is red.

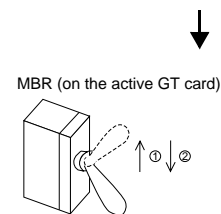
UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE



- TSW ACT lamp on the new card is red.
- TSW ACT lamp on the new card goes OFF.

System Changeover

- Replaced DLKC: STBY to ACT
- Mate DLKC: ACT to STBY



Check the following lamp indications on the Speech Path block to which the new DLKC card belongs and ensure that they are all steady-green:

- TSW ACT (TSW cards)
- OPE/MB (DLKC card)
- MUX ACT (MUX cards)

Check the following lamp indications on the mate Speech Path block and ensure that they are all OFF:

- TSW ACT (TSW cards)
- OPE/MB (DLKC card)
- MUX ACT (MUX cards)

Refer to [Figure 4-16](#) and [Figure 4-17](#).

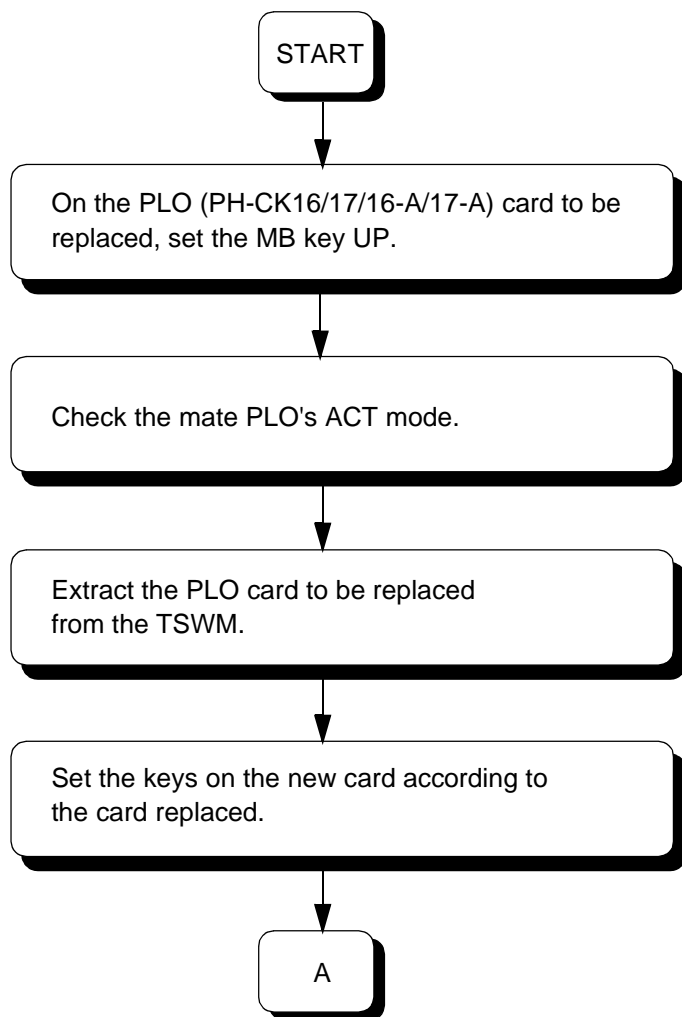
Note: The changeover of speech path system can be performed also by using the **CMOD** command. For details, refer to [Chapter 8, Maintenance Commands](#).

2.3.4 PLO Card Replacement Procedure

The PLO (PH-CK16/17/16-A/17-A) card is located in Slot No. 21 or 23 within the TSWM. Used together with a different direct digital interface circuit card, the card's main function is to set up the clock synchronization on the network. In addition, the MUSIC ROM supplies the hold tone to each station line via the TSW circuit card. Use the procedures below to replace the PLO card with a spare.

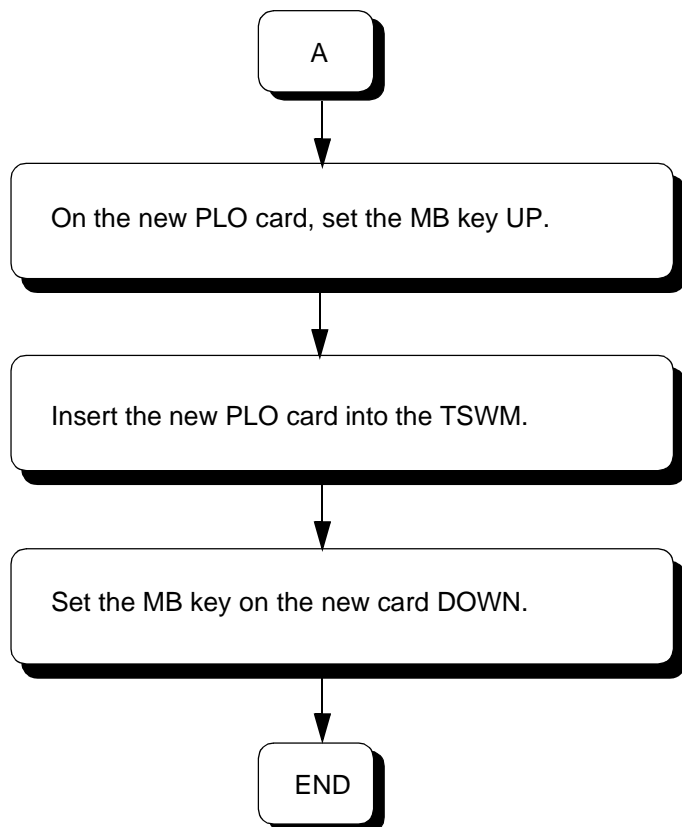
Note: *The ACT/STBY of PLO can be changed over via a single MB key operation on the circuit card. Though its circuit is controlled by the GT (PH-GT09) card via TSW I/O bus, the switching system of PLO is not affected by the speech path system changeover, differing from other echelons such as TSW, MUX, DLKC. Refer to [Section 12, System Control Procedures](#), in [Chapter 6](#).*

Replacement Procedure



- PLO system is changed over from ACT to STBY mode.
- ↓
- OPE lamp on the PLO card goes OFF.
- Check the mate PLO card's following lamp indication:
- OPE = Steady-green

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE



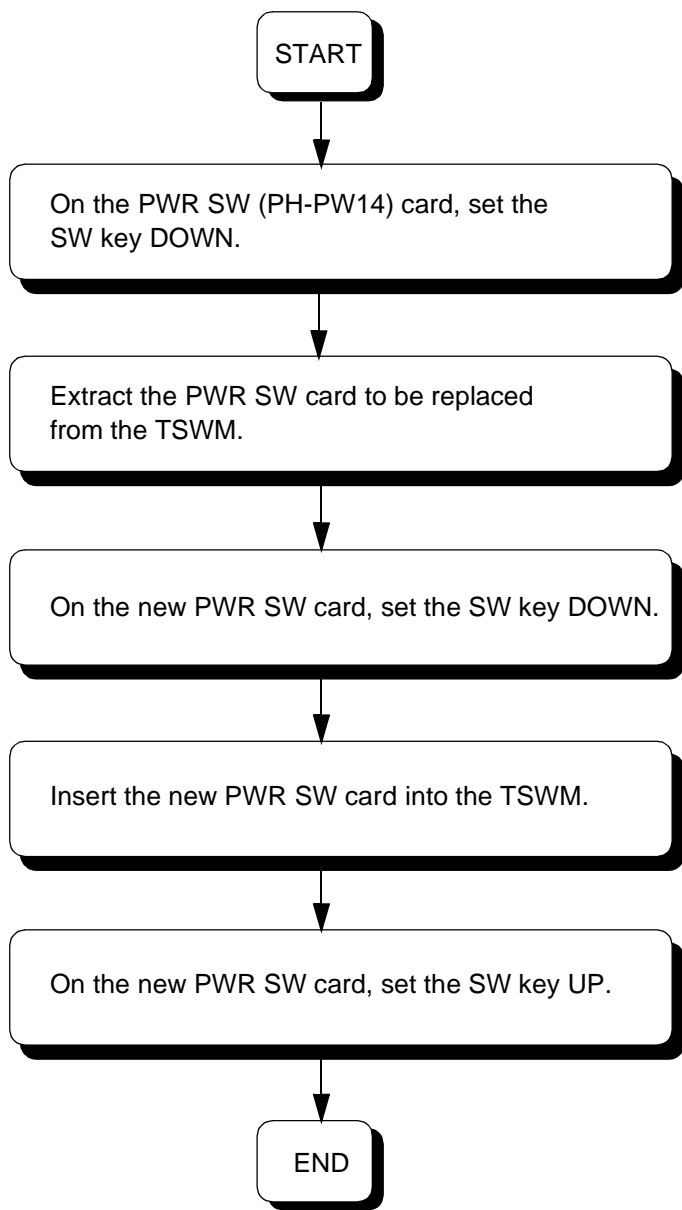
- OPE lamp on the new card is OFF.
Note

Note: After all steps are completed, check the ACT mode of TSW cards, which are in the same switching block with the replaced PLO. Because the PLO-located MUSIC ROM supplies hold tones only to the TSW cards belonging to the same switching block, verify all the TSW cards are also in the ACT-mode status. Refer to [Section 12, System Control Procedures](#), in [Chapter 6](#).

2.3.5 PWR SW Card Replacement Procedure

The PWR SW (PH-PW14) card is located in Slot No. 00 or 01 within the TSWM. The card’s main function is to supply DC -48V operating power to the same TSWM circuit cards and also DC +5, -5V, and +12V output power to the MISC slots. Use the following procedures to replace the card with a new one.

Replacement Procedure



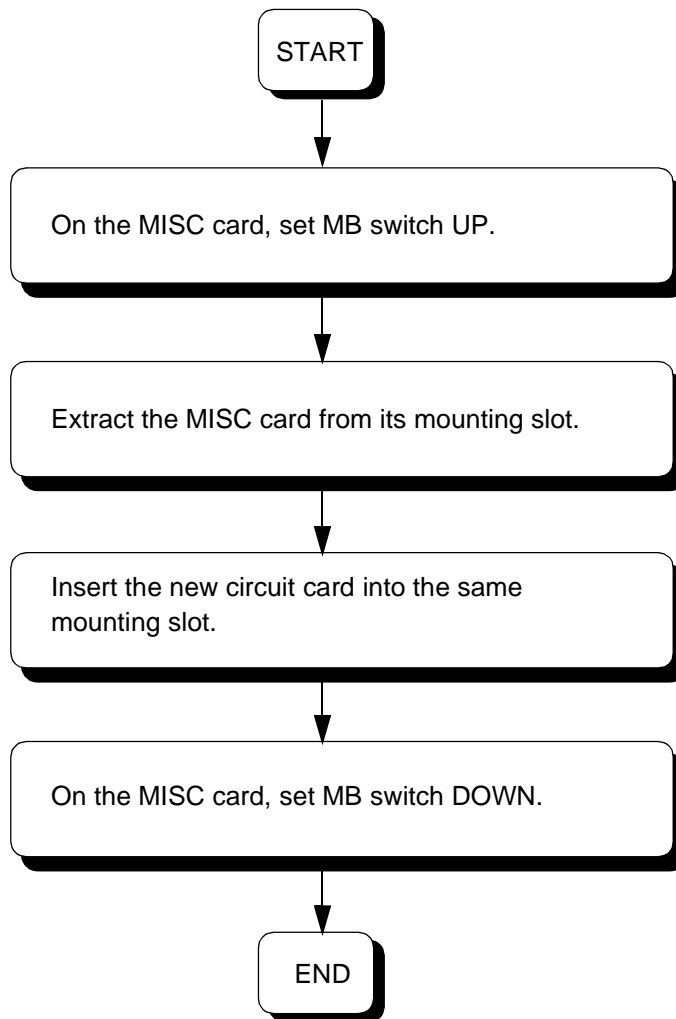
- P-ON lamp on the PWR SW card goes OFF.
- ALM lamp on the PWR SW card is red.

- P-ON lamp on the new card is OFF.
- ALM lamp on the PWR SW card is red.

- P-ON lamp on the new card is steady-green.
- ALM lamp on the PWR SW goes OFF.

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

2.3.6 MISC Card Replacement Procedure



- Keep MB switch UP.

3. PIM Accommodating Circuit Card Replacement Procedure

This section covers the procedures for replacing circuit cards mounted in the PIM (IMG0/1/2/3).

3.1 Precaution

- Use this procedure to replace a faulty circuit card with a spare or to check a spare card.
- There are functional switches (having set the default switch) on some of the circuit cards to be replaced. As for switch setting on the circuit cards, confirm the circuit card mounting face layout for the PIM. When a circuit card with a default switch setting is replaced with a spare card, always make the switch setting on the new circuit card the same as on the replaced card. Otherwise, electronic components on the circuit card may be destroyed, or the circuit card itself may fail to function normally.
- When handling a circuit card, always use the field service kit as countermeasures against static electricity. Touching a circuit card without using the field service kit may destroy the card due to static electricity on the human body.

3.2 Circuit Card Mounting Face Layout

Figure 4-18 shows the face layout of the circuit cards mounted in the PIM.

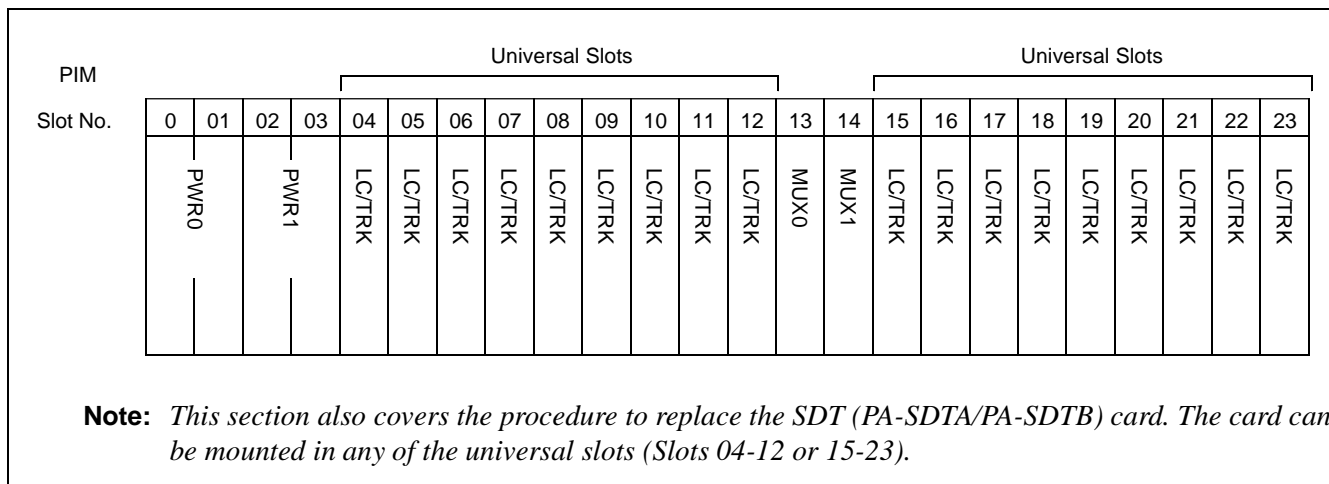


Figure 4-18 Circuit Card Mounting Face Layout of PIM

WARNING Improper key operations may result in a system down. Operate the keys with extreme care.

During replacement of a circuit card, the system issues system messages and activates the related alarm. Reset the indicated alarm after completing the replacement procedure.

If the indicated alarm is cleared via the RALM command, the system also clears the whole contents of the system message. **Before** using the RALM command, print the messages using the DFTD command.

Use the ALM RST button only to reset the alarm lamps.

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

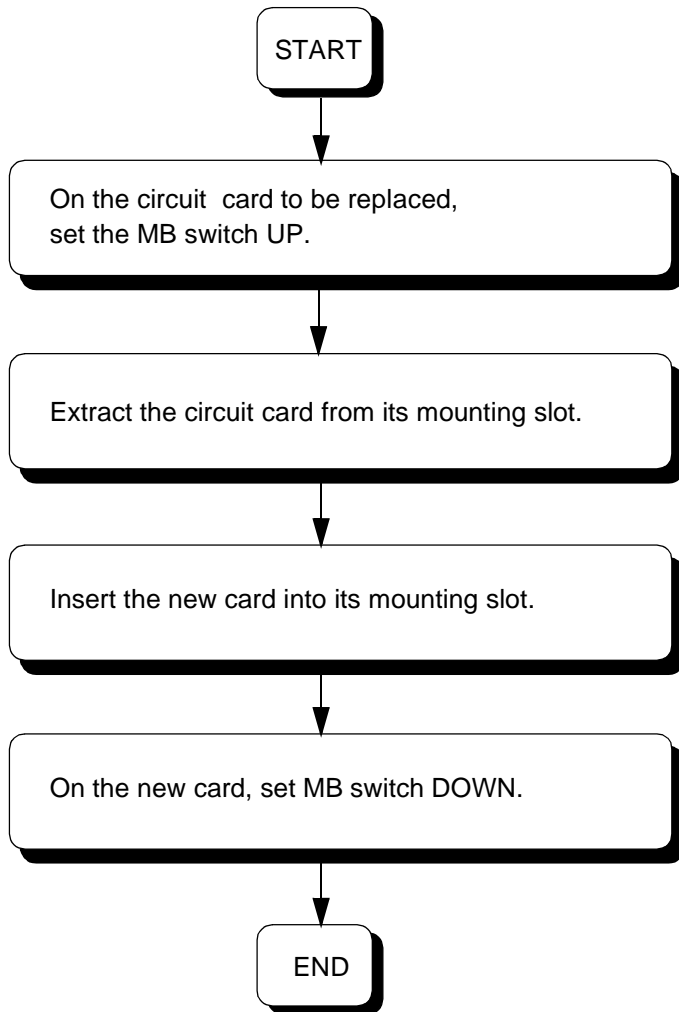
3.3 Operating Procedures

The following sections provide operating procedures to replace circuit cards mounted in the PIM. Perform the operations corresponding to each Reference Item specified in [Table 4-3](#). Note that the procedures assume that the system adopts the dual configuration.

Table 4-3 PIM Circuit Cards and Reference Items

CIRCUIT CARD FUNCTION NAME	REFERENCE ITEM	REMARKS
LC/TRK	Section 3.3.1, LC/TRK Circuit Card Replacement Procedure	
MUX	Section 3.3.2, MUX Card Replacement Procedure	
SDT	Section 3.3.3, SDT Card Replacement Procedure	
PWR	Section 3.3.4, PWR Card Replacement Procedure	

3.3.1 LC/TRK Circuit Card Replacement Procedure



- Keep MB switch set at UP.

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

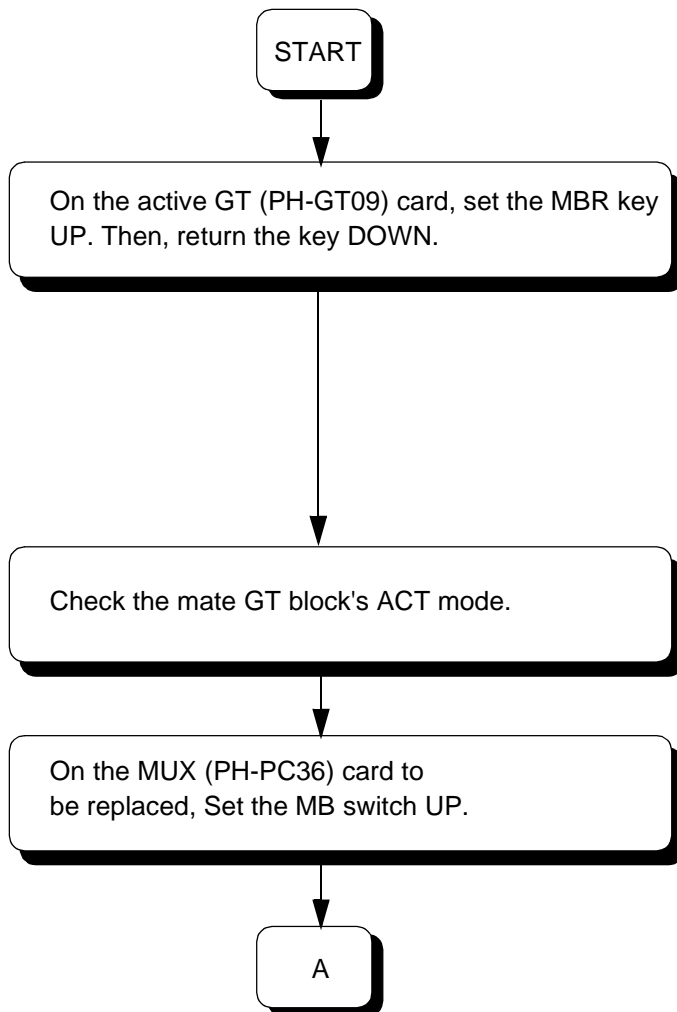
3.3.2 MUX Card Replacement Procedure

The MUX (PH-PC36) card is mounted in Slot No. 13 and/or 14 of each Port Interface Module (PIM). The card's main function is to provide an interface between the CPR and Port Microprocessor (PM) of the line/trunk circuit, and also to provide an interface for multiplexing/de-multiplexing of voice Pulse Code Modulation (PCM) information and digital data information. Use the procedures below to replace the MUX card with a spare:

Note: Execute the system changeover of MUX by using the MBR key operation on the active GT (PH-GT09) card or by using the CMOD command. Before starting this task, be sure to confirm the system block diagram shown in [Figure 4-16](#), or [Section 12, System Control Procedures](#), in [Chapter 6](#).

MUX Card Replacement Procedure

WARNING Apply extreme care when operating the keys on the circuit cards.



System Changeover

Check the following lamp indications on the circuit cards to be affected and ensure that they are all OFF:

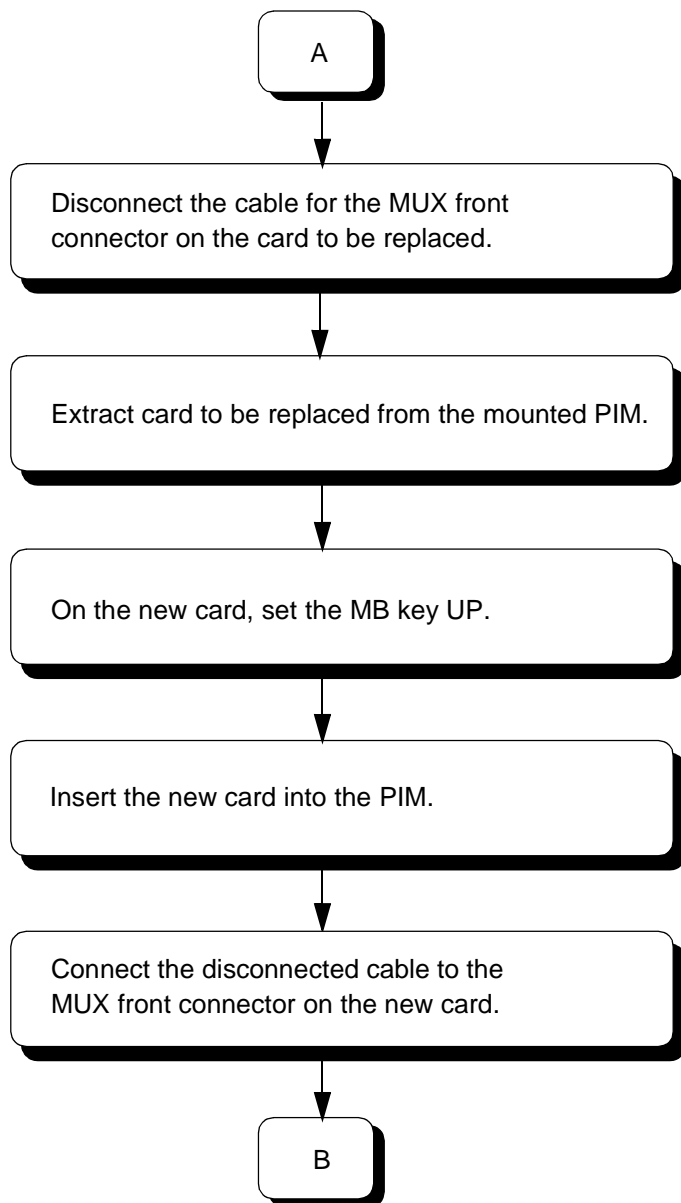
- TSW ACT (TSW cards)
- OPE/MB (DLKC card) **Note**
- MUX ACT (MUX cards)

Note: If the MUX card to be replaced represents system status #0, all circuit cards with #0 status are totally affected. Check the cited cards' lamp indications. Refer to [Figure 4-16](#) and [Figure 4-17](#).

Check the following lamp indications on the mate Speech Path Block and ensure that they are all steady-green:

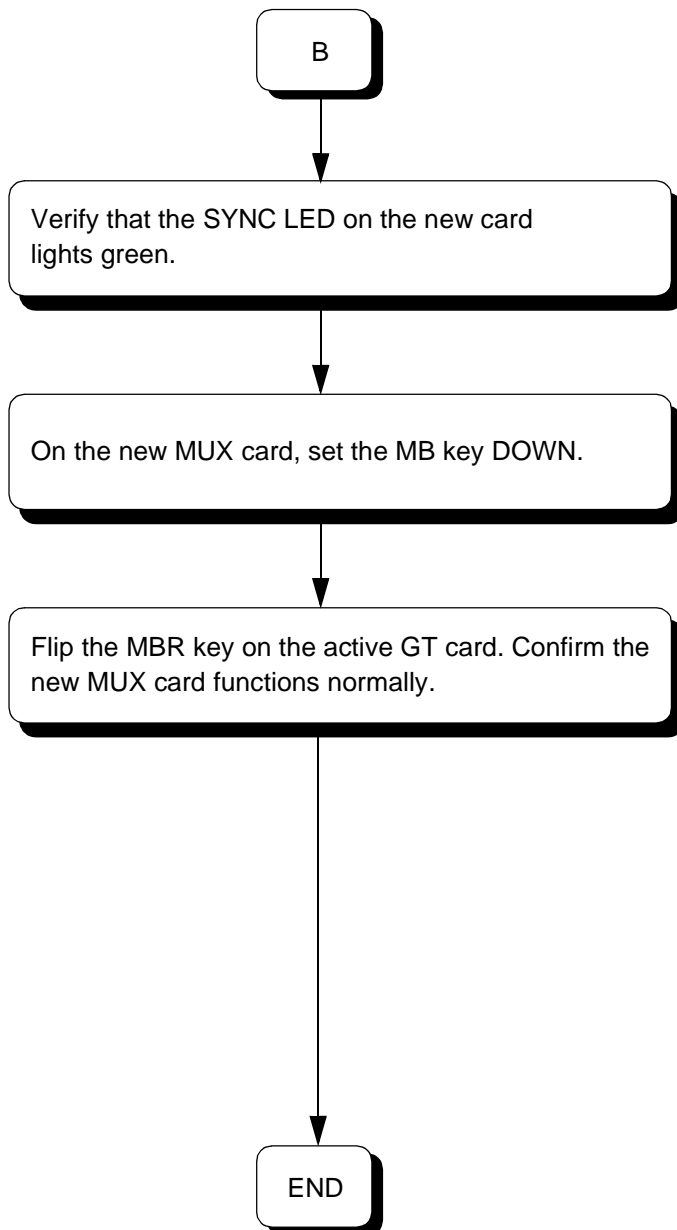
- TSW ACT (TSW cards)
- OPE/MB (DLKC card)
- MUX ACT (MUX cards)

MUX/ACT lamp on the DLKC card is red.

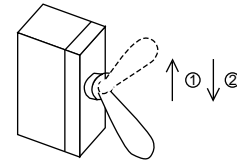


- MUX ACT lamp on the new card is red.

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE



MBR (on the active GT card)



System Changeover

Replaced MUX: STBY to ACT
Mate MUX: ACT to STBY

Check all the following lamp indications on the Speech Path block to which the new MUX card belongs and ensure that they are all steady-green:

- TSW ACT (TSW cards)
- OPE/MB (DLKC card)
- MUX ACT (MUX cards)

Check the following lamp indications on the mate Speech Path block and ensure that they are all steady-green:

- TSW ACT (TSW cards)
- OPE/MB (DLKC card)
- MUX ACT (MUX cards)

Refer to [Figure 4-16](#) and [Figure 4-17](#).

Note: *The changeover of Speech Path System can be performed also by using the [CMOD](#) command. For details, refer to [Chapter 8, Maintenance Commands](#).*

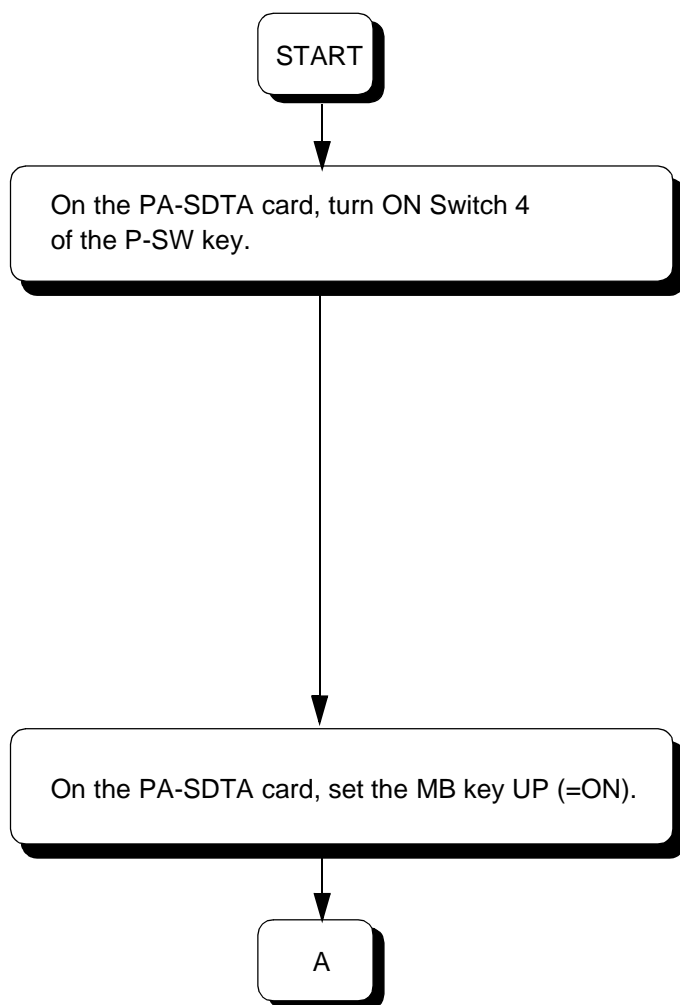
3.3.3 SDT Card Replacement Procedure

The SDT (PA-SDTA/PA-SDTB) card, mounted in a universal slot of a PIM, is used to provide a 52M interface for the optical fiber lines. Use the following procedure to replace the SDT card with a spare.



WARNING While this card is being replaced, the connected optical fiber line cannot be used.

Procedure to Replace Optical Fiber Cable



- ACT lamp on PA-SDTA card goes OFF. (When card is provided in a dual configuration, the card becomes STBY.)

The following occurs in call processing:

When card is provided in dual configuration

All calls (including already established calls plus newly attempted calls) can normally be handled by the mate card.

When card is in single configuration, or mate card is faulty in dual configuration

Though any call attempt is rejected, already established calls are not affected. When any connection link exists, the link is still maintained.

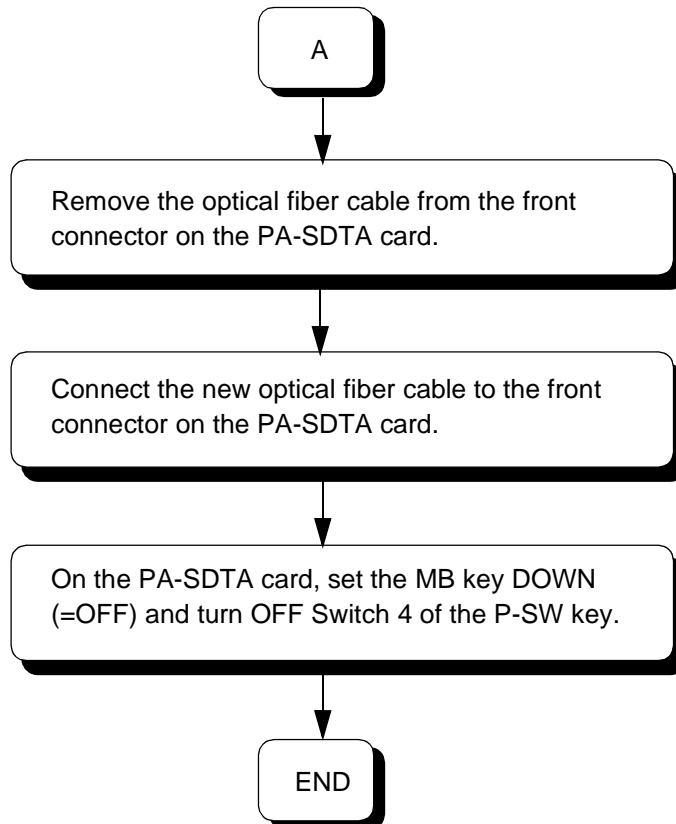
- OPE lamp on the PA-SDTA card is red.

The following occurs in call processing:

When card is in single configuration, or mate card is faulty in dual configuration

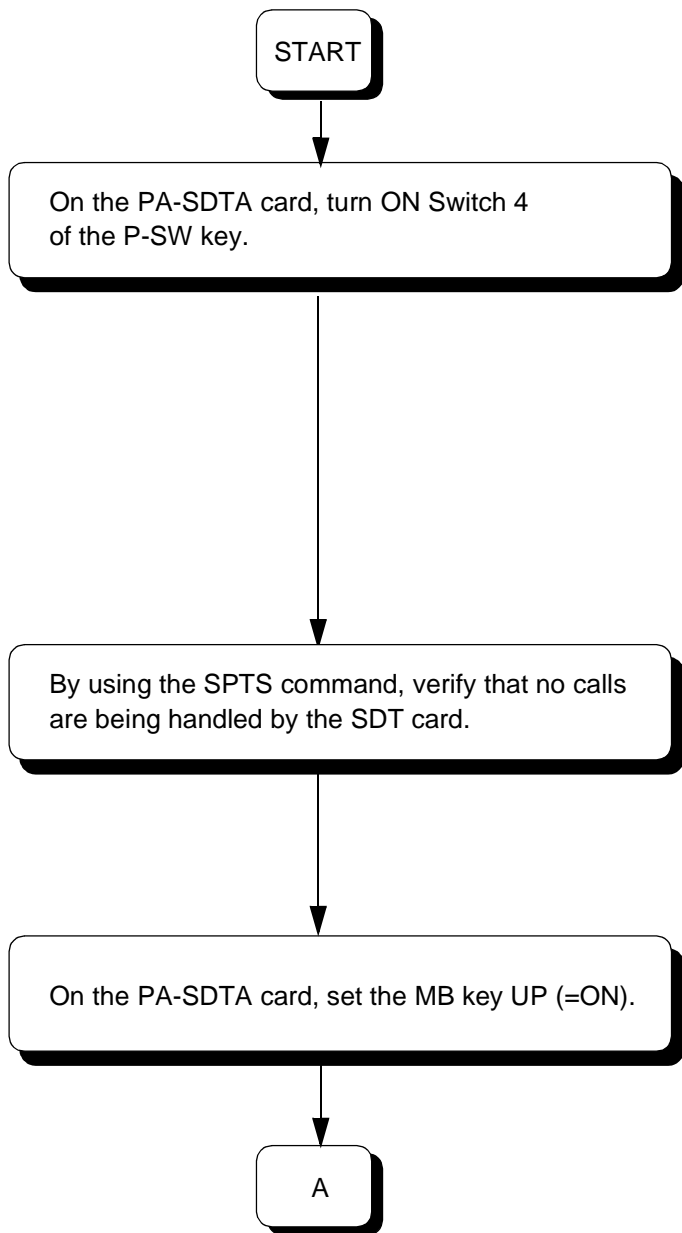
Already established calls (while in speech) lose voice/tone. Any connection link is severed after a few seconds.

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE



- OPE lamp on the PA-SDTA card is steady-green.

Procedure to Replace PA-SDTA/PA-SDTB card



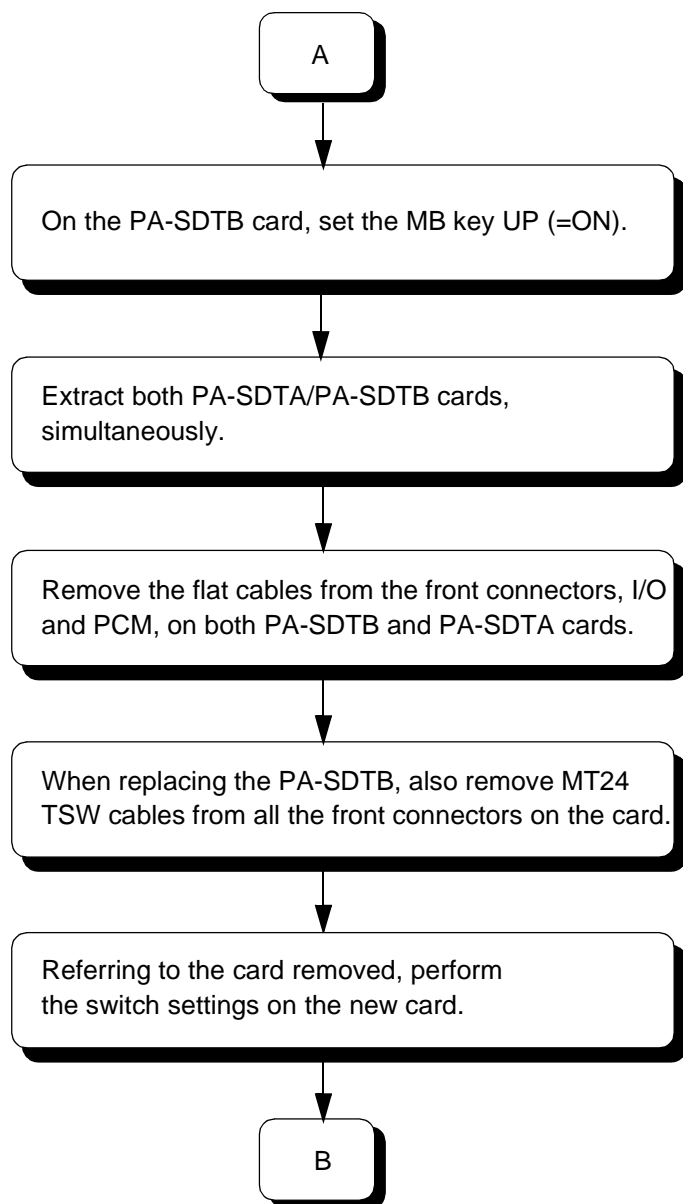
- ACT lamp on the PA-SDTA card goes OFF.
- Though any call attempt is rejected, already established calls are safely maintained. When any connection link exists, the link is maintained.

Note: *When the card is in a dual configuration, perform this for both system sides, in the order of STBY → ACT.*

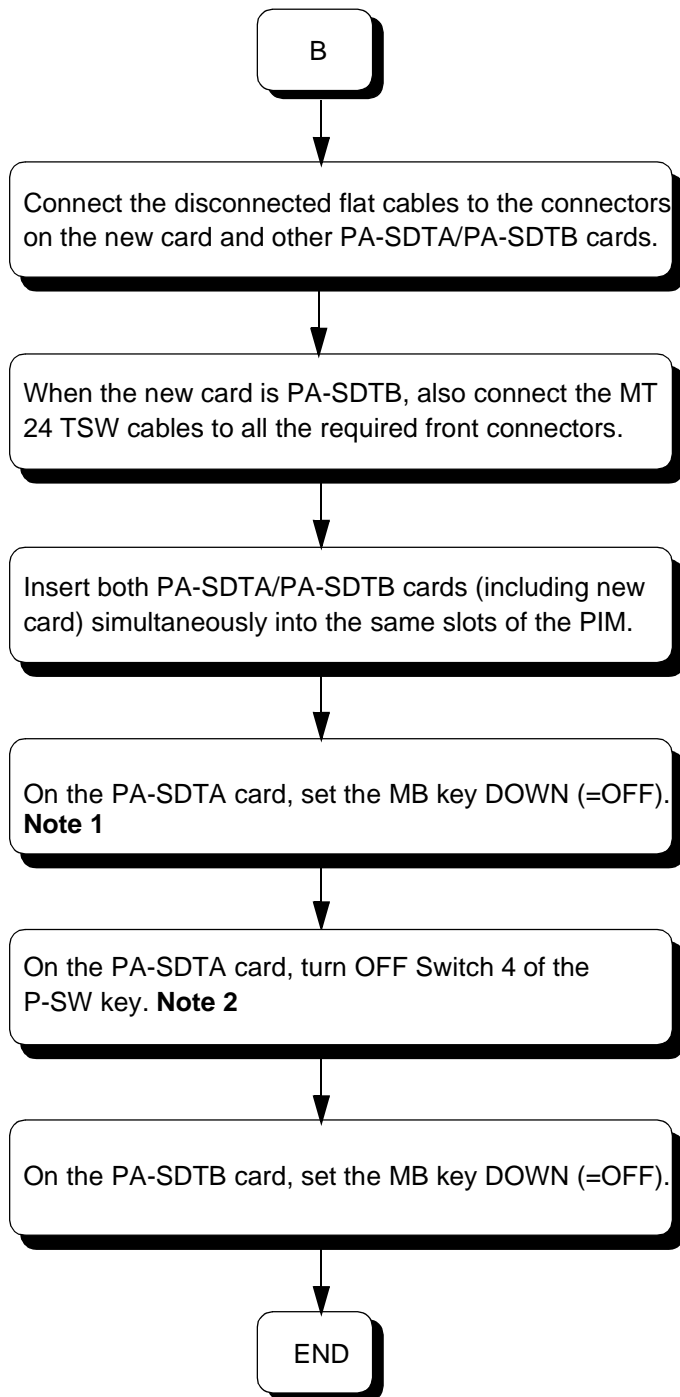
- OPE lamp on the PA-SDTA card is red.
- When already established calls exist, the connections lose voice/tone. When any connection link exists, the link is severed after a few seconds.

Note: *When the card is in a dual configuration, perform this for both system sides (both ACT and STBY sides).*

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE



- OPE lamp on the PA-SDTB card is red.
- When any connection link exists, the nailed-down connection between the FCH (PA-FCHA) and SDT (PA-SDTB) cards is cut off. Already established calls, while in speech, are all disconnected.
- Confirm that the MB key on the new card is set UP (=ON). If the new card is PA-SDTA, also confirm that Switch 4 of the P-SW key is ON.



- OPE lamp on the new card is red.

Note 1: When the card is in a dual configuration, perform this action for both system sides (both ACT and STBY sides).

Note 2: When the card is in a dual configuration, perform this action for both system sides, in the order of STBY → ACT.

- OPE lamp on the new card is steady-green.

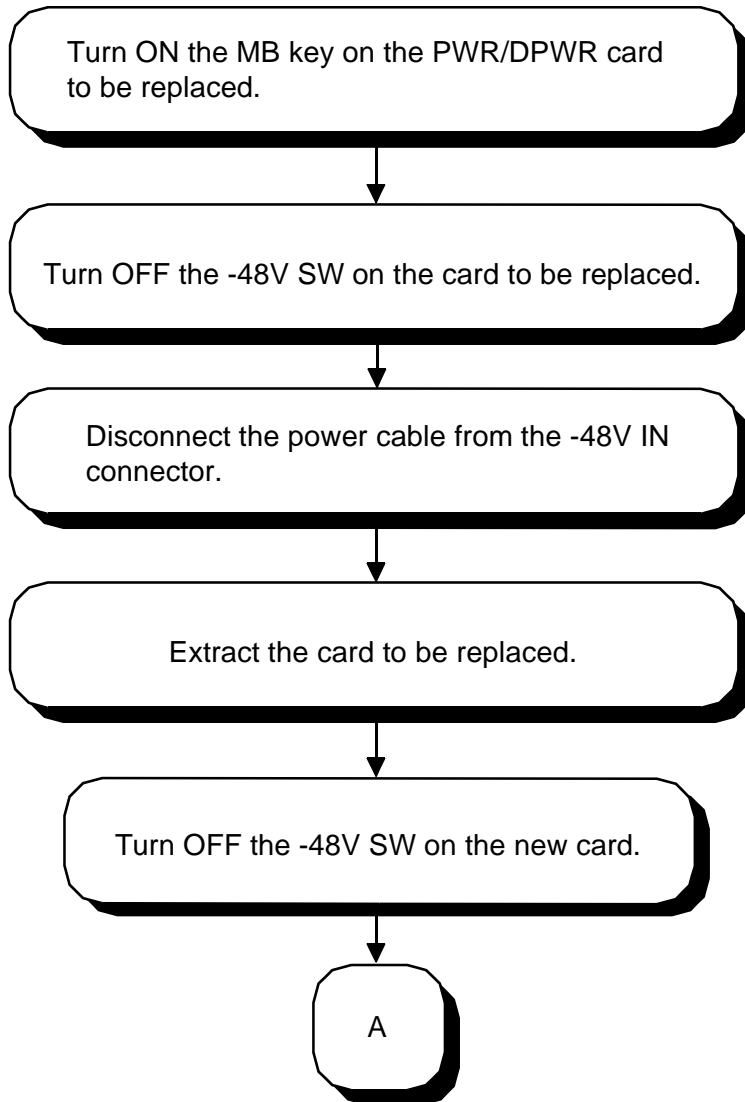
UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

3.3.4 PWR Card Replacement Procedure

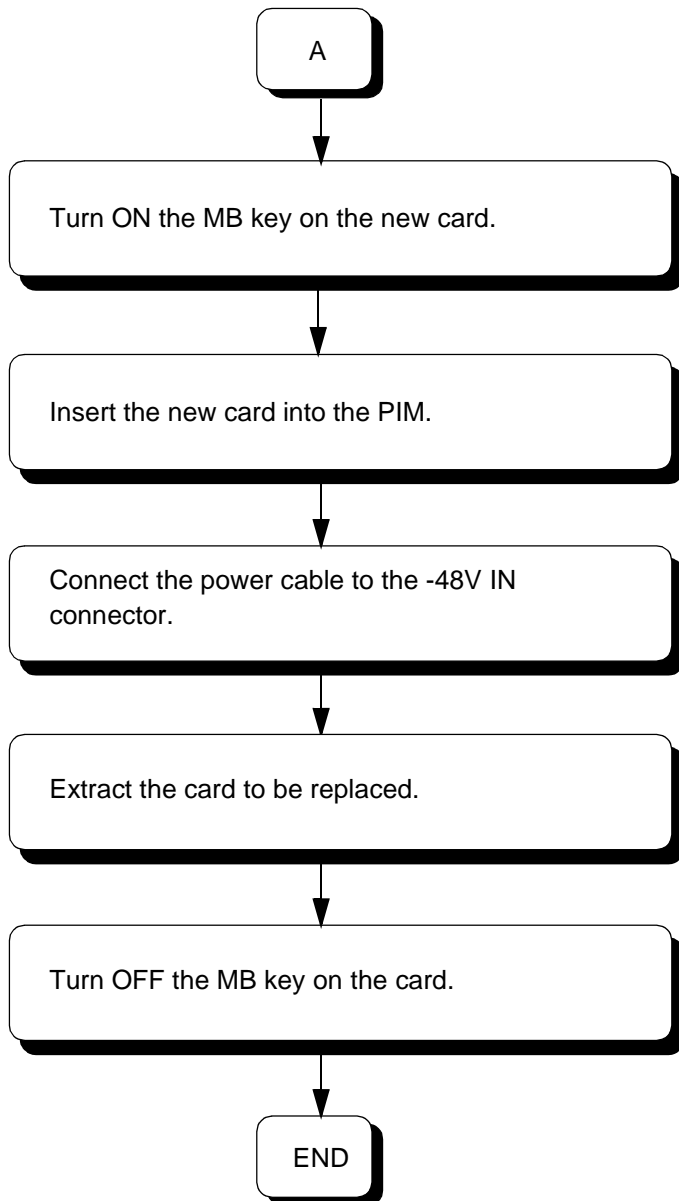
The PWR (PA-PW55-A/PA-PW55-B) and DPWR (PA-PW54-A/PA-PW54-B) cards are mounted respectively in Slot No. 1 and Slot No. 3 of each PIM. The card's main function is to provide operating power to the circuit cards accommodated in the PIM. The procedures to replace the PWR/DPWR card are as follows:



Replacement Procedure



- OPE lamp on the card goes OFF.



- OPE lamp on the new card is OFF.

- OPE lamp on the new card is green.

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

4. Fan Unit Replacement

This section explains how to replace the Fan Unit (FANU), which is fastened on the TOPU or inside the dedicated fan box within the system. Because the fan is a vital device to protect the system from heated air, it is recommended that the fan (a total of three per unit) be replaced at least every two years to guarantee its high performance.

The mounting location of FANU differs, depending on the module configuration of each cabinet. When the system consists of a total of three modules or less, the FANU is mounted on the TOPU of the cabinet. Otherwise, the FANU is housed in the dedicated fan box in the center of the cabinet. Refer to [Figure 4-19](#).

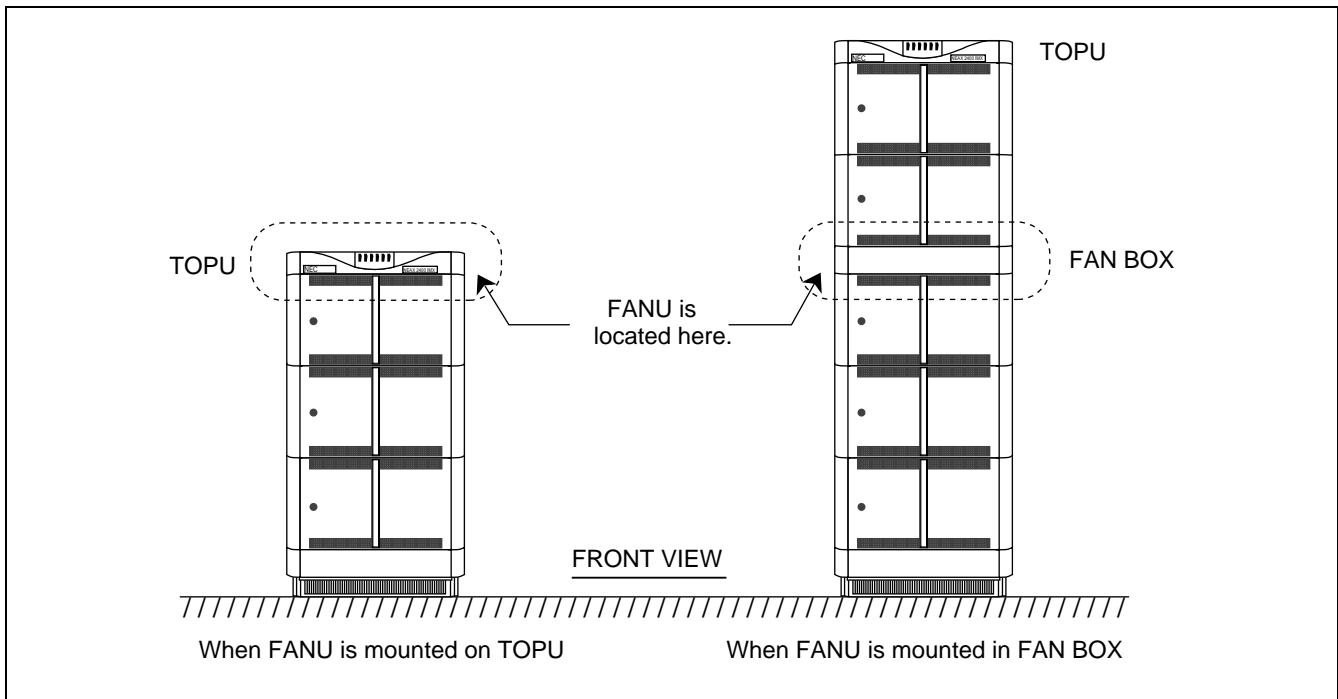


Figure 4-19 FANU Locations

Replacement Procedure: FANU on TOPU

When the FANU is mounted on the TOPU, perform the following replacement procedure:

- STEP 1 Using a Phillips screwdriver, remove the four screws. Lift away the top cover.
- STEP 2 Turn OFF the PWR SW on the PZ-M369. (Refer to [Figure 4-20](#).)
- STEP 3 Remove the fan fuse (5A) on the PZ-M369.
- STEP 4 Remove the fan cables from the fan connector and the connector(s) corresponding to the fan to be replaced (for example, when replacing FAN #0, disconnect the FC0 connector together with the fan connector).

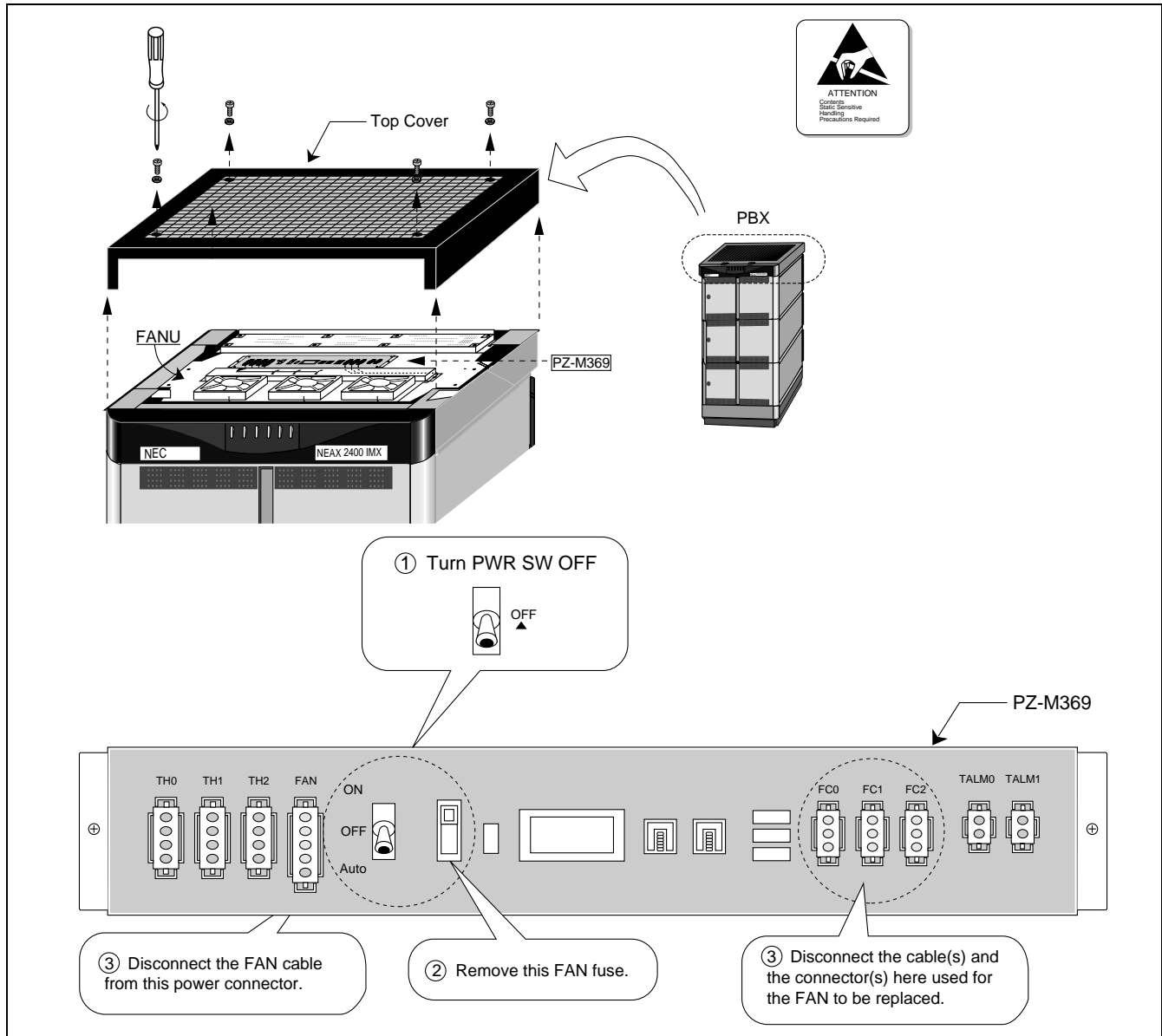


Figure 4-20 Preparation for FANU Replacement (Fans on TOPU)

STEP 5 Remove the four screws fastening the fan to be replaced. Refer to [Figure 4-21](#).

Note: The removed screws are used in [STEP 7](#) again. Do not dispose of them when unscrewing the fan here.

STEP 6 Remove the unscrewed fan from the FANU.

STEP 7 Fasten the new fan with the removed screws.

STEP 8 Connect the new fan cables to the fan connector and the connector(s) disconnected in [STEP 4](#).

STEP 9 Fix the fan fuse (5A) onto the PZ-M369.

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

STEP 10 Set the PWR SW on the PZ-M369 to the AUTO position.

Note: The switch setting of the PWR SW can be ON, depending on the location conditions of the system.

STEP 11 Attach the top cover again to the original location.

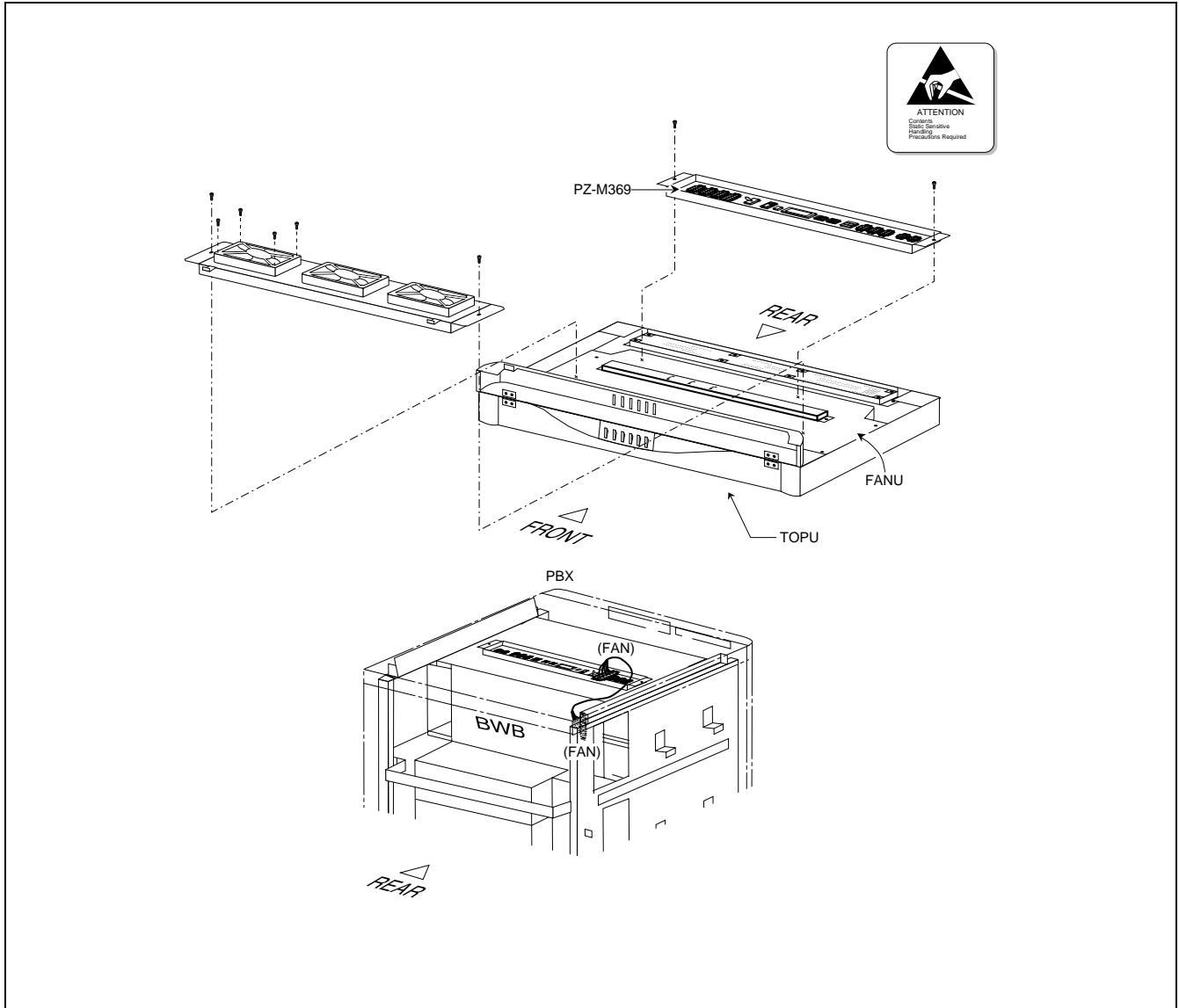


Figure 4-21 How to Replace FANU (Fans on TOPU)

Replacement Procedure: FANU in Fan Box

When the FANU is mounted in the fan box, perform the following replacement:

- STEP 1 Remove the front cover of the fan box. Then, extract the FANU.
- STEP 2 Turn OFF the PWR SW on the PZ-M369. (Refer to [Figure 4-22.](#))
- STEP 3 Remove the fan fuse (5A) on the PZ-M369.
- STEP 4 Remove the fan cables from the fan connector and the connector(s) corresponding to the fan to be replaced (for example, when replacing FAN #1, disconnect the FC0 connector together with the fan connector).

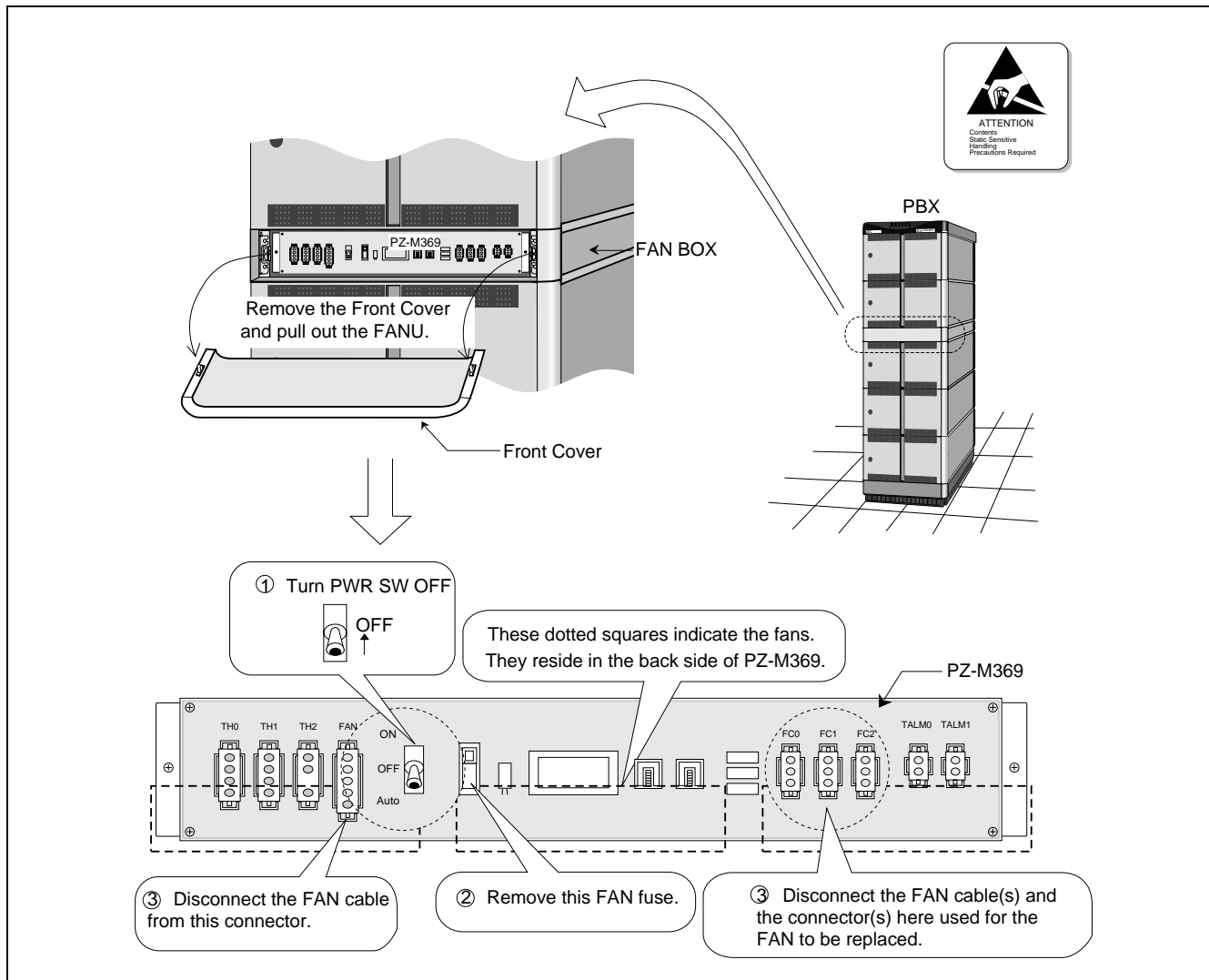


Figure 4-22 Preparation for FANU Replacement (Fans in Fan Box)

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

STEP 5 Take off the four screws fastening the fan to be replaced. (Refer to [Figure 4-23](#).)

Note: The removed screws are used in [STEP 7](#) again. Do not dispose of them when unscrewing the FAN here.

STEP 6 Remove the unscrewed fan from the FANU.

STEP 7 Fasten the new fan with the removed screws.

STEP 8 Connect the new fan cables to the fan connector and the connector(s) disconnected in [STEP 4](#).

STEP 9 Fix the fan fuse (5A) again onto the PZ-M369.

STEP 10 Insert the FANU into the fan box and fasten it with the two screws.

STEP 11 Set the PWR SW on the PZ-M369 to the AUTO position.

Note: The switch setting of the PWR SW can be ON, depending on the location conditions of the system.

STEP 12 Attach the front cover to the original location.

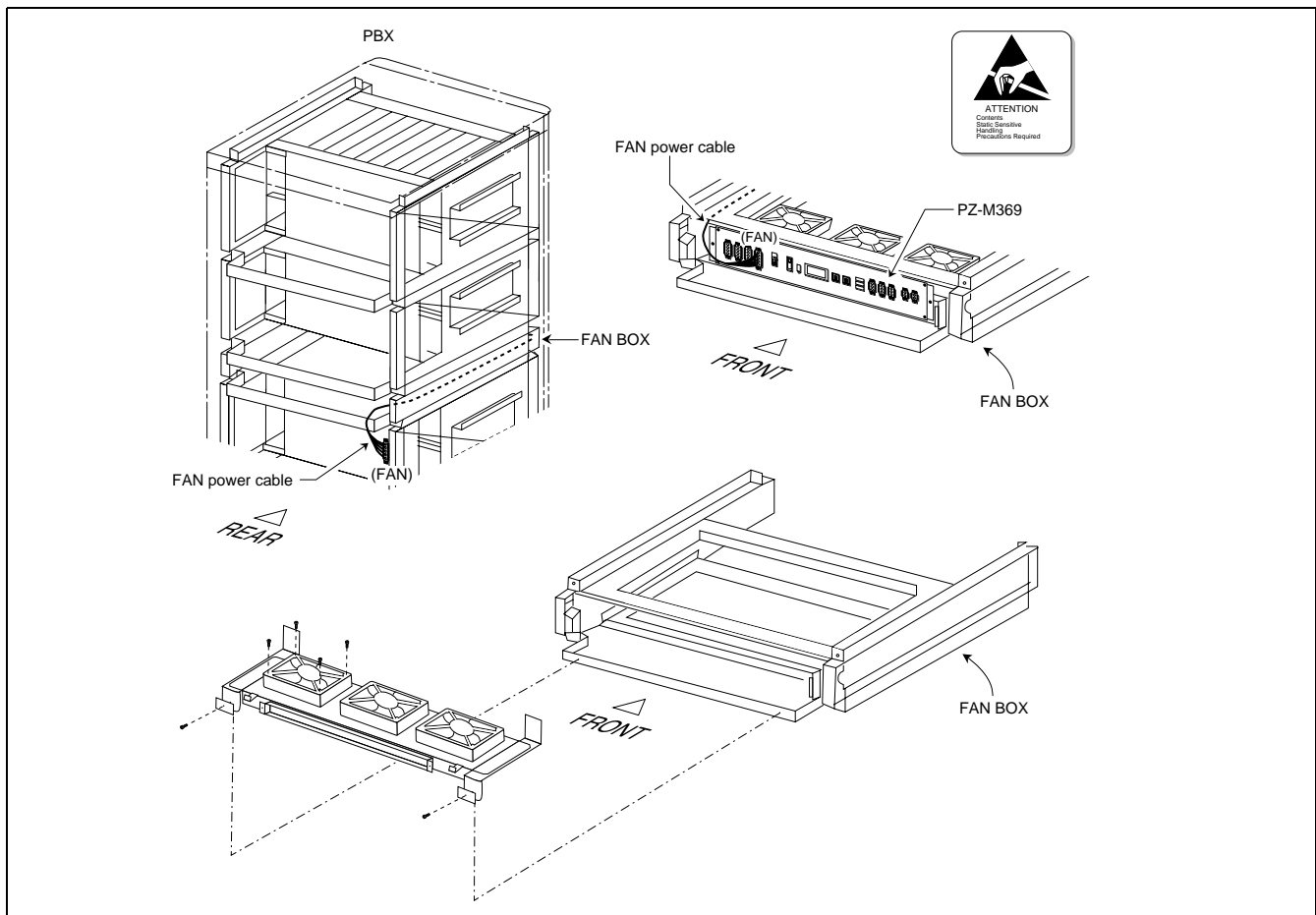


Figure 4-23 How to Replace FANU (Fans in Fan Box)

5. CPR Cooling Fan Replacement

This section explains how to replace a cooling fan in the back side of the CPR. This procedure is necessary when a fault is detected in the cooling fan. Because the fan is a vital device to protect the CPR from heated air, it is also recommended that the fan be replaced at least every two years, even if a fault is not detected.

STEP 1 Set the CPU, whose rack houses the fan to be replaced, in STBY mode via the MBR key on the DSP (Refer to [Figure 4-24.](#)) **Note**

Note: For the ACT/STBY changeover of the CPU, see [Chapter 6.](#)

STEP 2 Disconnect the power alarm cable from the PALM connector on PZ-PW92.

STEP 3 Turn OFF the PWR SW on the PZ-PW92 (Refer to [Figure 4-24](#) Face Layout of CPR.)

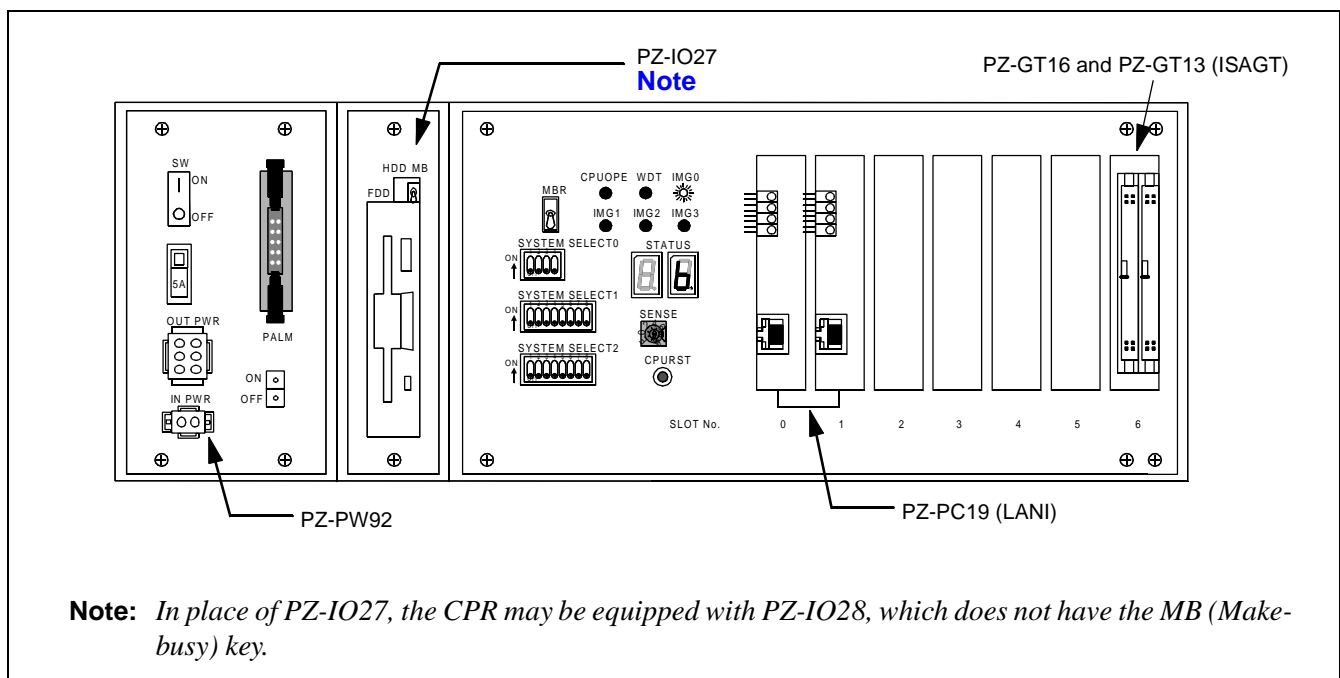


Figure 4-24 CPR Face Layout

STEP 4 Disconnect the power and bus and ether cables from the relevant connectors.

- Power cables from OUTPWR, INPWR connectors on PZ-PW92
- Bus cables from the front connectors on PZ-GT13 and PZ-GT16
- Ether (UTP CTG5 ST CA-n) cables from the front connectors on the PZ-PC19.

STEP 5 Remove the front bracket, and then take off the four screws fastened onto the CPU. (Refer to [Figure 4-25.](#))

STEP 6 Extract the CPR from the LPM. (Refer to [Figure 4-25.](#))

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

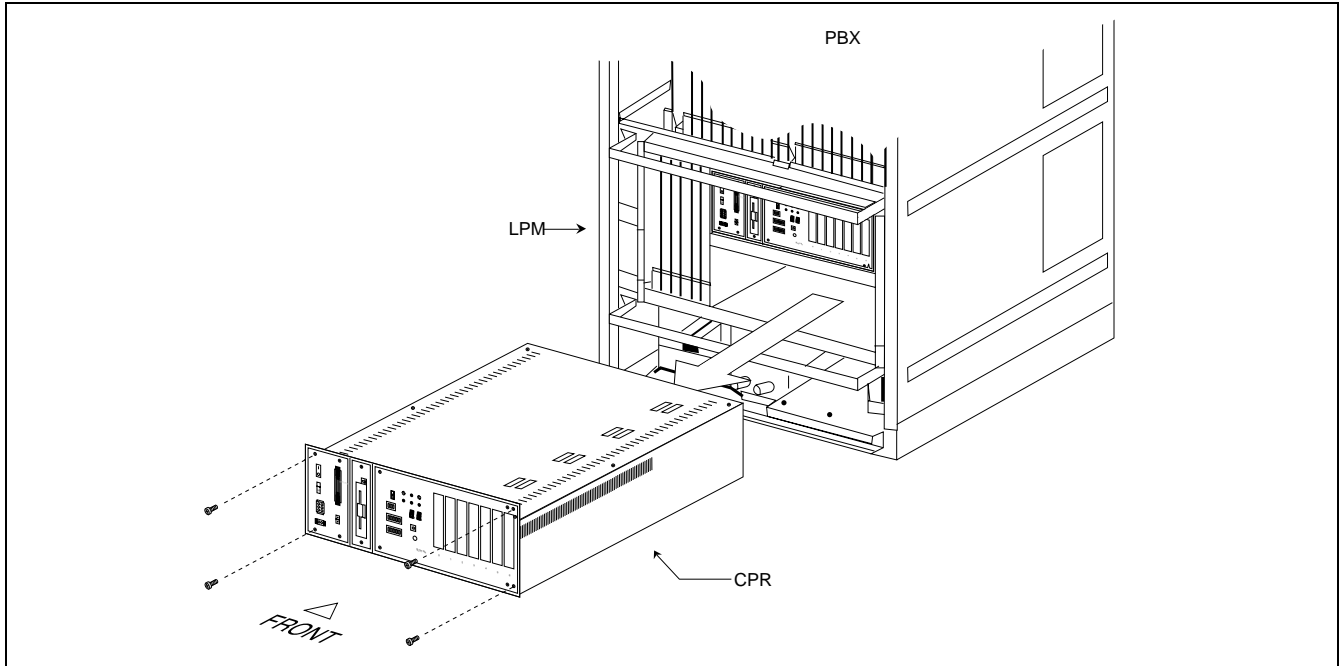


Figure 4-25 Extraction of CPR from LPM

STEP 7 Disconnect the fan cable from the connector in the backbone of CPR.

Note: The cooling fan is located in the backbone of CPR and the cable connector lies in its right side. Refer to [Figure 4-26](#).

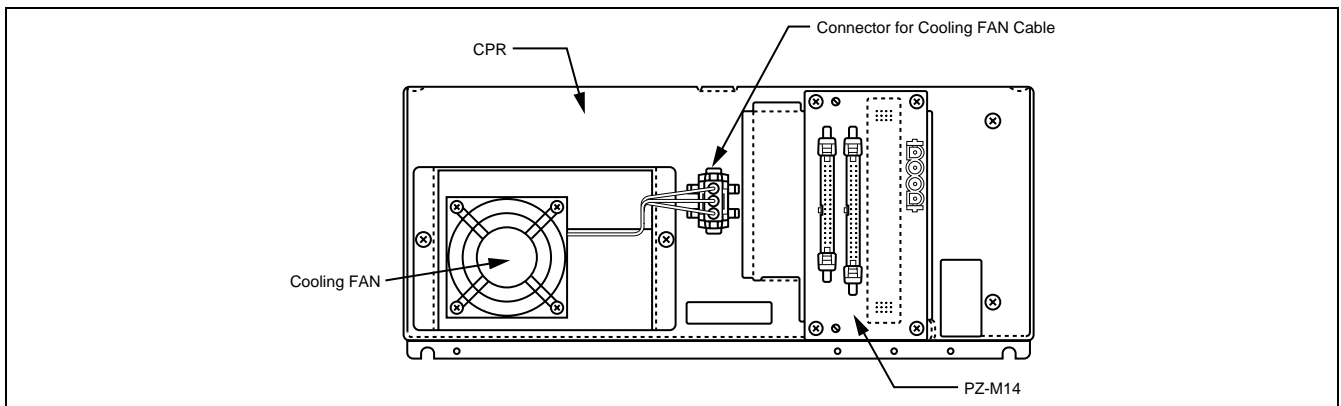


Figure 4-26 Rear View of CPR

STEP 8 Loosen the two screws fastening the box that contains the fan inside. Slightly lift the box and remove it from the CPR. Refer to [Figure 4-26](#) and [Figure 4-27](#).

STEP 9 Take off the four screws and remove the cooling fan from the CPR. Refer to [Figure 4-27](#).

STEP 10 Fasten the new cooling fan and CPR with screws. Then, connect the fan cable again to the connector. Refer to [Figure 4-26](#) and [Figure 4-27](#).

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

STEP 11 Insert the CPR back into the LPM.

STEP 12 Fasten the CPR and LPM with the four screws.

STEP 13 Connect the disconnected power, bus, and ether cables to the relevant connectors.

STEP 14 Turn ON the SW key on the PZ-PW92.

STEP 15 Connect the disconnected power alarm cable to the PALM connector on the PZ-PW92.

STEP 16 Analyze the indicated system message. The message displayed when the PWR SW on the PZ-PW92 was turned OFF.

STEP 17 Clear the indicated ALM and confirm that the ALM lamp is not lit again, indicating that the cooling fan is replaced securely.

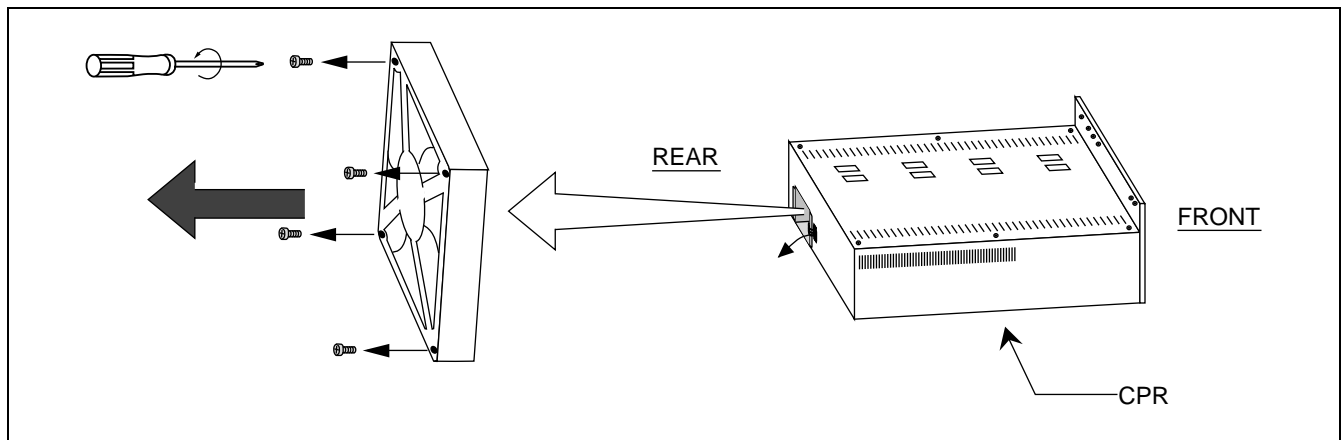


Figure 4-27 How to Remove the Cooling FAN

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

6. Fuse Replacement

The system uses the fuses shown in [Figure 4-28](#) as a protection against an overload resulting from a short circuit.

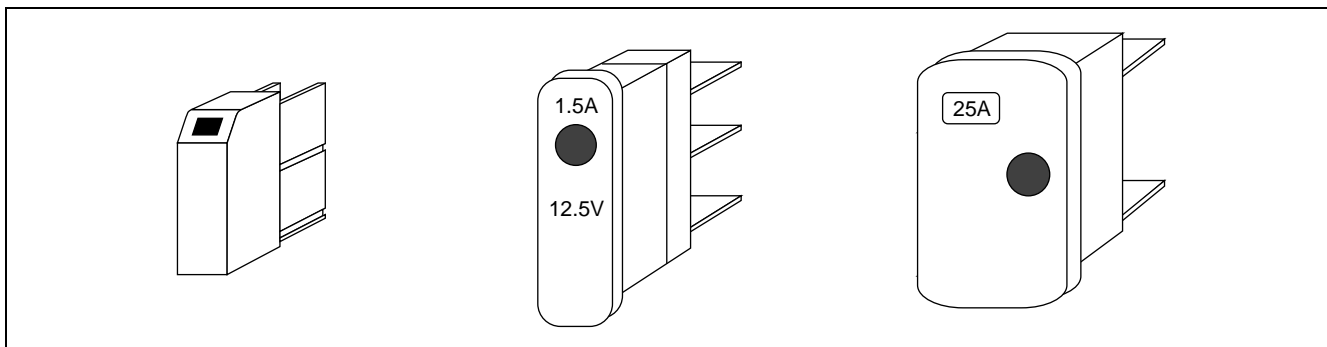


Figure 4-28 Fuses Used by System

When excessive current is applied to a PWR circuit card, the related fuse is blown. The blown fuse after a fault can be confirmed as shown in [Figure 4-29](#).

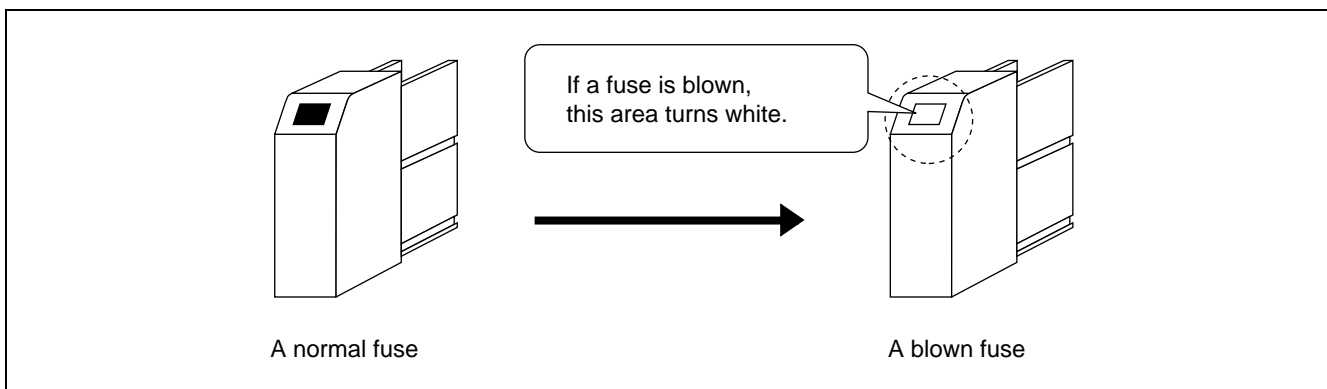




Figure 4-29 Blown Fault Example

The purpose of fuses is to let them blow before the components are damaged. If any fuse gets blown, replace it immediately with a new one using the following procedure:

- (1) Confirm the blown fuse via the system message [6-A] or MJ lamp on the top of IMG0.
- (2) Replace the fuse with a new one, referring to [Figure 4-30](#) and [Figure 4-31](#).
- (3) Determine the cause of the blown fault, referring to [Figure 4-32](#) (case of RGU fuse) or [Figure 4-33](#) (DC-48V fuse.)

Figure 4-30 shows the location of fuses within the system. In Chapter 4-30, the fuses are indicated by  or .

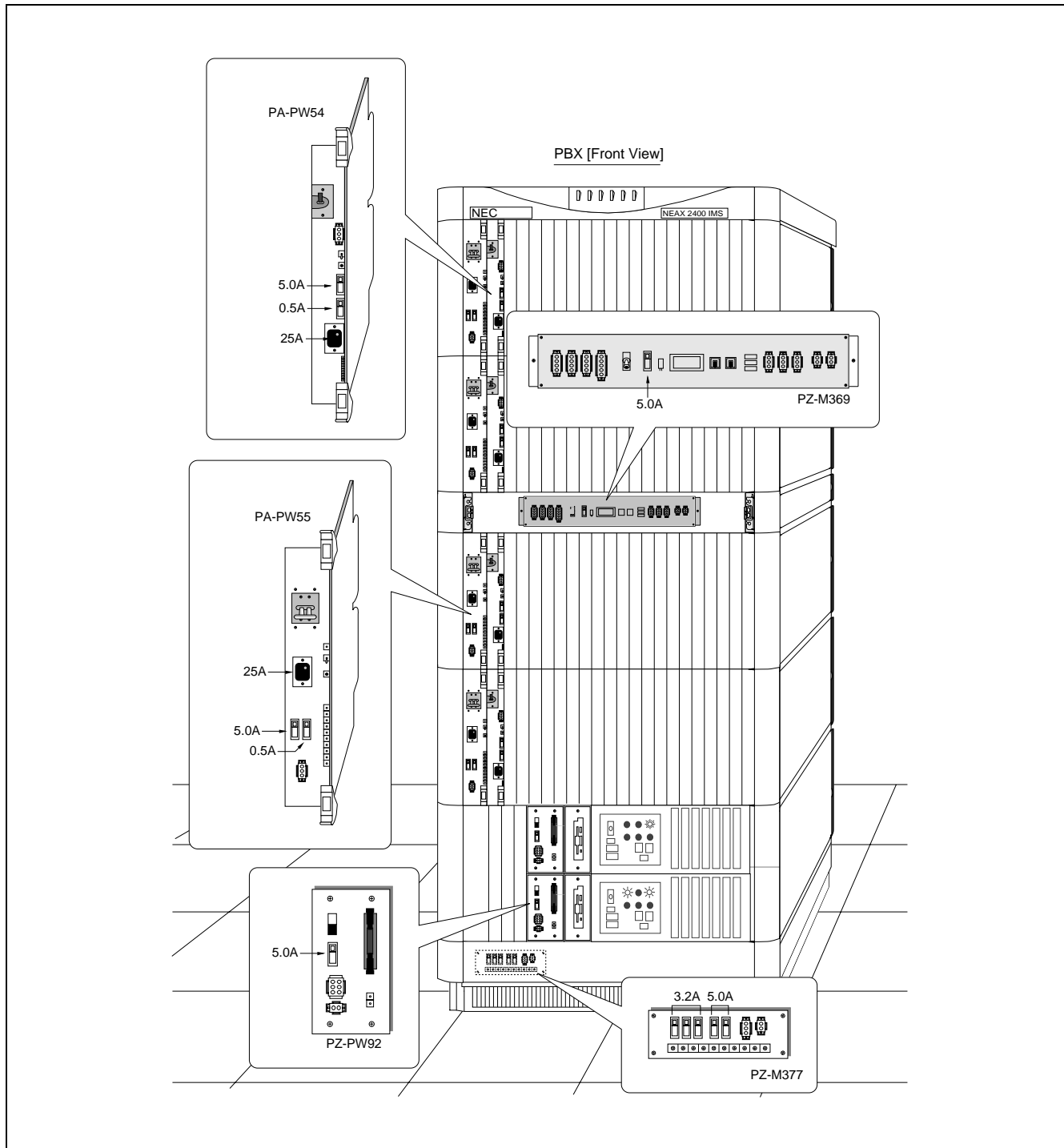


Figure 4-30 Fuse Locations Within System

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

In the TSWM, the fuse shown in [Figure 4-31](#) is used for the PWR SW (PH-PW14) card, which is housed in Slot No. 00 and/or 01.

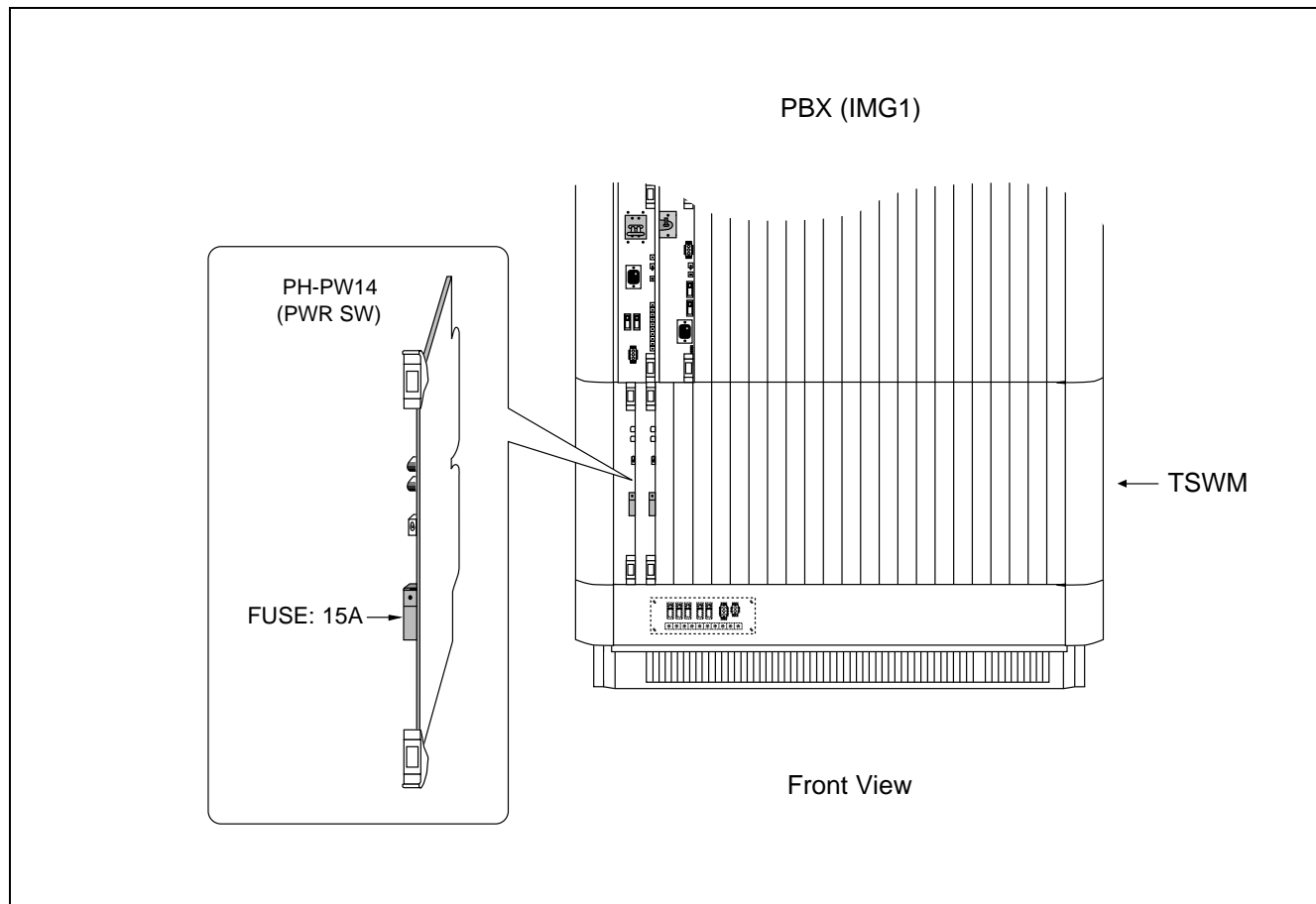


Figure 4-31 Fuse Location Within TSWM

Perform the procedure in [Figure 4-32](#) to confirm the cause of the RGU fuse blown fault.

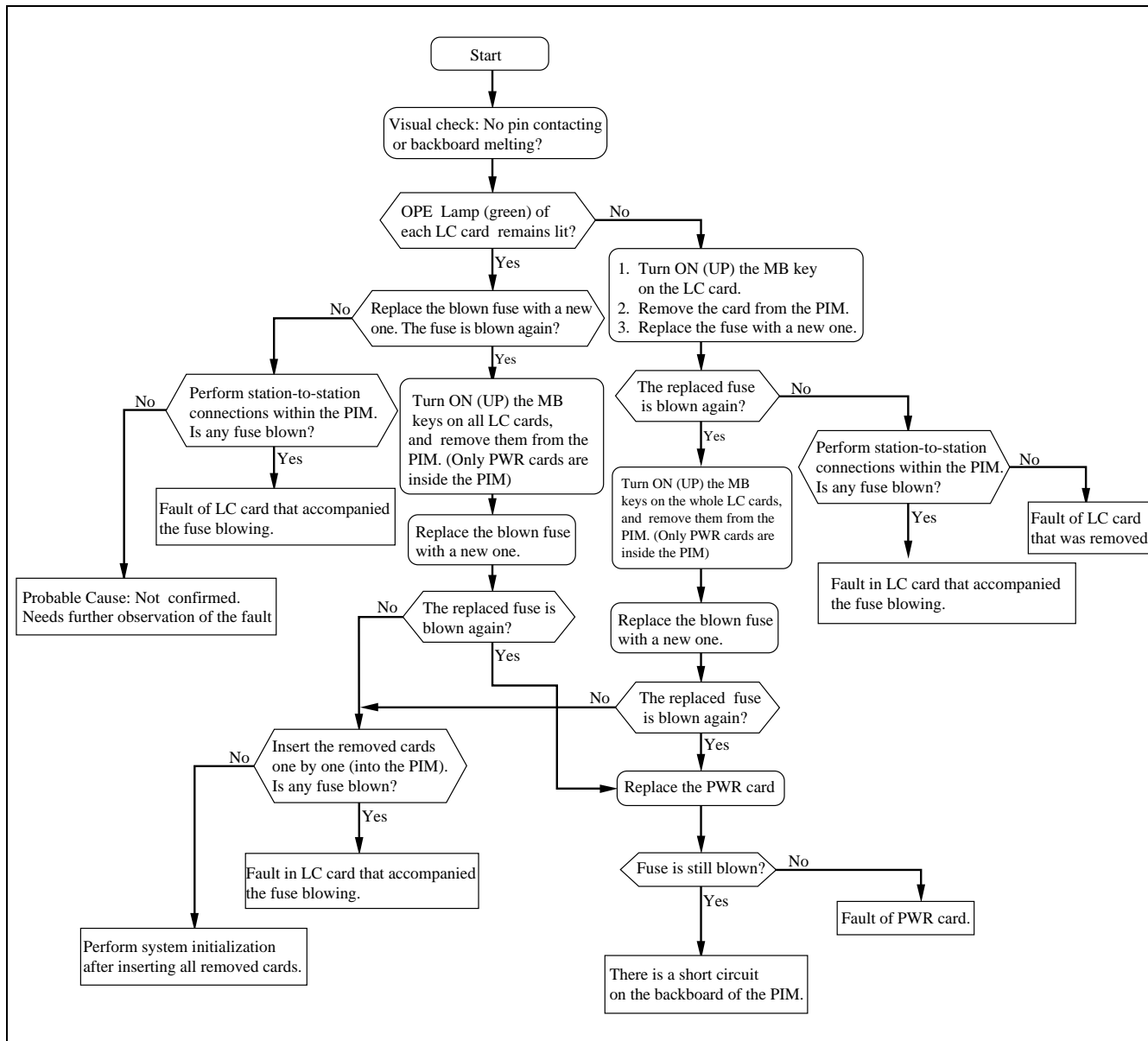


Figure 4-32 RGU Fuse Blown Fault Flowchart

UNIT/CIRCUIT CARD REPLACEMENT PROCEDURE

Perform the procedure in [Figure 4-33](#) to confirm the cause of the DC-48V fuse blown fault.

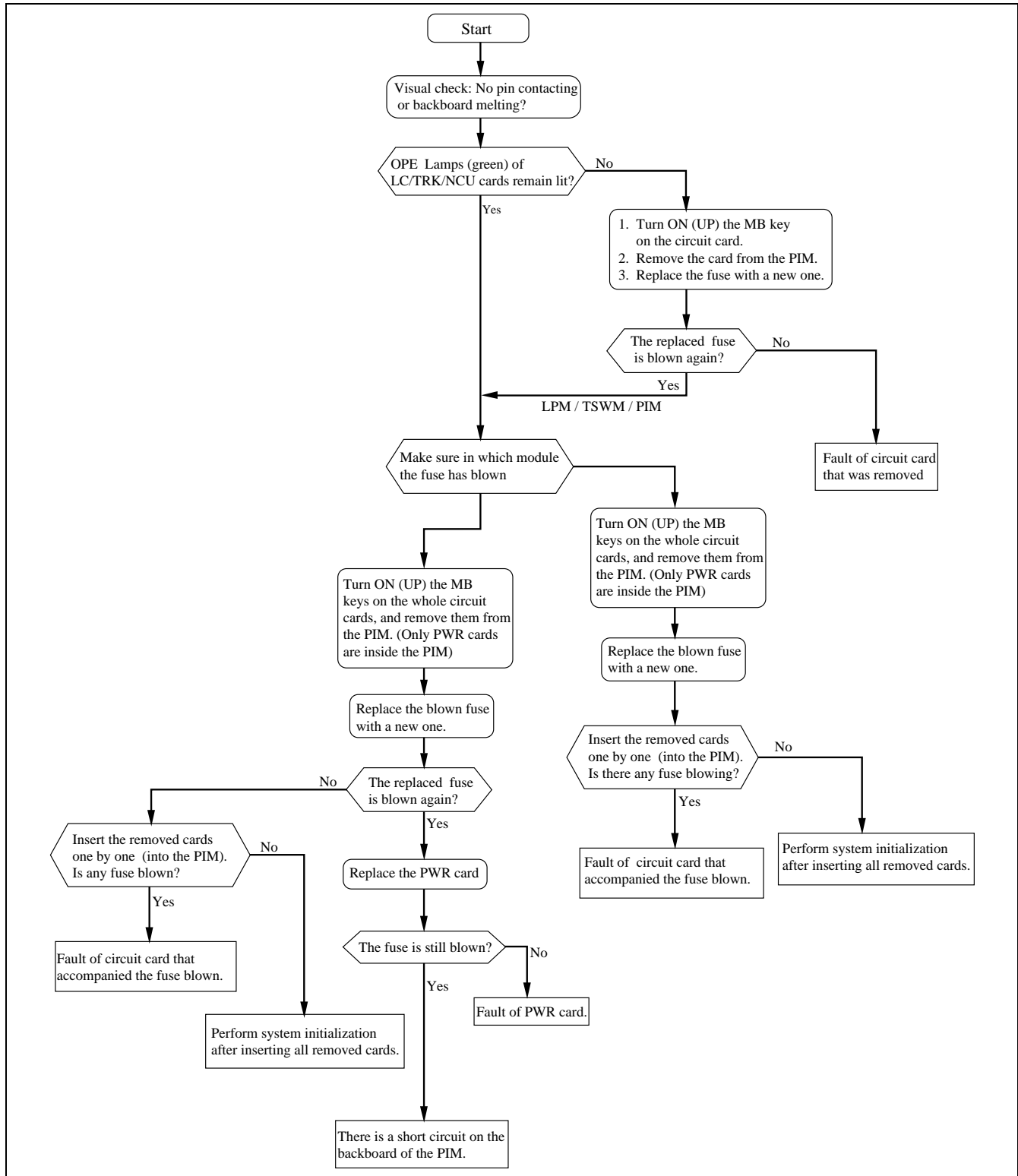


Figure 4-33 DC -48V Fuse Blown Fault Flowchart

CHAPTER 5 FAULT REPAIR PROCEDURES

This chapter provides information on how to repair the fault(s) within the system. If any of the components or equipment listed in [Table 5-1](#) has a failure, move on to the repair procedure explained for each faulty condition.

Table 5-1 Fault Repair Procedure Quick Reference

FAULTY ITEM	FAULTY SITUATION		REFERENCE SECTION
Line Fault	DP/PB Telephone	Dial tone is not heard.	Section 1.3, Line Fault - When Dial Tone (DT) Cannot Be Heard
		Dialing results in a wrong connection.	Section 1.4, Line Fault - When Dialing Results in Wrong Connection
		Bell does not ring.	Section 1.5, Line Fault - When Bell Does Not Ring
		Answer/speech cannot be made.	Section 1.6, When Call Cannot Be Answered and Speech Cannot Be Made
	D ^{term}	<ul style="list-style-type: none"> • D^{term} cannot be operated. • Operations are abnormal. 	Section 1.7, D^{term} Fault
Trunk Fault	<ul style="list-style-type: none"> • No connections can be set up. • PB/DP signals are erroneously received or set out from ORT/SND. • No three-way calling can be made on CFT, or noise gets in a established connection. • A connection results in no speech. • Noise gets in a established connection. 		Section 2.3, Trunk (ORT, SND, CFT) Fault and Section 2.4, Trunk (COT, TLT, DTI) Fault
ATTCON/DESKCON	<ul style="list-style-type: none"> • No speech can be made. • No control operations can be made. 		Section 3.3, ATTCON/DESKCON Fault
Unit Fault	Faults related to speech.		Section 4.2, Unit Fault - Fault Related to Speech
	Dial tone is not heard.		Section 4.3, Unit Fault - When Dial Tone (DT) Cannot Be Heard
	The ACT MUX card side has become faulty and system changeover has been executed.		Section 4.4, Unit Fault - ACT-Side MUX Card Is Faulty and System Has Changed Over

FAULT REPAIR PROCEDURES

Table 5-1 Fault Repair Procedure Quick Reference (Continued)

FAULTY ITEM	FAULTY SITUATION	REFERENCE SECTION
Speech System Fault	Faults related to speech.	Section 5.2, Speech Path System Fault - Fault Related to Speech
	Dial tone is not heard.	Section 5.3, Speech Path System Fault - When Dial Tone (DT) Cannot Be Heard
	STBY side is faulty.	Section 5.4, Speech Path System Fault - STBY Side Has Become Faulty
Control System Fault	Fault occurs occasionally at the ACT side.	Section 6.2, Control System Fault - Fault Occurs Intermittently
	STBY side is faulty.	Section 6.3, Control System Fault - STBY Side Is Faulty
Alarm Indication Fault	No fault indication is made on the Alarm Indicator Panel.	Section 7.2, Fault of Alarm Indicating Panel
	Fault is not detected.	Section 7.3, Fault That Cannot Be Detected
Power Supply Fault	Fuse for RGU/-48V has blown.	Section 8.2, Fuse Blown Fault
	The circuit breaker of PWR supply is off.	Section 8.3, Circuit Breaker OFF Fault in PWR Supply
	Alarm lamp on the PWR supply is lit.	Section 8.4, Fault of Alarm Lamps on PWR Supply
Fan Unit Fault	<ul style="list-style-type: none"> • Fan are not activated even if the temperature has risen higher than a predetermined degree. • Fans are not activated even if the FAN START switch is set to AUTO position. 	Section 9.2, Fan Unit Fault
Tone Fault	Tone is distorted.	Section 10.2, Tone Fault
System Down Fault	Cause for the fault cannot be identified.	Section 11.1, When Cause for Fault Cannot Be Identified
	The faulty circuit card can be detected.	Section 11.2, When Faulty Circuit Cards Can Be Assumed From System Message
CCIS Line Fault	<ul style="list-style-type: none"> • A Specific CCH/CCT card is faulty. When the signal transmission line is a digital line, transmission/receiving of control signals cannot be performed. • When the signal transmission line is an analog line, transmission/receiving of control signals cannot be performed. 	Section 12.3, Specific CCH/CCT Card Is Faulty and Section 12.4, Fault of CCH, DTI and Related Flat Cable

Table 5-1 Fault Repair Procedure Quick Reference (Continued)

FAULTY ITEM	FAULTY SITUATION	REFERENCE SECTION
ISDN Line Fault	<ul style="list-style-type: none"> A specific DCH/PRT card is faulty. When the signal transmission line is a digital line, transmission/receiving of control signals cannot be performed. 	Section 13.3, Specific DCH/PRT Card Is Faulty and Section 13.4, Fault of DCH, DTI, and Related Flat Cable
Hard Time Clock Fault	EMA card is faulty.	Section 14, Hard Time Clock Fault

1. LINE FAULT

This section explains the fault repair procedure in a case where only one specific station line is in any of the faulty conditions listed in [Table 5-2](#).

Table 5-2 Line Fault Situation

FAULTY SITUATION	REFERENCE SECTION
When Dial Tone cannot be heard	Section 1.3, Line Fault - When Dial Tone (DT) Cannot Be Heard
When dialing results in a wrong connection	Section 1.4, Line Fault - When Dialing Results in Wrong Connection
When the bell does not ring	Section 1.5, Line Fault - When Bell Does Not Ring
When call cannot be answered and speech cannot be made	Section 1.6, When Call Cannot Be Answered and Speech Cannot Be Made
D ^{term} Fault	Section 1.7, D ^{term} Fault

FAULT REPAIR PROCEDURES

1.1 Check Point

When repairing a line fault, consider the following items:

- (1) Check alarm lamps on line circuit cards.
- (2) When an outgoing call cannot be originated to a specific line/trunk or when an incoming call cannot be terminated from a specific line/trunk, check Tenant Restriction Data (assigned via ATNR command) and Route Restriction Data (assigned via ARSC command).

1.2 Line Control

Each line in a specific Line circuit (LC/ELC) card is controlled by the PM in that line circuit card. The line circuit cards are controlled from the CPU via the MUX. Figure 5-1 shows the control route of line circuit cards.

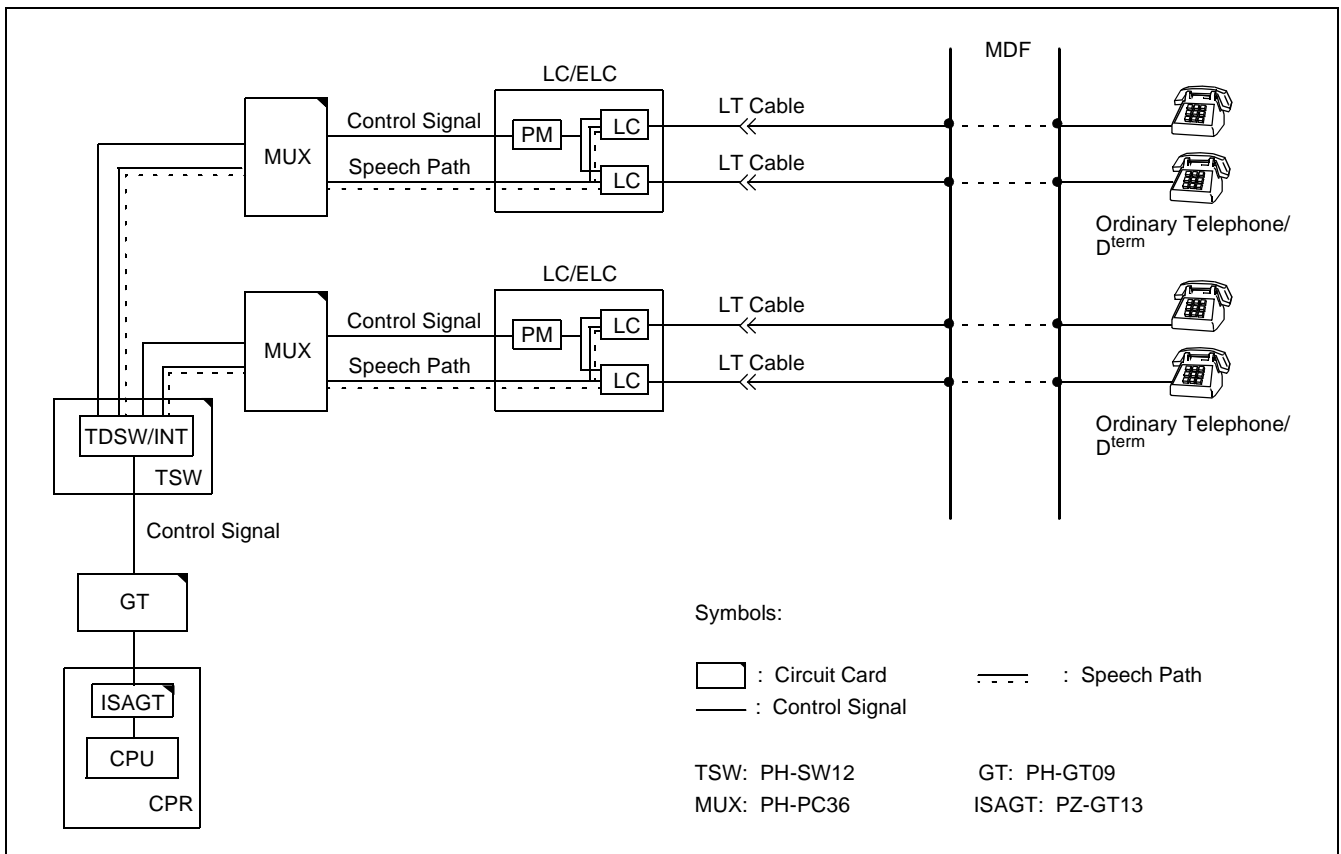


Figure 5-1 Controlling LC/ELC Circuit Cards and Speech Path

1.3 Line Fault - When Dial Tone (DT) Cannot Be Heard

Note: *If a circuit card is replaced because only one line is faulty, no other lines in that circuit card can be used until the replacement is complete.*



START

When OPE lamp on the LC circuit card does not illuminate

Confirm MB switch of the LC circuit card is in ON position (UP).

Use ASDT command to confirm that station data in the LC circuit card is assigned.

Replace the LC circuit card with a spare.

When BL lamp for each line is flashing or illuminating on the LC circuit card

Confirm MB switch of the LC circuit card is in ON position (UP side).

Use MBST command to confirm LC circuit card has not been placed into make-busy state.

Use ASDT command to check the station data assignment.

Replace the LC circuit card with a spare.





A

Check the faulty line on the MDF.

Isolate the faulty line to the in-house wiring side and to the system side.

Connect the test telephone to the system side and check to see if dial tone can be heard.

When Dial Tone (DT) is heard

Check the in-house wirings.

Replace the station telephone set with a spare.

When no DT or side tone is heard

Check LT cables.

Replace the LC circuit card with a spare.

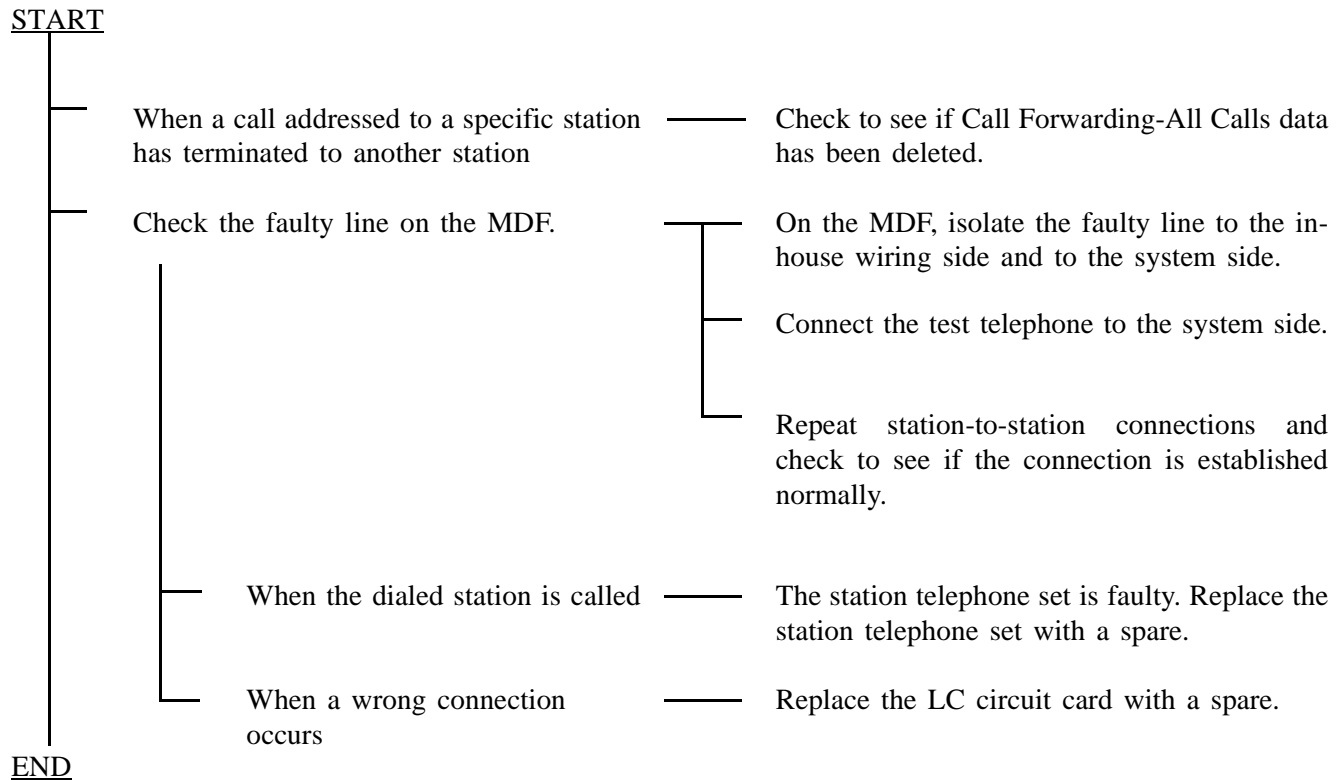
When DT is not heard, but side tone can be heard.

Replace the LC circuit card with a spare.

END

1.4 Line Fault - When Dialing Results in Wrong Connection

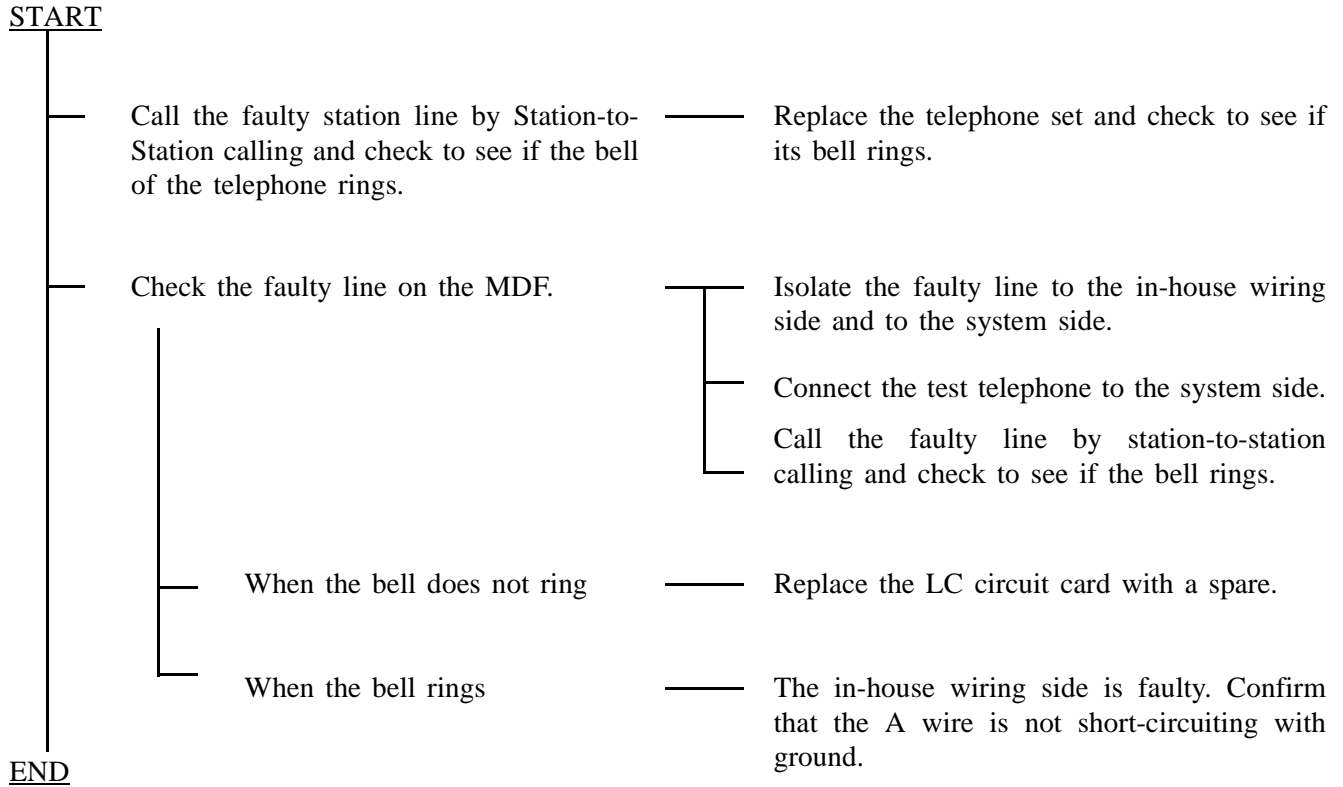
Note: *If a circuit card is replaced because only one line is faulty, no other lines in that circuit card can be used until the replacement is complete.*



FAULT REPAIR PROCEDURES

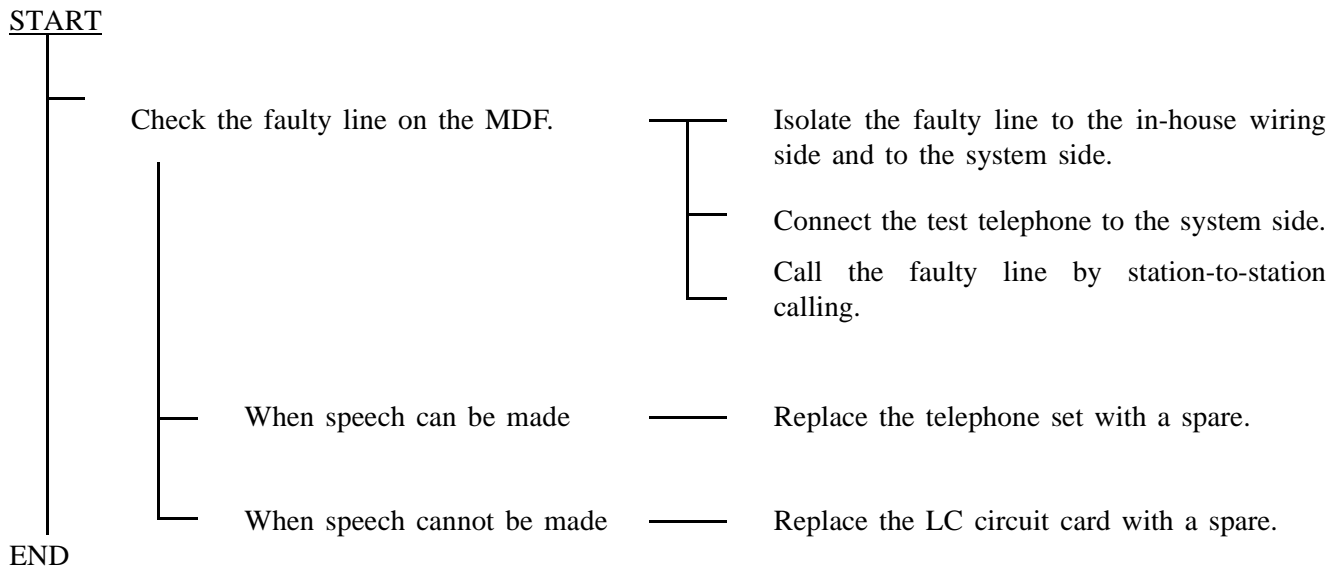
1.5 Line Fault - When Bell Does Not Ring

Note: *If a circuit card is replaced because only one line is faulty, no other lines in that circuit card can be used until the replacement is complete.*



1.6 When Call Cannot Be Answered and Speech Cannot Be Made

Note: *If a circuit card is replaced because only one line is faulty, no other lines in that circuit card can be used until the replacement is complete.*



FAULT REPAIR PROCEDURES

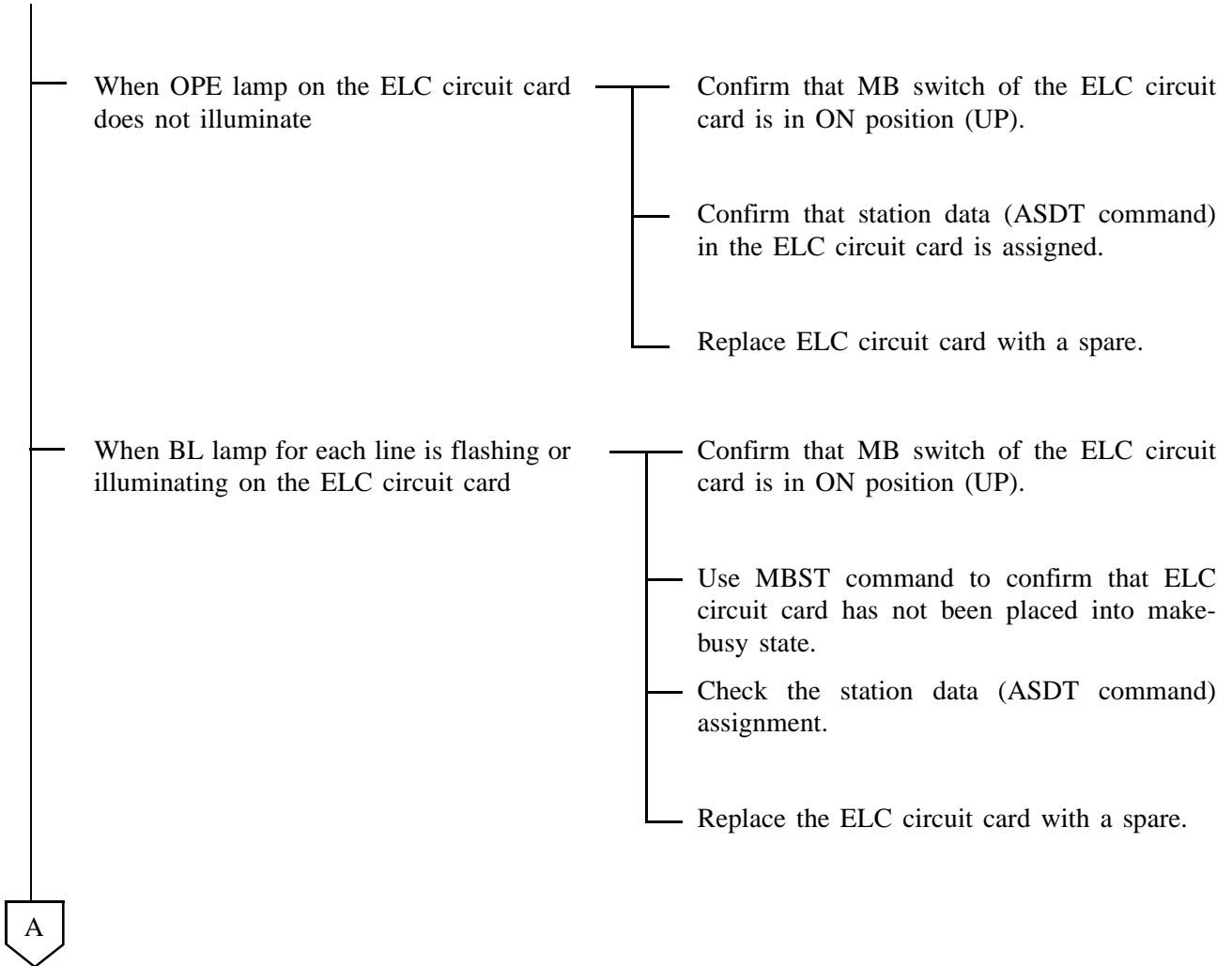
1.7 D^{term} Fault

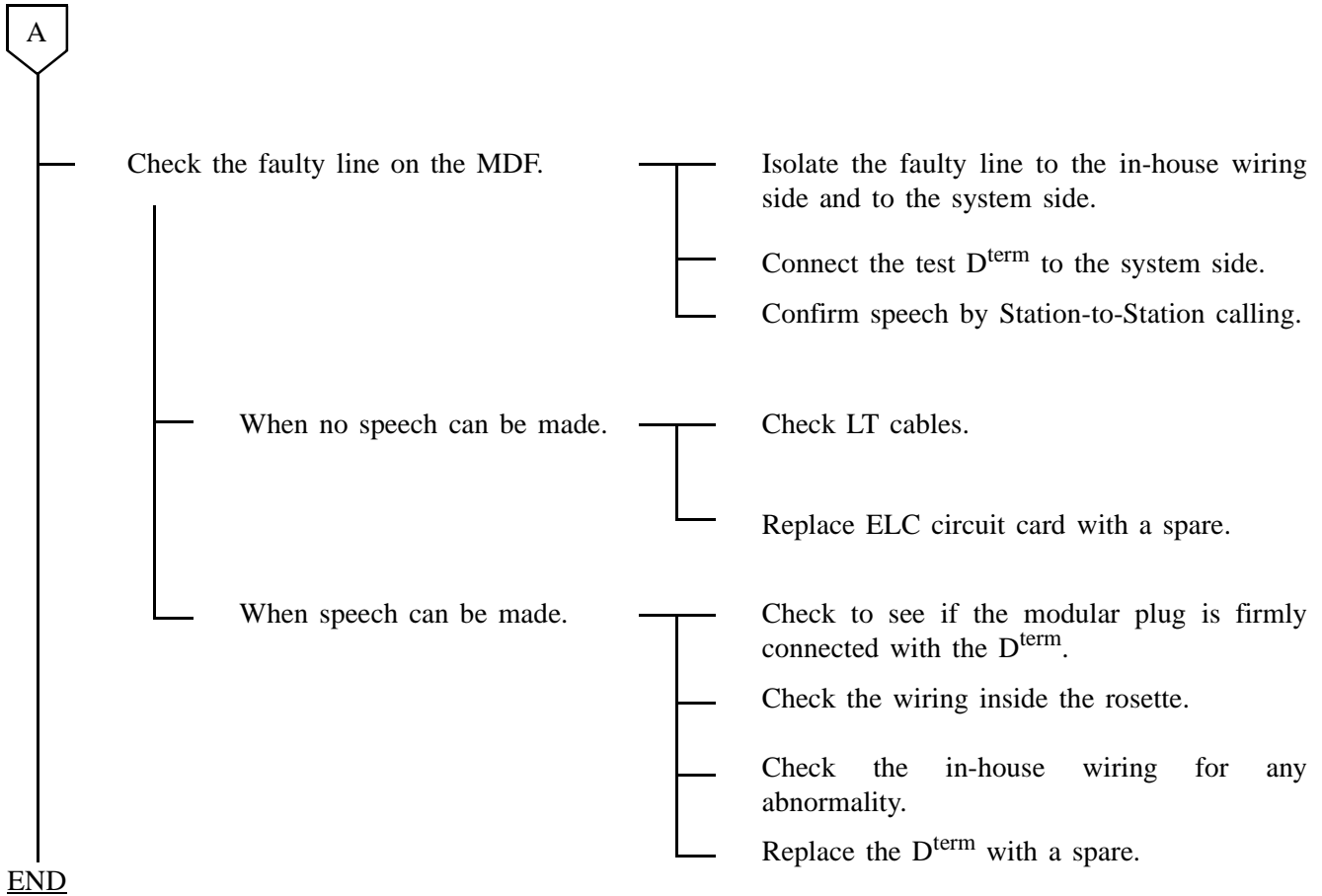
Note 1: *If a circuit card is replaced because only one line is faulty, no other lines in that circuit card can be used until the replacement is complete.*

Note 2: *If any of the in-house cable wirings short-circuit, the POW ALM lamp on the ELC circuit card lights. Remove the cause of the short-circuit and initialize the ELC circuit card.*



START





FAULT REPAIR PROCEDURES

2. TRUNK FAULT

This paragraph explains the fault repair procedure when a fault, shown in [Table 5-3](#), has occurred to a specific trunk.

Table 5-3 Trunk Fault Situation

TRUNK	FAULTY SITUATION	REFERENCE SECTION
ORT	No connection can be set up. PB/DP signals are erroneously received or cannot be received.	Section 2.3, Trunk (ORT, SND, CFT) Fault
SND	No connections can be set up. PB/DP signals are erroneously sent out or cannot be sent out.	
CFT	No connections can be set up. No three-way calling can be made. Noise gets in an established connection.	
COT TLT DTI	No connections can be set up. A connection results in no speech. Noise gets in an established connection.	Section 2.4, Trunk (COT, TLT, DTI) Fault

2.1 Check Point

When repairing a trunk fault, consider the following items:

- (1) Check alarm lamps on trunk circuit cards.
- (2) When an outgoing call cannot be originated to a specific trunk or when an incoming call cannot be terminated from a specific trunk, check Tenant Restriction Data (assigned via ATNR command) and Route Restriction Data (assigned via ARSC command).
- (3) Three-Way Conference Trunk (CFT) is on the MUX (PH-PC36) circuit cards. If a three-way conference call cannot be established, check the MUX cards.
- (4) If the present timing for supervising the trunk/sender status is considered to be responsible for the fault, change the timing. The specifications for timings that can be changed with respect to trunks and senders are shown in [Table 5-4](#) and [Table 5-5](#).

Table 5-4 Timings for Trunks

	ITEMS FOR STATUS SUPERVISION	CONDITIONS FOR SUPERVISION	TIMING SPECIFICATIONS
1	Detection of Call Termination	<ul style="list-style-type: none"> • Ring Down System Detection by ringing signal (20Hz) from the opposite office. • Loop System Detection by loop from the opposite office. • E&M System Detection by incoming signal (ground or – 48V) on E (RG2) lead. 	<p>Ringing signal of more than 4 cycles is detected within 800 ms.</p> <p>Detection within 16 ms after call termination.</p>
2	Acknowledge Signal Sending	<ul style="list-style-type: none"> • Wink Signal • Delay Start 	<p>160 ms (standard)</p> <p>Timing can be assigned using ARTD command.</p>
3	Detection of Release at the time of Incoming Connection	<ul style="list-style-type: none"> • E&M System • Loop System 	<p>288 ms (standard)</p> <p>160 ms (standard)</p> <p>Timing can be assigned using ARTD command.</p>
4	Timing for Restricting Call Origination after Release	After release of the user’s trunk or the trunk at the opposite office has been detected, a new call origination is restricted.	<p>3070 ms (standard)</p> <p>Timing can be assigned using ARTD command.</p>
5	Seizure of Opposite Office	<ul style="list-style-type: none"> • Loop System Closure of DC loop. • E&M System Supply of outgoing call signal (ground or – 48V) onto M (DL) lead. 	
6	Detection of Acknowledge Signal	<ul style="list-style-type: none"> • Wink Signal • Delay Start 	Timing is assigned using ARTD command.
7	Trunk Hold Time	Even if answer signal has not reached from the opposite office, the call is regarded as answered.	<ul style="list-style-type: none"> • If DP Signal is 10 sec. (standard) after dial pulses are sent out Timing can be assigned using ARTD command. • If PB Signal is 30 sec. (standard) after seizure of the trunk Timing can be assigned using ASYD SYS 1 Index 156 (only when 2nd Dial Tone System).
8	Detection of Release at the time of Outgoing Connection	<ul style="list-style-type: none"> • Loop System Detection of polarity reversal across tip and ring. • E&M System Detection of Release Signal (ground or – 48V) on E lead. 	<p>608 ms (standard)</p> <p>Timing can be assigned using ARTD command.</p>

FAULT REPAIR PROCEDURES

Table 5-5 Timings for Senders

	ITEMS FOR STATUS SUPERVISION	CONDITIONS FOR SUPERVISION	TIMING SPECIFICATIONS
1	Sender Acknowledge Wait Timer	Timing limit for waiting to receive connection acknowledgement signal from the opposite office after seizing the opposite office.	4 sec. (standard) Timing can be assigned using ASYD SYS 1 Index 130 command.
2	Sender Prepause Timer	Time from sender seizure till sending of the 1st digit where connection acknowledgment is made by interface with the opposite office.	DP: 3 sec. (standard) PB: 2.5 sec. (standard) Timing can be assigned using ASYD SYS 1 Index 131 command.
3	Sender Inter-digit Timer	Inter-digit timing for the numbers to be sent out by the sender.	<ul style="list-style-type: none"> • For DP <ul style="list-style-type: none"> 10 pps: 860 ms (standard) 20 pps: 460 ms (standard) Timing can be assigned using ASYD SYS 1 Index. 132 command. • For PB <ul style="list-style-type: none"> 60 ms/120 ms (to be selected by ONSG of ARTD command.) Timing can be changed using ASYD SYS 1 Index 133 command.

2.2 Trunk Control

Trunk circuit cards are controlled from the CPU via the MUX. Each trunk line in a specific trunk circuit card is controlled by the Port Microprocessor (PM) in a trunk circuit card. Figure 5-2 shows the control route of the trunk circuit card.

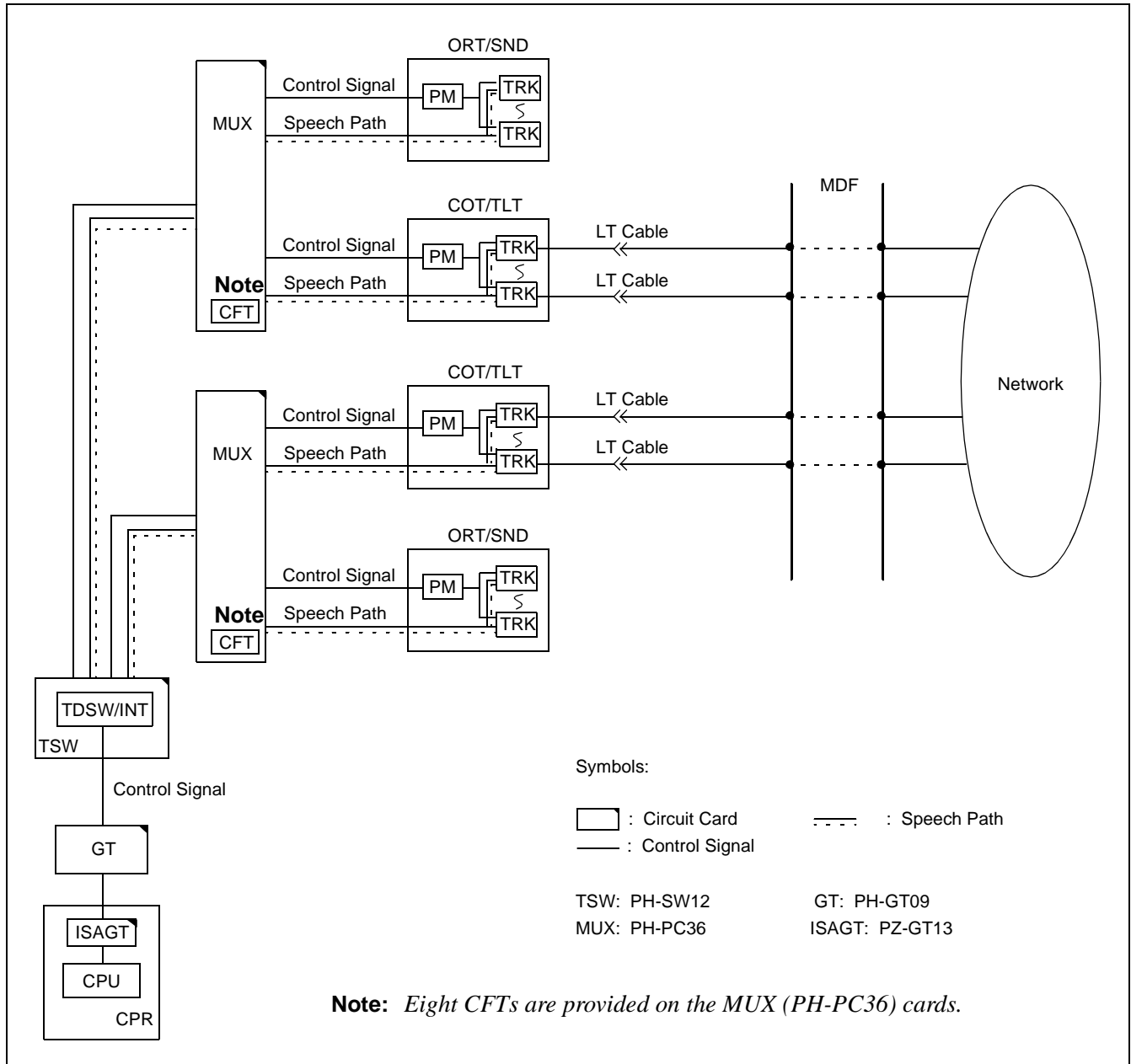


Figure 5-2 Controlling Trunk Circuit Cards and Speech Path

FAULT REPAIR PROCEDURES

2.3 Trunk (ORT, SND, CFT) Fault

Note: *If a circuit card is replaced because only one line is faulty, no other lines in that circuit card can be used until the replacement is complete.*



START

When only one line is faulty

Place the faulty line into make-busy state.

For ORT/SND, set MB switch of each circuit to ON position.

For CFT, place it into make-busy state using command MBTK.

Replace the circuit card with spare.

Set MB switch UP and extract the circuit card from its mounting slot.

Set MB switch of the new circuit card UP and insert the circuit card into its mounting slot.

Set MB switch DOWN.

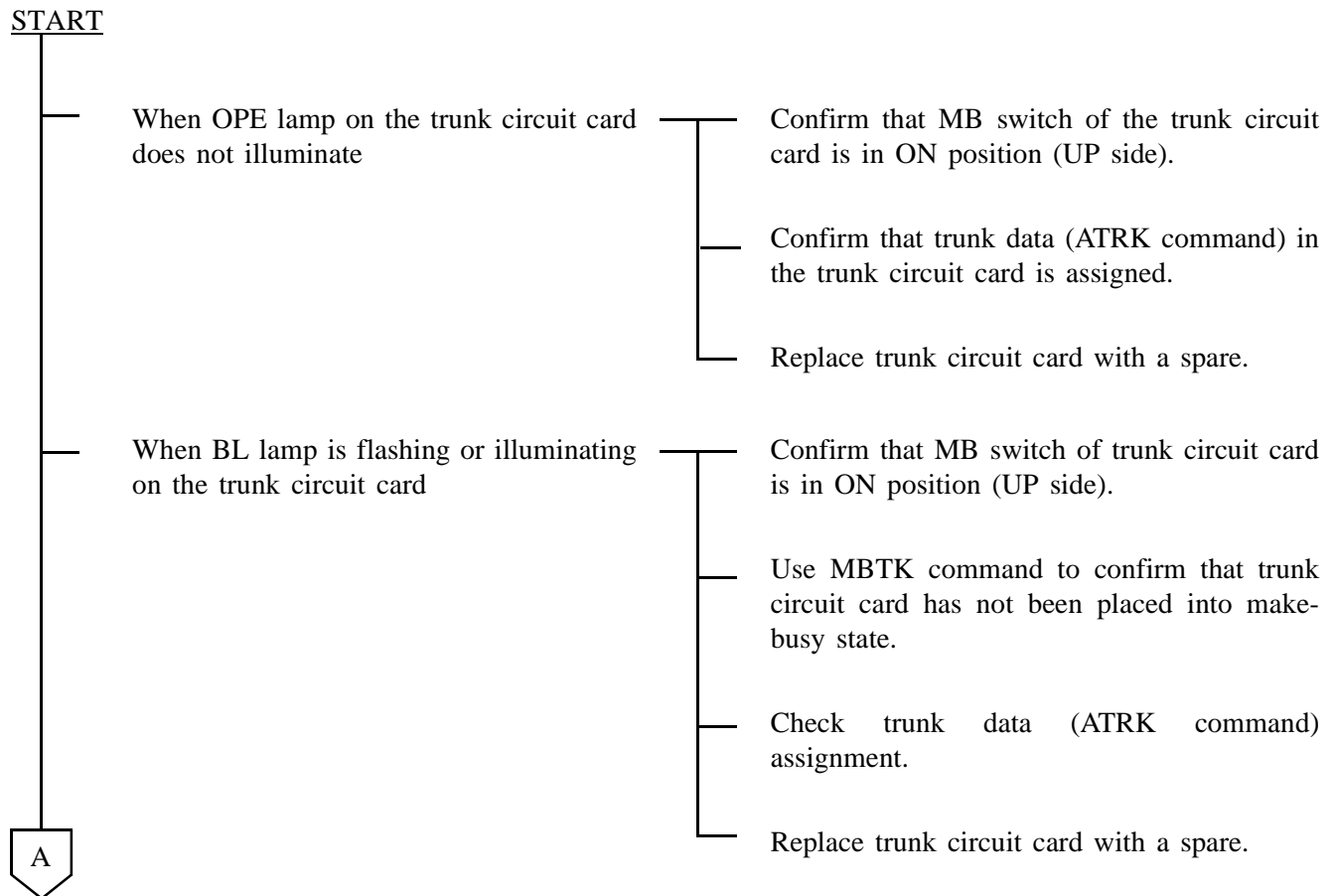
If the line is under make-busy state, cancel it.

END

2.4 Trunk (COT, TLT, DTI) Fault

Note 1: *If a circuit card is replaced because only one line is faulty, any other lines in that circuit card cannot be used until the replacement is complete.*

Note 2: *If the polarities of the external line is reversed, it is detected in the form of Trunk Ineffective Hold.*





A

Check the faulty line on the MDF.

Note 1: *Check can be made only on temporarily opened C.O./Tie Lines.*

Note 2: *Cross connection methods are explained on the following pages.*

When the connection is not set up, the C.O./Tie Line is faulty

When the connection is set up

If the C.O./Tie Line is in Loop Start system:

Isolate the faulty line to C.O. side and to the system side.

Connect the test telephone to the C.O. side.

Confirm that Dial Tone (DT) is heard and the call is connected to the destination party at the opposite office.

If C.O./Tie Line is any other type than Loop Start:

By cross connections on the MDF, connect the faulty line to a normal trunk.

By a designated connection from the ATTCON/DESKCON, seize the trunk connected with the faulty line (*E).

After the trunk has been seized, check to see if a call can be originated.

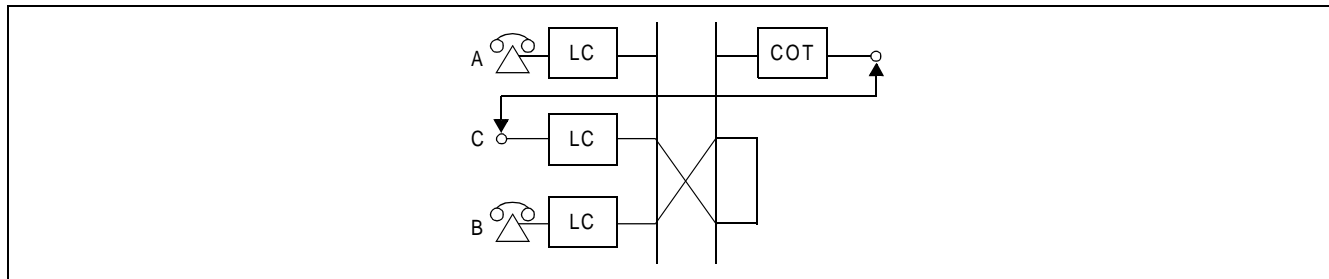
Replace the D^{term} with a spare.

END

Note: When performing loop-back connection tests on the trunks at the user's office, provide cross connection as follows:

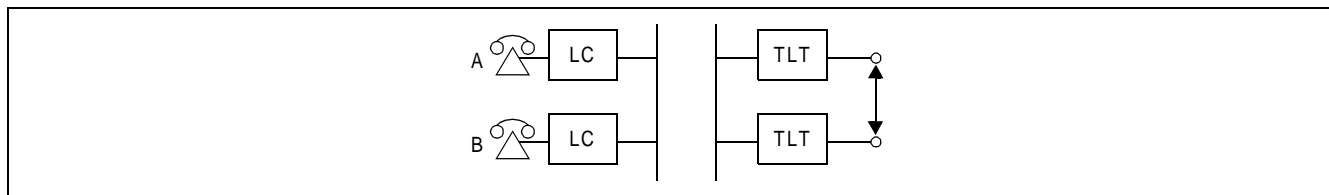


(1) For a COT

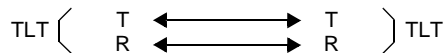


- Set up a loop-back connection between the COT (C.O. Trunk) to be tested and station line.
- The trunk route must be assigned for Loop Start.

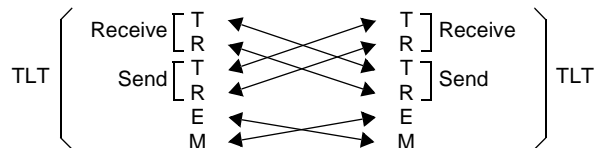
(2) For a TLT (for DID)



- Set up a loop-back connection between the Tie Line Trunk (TLT) to be tested and another TLT.
- If the TLT is a Direct Inward Dialing (DID) Trunk, connect the related leads as shown below:

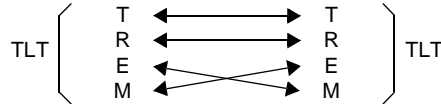


- If the TLT is a 4-wire E & M System, connect the related leads as shown below:

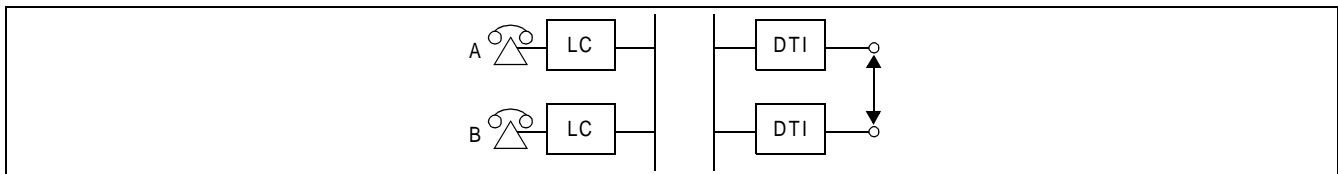




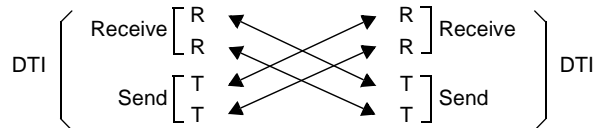
- If the TLT is a 2W E & M System, connect the related leads as shown below:



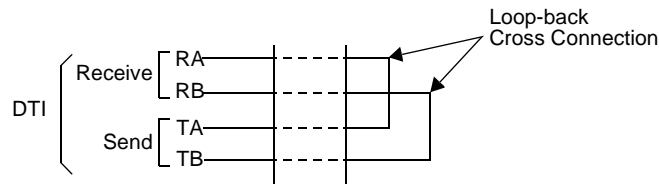
(3) For a DTI



- Set up a loop-back connection between the DTI Trunk to be tested and another DTI Trunk as shown below:



- If the office is the PLO-source office, perform the tests by disconnecting the PLO and M-OSC. The mode of the PLO becomes Self Operation Mode.
- When the loop-back test is performed at the time of PCM LOSS, FRM LOSS, or MERM LOSS alarm lamp (red) illuminates. If the alarm lamp goes out, the DTI circuit card side is normal.
- When only one DTI circuit card is to be checked, make the following connections and confirm that no alarm lamps illuminates.



3. ATTCON/DESKCON FAULT

This section explains the fault repair procedure when a specific Attendant Console (ATTCON) is in any of the following faulty conditions.

- No speech can be made.
- No operations can be made.

3.1 Check Point

When repairing an ATTCON/DESKCON fault, consider the following items:

- (1) Check the cable connections on the backplane.
- (2) When replacing the ATI circuit card for master ATTCON/DESKCON, the system is placed under Night Mode during replacement procedure.
- (3) When replacing the master ATTCON/DESKCON, the system is placed under Night Mode during replacement procedure.

3.2 ATTCON/DESKCON Control

Each ATTCON/DESKCON is controlled from an ATI (PA-CS33) circuit card. The ATI circuit card is controlled from the CPU card via the INT on the TSW card. [Figure 5-3](#) shows the control route of the ATI circuit card.

The ATI (PA-CS33) circuit card is used as an interface card between the PBX and ATTCON/DESKCON. The card is mounted in Slots 12 or 23.

FAULT REPAIR PROCEDURES

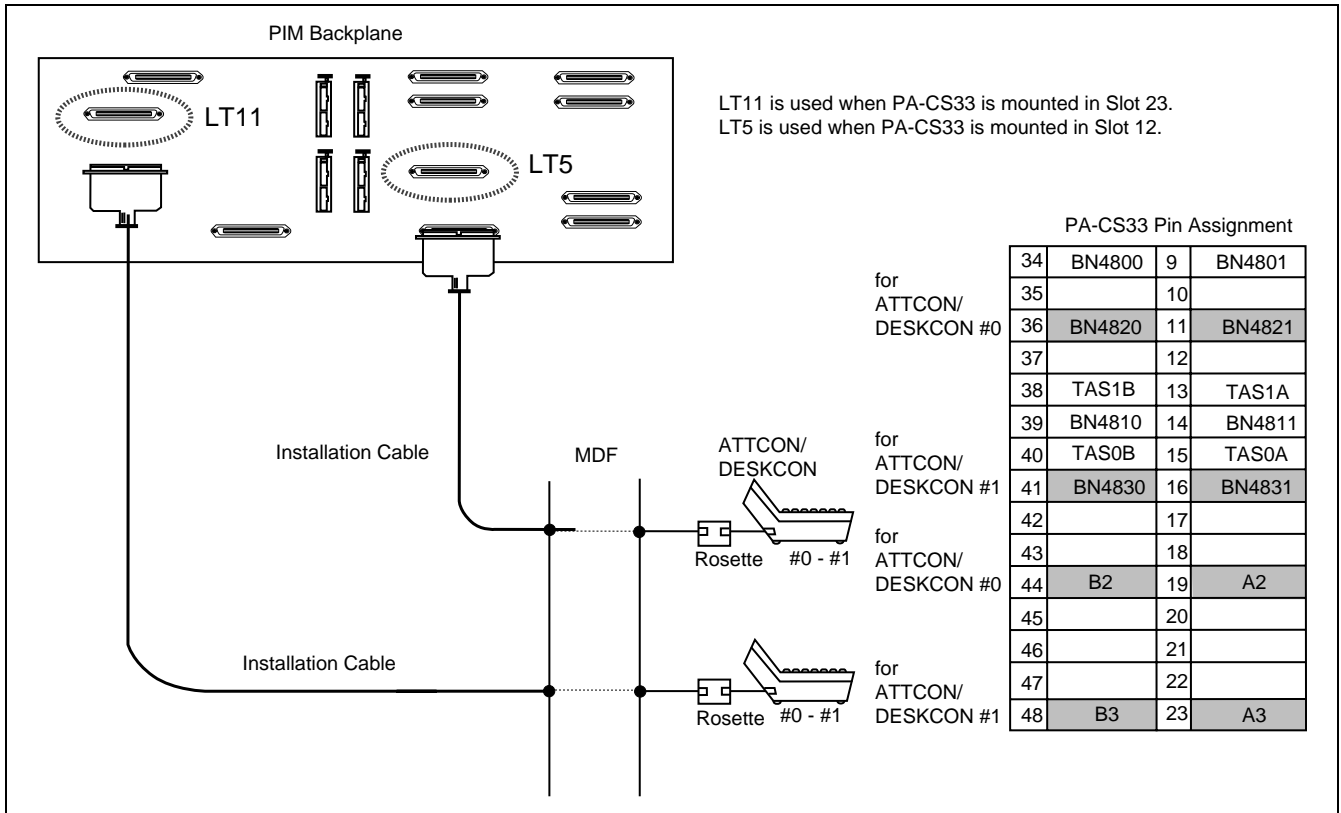
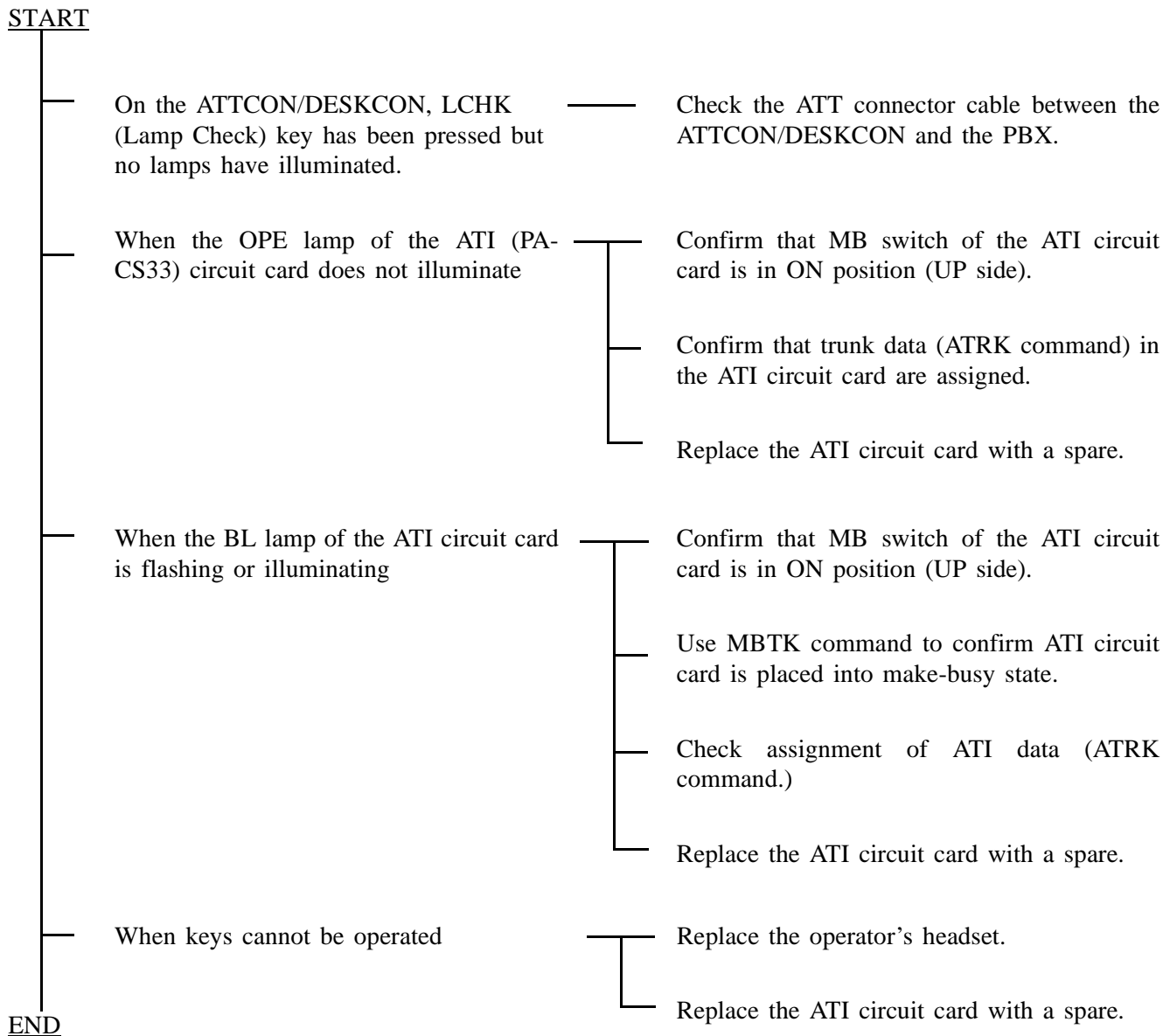


Figure 5-3 ATT Connector Cabling and Connector Leads Accommodation

3.3 ATTCON/DESKCON Fault

Note 1: *No speech can be made.*

Note 2: *While replacement of the ATI circuit card for the master ATTCON/DESKCON is in progress, the system is placed under Night Mode.*



FAULT REPAIR PROCEDURES

Note: *No operations can be made.*



START

Replace the ATTCON/DESKCON with a spare.

Set the MB switch of ATI PA-CS33 circuit card UP.

If the circuit card is equipped with a fuse, remove the fuse.

Disconnect the CHAMP connector of the ATTCON/DESKCON and replace the ATTCON/DESKCON.

If the circuit card is equipped with a fuse, insert the fuse into its position.

Set the MB switch of the ATI circuit card DOWN.

Confirm the PA lamp illuminates on the ATTCON/DESKCON.

END

4. UNIT FAULT

This section explains the fault repair procedure in a case where any of the faults shown in Table 5-6 has occurred to all the line/trunk circuit cards mounted in a specific unit. Figure 5-4 shows the range of units.

Table 5-6 Unit Fault Situation

FAULT SITUATION	REFERENCE SECTION
Noise, one-way speech, no tone. Even if dialing has been made, dial tone does not stop.	Section 4.2, Unit Fault - Fault Related to Speech
Dial Tone cannot be heard.	Section 4.3, Unit Fault - When Dial Tone (DT) Cannot Be Heard
MUX card has become faulty and, as a result the CPU has changed over.	Section 4.4, Unit Fault - ACT-Side MUX Card Is Faulty and System Has Changed Over

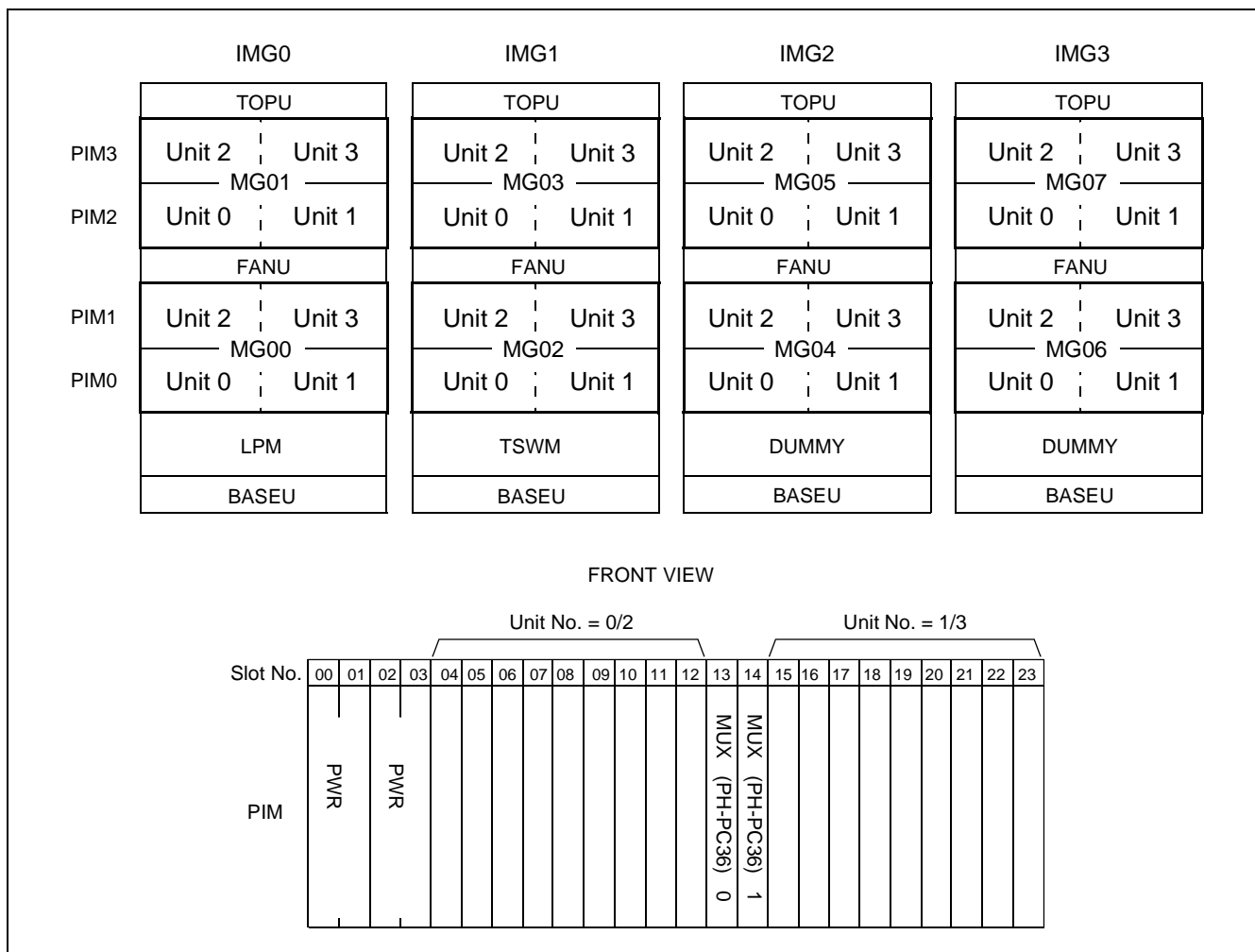


Figure 5-4 Range of Units

FAULT REPAIR PROCEDURES

4.1 Check Point

When repairing a unit fault, consider the following items:

- (1) Speech paths and control paths in the unit are connected to line/trunks via the MUX circuit cards. Be sure to check the alarm lamps on the MUX circuit cards, and check to see if the front cable between each MUX circuit card and TSW circuit card is connected correctly. [Figure 5-5](#) and [Figure 5-6](#) show the block diagram within the unit.
- (2) The MUX circuit cards are operating in the ACT/STBY modes under control of the CPU circuit. When the ACT-side CPU has detected a fault in the ACT-side MUX circuit card, CPU changeover is executed and the ACT/STBY mode of the Speech Path System is also changed over. When both of the MUX circuit cards have become faulty, all the lines/trunks in that unit are placed into make-busy state. (If a PFT circuit card is located in that specific unit, the PFT is activated.) [Figure 5-7](#) shows the location of the MUX cards.
- (3) When both units in a specific PIM are faulty, it is possible that the PWR circuit card mounted in that specific PIM is faulty. In such a case, refer to [Section 8, Power Supply Fault](#).

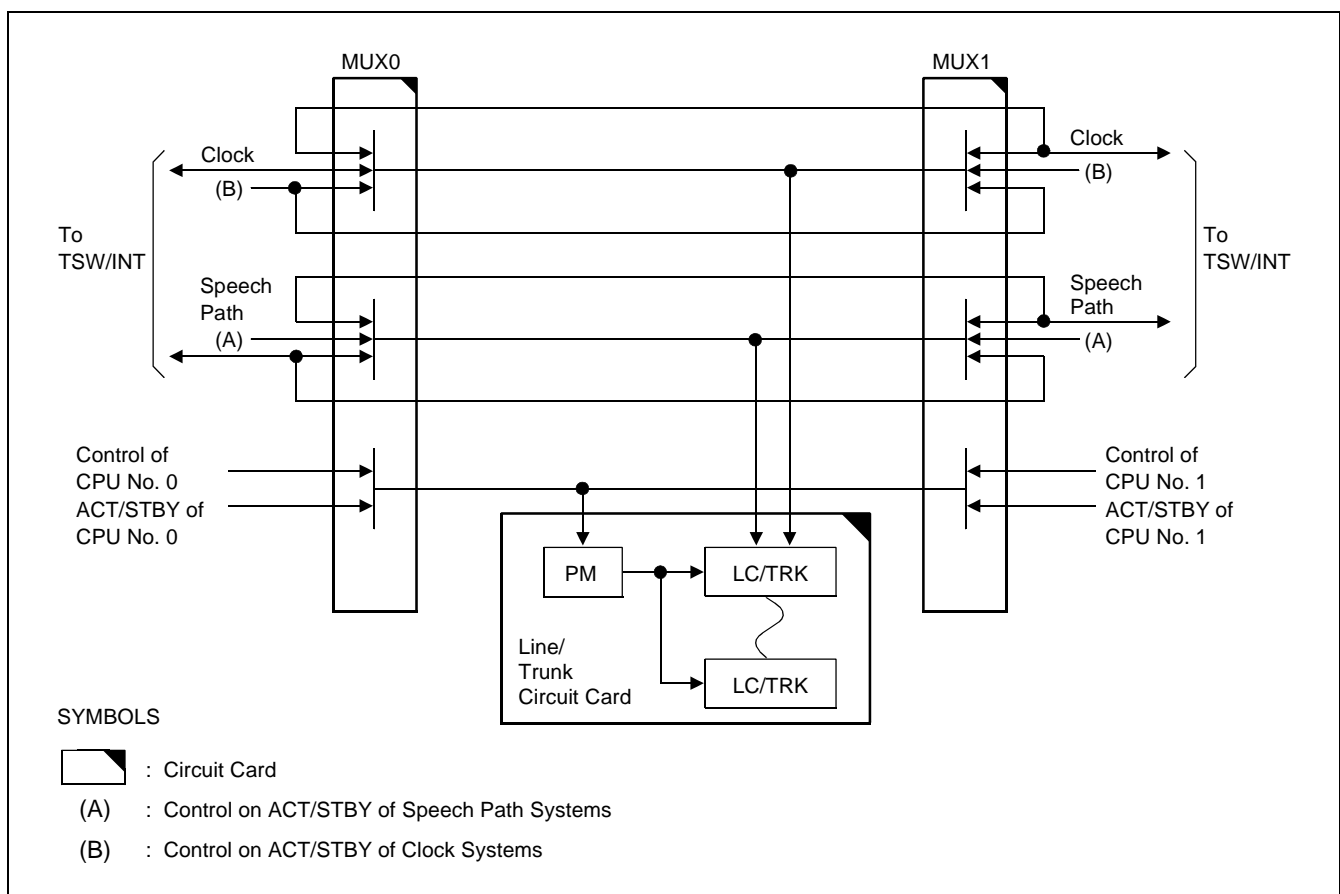


Figure 5-5 Unit Control Block Diagram (Dual Configuration)

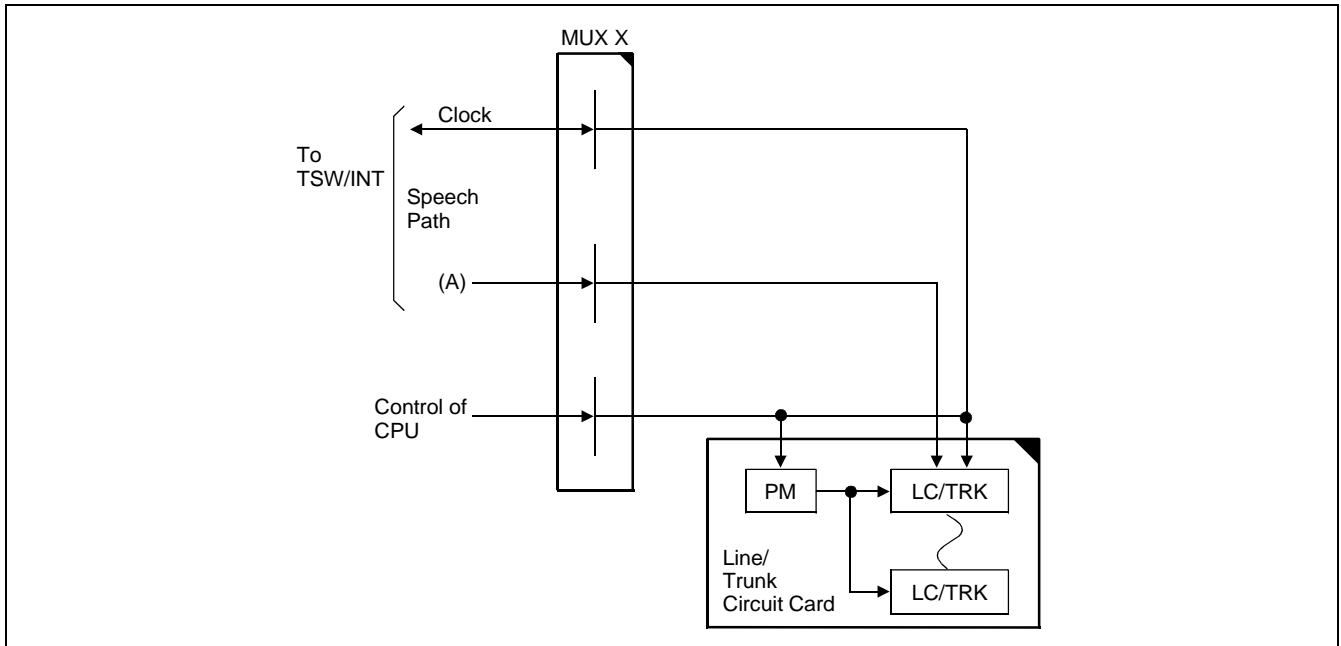


Figure 5-6 Unit Control Block Diagram (Single Configuration)

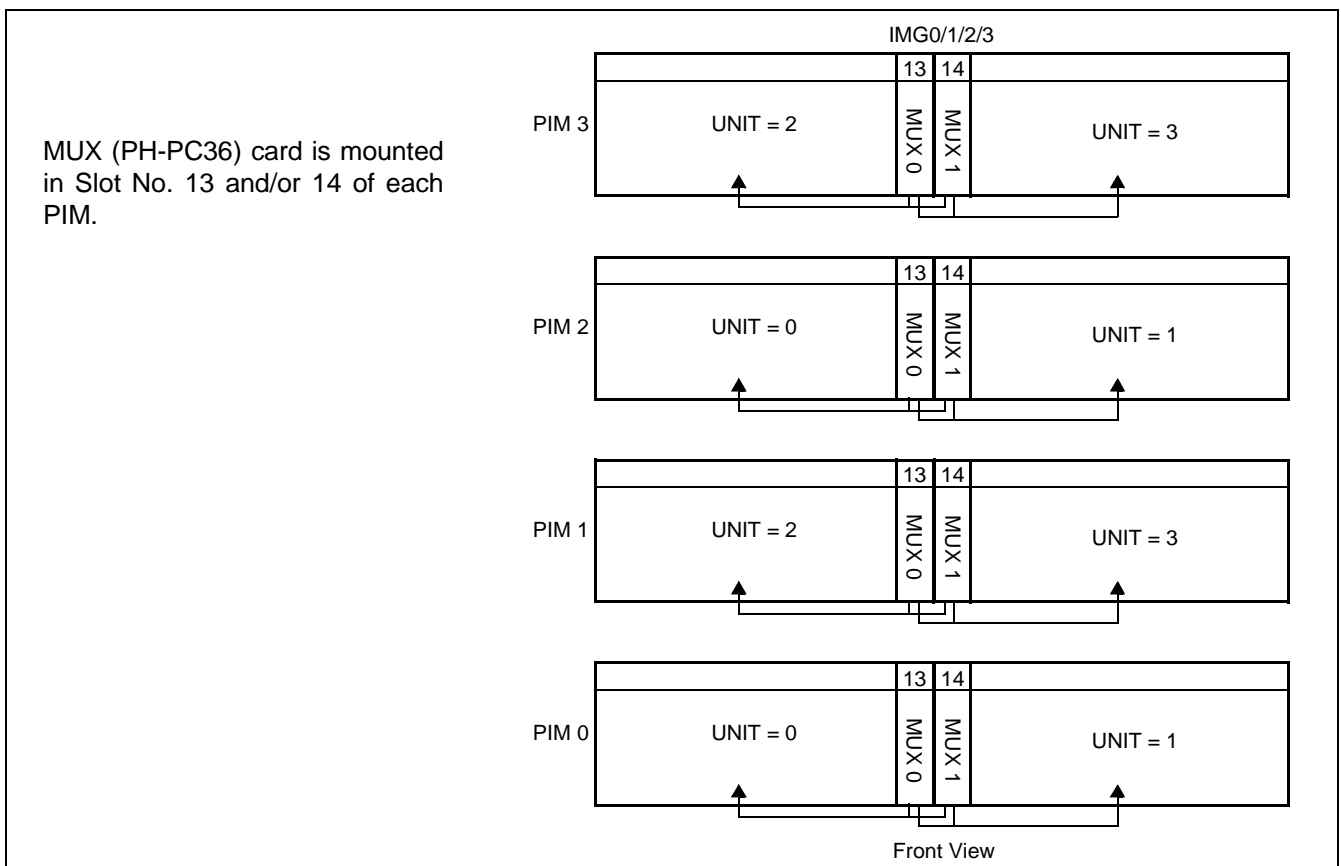


Figure 5-7 MUX Card Locations

FAULT REPAIR PROCEDURES

4.2 Unit Fault - Fault Related to Speech

Faulty Situation:

- Noise, one-way speech, no tone, etc. occurs only within a unit.
- Even if dialing has started, dial tone does not stop.



(1) For Dual Configuration

START

Check by replacing the MUX (PH-PC36) circuit card.

Replace the MUX circuit card referring to [Section 3.3.2, MUX Card Replacement Procedure](#), in [Chapter 4](#).

After replacement of the MUX circuit card, make a station-to-station call in the faulty unit and see if speech is normal.

Place the MUX circuit card into ACT mode by flipping the MBR key on the active GT (PH-GT09) card. Refer to [Section 12.1.6, Manual System Changeover of Speech Path System](#), in [Chapter 6](#).

Check by replacing the TSW circuit card.

Replace the TSW circuit card by referring to [Section 2.3.2, TSW Card Replacement Procedure](#), in [Chapter 4](#).

After replacement of the TSW circuit card, make a station-to-station call in the faulty unit and see if speech is normal.

Place the TSW circuit card into ACT mode by flipping the MBR key on the active GT (PH-GT09) card. Refer to [Section 12.1.6, Manual System Changeover of Speech Path System](#), in [Chapter 6](#).





A

Check the line/trunk circuit cards mounted in the unit to see if they are faulty.

Set the MB switch of the line/trunk circuit card UP and extract it from its mounting slot.

Make a station-to-station call and see if a fault occurs.

Perform this check on an individual basis.

If the fault has stopped occurring, the circuit card extracted at that time is faulty. Replace the circuit card with a spare.

If the fault continues, check the next circuit card.

END



(2) For Single Configuration

START

Check by replacing the MUX (PH-PC36) circuit card.

Replace the MUX circuit card by referring to [Section 3.3.2, MUX Card Replacement Procedure](#), in [Chapter 4](#).

After replacement of the MUX circuit card, make a station-to-station call in the faulty unit and see if speech is normal.

Press the RESET button on the EMA card (*D).

Check by replacing the TSW circuit card.

Replace the TSW circuit card referring to [Section 2.3.2, TSW Card Replacement Procedure](#), in [Chapter 4](#).

After replacement of the TSW circuit card, make a station-to-station call in the faulty unit and see if speech is normal.

Press the RESET button on the EMA card (*D).





A

Check the line/trunk circuit cards mounted in the unit to see if they are faulty.

Set the MB switch of the line/trunk circuit card UP and extract it from its mounting slot.

Perform this check on an individual basis.

Make a station-to-station call and see if a fault occurs.

If the fault has stopped, the circuit card extracted at that time is faulty. Replace the circuit card with a spare.

If the fault continues, check the next circuit card.

END

FAULT REPAIR PROCEDURES

4.3 Unit Fault - When Dial Tone (DT) Cannot Be Heard

Faulty Situation:

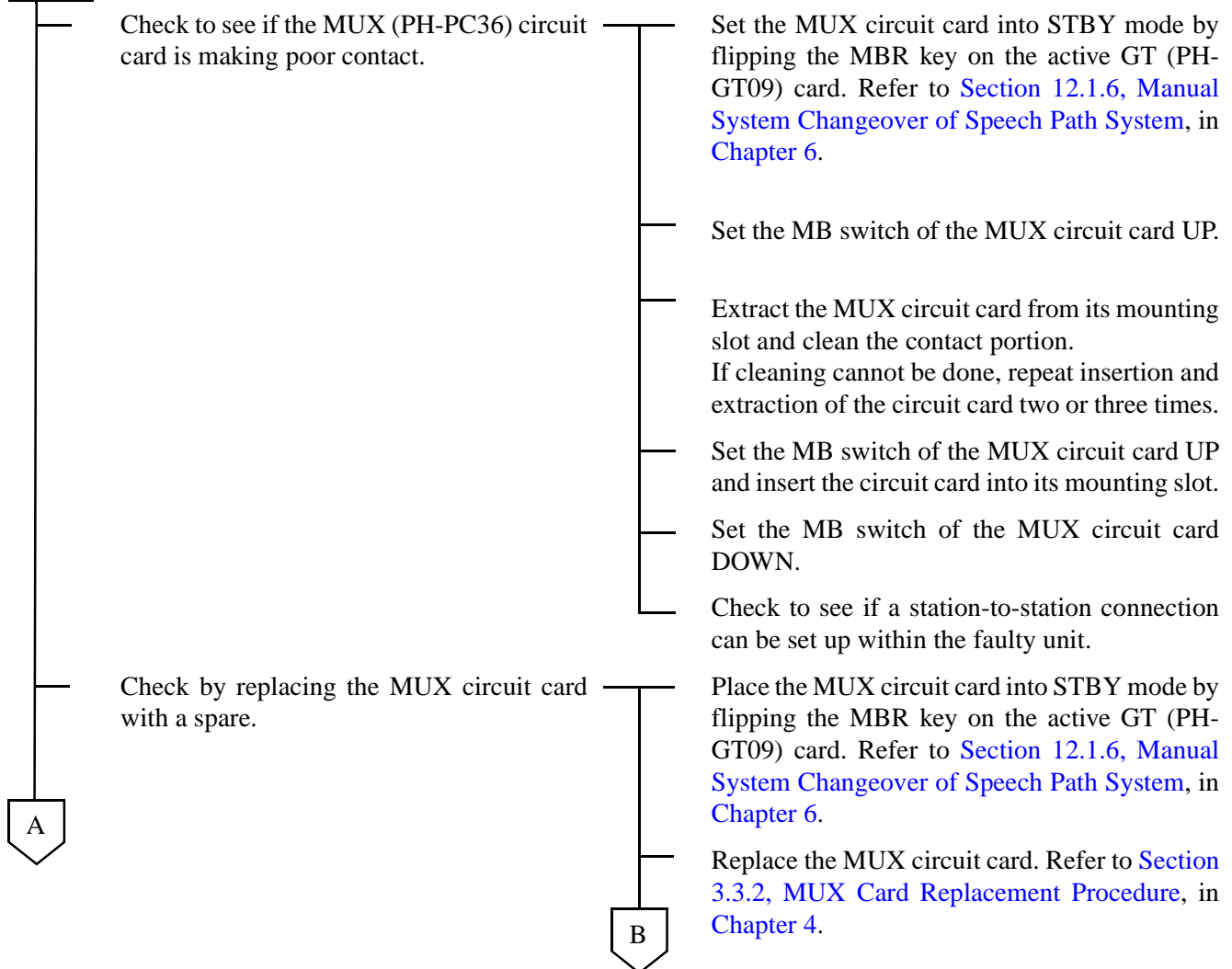
- Dial Tone (DT) cannot be heard except within a unit.
- [4-T] Both MUX Failure / [4-S] MUX Ready Failure
- [23-Y] MUX Clock Failure



Note: For dual system configuration, if a system message indicates that both systems are faulty, first repair the fault in the indicated system and then proceed to repair the PIM in the other system.

(1) For Dual Configuration

START





A

B

Extract all the line/trunk circuit cards from their mounting slots in the unit. Insert the cards back into their slots one after another and see if the dial tone is heard each time.

Place the MUX circuit card into ACT mode by flipping the MBR key on the active GT (PH-GT09) card. Refer to [Section 12.1.6, Manual System Changeover of Speech Path System](#), in [Chapter 6](#).

Check to see if a station-to-station connection can be set up to identify the circuit card responsible for the fault.

Extract all the line/trunk circuit cards from their slots.

Note: *Set the MB switch of the line/trunk circuit card UP and extract.*

Confirm the MUX ACT lamp on the MUX circuit card illuminates.

Set the MB switch of an extracted line/trunk circuit card UP and insert the circuit cards into their mounting slots one by one.

Confirm the OPE lamp of the inserted circuit card illuminates by setting the MB switch DOWN.

Make a station-to-station call and see if DT can be heard.

Note: *Perform this check on the rest of the circuit cards by inserting them into their slots individually.*

If Dial Tone (DT) is heard, check the next circuit card.

If DT is not heard, replace the circuit card with a spare.

END



(2) For Single Configuration

START

Check to see if the MUX (PH-PC36) circuit card is making poor contact.

Set the MB switch of the MUX circuit card UP.

Extract the MUX circuit card from its mounting slot and clean the contact portion. If cleaning cannot be done, repeat insertion and extraction of the circuit card two or three times.

Set the MB switch of the MUX circuit card UP and insert the circuit card into its mounting slot.

Set the MB switch of the MUX circuit card DOWN.

Check to see if a station-to-station connection can be set up within the faulty unit.

Check by replacing the MUX circuit card with a spare.

Replace the MUX circuit card referring to [Section 3.3.2, MUX Card Replacement Procedure](#), in [Chapter 4](#).

Place the MUX circuit card into ACT mode by flipping the MBR key on the active GT (PH-GT09) card. Refer to [Section 12.1.6, Manual System Changeover of Speech Path System](#), in [Chapter 6](#).

Check to see if a station-to-station connection can be set up to identify a circuit card responsible for the fault.

A



A

Extract all the line/trunk circuit cards from their mounting slots in the unit. Insert the cards back into their slots one after another and see if the dial tone is heard each time.

Extract all the line/trunk circuit cards from their slots.

Note: *Set the MB switch of the line/trunk circuit card UP and extract.*

Confirm the MUX ACT lamp on the MUX circuit card illuminates.

Set the MB switch of an extracted Line/Trunk circuit card UP and insert the circuit cards into their mounting slots one by one.

Confirm the OPE lamp of the inserted circuit card illuminates by setting the MB switch DOWN.

Make a station-to-station call and see if dial tone can be heard.

Note: *Perform this check on the reset of the circuit cards by inserting them into their slots individually.*

If DT is heard, check the next circuit card.

If DT is not heard, replace the circuit card with a spare.

END

FAULT REPAIR PROCEDURES

4.4 Unit Fault - ACT-Side MUX Card Is Faulty and System Has Changed Over

Faulty Situation:

- The ACT side has become faulty and the system changeover has executed in the dual configuration system.
- [4-S] MUX Ready Failure / [4-T] Both MUX Failure
- [23-Y] MUX Clock Failure



START

Check to see if the MUX (PH-PC36) circuit card of the STBY side is making poor contact.

If the connection is set up, set the faulty system into STBY side.

Set the MB switch of the MUX circuit card UP.

Extract the MUX circuit card from its mounting slot and clean the contact portion.

If cleaning cannot be done, repeat insertion and extraction of the circuit card two or three times.

Set the MB switch of the MUX circuit card UP and insert the circuit card into its mounting slot.

Set the MB switch of the MUX circuit card DOWN.

Set the faulty system to ACT side by flipping the MBR key on the active GT (PH-GT09) card. Refer to [Section 12.1.6, Manual System Changeover of Speech Path System](#), in [Chapter 6](#).

Check to see if a station-to-station connection can be set up within the faulty unit.





A

Replace the MUX circuit card with a spare, and check it.

Replace the MUX circuit card referring to [Section 3.3.2, MUX Card Replacement Procedure](#) in [Chapter 4](#).

Place the MUX circuit card into ACT mode by flipping the MBR key on the active GT (PH-GT09) card. Refer to [Section 12.1.6, Manual System Changeover of Speech Path System](#), in [Chapter 6](#).

Check to see if a station-to-station connection can be set up and identify a circuit card responsible for the fault.

Perform the above check by extracting each MUX circuit card individually.

If the connection is set up, set the faulty system into STBY side.

END

FAULT REPAIR PROCEDURES

5. SPEECH PATH (TSW) SYSTEM FAULT

This section explains the fault repair procedure when any of the faults shown in [Table 5-7](#) has occurred in the whole system.

Table 5-7 Speech Path (TSW) System Fault Situation

FAULTY SITUATION	REFERENCE SECTION
<ul style="list-style-type: none">Noise, one-way speech, no toneEven if dialing has been made, dial tone does not stop.	Section 5.2, Speech Path System Fault - Fault Related to Speech
Dial tone cannot be heard.	Section 5.3, Speech Path System Fault - When Dial Tone (DT) Cannot Be Heard
A fault occurring in the STBY side TSW is indicated by a system message or an alarm lamp.	Section 5.4, Speech Path System Fault - STBY Side Has Become Faulty

5.1 Check Point

When repairing a speech path fault, consider that when any of the faults shown in [Table 5-7](#) have occurred in the system, it is possible that the TSW circuit card is at fault. Always check the alarm lamps on the TSW circuit card.

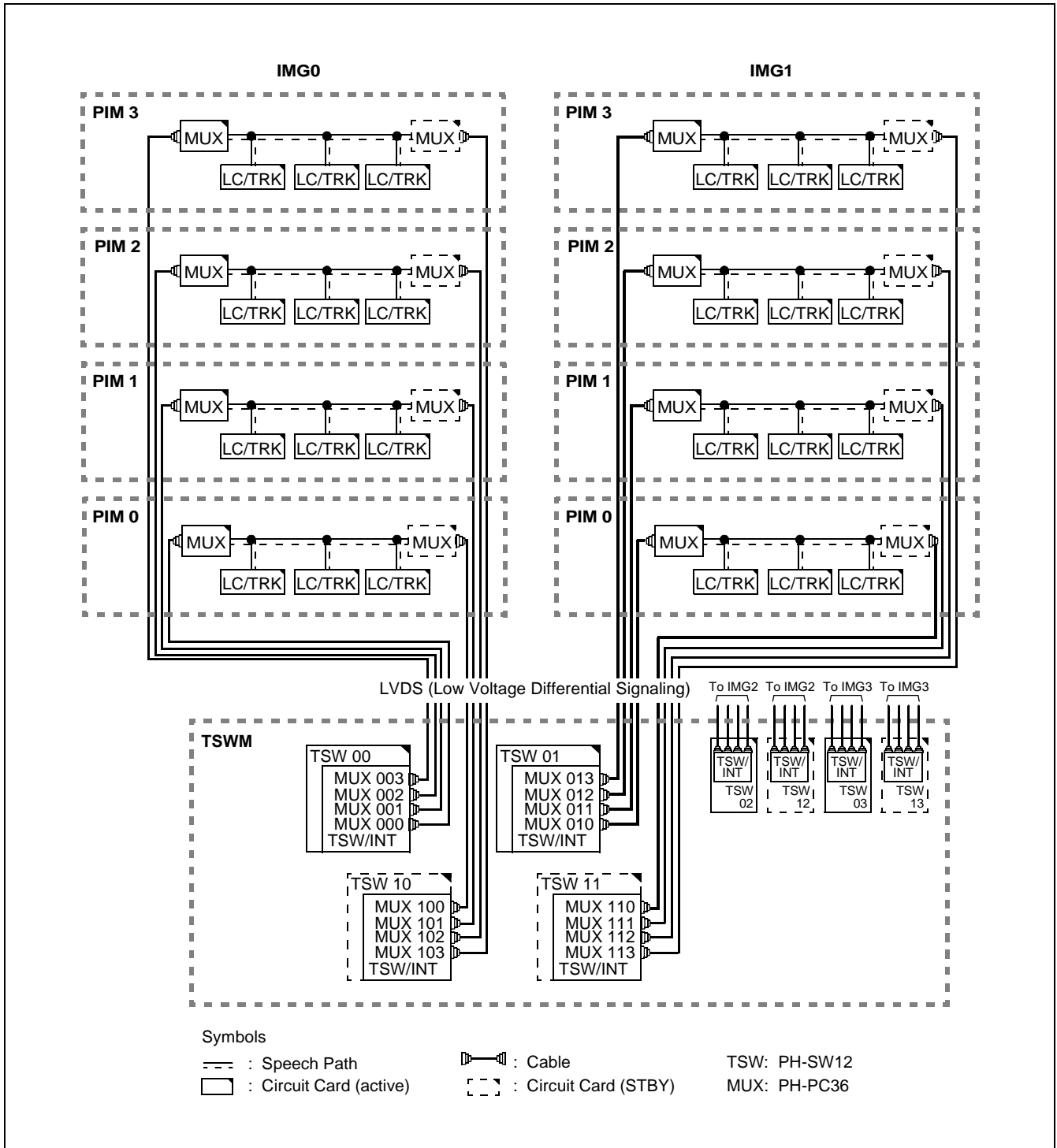


Figure 5-8 Speech Path Block Diagram

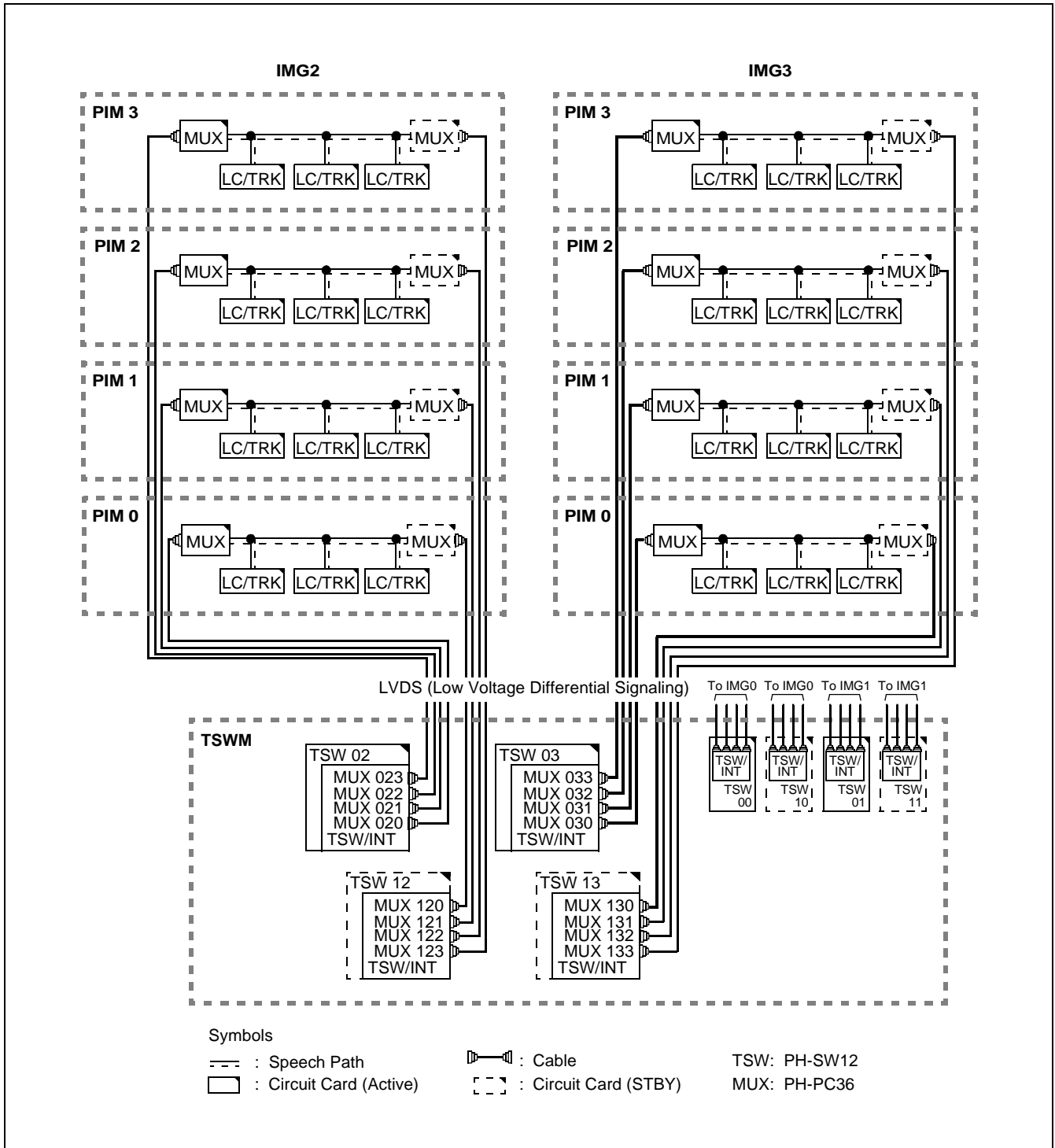
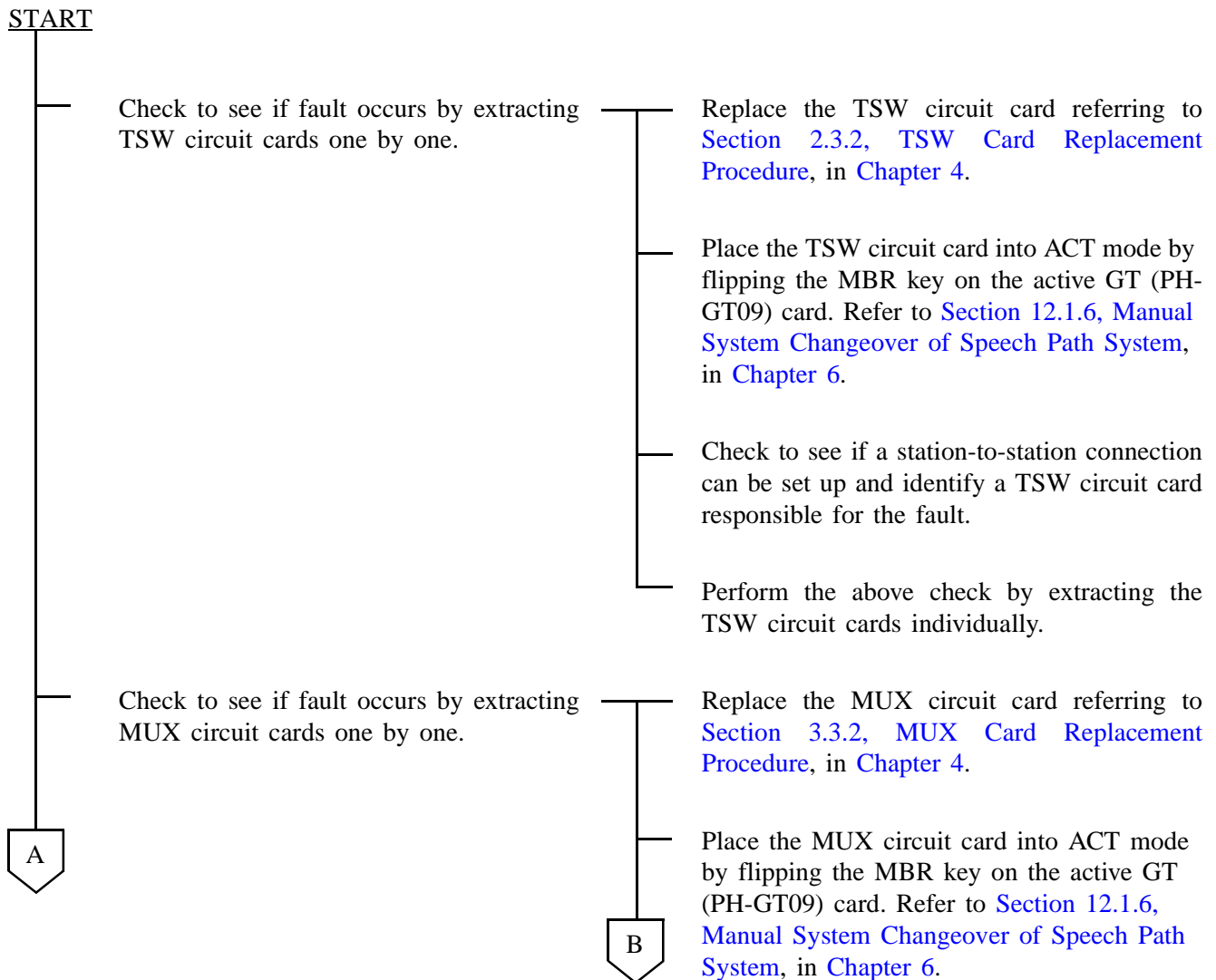


Figure 5-8 Speech Path Block Diagram (Continued)

5.2 Speech Path System Fault - Fault Related to Speech

Faulty Situation:

- Fault related to speech such as noise, one-way speech, no-speed, etc. occurs.
 - Even if dialing started, Dial Tone (DT) does not stop.
 - [1-C] Both TSW Write Failure
 - [1-D] TSW Write Failure
- (1) For Dual Configuration





A

When the PLO (PH-CK16/17/16-A/17-A) circuit card is mounted for digital interface, replace PLO circuit card with a spare and check.

Set the faulty speech path system to STBY side by flipping the MBR key on the active GT (PH-GT09) card. Refer to [Section 12.1.6, Manual System Changeover of Speech Path System](#), in [Chapter 6](#).

END

B

Check to see if a station-to-station connection can be set up and identify a circuit card responsible for the fault.

Perform the above check by extracting the MUX circuit cards individually.

Set MB switch of the PLO circuit card to UP side.

Confirm OPE lamp on the PLO circuit card of the mate system illuminates.

Extract PLO circuit card from its mounting slot.

Set MB switch UP and insert the new PLO circuit card into its mounting slot.

Set MB switch DOWN.

Set MB switch of the ACT-side PLO circuit card UP.

Confirm that the new PLO circuit card becomes the ACT side (OPE lamp on the new card lights green).

Set MB switch of the STBY side PLO DOWN.

Confirm that speech can be carried out normally by a station-to-station call.



(2) For Single Configuration

START

Check to see if the fault occurs by extracting TSW circuit cards one by one.

Replace the TSW circuit card referring to [Section 2.3.2, TSW Card Replacement Procedure](#), in [Chapter 4](#).

Check to see if a station-to-station connection can be set up and identify a TSW circuit card responsible for the fault.

Perform the above check by extracting the TSW circuit cards individually.

Check to see if the fault occurs by extracting MUX circuit cards one by one.

Replace the MUX circuit card referring to [Section 3.3.2, MUX Card Replacement Procedure](#), in [Chapter 4](#).

Initialize the system by pressing the START button on the TOPU.

Check to see if a station-to-station connection can be set up and identify a TSW circuit card responsible for the fault.

Perform the above check by extracting the TSW circuit cards individually.





A

When the PLO (PH-CK16/17) circuit card is mounted for digital interface, replace the PLO circuit card with a spare and check it.

Set MB switch of the PLO circuit card to UP side.

Confirm ACT lamp on the PLO circuit card goes out.

Extract PLO circuit card from its mounting slot.

Set MB switch UP and insert the new PLO circuit card into its mounting slot.

Set MB switch DOWN.

Confirm the ACT lamp on the new PLO circuit card illuminates.

Confirm that speech can be carried out normally by a station-to-station call.

END

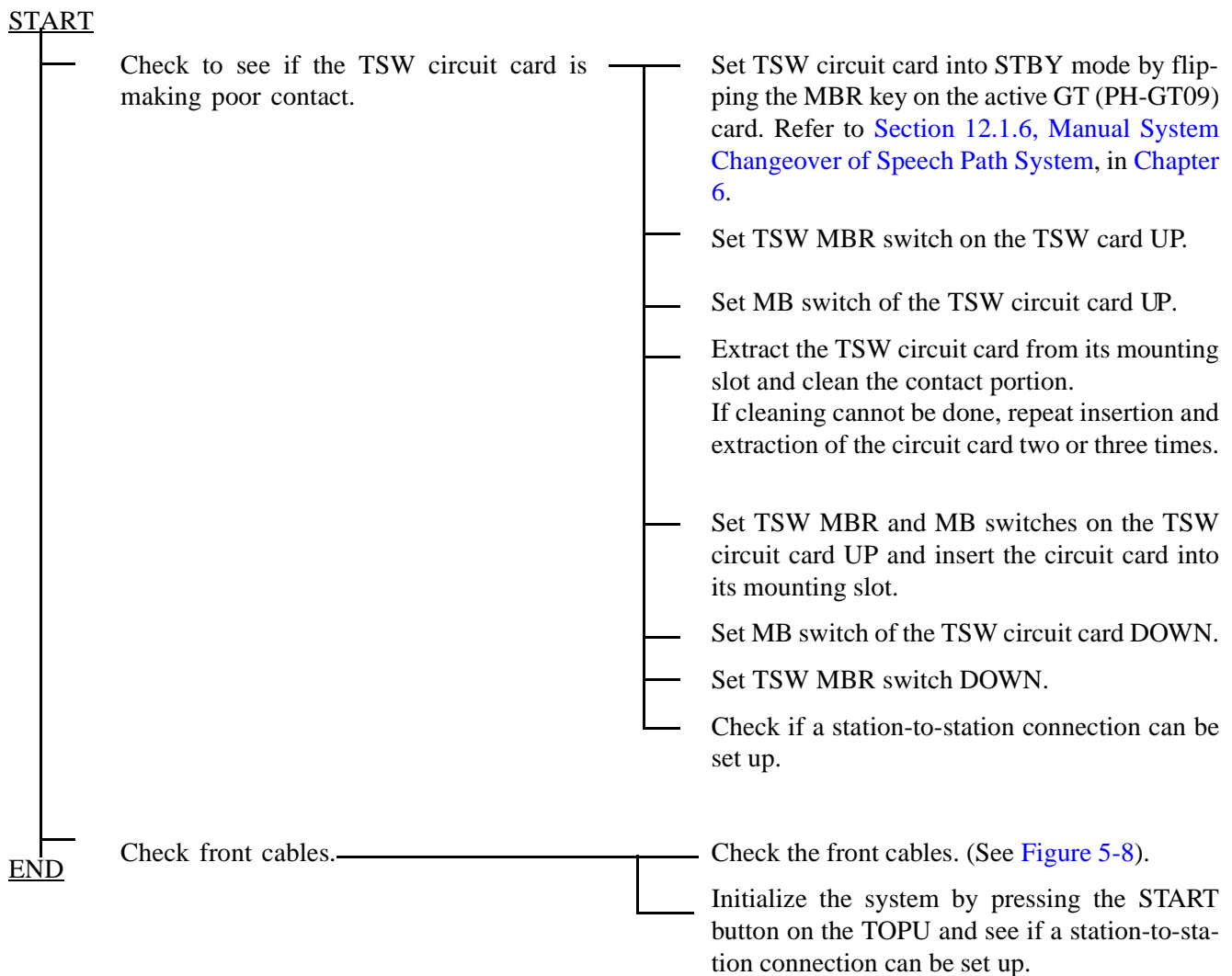
5.3 Speech Path System Fault - When Dial Tone (DT) Cannot Be Heard

Faulty Situation:

- Dial Tone (DT) cannot be heard.
- [1-A] Both TSW Failure (Permanent)
- [1-E] Both TSW Clock Failure
- [4-C] Both TSW Ready Failure
- [23-Y] MUX Clock Failure



Note: For dual system configuration, if a system message indicates that both systems are faulty, first repair the fault in the indicated system and then proceed to repair the PIM in the other system.



FAULT REPAIR PROCEDURES

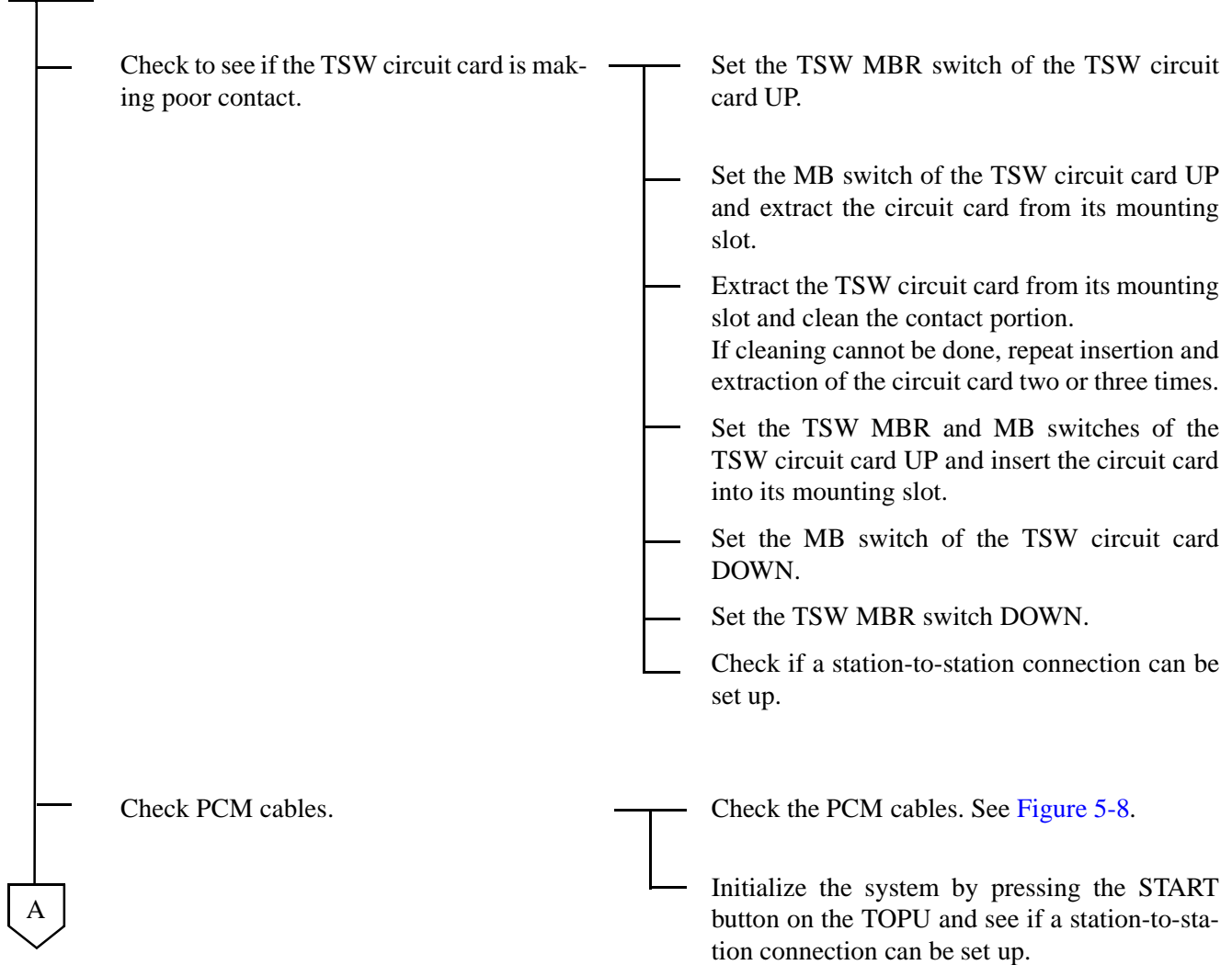
5.4 Speech Path System Fault - STBY Side Has Become Faulty

Faulty Situation:

- A fault occurred in the STBY side of the dual configuration system.
- [1-B] TSW Failure (Permanent)
- [1-D] TSW Write Failure
- [1-F] TSW Clock Failure
- [4-D] TSW Ready Failure



START



Faulty Situation:

- Fault related to speech such as noise, one-way speech, no-speed, etc. occurs.
- Even if dialing started, Dial Tone (DT) does not stop.
- [1-C] Both TSW Write Failure
- [1-D] TSW Write Failure



A

Check to see if fault occurs by extracting TSW circuit cards one by one.

Replace the TSW circuit card referring to [Section 2.3.2, TSW Card Replacement Procedure](#) in [Chapter 4](#).

Set the TSW circuit card into ACT mode by flipping the MBR key on the active GT (PH-GT09) card. Refer to [Section 12.1.6, Manual System Changeover of Speech Path System](#), in [Chapter 6](#).

Initialize the system by pressing the START button on the TOPU.

Check to see if a station-to-station connection can be set up to identify a TSW circuit card responsible for the fault.

Perform the above check by extracting the TSW circuit cards individually.

Check to see if the fault occurs by extracting MUX circuit cards one by one.

Replace the MUX circuit card referring to [Section 3.3.2, MUX Card Replacement Procedure](#), in [Chapter 4](#).

Set the MUX circuit card into ACT mode by flipping the MBR key on the active GT (PH-GT09) card. Refer to [Section 12.1.6, Manual System Changeover of Speech Path System](#), in [Chapter 6](#).

Check to see if a station-to-station connection can be set up and identify a TSW circuit card responsible for the fault.

Perform the above check by extracting the MUX circuit cards individually.

END

FAULT REPAIR PROCEDURES

6. CONTROL SYSTEM FAULT

This section explains the fault repair procedure for the control system listed in [Table 5-8](#).

Table 5-8 Control System Fault Situation

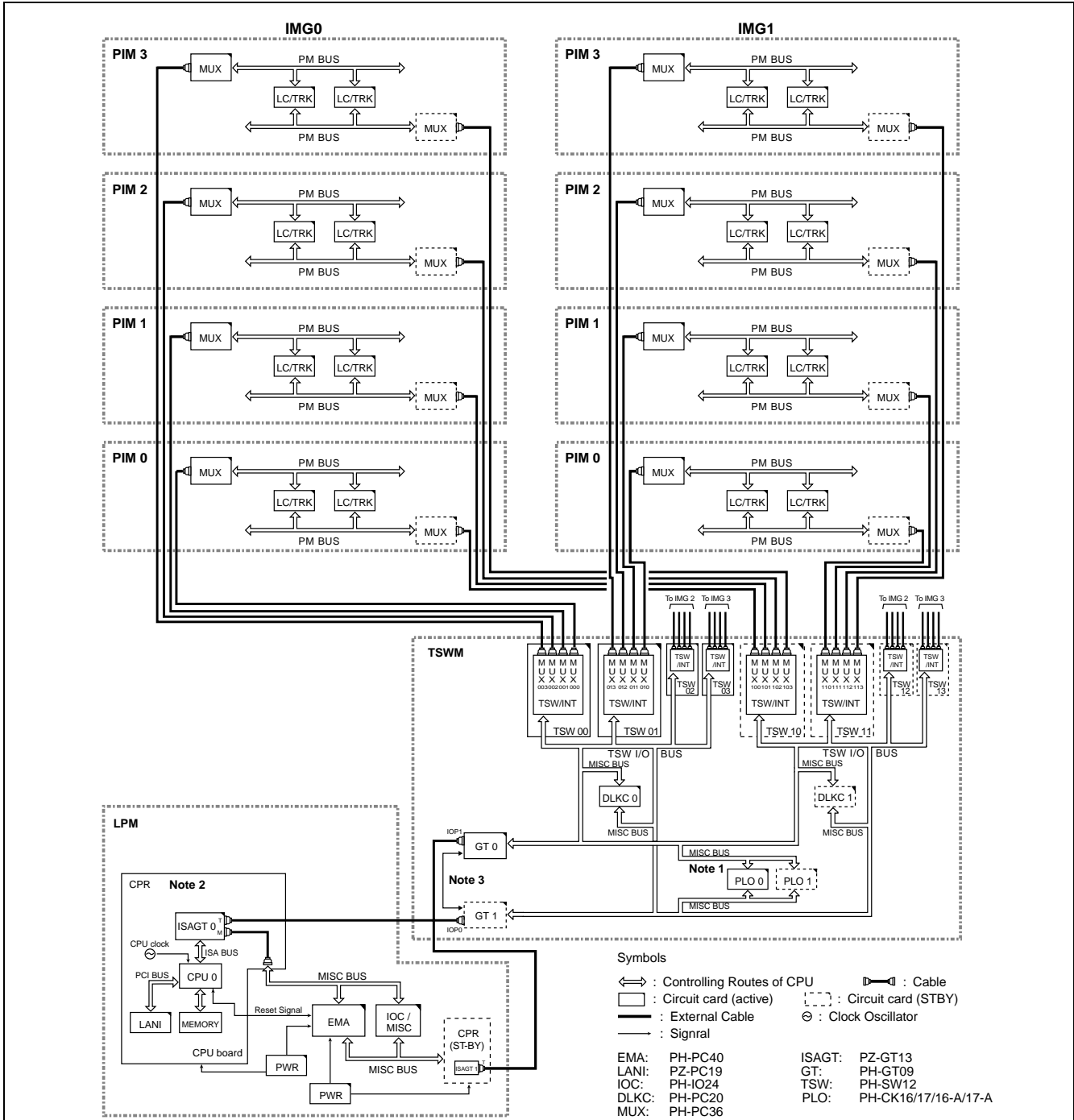
FAULTY SITUATION	REFERENCE SECTION
Fault occurs occasionally at the STBY side.	Section 6.2, Control System Fault - Fault Occurs Intermittently
STBY side is faulty.	Section 6.3, Control System Fault - STBY Side Is Faulty

6.1 Check Point

When repairing the control system, check the status of the following lamps:

- CPR
- GT
- TSW
- MUX
- EMA circuit cards

[Figure 5-9](#) shows a block diagram of the CPU controlling block, where CPU #0 is active.



- Note 1:** The circuit cards, drawn by dotted lines, indicate they are in STBY state. These cards (TSW, MUX and DLKC) are totally changed over to the ACT mode, when the MBR key of the active GT (PH-GT09) card is once flipped. However, PLO (PH-CK16/17/16-A/17-A) is independent and not affected by the development.
- Note 2:** If the ACT/STBY of CPU is once changed over, the system of GT (in TSWM) also changes over.
- Note 3:** Though an external cable is physically connected between ISAGT0 and GT1, the actual control signal is sent/received only between ISAGT0 and GT0. This is because GT0 and GT1 are having a multiple connection on the backboard side. (Refer to Chapter 6, Section 12.)

Figure 5-9 CPU Controlling Block Diagram

FAULT REPAIR PROCEDURES

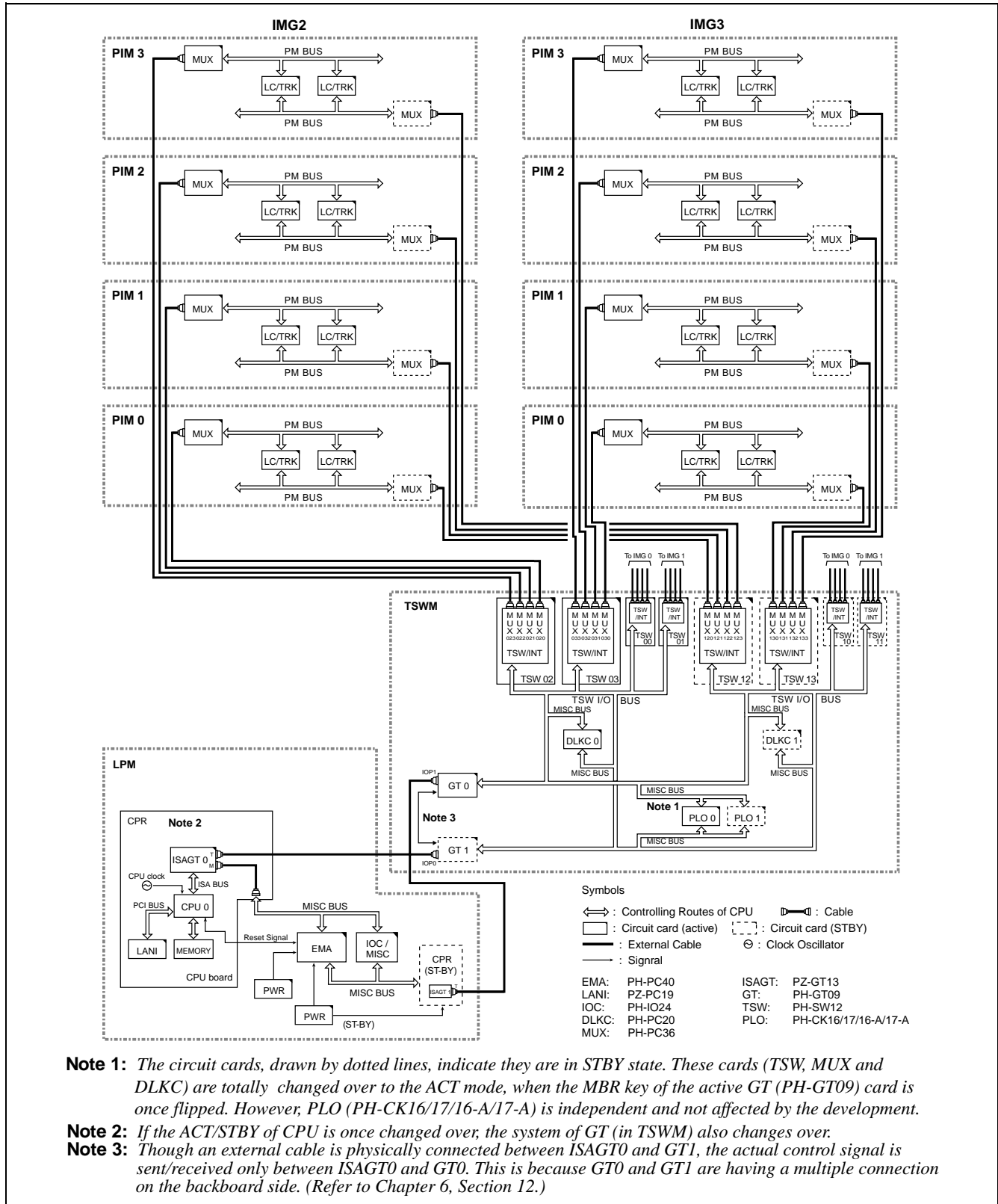


Figure 5-9 CPU Controlling Block Diagram (Continued)

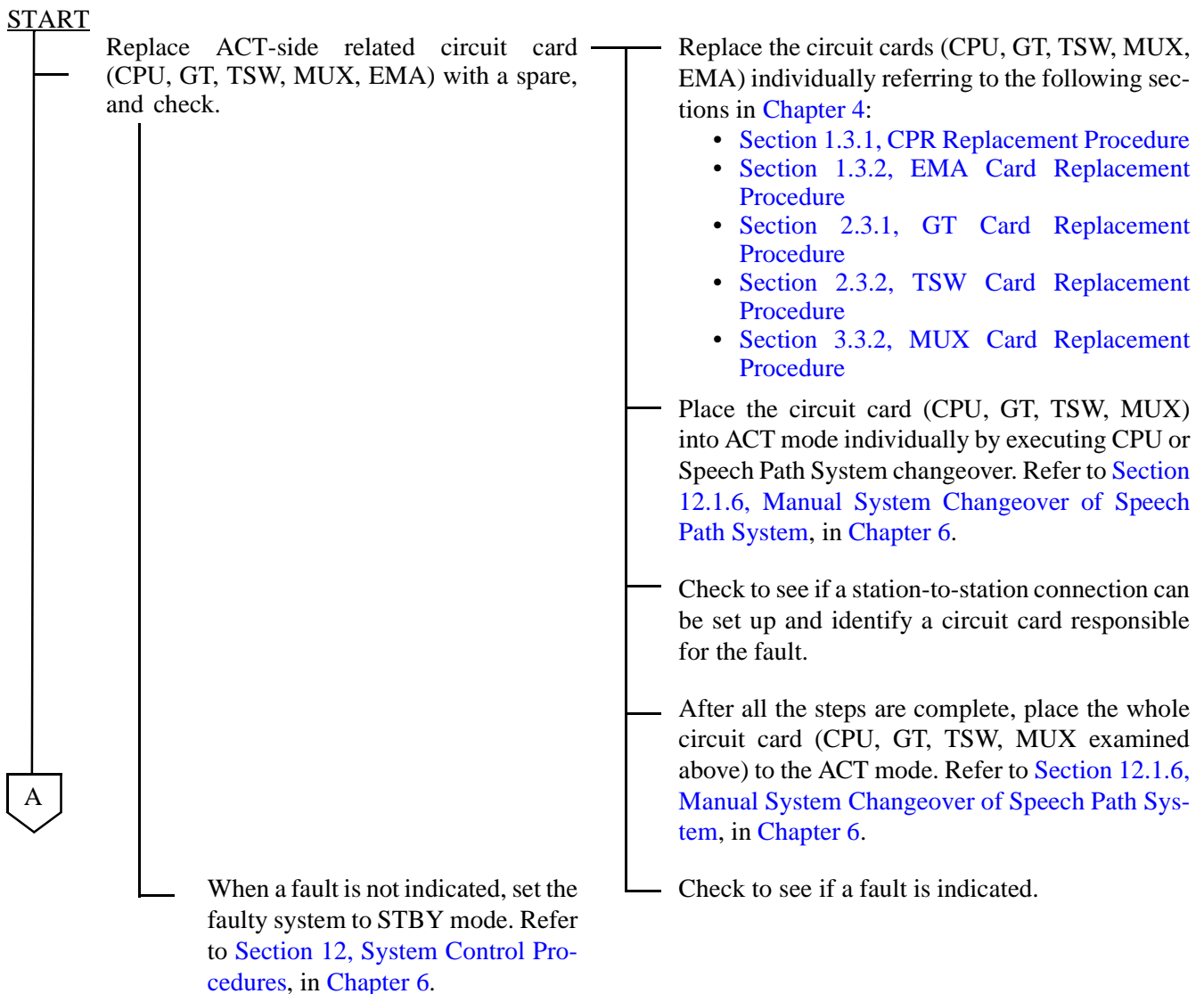
6.2 Control System Fault - Fault Occurs Intermittently

Faulty Situation:

- Fault occurs intermittently at ACT side in the dual configuration system.
- Fault occurs intermittently in the single configuration system.
- [0-C] ~ [0-K] CPU Failure
- [1-C] Both TSW Write Failure
- [1-D] TSW Write Failure
- [3-D], [3-E] Lock-Up Failure (Permanent/Temporary)



(1) For Dual Configuration





(2) For Single Configuration

A

Replace the related circuit card (CPU, GT, TSW, MUX, EMA) with a spare, and check.

Replace the circuit card (CPU, GT, TSW, MUX, EMA) individually by referring to the following sections in [Chapter 4](#):

- [Section 1.3.1, CPR Replacement Procedure](#)
- [Section 1.3.2, EMA Card Replacement Procedure](#)
- [Section 2.3.1, GT Card Replacement Procedure](#)
- [Section 2.3.2, TSW Card Replacement Procedure](#)
- [Section 3.3.2, MUX Card Replacement Procedure](#)

Initialize the system by pressing the START button on the TOPU and check to see if a station-to-station connection can be set up and identify a circuit card responsible for the fault.

END

6.3 Control System Fault - STBY Side Is Faulty

Faulty Situation:

- Fault has occurred in the STBY side of dual configuration system.
- [0-I] STBY CPU Failure
- The ACT side has become faulty, and system changeover has executed.
- [0-C], [0-H], [0-J] Processor Failure (ACT side)



START

Replace STBY side related circuit cards (CPU, GT, TSW, MUX, EMA) with a spare, and check.

Replace the circuit cards (CPU, GT, TSW, MUX, EMA) individually by referring to the following paragraphs in [Chapter 4](#):

- [Section 1.3.1, CPR Replacement Procedure](#)
- [Section 1.3.2, EMA Card Replacement Procedure](#)
- [Section 2.3.1, GT Card Replacement Procedure](#)
- [Section 2.3.2, TSW Card Replacement Procedure](#)
- [Section 3.3.2, MUX Card Replacement Procedure](#)

Place the circuit cards (CPU, GT, TSW, MUX) into ACT mode by executing CPU changeover. Refer to [Section 12.1.6, Manual System Changeover of Speech Path System](#), in [Chapter 6](#).

Check to see if a station-to-station connection can be set up to identify the circuit card responsible for the fault.

When a fault is not indicated, set the faulty systems to STBY side in advance by executing CPU changeover. Refer to [Section 12, System Control Procedures](#), in [Chapter 6](#).

END

FAULT REPAIR PROCEDURES

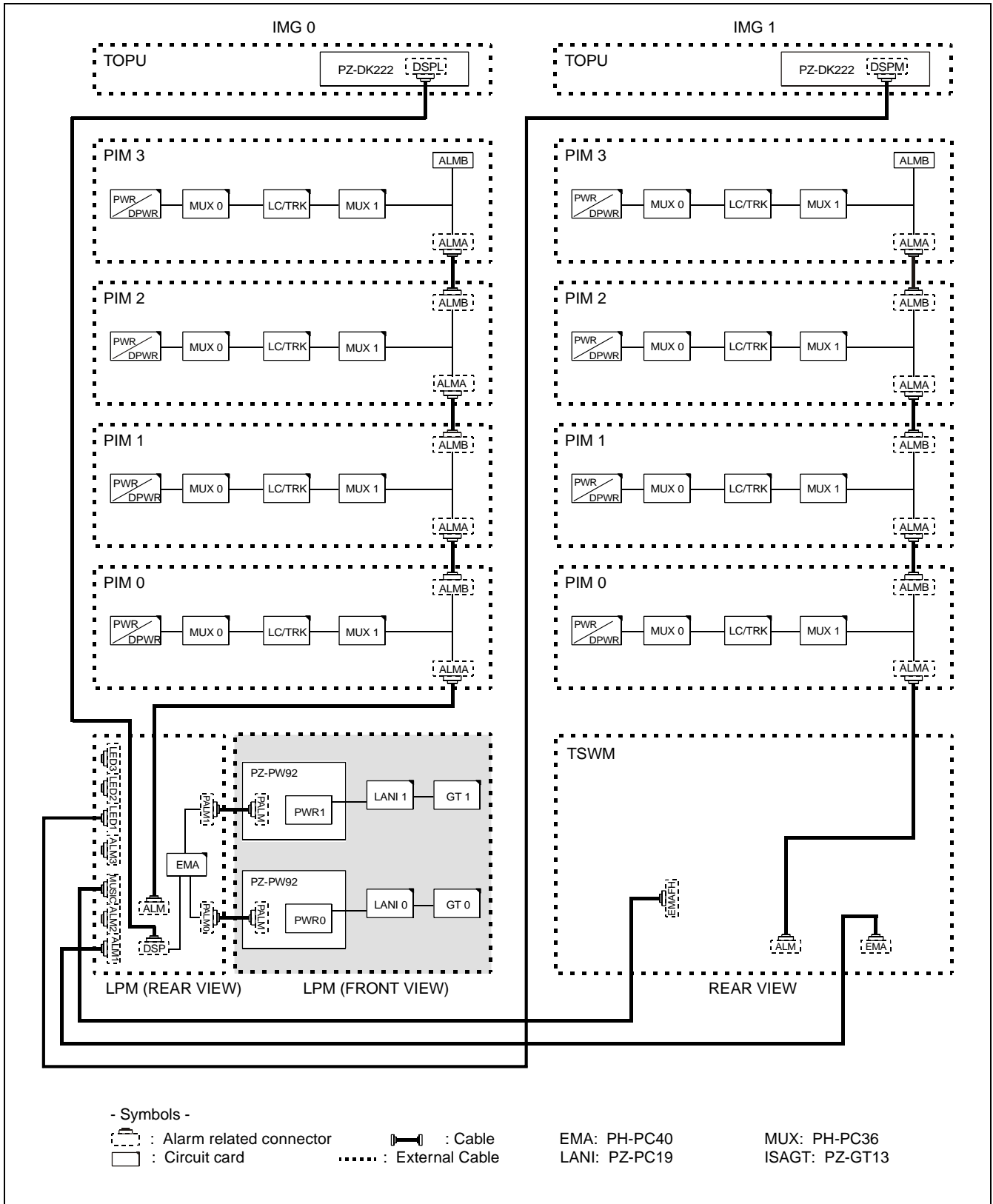


Figure 5-10 Alarm Bus Cable Connections Diagram

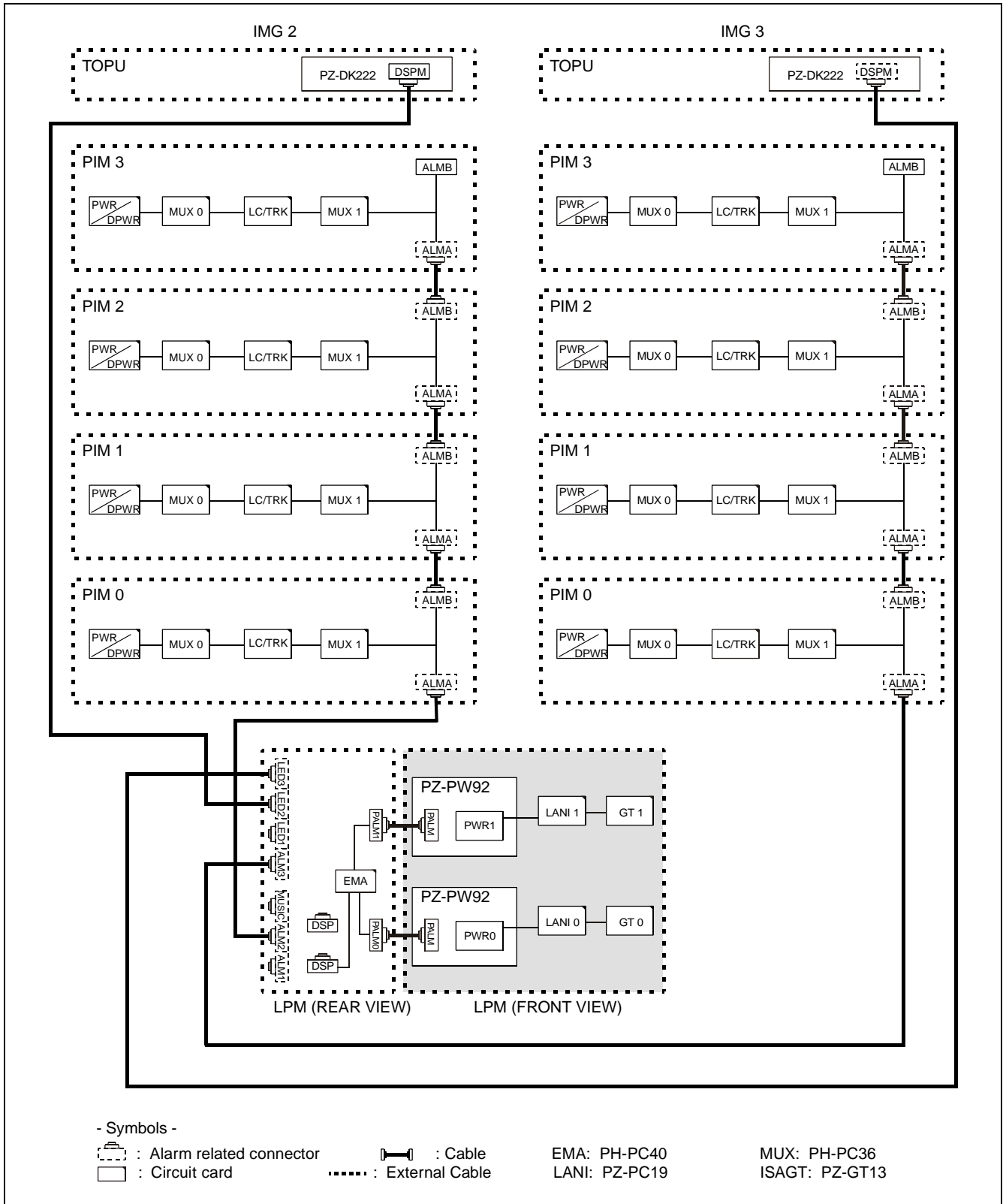


Figure 5-10 Alarm Bus Cable Connections Diagram (Continued)

FAULT REPAIR PROCEDURES

7. ALARM INDICATION FAULT

This section explains the fault repair procedure where any of the faults shown in [Table 5-9](#) occur.

Table 5-9 Alarm Indication Fault Situation

FAULTY SITUATION	REFERENCE SECTION
A fault is indicated on the TOPU, but it is not indicated on the Alarm Indicating Panel (External Alarm Indicating Panel).	Section 7.2, Fault of Alarm Indicating Panel
<ul style="list-style-type: none">A system message is indicated, but no alarm indication is made on the TOPU.An alarm lamp on the circuit card is lighting, but no alarm indication is made on the MAT or on the TOPU.	Section 7.3, Fault That Cannot Be Detected

7.1 Check Point

When repairing an alarm indication fault, check the alarm cable route shown in [Figure 5-11](#) and [Figure 5-12](#).

7.2 Fault of Alarm Indicating Panel

START

— Confirm lamps and power supply circuit of the Alarm Indicating Panel.

— Confirm cross connections on the MDF.

— Confirm that the connector of 16 PH EXALM CA is firmly plugged in the EXALM connector on the backplane of LPR.

END



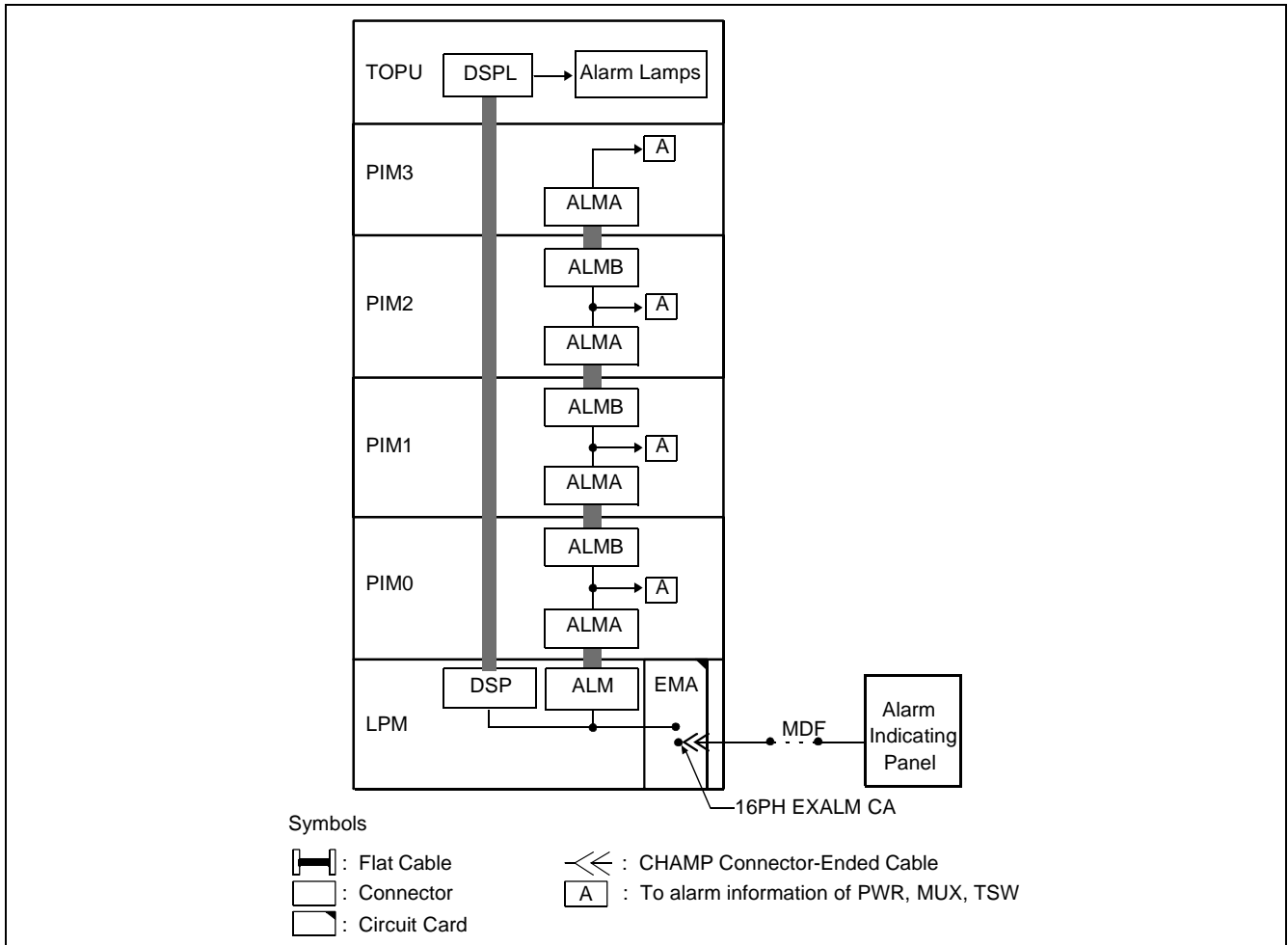


Figure 5-11 Cable Routing for Alarm Indications

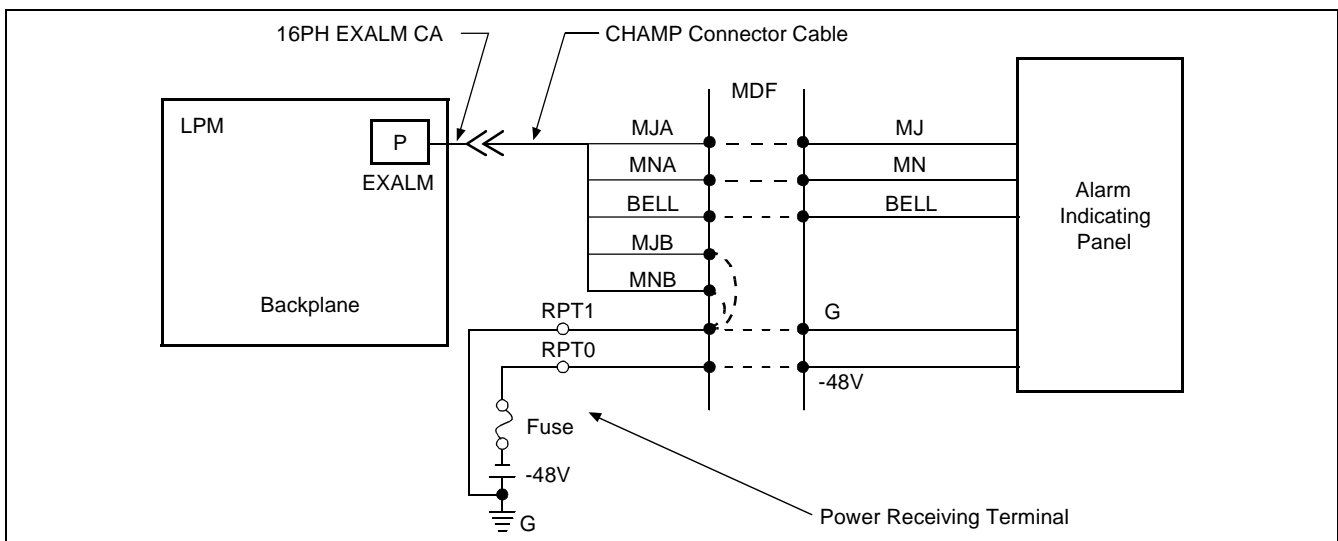


Figure 5-12 Cabling Related to Alarm Indicating Panel

FAULT REPAIR PROCEDURES

7.3 Fault That Cannot Be Detected



START

Check the DSP flat cable (See [Figure 5-10](#)).

WARNING If the EMA card is removed from the system while the system is in operation under the control of the CPU #1, the system will reset and stop all call processing. See [Section 1.3.2, EMA Card Replacement Procedure](#), in [Chapter 4](#) for detailed instructions.

Replace the EMA circuit card with a spare.

Set the MB switch of the EMA circuit card, and extract the circuit card from its mounting slot.

Make necessary switch settings on the new circuit card.

Set MB switch UP side and insert the circuit card into its mounting slot.

Set the MB switch DOWN.

Check to see if a fault is detected.

END

8. POWER SUPPLY FAULT

This section explains the fault repair procedure when any of the faults shown in [Table 5-10](#) occur.

Table 5-10 PWR Supply Fault Situation

FAULTY SITUATION	REFERENCE SECTION
Fuse Blown Fault	Section 8.2, Fuse Blown Fault
Circuit Breaker OFF, Fault in PWR Supply	Section 8.3, Circuit Breaker OFF Fault in PWR Supply
Fault of Alarm Lamps on PWR Supply	Section 8.4, Fault of Alarm Lamps on PWR Supply

8.1 Check Point

When repairing a power supply fault, consider the following items:

- (1) Before checking the system, check the rectifier, battery, and power cables.
- (2) The PWR circuit card is equipped with the circuits to supply ringing signal and howler tone. When a fault occurs that causes the bell of the telephone not to ring, or howler tone cannot be heard, etc., check the alarm lamp on the PWR circuit card.
- (3) [Figure 5-13](#) through [Figure 5-15](#) show the block diagrams for the power supply to each module.

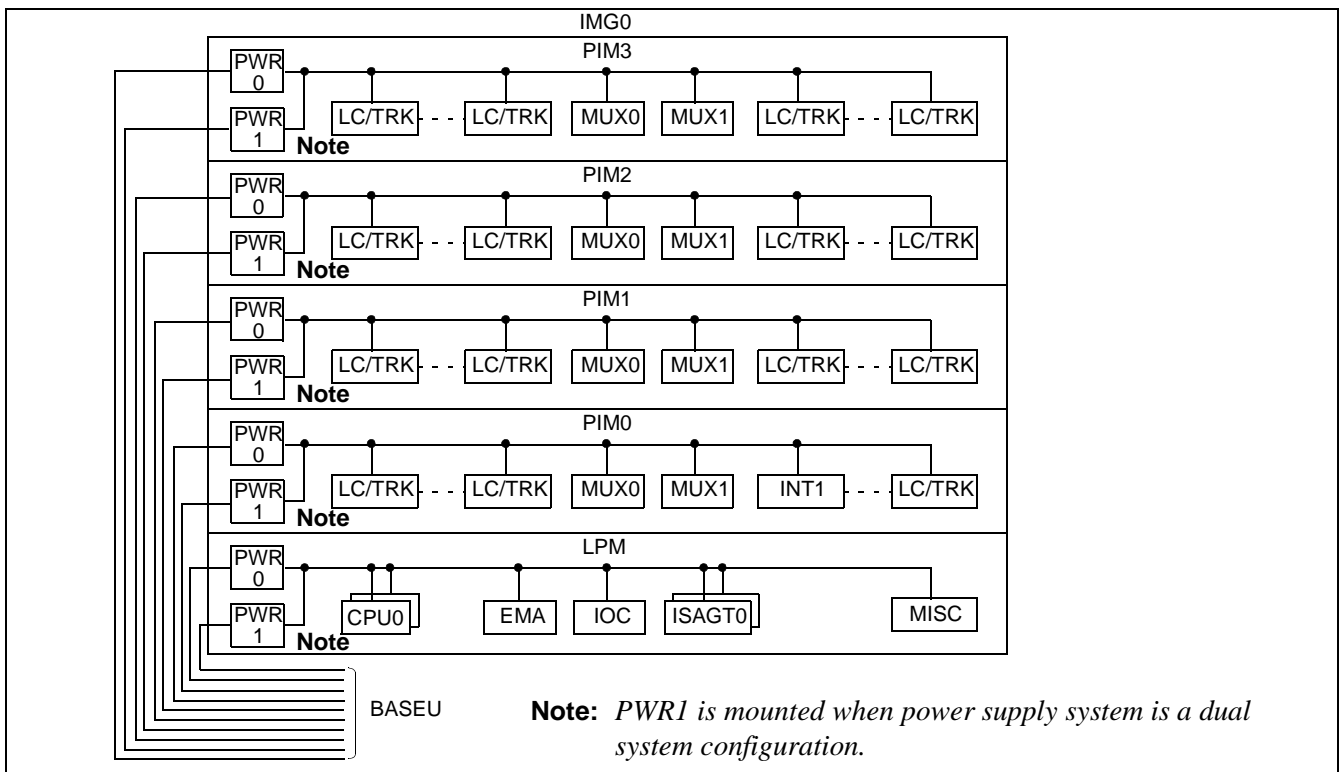


Figure 5-13 Block Diagram of Power Supply System (IMG0)

FAULT REPAIR PROCEDURES

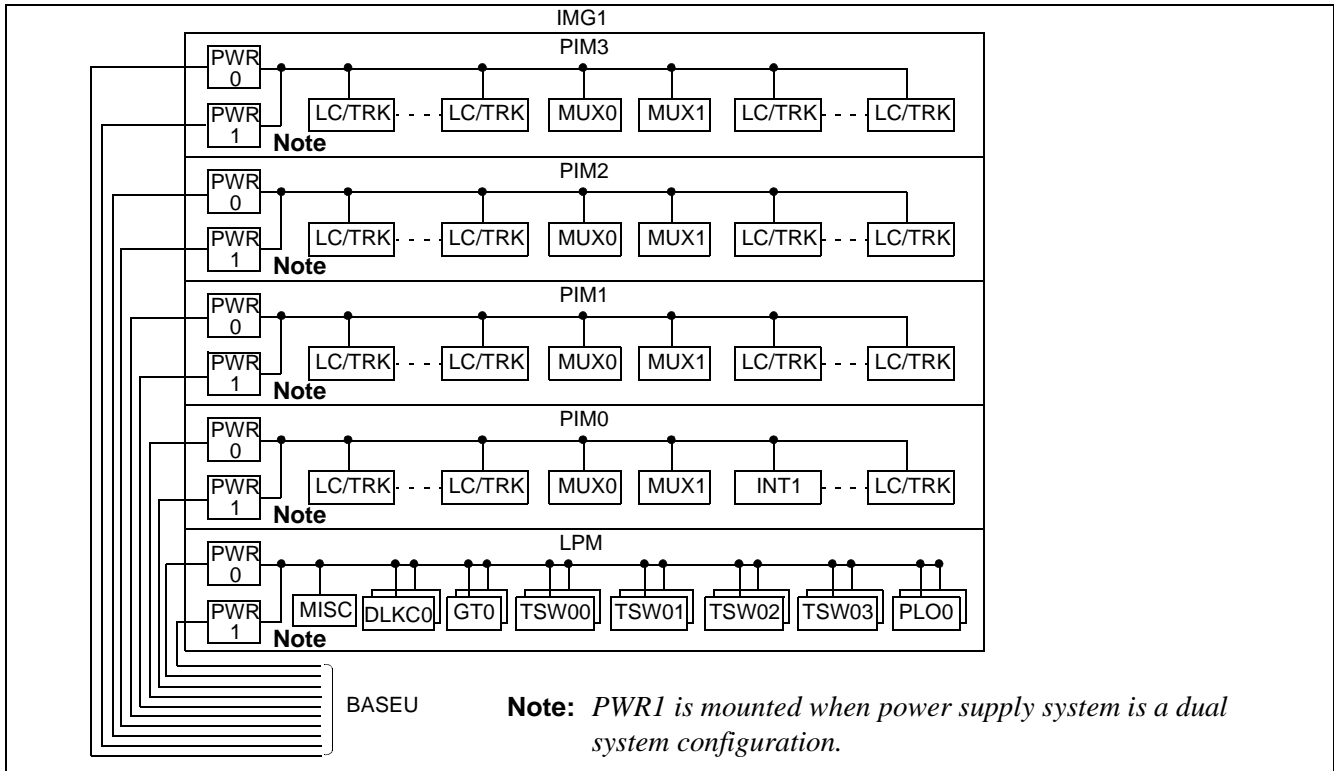


Figure 5-14 Block Diagram of Power Supply System (IMG1)

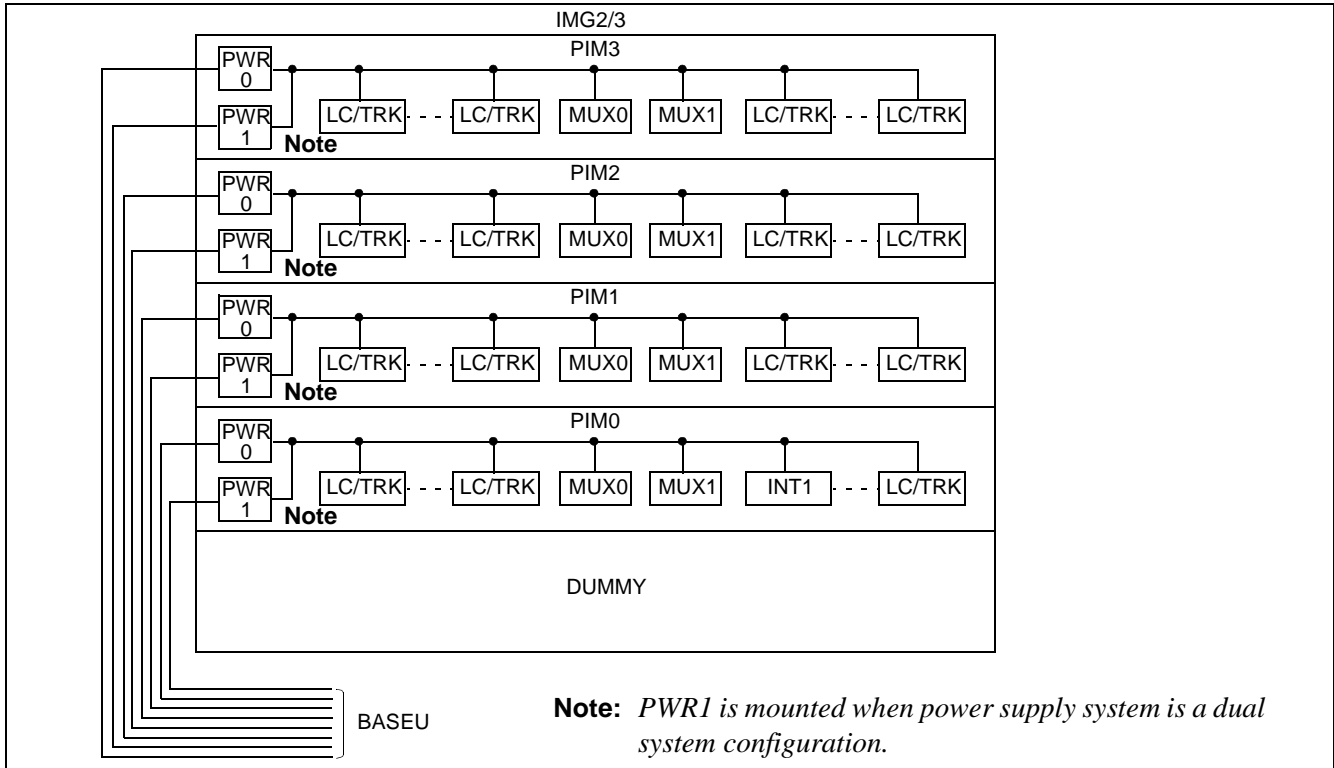


Figure 5-15 Block Diagram of Power Supply System (IMG2/3)

(4) Figure 5-16 shows the power supply system for PIM.

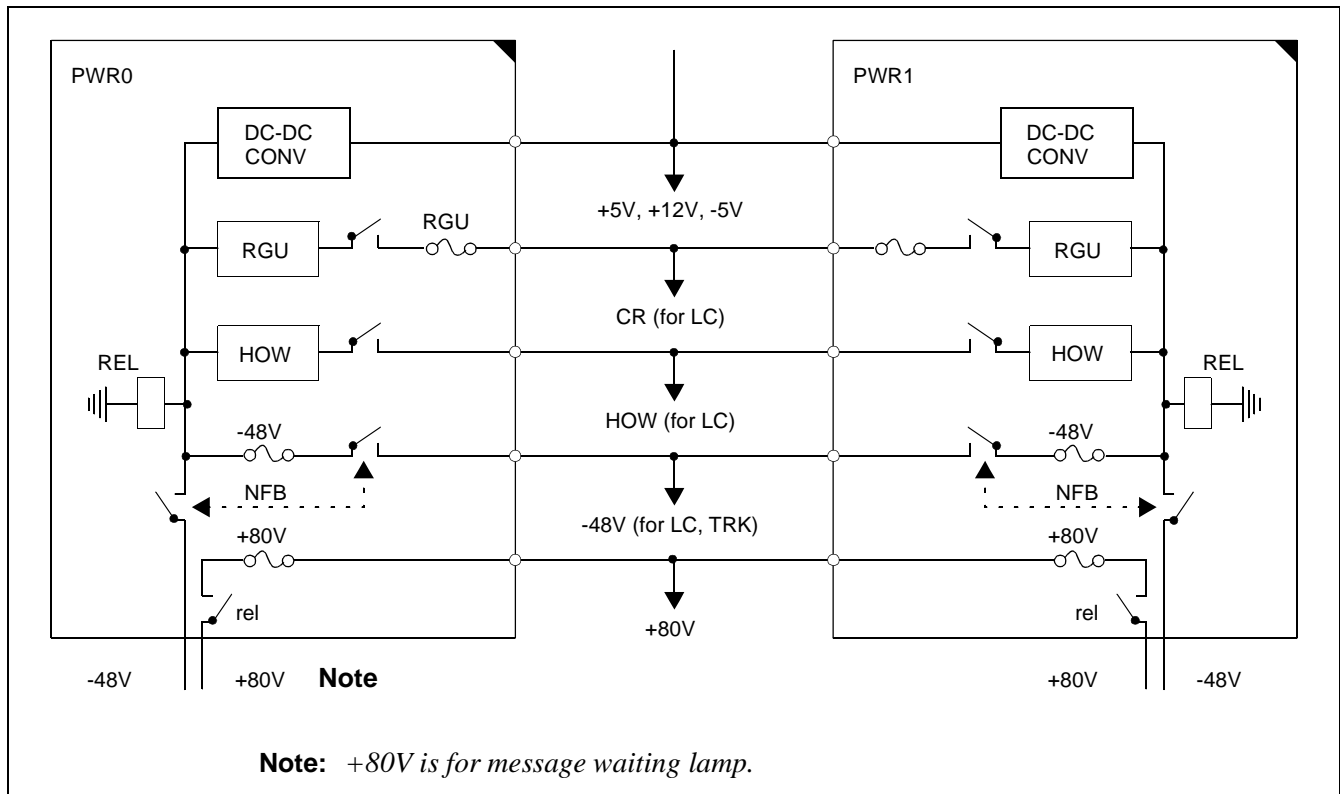


Figure 5-16 Power Supply to PIM

(5) Figure 5-17 shows the power supply system for LPM.

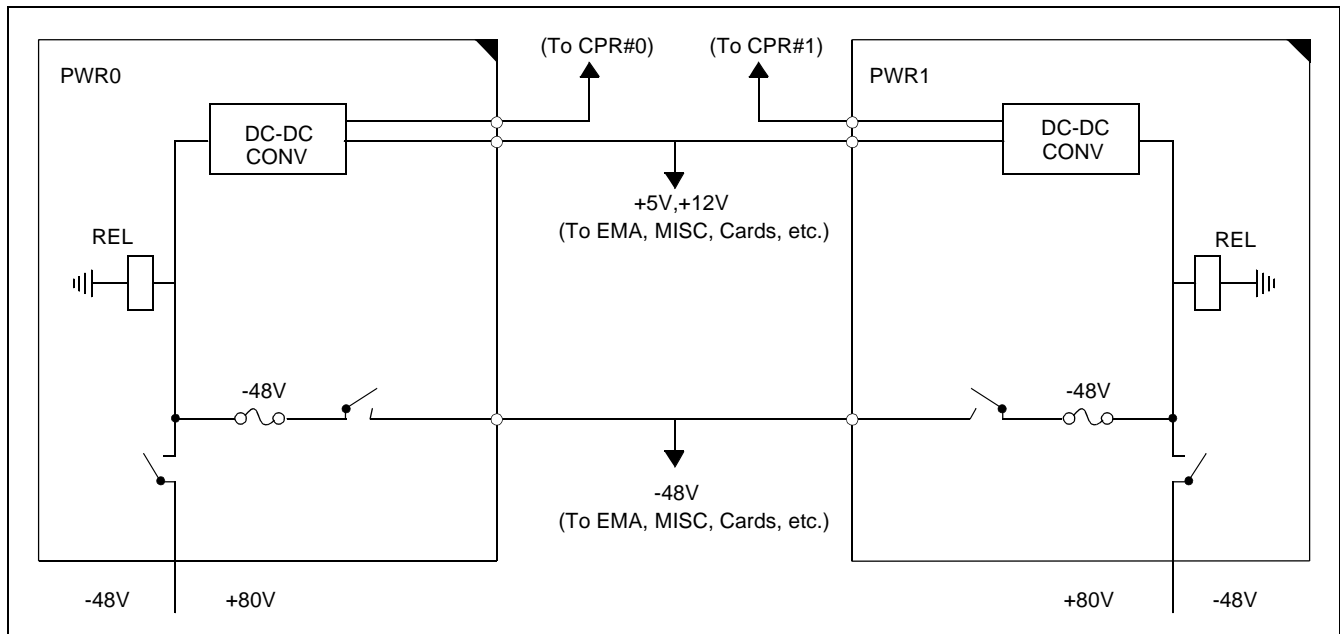


Figure 5-17 Power Supply to LPM

FAULT REPAIR PROCEDURES

(6) Figure 5-18 shows the power supply system for TSWM.

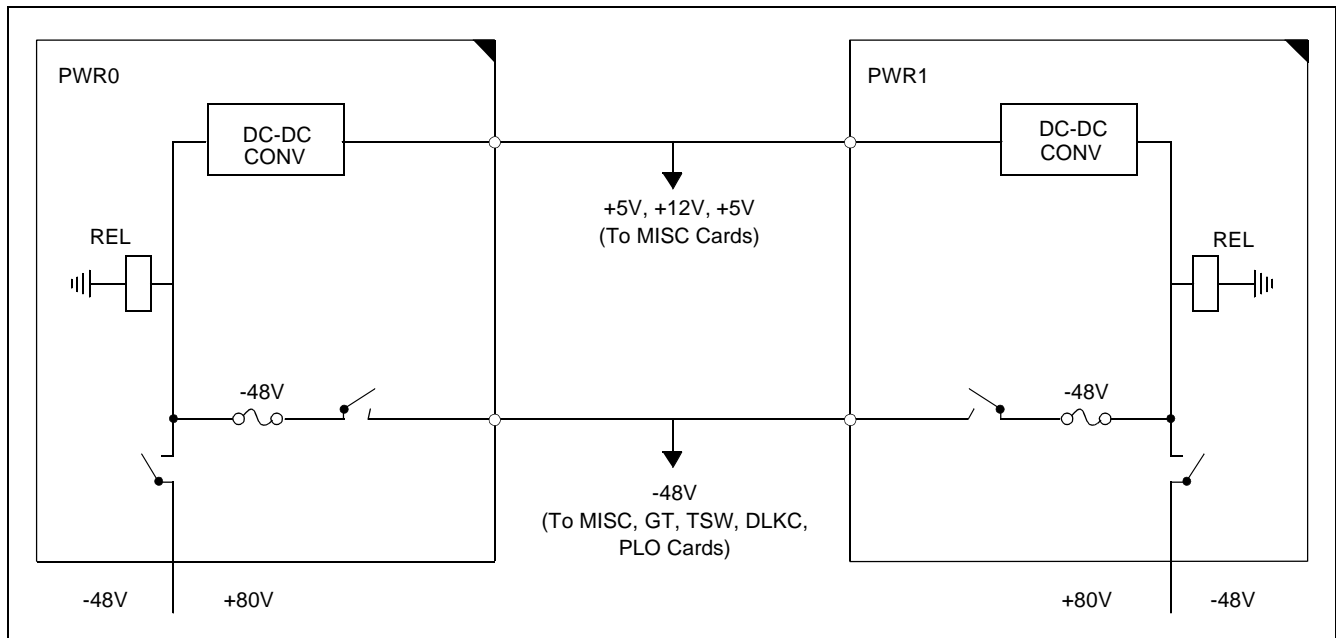


Figure 5-18 Power Supply to TSWM

8.2 Fuse Blown Fault

START

Check the backplane of the PIM.

Make a visual check on the backplane for pin contacting, melting or burn, etc.

Extract all the circuit cards from the PIM, and insert them back into their slots individually to see if the fuse blows.

Set the MB switch of the PWR supply UP.

Set the circuit breaker of the PWR supply DOWN.

Extract all the circuit cards from their mounting slots, except PWR supply.

Replace the fuse with spare.

Set the circuit breaker of the PWR supply UP side.

Set the MB switch of the PWR supply DOWN.

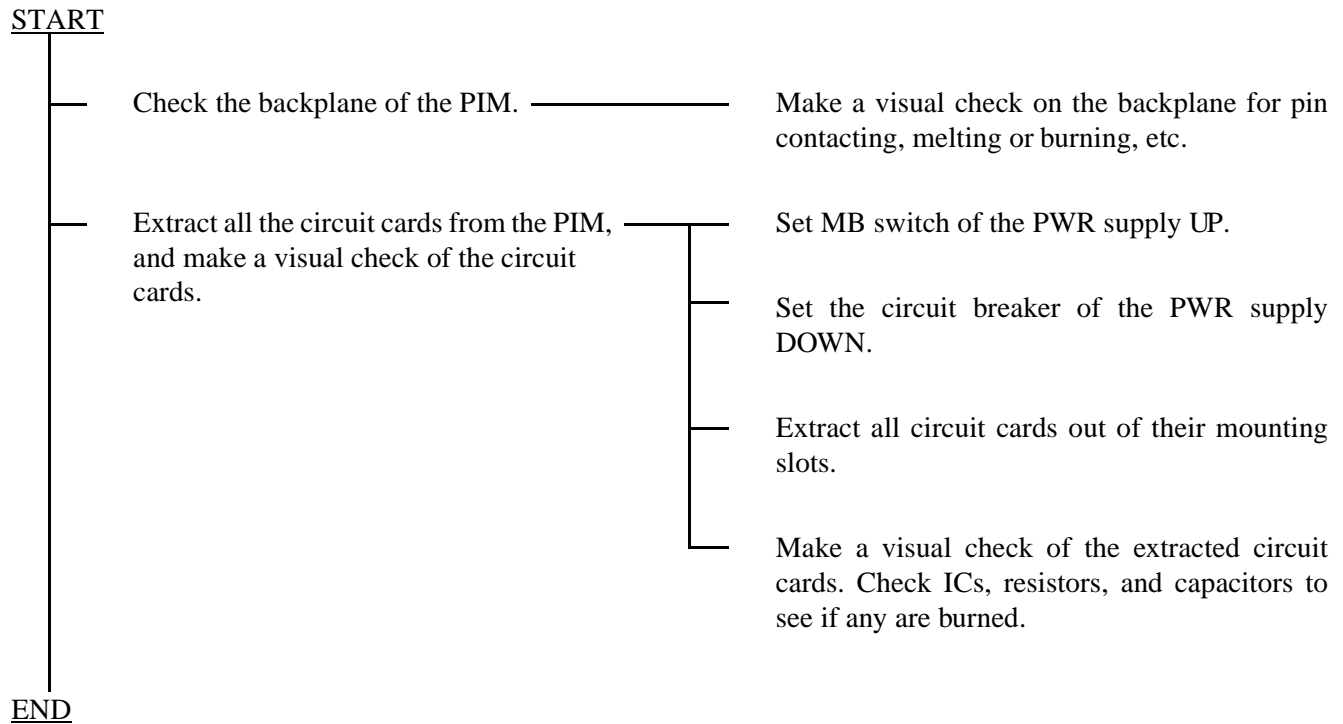
Insert the circuit cards into their mounting slots individually, with their MB switch to UP side.

Check to see if the fuse blows when the MB switch has been set to DOWN.

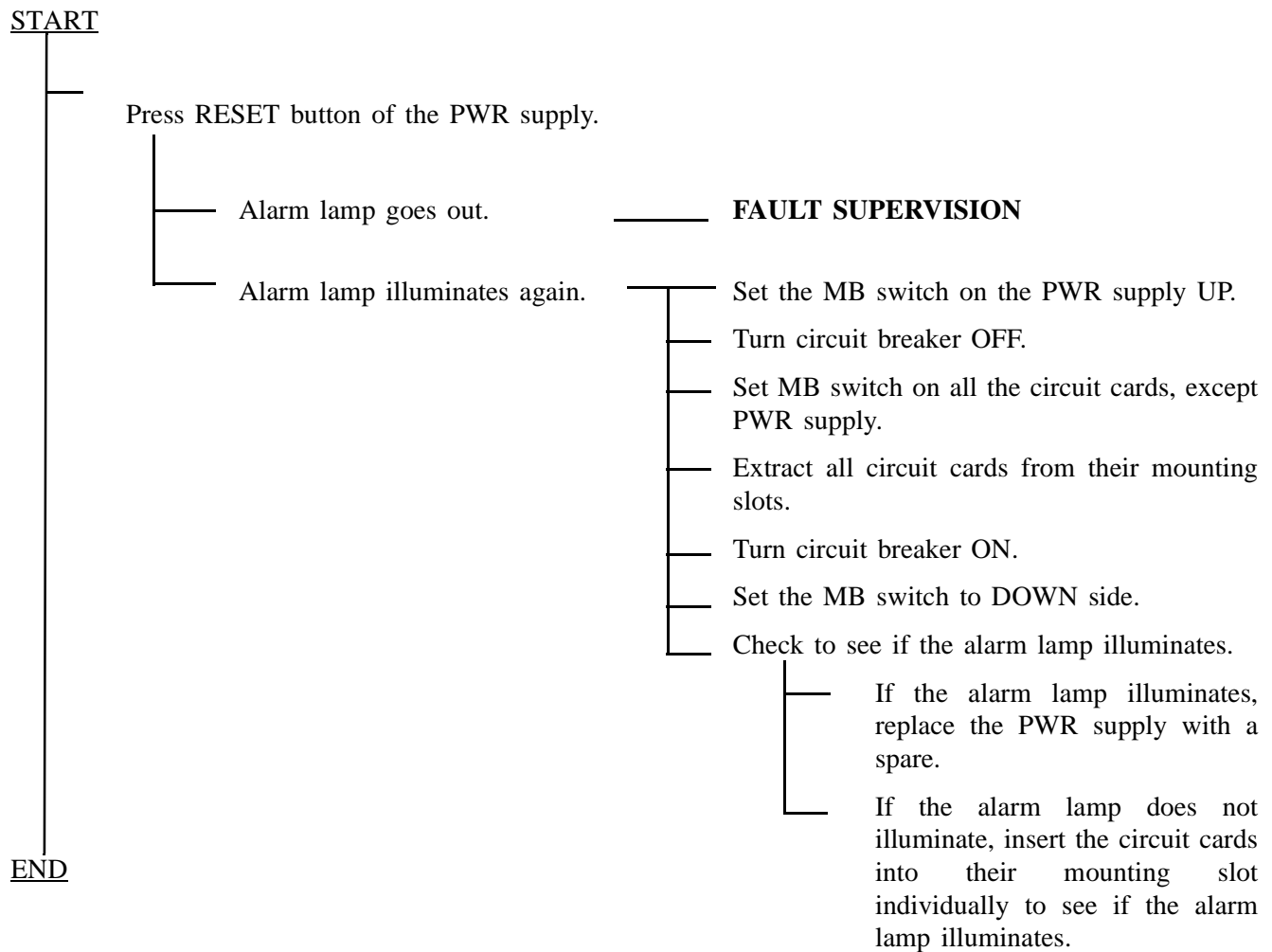
END

FAULT REPAIR PROCEDURES

8.3 Circuit Breaker OFF Fault in PWR Supply



8.4 Fault of Alarm Lamps on PWR Supply



Note: Insert each PWR supply with its MB switch to UP side, and then set it back to DOWN side.

FAULT REPAIR PROCEDURES

9. FAN UNIT FAULT

This section explains the fault repair procedure where a fan in the Fan Unit (FANU) does not operate.

9.1 Check Point

(1) When repairing a FANU fault, exercise care about the following conditions. The fans (a total of 3) are activated by operating the PWR SW key located on the PZ-M369. The conditions for starting the fan are as follows:

- With PWR SW key for the fan set to ON position: Always operating
- With PWR SW key for the fan set to AUTO position: Starts operating if the in-frame temperature is higher than 40°C (104°F); stops operating at temperatures lower than 32°C (90°F). See [Figure 5-19](#).

(2) When replacing the FANU with a spare, refer to [Section 4., Fan Unit Replacement](#), in [Chapter 4](#).

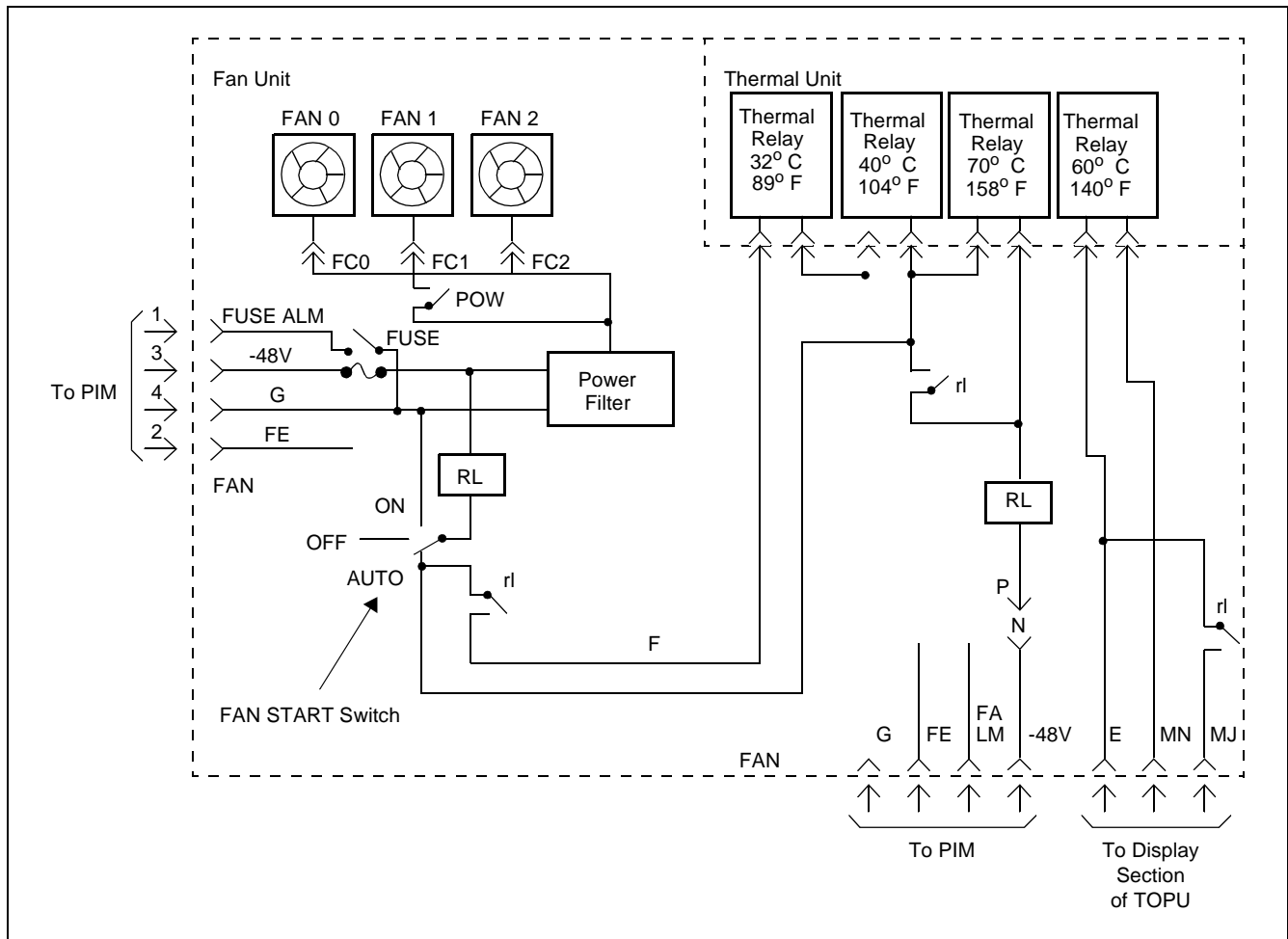


Figure 5-19 Circuit Diagram of Fan Unit and Thermal Unit

9.2 Fan Unit Fault

START

Set the PWR SW key on the PZ-M369 to the ON position.

When the fan spins

Set PWR SW key to AUTO position, and short the thermal relay of the thermal unit.

If the fan does not operate

Check the connector cable between the FANU and the thermal unit.

If the fan operates

Replace thermal relay with a spare.

Disconnect the fan connector of the cable for the thermal unit.

Replace thermal relay with a spare.

Connect the fan connector.

If the fan does not operate

Check the voltage (DC -48 V) at connectors FC0 through FC2.

If the voltage is less than -48 V

Check the connector cable (fan connector) between the FANU and the PIM.

If the voltage is -48 V

Replace the fan with a spare. Refer to [Section 4., Fan Unit Replacement](#), in [Chapter 4.](#)

After the fault is corrected, set PWR SW key to the AUTO position. If the fans are to continue operating constantly, set PWR SW key to the ON position.

END

FAULT REPAIR PROCEDURES

10. TONE FAULT

This section explains the fault repair procedure when any of the various tones cannot be heard in the whole system.

10.1 Check Point

When repairing a tone fault, consider that the tone generator circuit is equipped in the TSW circuit card and supplies tone.

Figure 5-20 shows an example of the related trunking for dial tone connection.

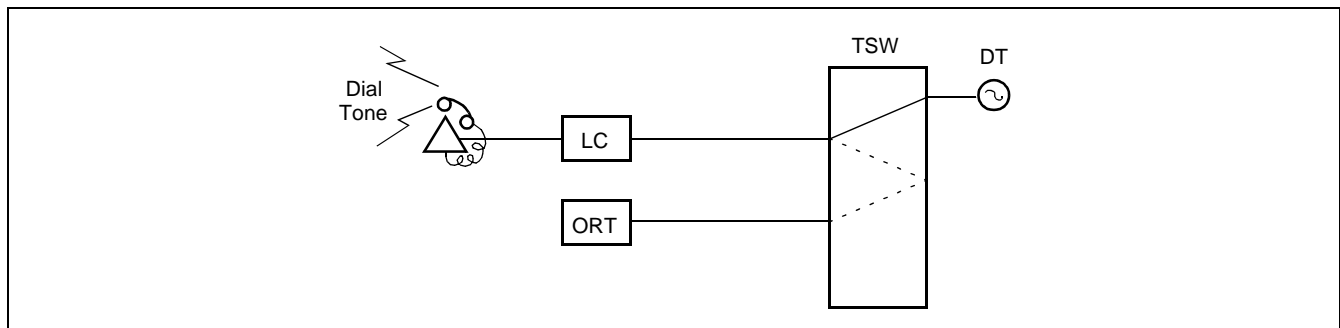


Figure 5-20 DialTone Connection

10.2 Tone Fault



START

Replace the TSW circuit card with a spare and check.

When only Hold Tone is faulty

If External Hold Tone source is in use

Check the external equipment which sends out hold tone.

Check cross connections on the MDF. [Figure 5-21](#) shows a block diagram of external hold tone supply (optional).

Replace the EMA/PLO circuit card with a spare.

Set the MB switch of the EMA/PLO circuit card to UP side and extract the circuit card from its mounting slot.

Note: *When system is 1-IMG configuration, replace EMA card. Otherwise, replace PLO card.*

WARNING If the EMA card is removed from the system while the system is in operation under the control of the CPU #1, the system will reset and stop all call processing. Refer to [Section 1.3.2, EMA Card Replacement Procedure](#), in [Chapter 4](#), for detailed instructions.

Make necessary switch settings on the new circuit card, referring to the card extracted.

Set the MB switch of the new circuit card UP and insert the circuit card into its mounting slot.

Set the MB switch DOWN.

Initialize the system and confirm the tone.

END

FAULT REPAIR PROCEDURES

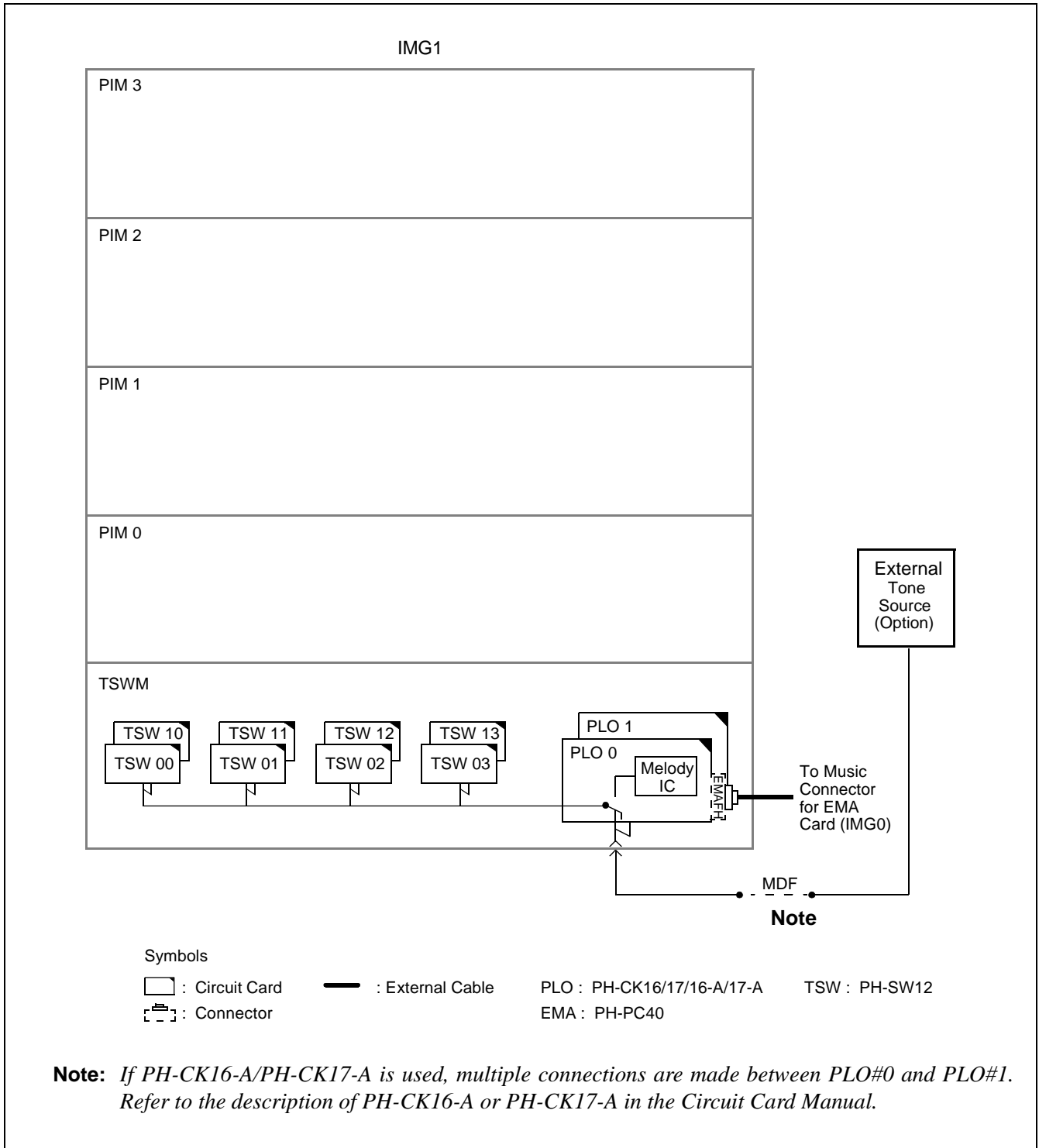


Figure 5-21 External Hold Tone Supply Block Diagram

11. SYSTEM DOWN FAULT

This section explains the fault repair procedure when both the CPU and TSW systems are faulty. [Figure 5-22](#) shows the sequence of repair for system down fault.

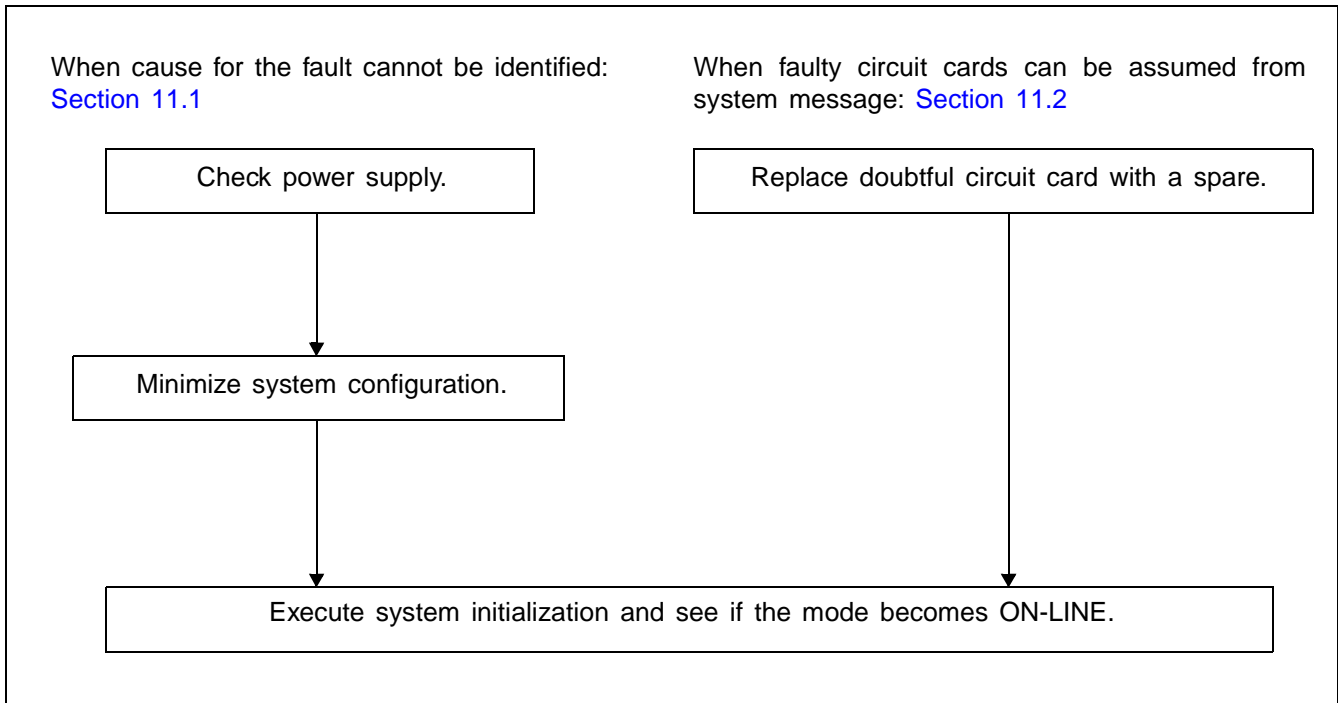


Figure 5-22 System Down Fault Repair Sequence

(1) Check by minimizing the system configuration

Mount only the basic circuit cards in CPU No. 0 system and initialize.

Remove all circuit cards from CPU No. 0 system except the basic circuit cards.

Circuit cards to be mounted are as follows:
CPU, EMA, TSW, MUX
(EMA: PH-PC40, TSW: PH-SW12, MUX: PH-PC36)

On the CPU Display Panel (DSP), set its SENSE switch to "1."

Press Reset (RST) button on the DSP.

CPU OPE lamp should be illuminated on the DSP.

Initialization cannot be made.

Check by replacing the basic circuit cards individually.

Set MB switch of the circuit card UP and extract the circuit card from its mounting slot.

Make necessary switch settings on the new circuit card.

Set MB switch of the new circuit card UP and insert the circuit card into its mounting slot.

Set MB switch DOWN.

On the DSP (CPU), set SENSE switch to "1."

Press RST button on the DSP.

CPU OPE lamp should illuminate on the DSP.

If CPU OPE lamp of the DSP does not illuminate, replace next circuit card and check it. (Repeat the above steps for all basic circuit cards.)

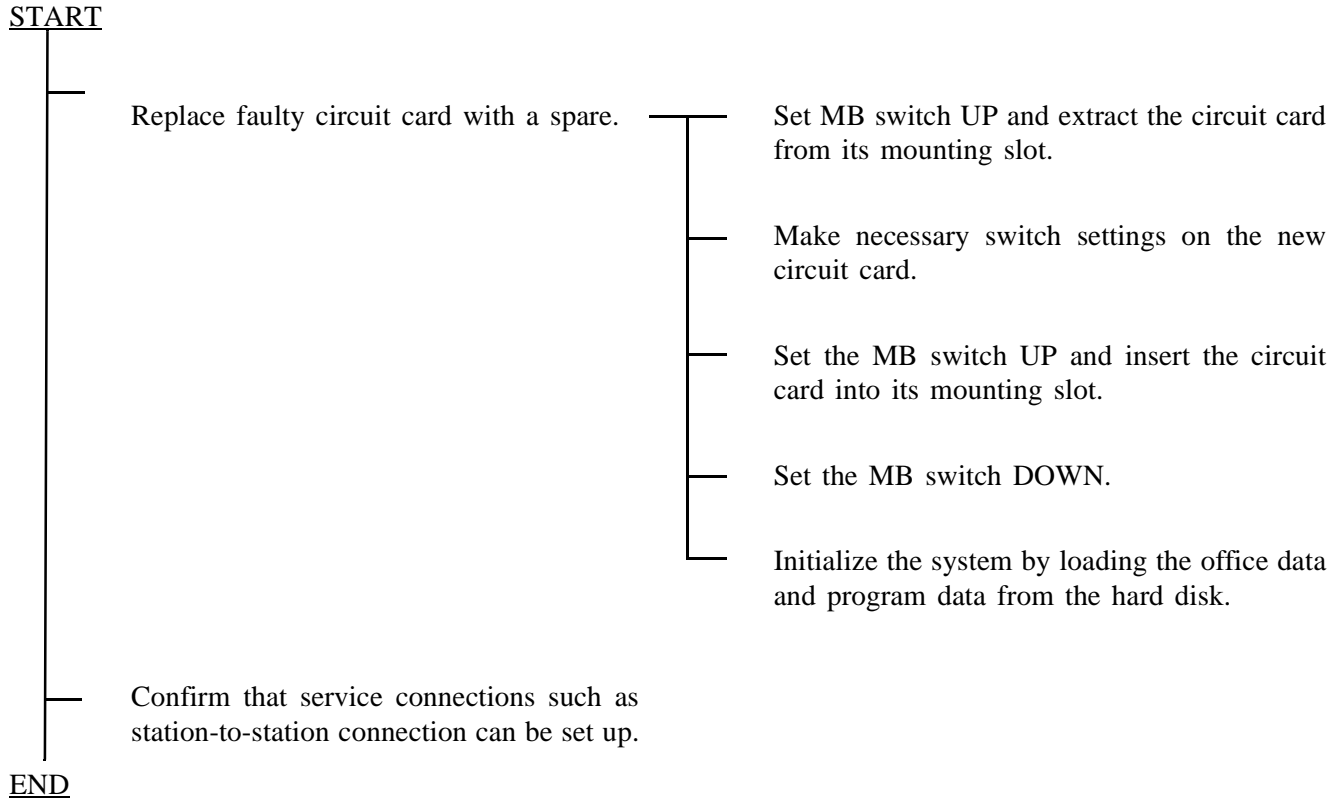
END

FAULT REPAIR PROCEDURES

11.2 When Faulty Circuit Cards Can Be Assumed From System Message

Faulty Situation:

When the system is down with message [0-C] ~ [0-J] indicated, faulty circuit cards can be assumed from the message detail data. Replace circuit cards with spares.



12. COMMON CHANNEL INTEROFFICE SIGNALING (CCIS) LINE FAULT

This section explains the fault repair procedure when any of the faults shown in [Table 5-11](#) occur to a specific CCIS line.

Table 5-11 CCIS Line Fault Situation

FAULTY SITUATION	REFERENCE SECTION
A specific CCH/CCT card is faulty.	Section 12.3, Specific CCH/CCT Card Is Faulty
When the signal transmission line is a digital line, transmitting/receiving of control signals cannot be performed.	Section 12.4, Fault of CCH, DTI and Related Flat Cable

12.1 Check Point

When repairing a CCIS Line fault, consider the following items:

- (1) Check alarm lamps on the CCH or CCT circuit card.
- (2) Refer to [Figure 5-23](#), and check the cable connection.

12.2 CCIS Line Control

The CCH/CCT circuit card controls the signal link (digital) of the interoffice common channel signaling system and transmitting/receiving call processing information. The signal link controls permit normal transmission and reception of call processing information.

A break in signal links is detected, then restored to establish signal links. The call processing information is converted into No. 7 signal format for channel 1 (any channel) of the DTI before being transmitted to a distant office. [Figure 5-23](#) shows the CCIS line control route.

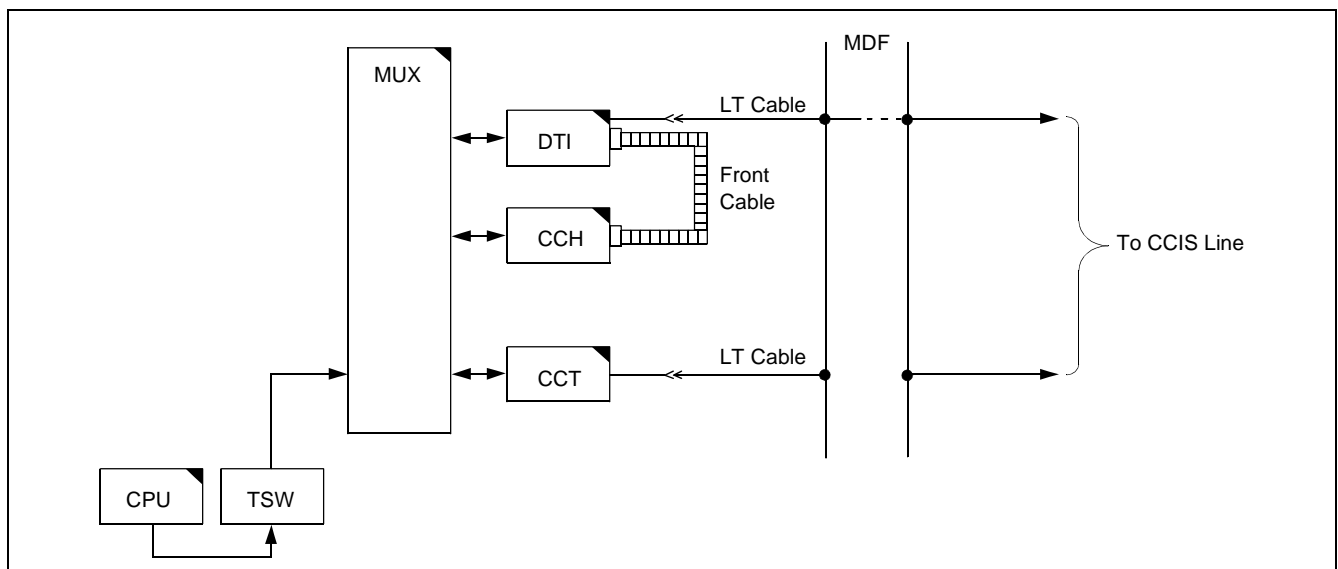


Figure 5-23 Controlling CCIS Line

FAULT REPAIR PROCEDURES

12.3 Specific CCH/CCT Card Is Faulty

START

Check by replacing CCH/CCT card with a spare.

On CCH/CCT card, set the MBR switch UP.

On CCH/CCT card, set MBR switch UP and extract the card from its mounting slot.

Make switch settings on a new CCH/CCT card.

On new CCH/CCT card, set MBR and MB switches UP and insert the card into its mounting slot.

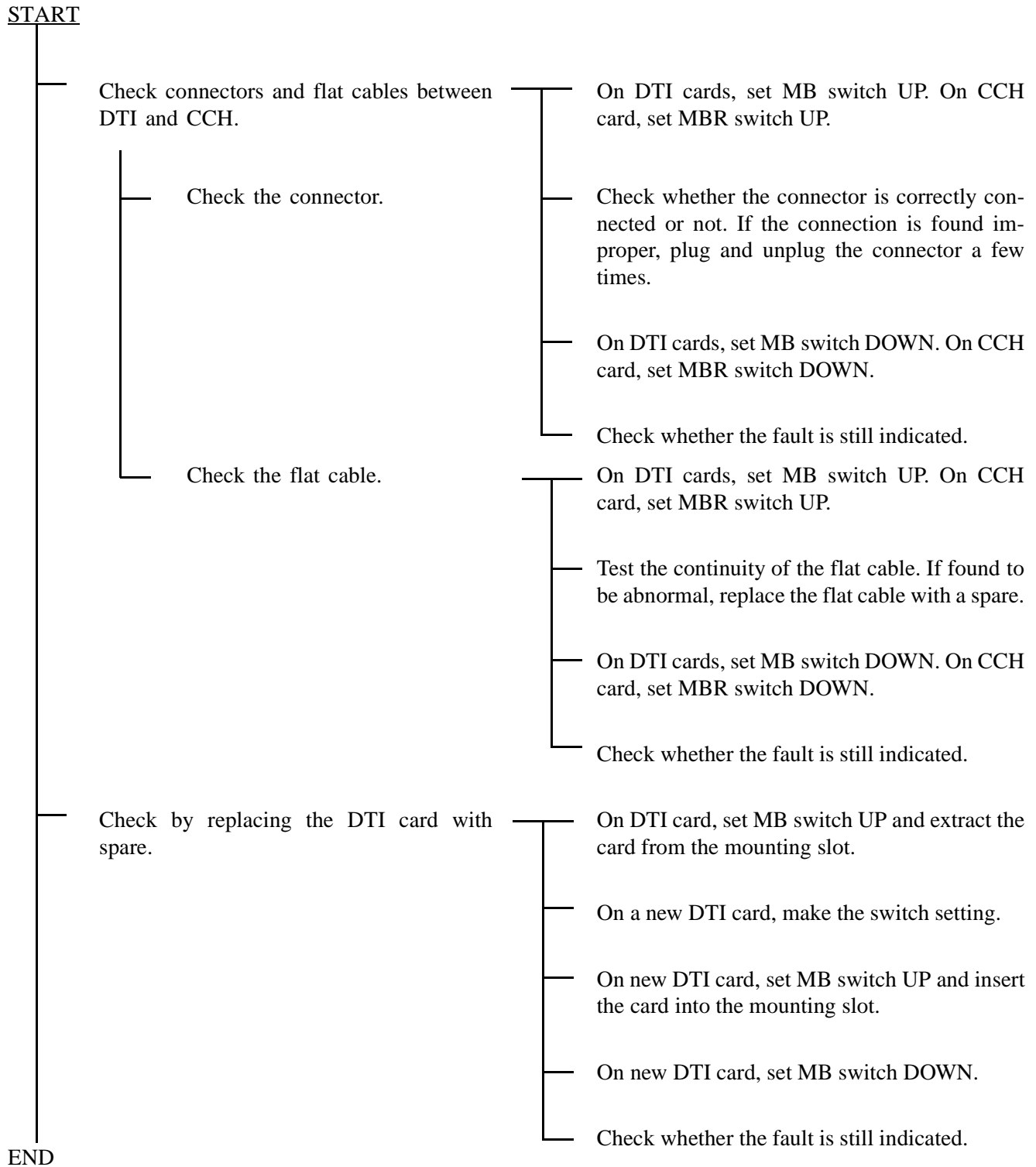
On new CCH/CCT card, set MB switch DOWN.

On new CCH/CCT card, set MBR switch DOWN.

Check whether the fault is still indicated.

END

12.4 Fault of CCH, DTI and Related Flat Cable



FAULT REPAIR PROCEDURES

13. INTEGRATED SERVICE DIGITAL NETWORK (ISDN) LINE FAULT

This section explains the fault repair procedure when any of the faults shown in [Table 5-12](#) occur to a specific ISDN.

Table 5-12 ISDN Line Fault Situation

FAULTY SITUATION	REFERENCE SECTION
A specific CCH/CCT card is faulty.	Section 13.3, Specific DCH/PRT Card Is Faulty
When the signal transmission line is a digital line, transmitting/receiving of control signals cannot be performed.	Section 13.4, Fault of DCH, DTI, and Related Flat Cable

13.1 Check Point

When repairing an ISDN Line fault, consider the following items:

- (1) Check alarm lamps on the DCH or PRT circuit card.
- (2) Refer to [Figure 5-24](#), and check the cable connection.

13.2 ISDN Line Control

The DCH/PRT circuit card controls the signal link (digital) of the ISDN line and transmits/receives call processing information.

The signal link controls permit normal transmission and reception of call processing information. [Figure 5-24](#) shows the ISDN line control route.

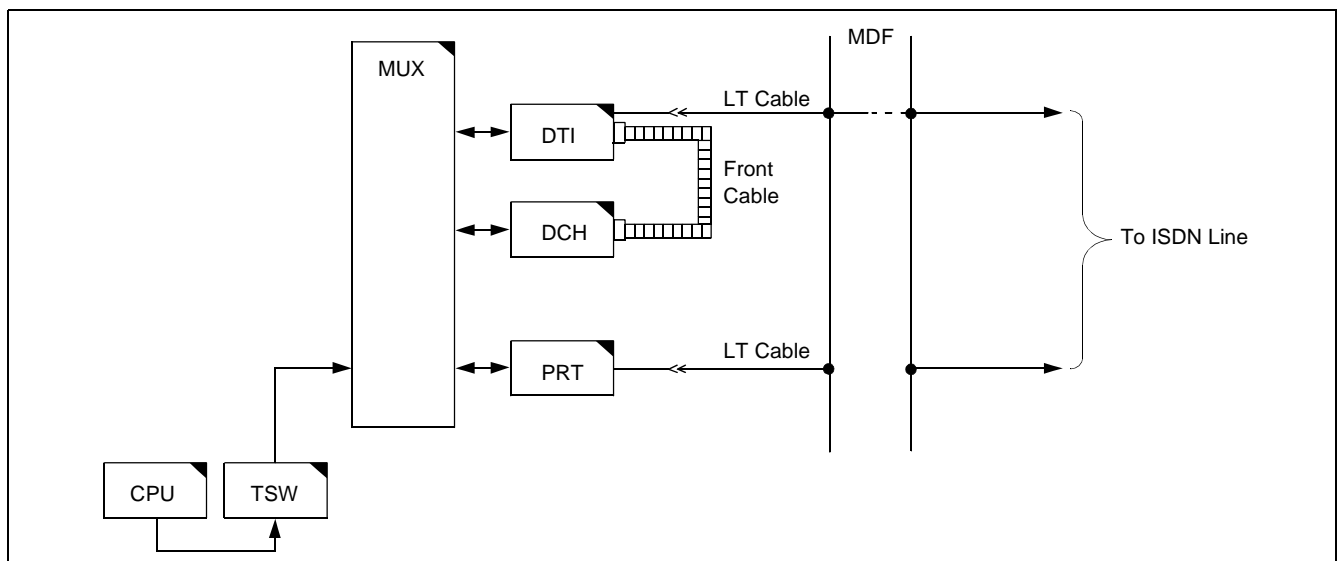


Figure 5-24 Controlling ISDN Line

13.3 Specific DCH/PRT Card Is Faulty

START

Check by replacing the DCH/PRT card with a spare.

On DCH/PRT card, set MBR switch UP.

On DCH/PRT card, set MB switch UP and extract the card from its mounting slot.

Make switch setting on a new DCH/PRT card.

On new DCH/PRT card, set MBR and MB switches UP and insert the card into its mounting slot.

On new DCH/PRT card, set MB switch DOWN.

On new DCH/PRT card, set MBR switch DOWN.

Check whether the fault is still indicated.

END

FAULT REPAIR PROCEDURES

13.4 Fault of DCH, DTI, and Related Flat Cable

START

Check the connectors and flat cables between DTI and DCH.

Check the connector.

On DTI cards, set MB switch UP. On DCH card, set MBR switch UP.

Check whether the connector is correctly connected. If the connection is found improper, plug and unplug the connector a few times.

On DTI cards, set MB switch DOWN. On DCH card, set MBR switch DOWN.

Check whether the fault is still indicated.

Check the flat cable.

On DTI cards, set MB switch UP. On DCH card, set MBR switch UP.

Test the continuity of the flat cable. If abnormal, replace the flat cable with spare.

On DTI cards, set MB switch DOWN. On DCH card, set MBR switch DOWN.

Check whether the fault is still indicated.

Check by replacing the DTI card with a spare.

On DTI card, set MB switch UP and extract the card from the mounting slot.

On a new DTI card, make switch setting.

On new DTI card, set MB switch UP and insert the card into the mounting slot.

On new DTI card, set MB switch DOWN.

Check whether the fault is still indicated.

END

14. HARD TIME CLOCK FAULT

This section explains the procedure for repairing a hard time clock failure which occurs within the EMA card.

START

Replace the EMA card.

Replace the EMA card referring to [Section 1.3.2, EMA Card Replacement Procedure](#), in [Chapter 4](#).

WARNING If the EMA card is removed from the system while the system is in operation under the control of the CPU #1, the system will reset and stop all call processing. See [Section 1.3.2, EMA Card Replacement Procedure](#), in [Chapter 4](#), for detailed instructions.

END

This page is for your notes.

CHAPTER 6 SYSTEM OPERATIONS

To maintain the system in a normal state, maintenance technicians need to monitor the servicing status of the system. Figure 6-1 shows the flow of the system status monitor.

When trouble occurs in any part of the system or to any phase of system operations, maintenance technicians are alerted by an alarm indication or by a report from a station user or an operator. When the system becomes overloaded, maintenance technicians can execute Line Load Control.

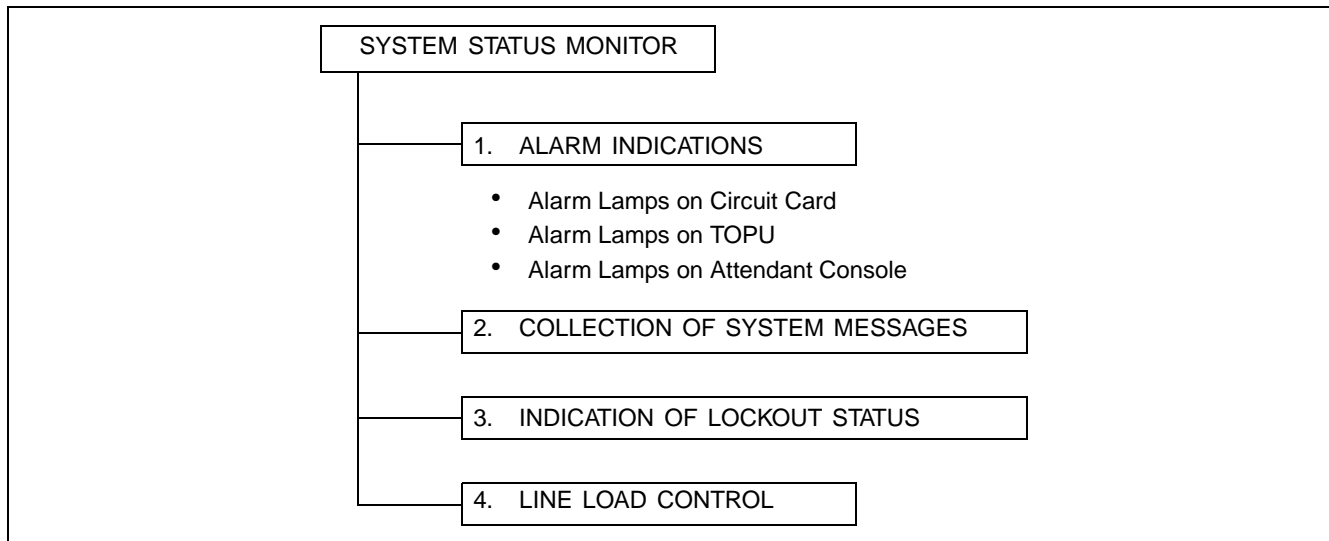


Figure 6-1 System Status Monitor

1. ALARM INDICATIONS

When trouble occurs in the system, the system activates an appropriate remedial action (system changeover, make-busy shift of the circuit card, restart processing, etc.) by executing the automatic diagnostic function. Results of the action taken and the faulty situation are displayed.

1.1 Kinds of Alarm Indications

Figure 6-2 shows the kinds of alarm indications.

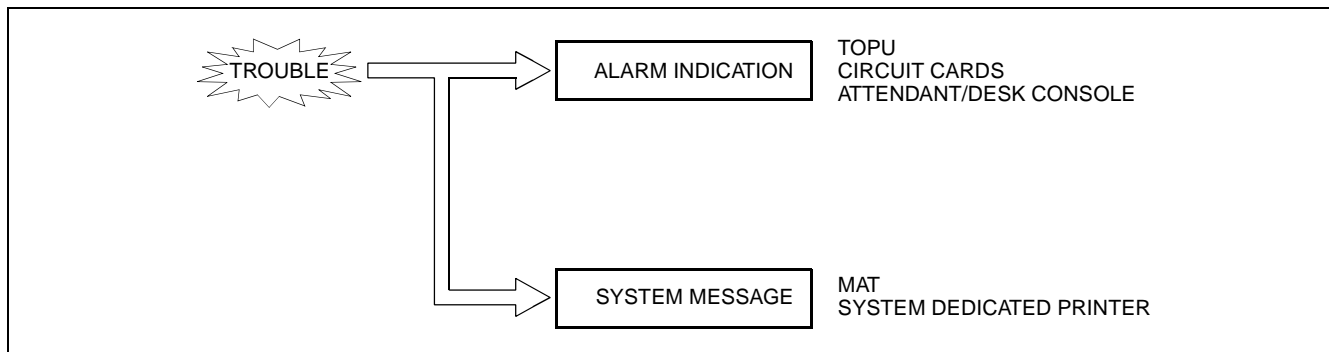


Figure 6-2 Alarm Indications

SYSTEM OPERATIONS

1.2 How to Stop Alarm Indications

To stop the alarm indication, press ALM RST key on the TOPU or use the RALM command.

Note: *If the RALM command is executed, the system messages that show the reason for the failure will be cleared. Always print the indicated system message before using this command.*

1.3 Alarm Indications on TOPU

The system has alarm lamps on the TOPU as shown in [Figure 6-3](#). [Table 6-1](#) lists the meaning of each lamp.

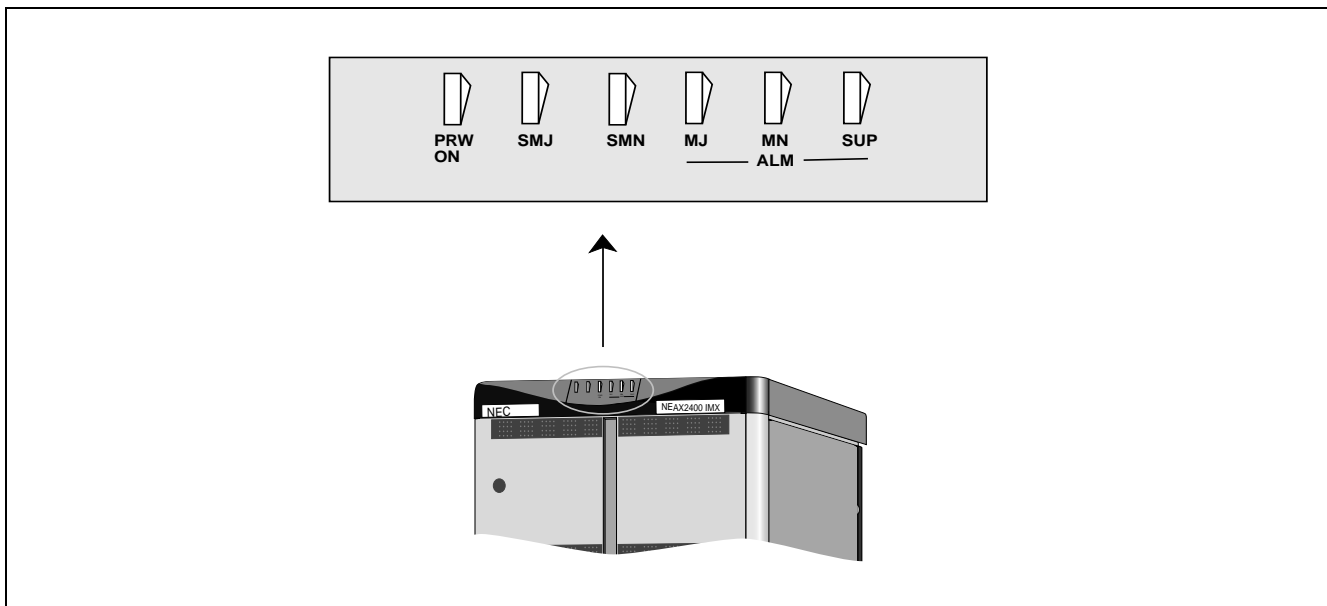


Figure 6-3 Alarm Indications on TOPU

Table 6-1 Description of Alarm Indications on TOPU

LAMP	COLOR	FUNCTION	CONTENTS
PWR ON	Green	Power ON Indication	Lights when the power is turned ON to the LPR (EMA card mounted)
ALM MJ	Red	Alarm urgency level indicating lamps for each IMG	The kind of lamp indications are programmable by variable alarm indication. Refer to Section 1.4, Variable Alarm Indication .
ALM MN	Red		
ALM SUP	Yellow		
SMJ	Red	Alarm urgency level indicating lamps for IMG0	Lights when any abnormal state is detected within the system (System Alarm MJ/MN)
SMN	Red		

1.4 Variable Alarm Indication

This feature allows PBX users to make a flexible change of system message output grades which range 0 to 3 and alarm lamp grades which consist of MJ, MN, SUP and NONE. Thus, the PBX users can give a proper alarm grade to each system message according to their requirements. When assigning no data, the default alarm grades are automatically adopted.

COMMAND	COMMAND FULL NAME
ALMG	Assignment of Alarm Grade Data

2. COLLECTION OF SYSTEM MESSAGES

System messages are collected in the following ways:

- Automatic printout to the system message dedicated printer
- Automatic printout to the MAT printer
- Printout by DFTD command

2.1 Automatic Printout to System Message Dedicated Printer

Figure 6-4 shows the operating procedure.

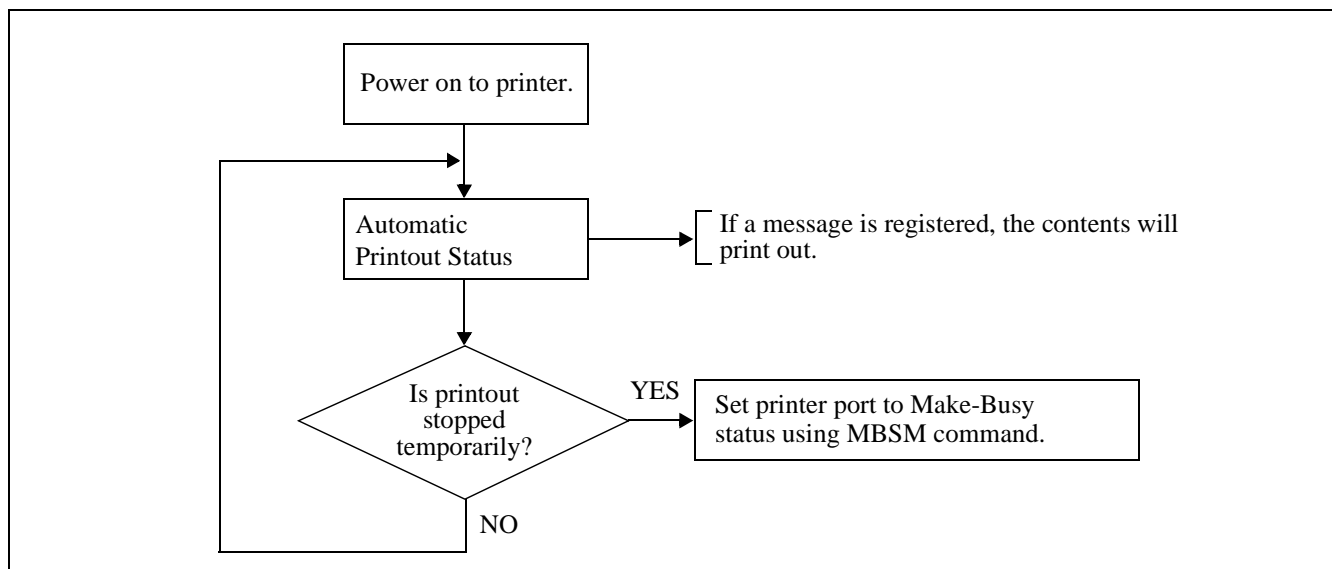


Figure 6-4 Automatic Printout to System Message Dedicated Printer Operating Procedure

COMMAND	COMMAND FULL NAME
MBSM	Make Busy of System Message Printout

SYSTEM OPERATIONS

2.2 Display on MAT

Set Scanning to Scanning ON (default) on the Scanning PBX form to collect system messages. If any message is collected, the information is displayed in the text box on the DFTD command form.

3. INDICATION OF LOCKOUT STATIONS

When a station is in lockout status (permanent signaling state, shorting across speech wires, etc.), it can quickly be discovered, preventing the situation from developing into serious trouble.

3.1 Indicating Method

By entering the following commands from the MAT, information pertaining to the lockout station concerned will display.

COMMAND	COMMAND FULL NAME
DLSL	Display of Lockout Station - LENS
DLSS	Display of Lockout Station - Number

3.2 Recovery Procedure

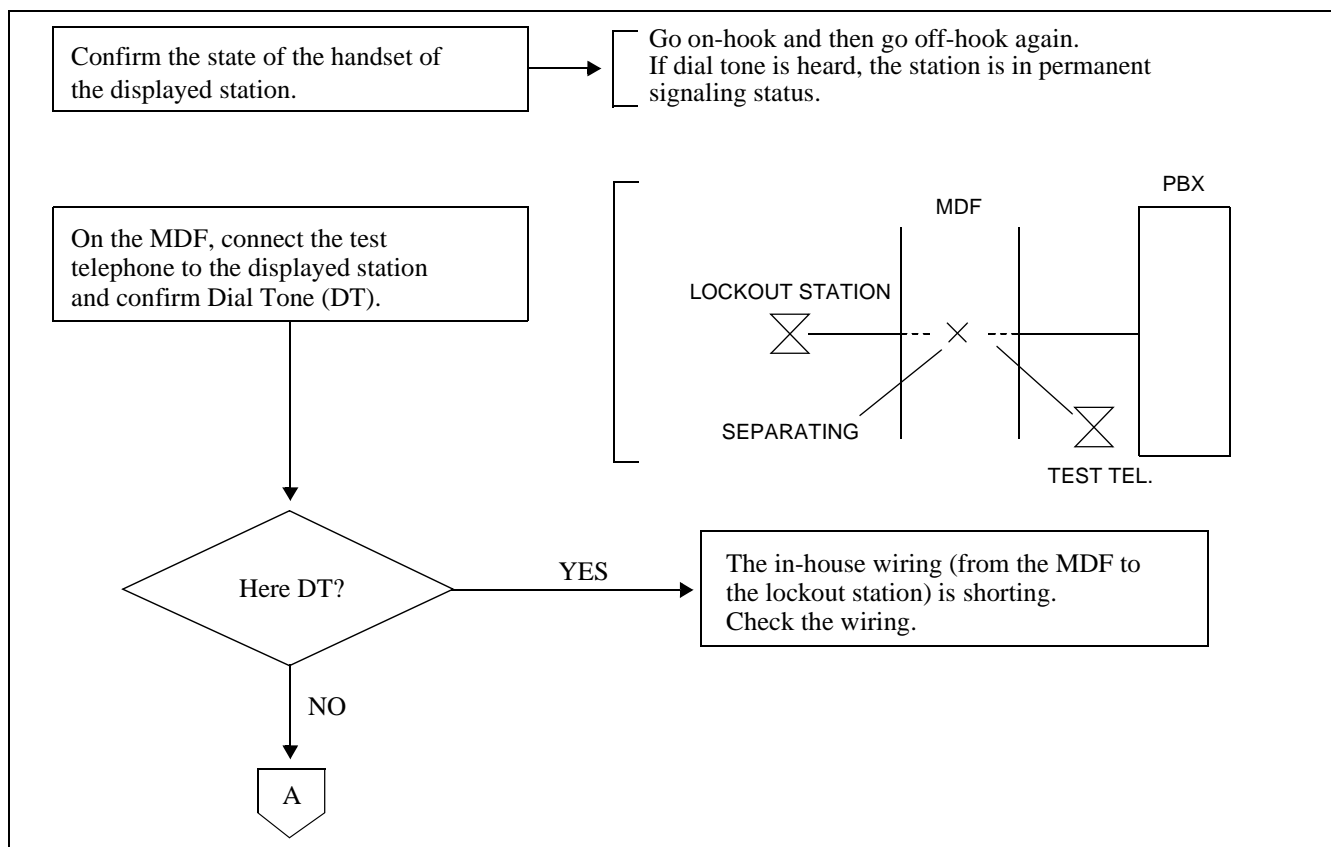


Figure 6-5 Recovery Procedure From Lockout Station

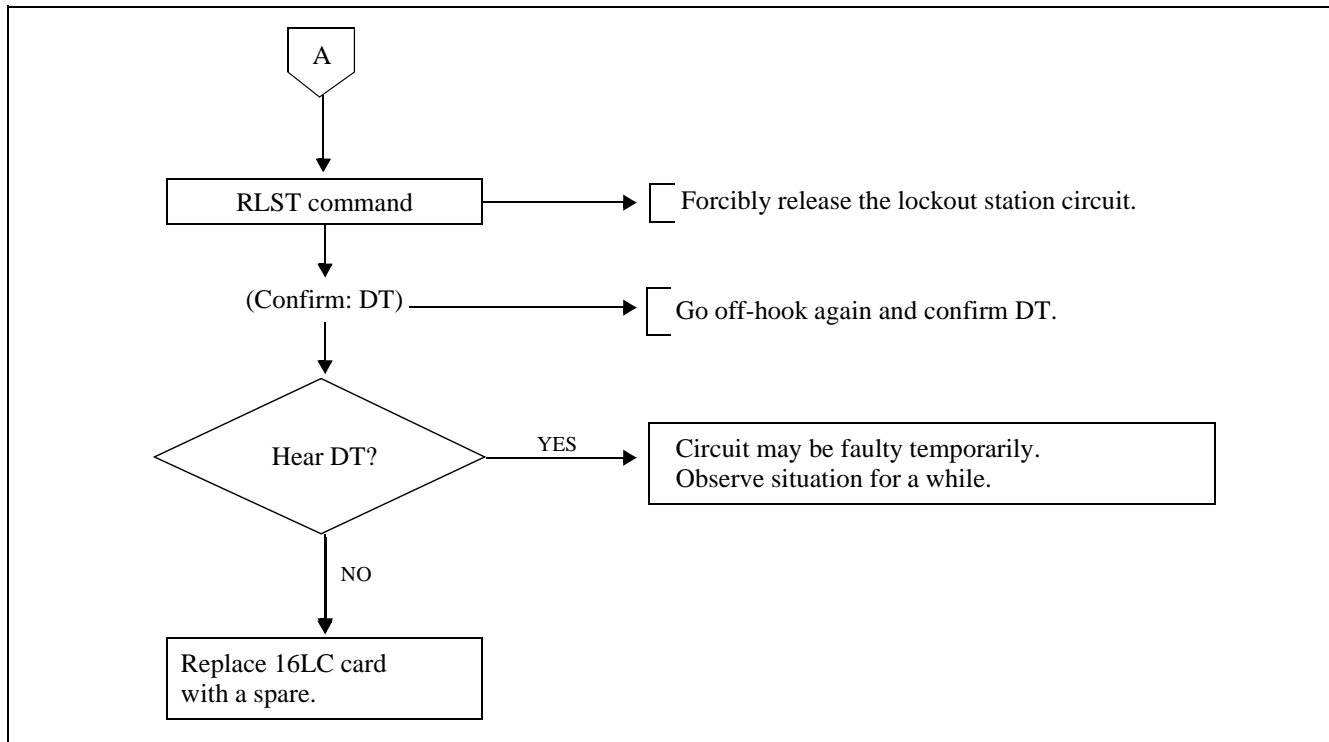


Figure 6-5 Recovery Procedure From Lockout Station (Continued)

COMMAND	COMMAND FULL NAME
RLST	Release Station/Trunk

SYSTEM OPERATIONS

4. LINE LOAD CONTROL

In the PBX, Line Load Control can be activated automatically or manually as a countermeasure against abnormal traffic congestion.

In the case of automatic control, the system automatically monitors an overloaded situation and restricts outgoing calls from stations and incoming calls from trunks.

In the case of manual control, the operator at an Attendant/Desk Console or the MAT restricts outgoing calls from stations and incoming calls from trunks.

This section covers the following methods to activate Line Load Control:

- Control by dialing an access code from the ATTCON/DESKCON
- Control by entering command data from the MAT
- System automatic monitoring

Operating Procedure

(1) Operations on the Attendant Console

By the operations on the ATTCON, restriction is effected on an outgoing call from a station having SFC in which the SFI = 16 (Line Load Control) of ASFC command is set as RES=0 (incoming calls to that station are allowed). For restricting incoming calls from a trunk, system data ASYD, SYS1, INDEX59, b0=1 should be assigned.

- Setting

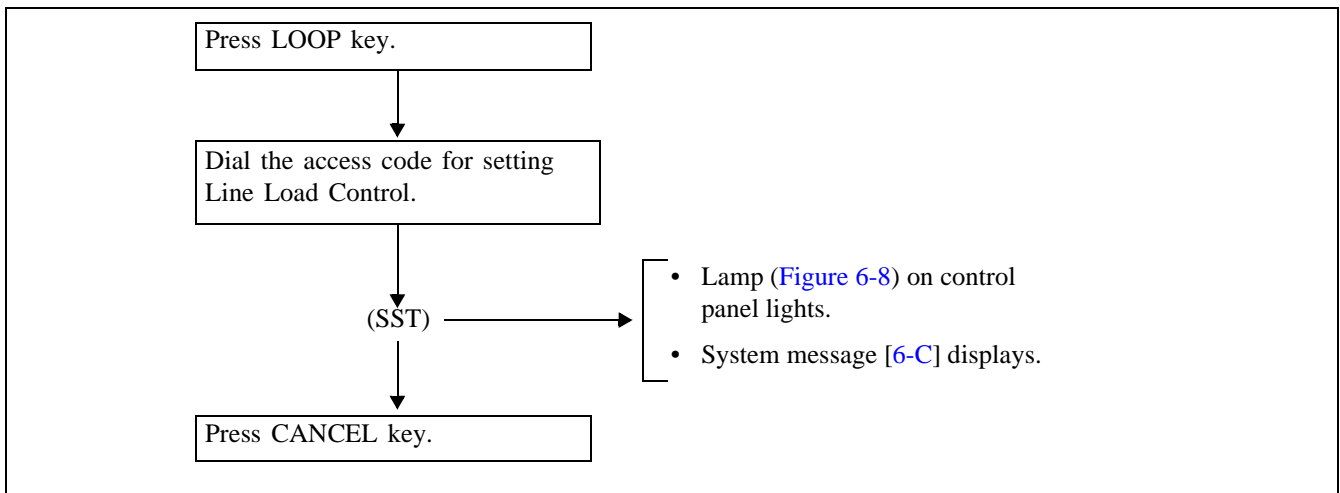


Figure 6-6 Line Load Control Operations on ATTCON—Setting

- Cancelling

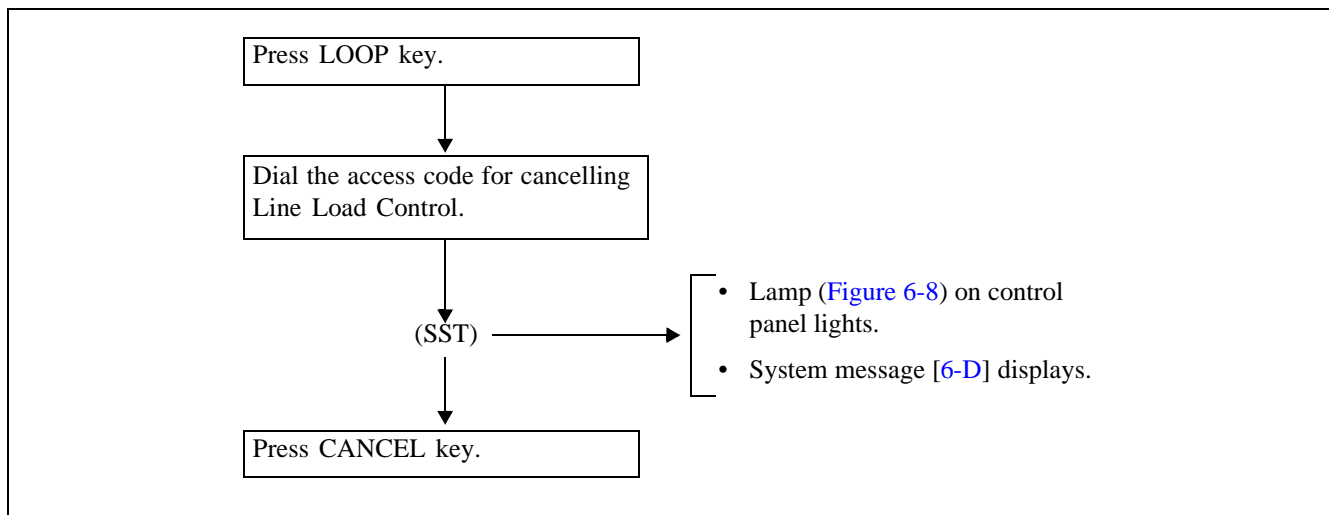


Figure 6-7 Line Load Control Operations on ATTCON—Cancelling

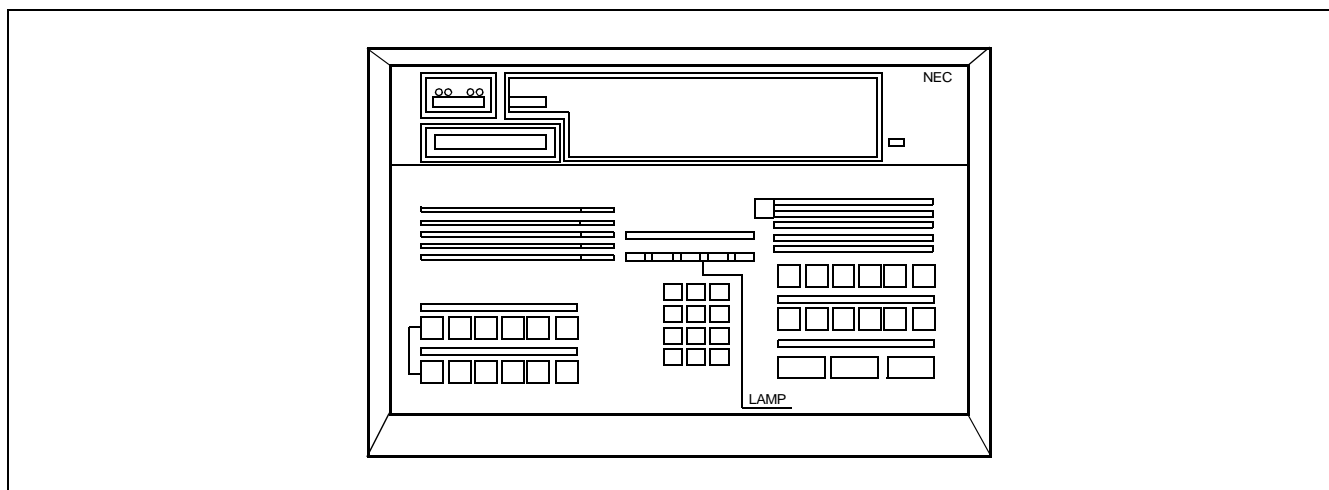


Figure 6-8 Locations of Lamps (ATTCON)

SYSTEM OPERATIONS

(2) Key Operations on the Desk Console (DESKCON)

By the operations on the Desk Console, restriction is applied on an outgoing call from a station having SFC in which the SFI = 16 (Line Load Control) of ASFC command is set as RES=0 (incoming calls to that station are allowed). For restricting incoming calls from a trunk, system data ASYD, SYS1, INDEX59, b0=1 should be assigned.

- Setting

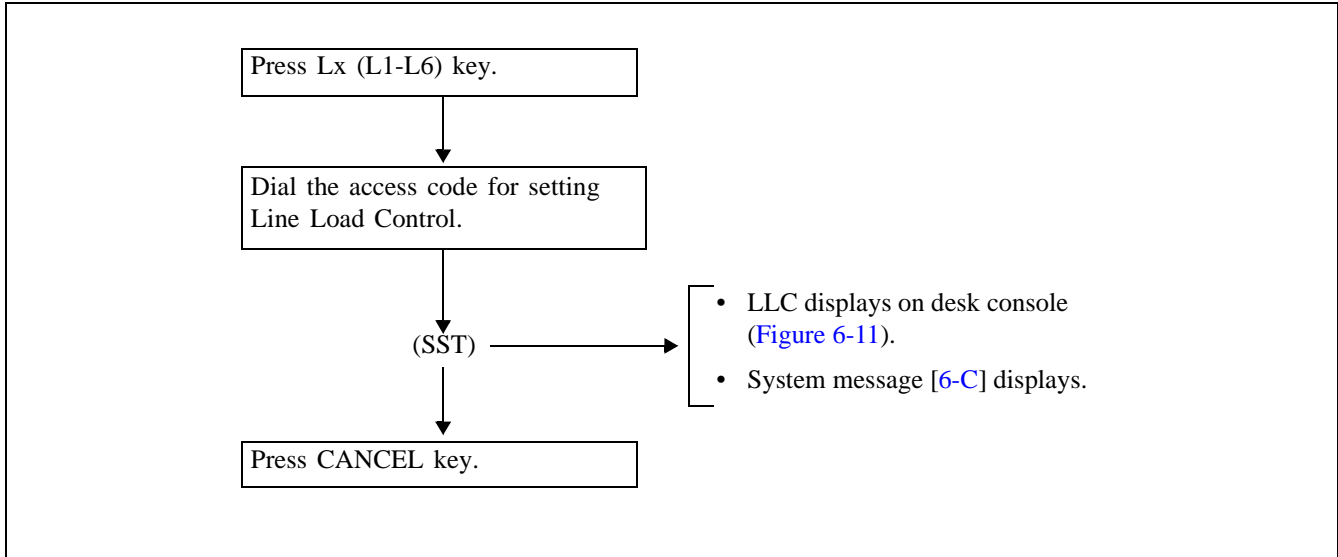


Figure 6-9 Line Load Control Key Operations on DESKCON—Setting

- Cancelling

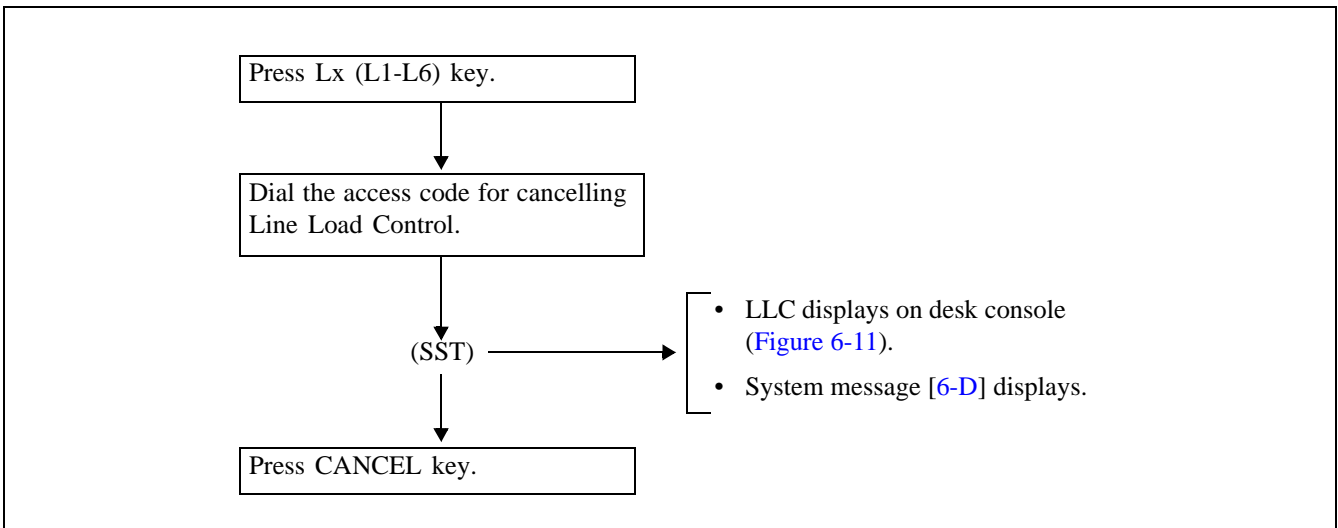


Figure 6-10 Line Load Control Key Operations on DESKCON—Cancelling

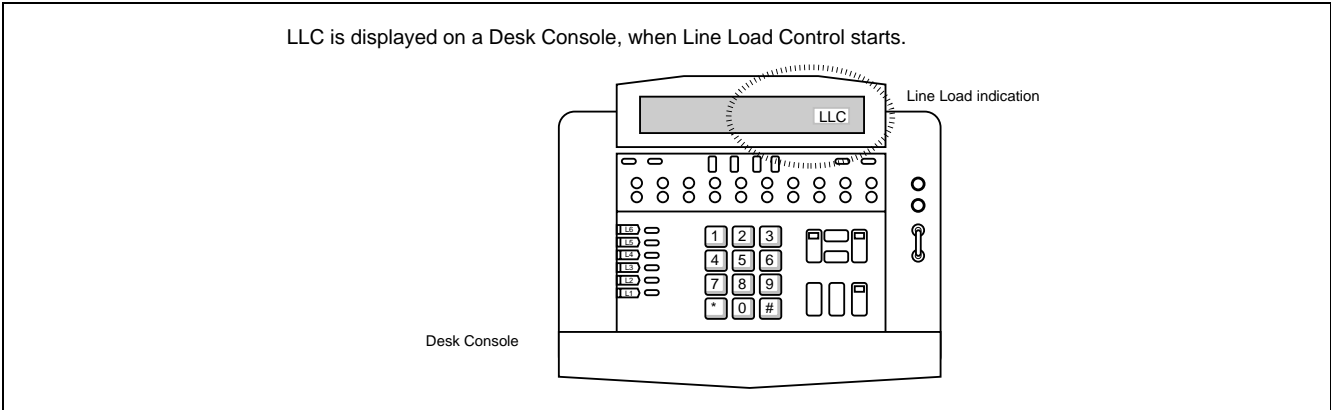


Figure 6-11 Line Load Control Indication (DESKCON)

(3) Operations on the MAT

By entering ALLC command from the MAT, Line Load Control executes. The station to be controlled and the contents of the Line Load Control executed on the MAT are the same as those in Step (1), [Operations on the Attendant Console](#).

COMMAND	COMMAND FULL NAME
ALLC	Assignment of Line Load Control

(4) Automatic Setting

If the usage rate of the CPU exceeds the system data usage rate, Line Load Control is automatically set. In this case, system message [6-C] displays. The station to be controlled and the contents of the Automatic Line Load Control are the same as those in Step (1), [Operations on the Attendant Console](#).

If the usage rate of the CPU drops below the system data usage rate, the Line Load Control is automatically cancelled. In this case, system message [6-D] displays. While the Line Load Control is set, the lamps on the control panel of the Desk/Attendant Console remain lit.

SYSTEM OPERATIONS

5. IOC LINE MONITOR

(1) Functional Outline

This function monitors the IOC port status. As a result of the monitoring by this function, the following is executed:

- When the connection with a port has been disconnected, it is reported by a message.
- When the connection with a port is set up, it is reported by a message.
- The port status is stored in the memory and updated continuously.

(2) Message Judgment Criteria

[Table 6-2](#) describes the message judgement criteria.

Table 6-2 Message Judgment Criteria

MESSAGE	CONTENT
Port Normal	System data is assigned, and DR signal is ON.
Port Abnormal	System data is assigned, and DR signal is OFF.
Output of Port Disconnected	This message is output when Port Abnormal status has lasted for 30 seconds. This message is immediately output if port abnormal occurs after the IOC card is initialized.
Output of Port Status Restored	This message is output when DR signal is ON for the port about which Output of Port Disconnected message is output.

6. LINE MANAGEMENT

The following explanations apply to line management:

- Make-Busy/Make-Busy Cancel of Station and Data Terminal
- Class Change and Number Change of Station and Data Terminal
- Make-Busy/Make-Busy Cancel of C.O. Line/Tie Line

6.1 Make-Busy/Make-Busy Cancel of Station and Data Terminal

Stations and data terminals can be put into make-busy state by the following operations:

- (1) On each station basis using the MBST command.
Assign the station number in the STN parameter and choose “1” for the MB box of the MBST command.
For the make-busy cancellation, choose “0” for the MB box.
 - (2) On each circuit basis using the MBLE command.
Assign LENS number in the LENS parameter and choose “1” for the MB box of the MBLE command.
For the make-busy cancellation, choose “0” for the MB box.
 - (3) On each circuit card basis using the MBPM command or operating the MB (toggle) key on the card.
 - Assign the required LENS number in the MG, UNIT and Group parameters and choose “3” for the MB box of the MBPM command.
 - For the make-busy cancellation, choose “2” for the MB box.
- or
- Set to UP the MB key on the circuit card (= ON).
 - For make-busy cancellation, return the MB key down (= OFF).

SYSTEM OPERATIONS

6.2 Class Change and Number Change of Station and Data Terminal

Figure 6-12 shows the procedure for class change and number change of station and data terminal.

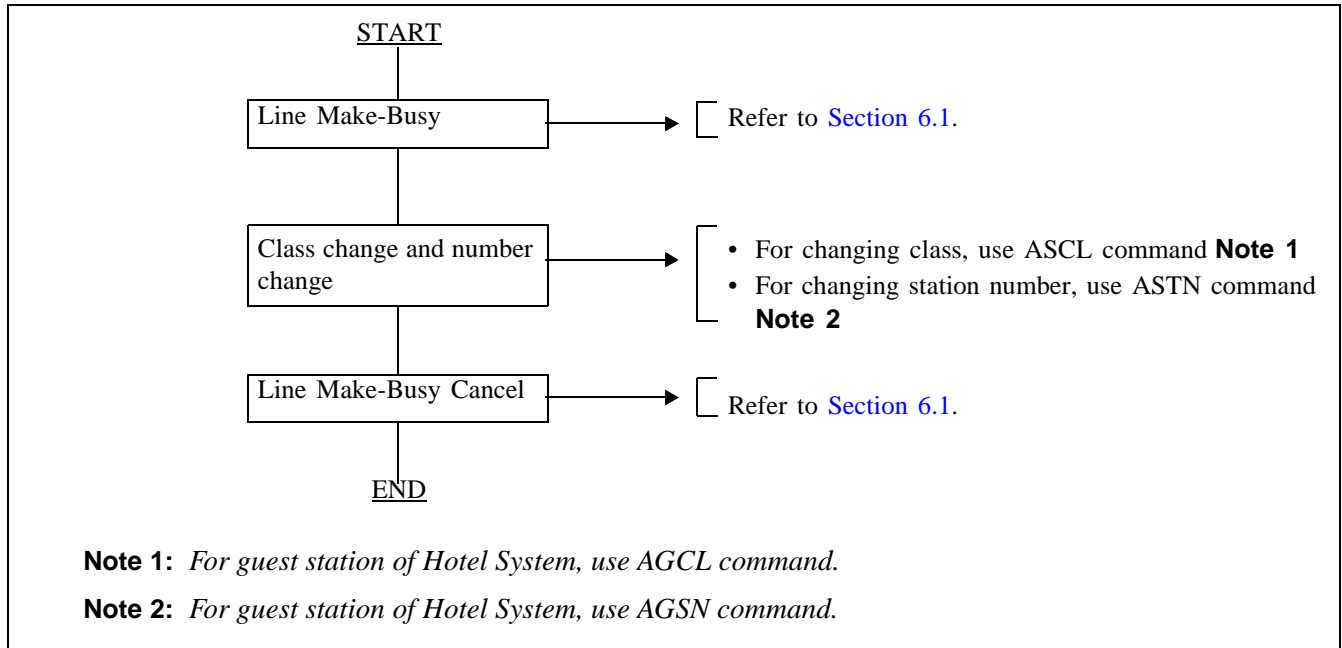


Figure 6-12 Class Change and Number Change of Station and Data Terminal Procedure

6.3 Make-Busy/Make-Busy Cancel of C.O. Line/Tie Line

Figure 6-13 shows the procedure to make-busy/make-busy cancel of C.O. line/tie line.

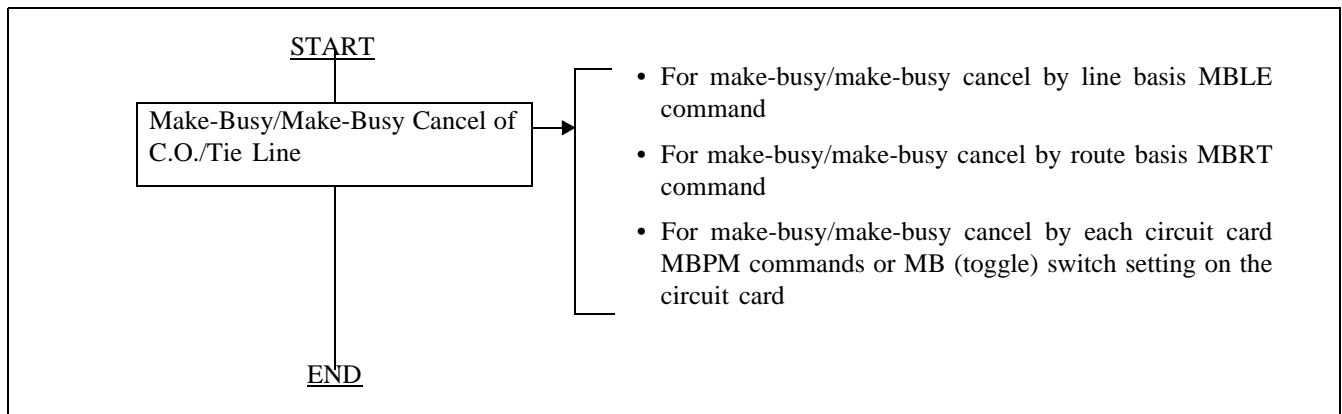


Figure 6-13 Make-Busy/Make-Busy Cancel of C.O. Line/Tie Line Procedure

6.4 Line Management Commands

COMMAND	COMMAND FULL NAME
AGCL	Assignment of Guest Station Class
AGSN	Assignment of Alternated Guest Station Number
ASCL	Assignment of Station Class Data
ASTN	Assignment of Station Number
MBLE	Make Busy of LENS
MBPM	Make Busy of Port Microprocessor
MBRT	Make Busy of Route
MBST	Make Busy of Station
MBTK	Make Busy of Trunk
DLEN	Display of LENS Data

7. STATION MESSAGE DETAIL RECORDING SYSTEM (SMDR)

Billing information can be managed by connecting the PBX system and an external computer (SMDR equipment).

Note: *The SMDR equipment and its software must be provided by the user.*

The PBX system provides the SMDR equipment with the following information:

- Calling Party Information
- Called Party Number
- Call Start Time
- Call End Time
- Call Data
- Authorization Code/Account Code

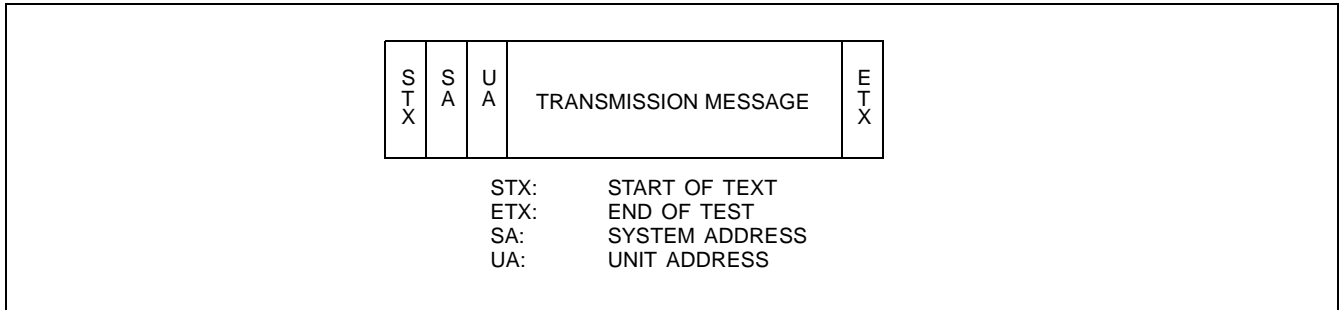
Upon receiving the above information from the PBX system, the SMDR equipment performs editing and management of the information and outputs the resulting information. This section explains the information provided to the SMDR equipment and also explains the method of controlling the interface port (IOC card) between the SMDR equipment and the PBX system.

SYSTEM OPERATIONS

7.1 Transmission Data to SMDR Equipment

(1) Transmission Format

As seen in the figure below, the basic information to be transmitted (Transmission Message) is a block which begins with Start of Text (STX) and ends with End of Text (ETX). When the call ends, the whole contents of this information is transmitted to the SMDR equipment.



(2) Transmission Message

One transmission message consists of 128 bytes of data. Each byte represents by ASCII codes the data to be transmitted (Refer to [Table 6-3](#)). The contents of the data to be transmitted vary with the kind of call, but the first byte is always transmitted by ASCII code K (4B hex.). The second byte to be transmitted is the data which specifies the kind of call.

Note: *In case the Fusion service is involved, the message can consist of more than 128 byte data.*

[Figure 6-14](#) shows the transmission message of an outgoing call. [Figure 6-15](#) shows the transmission message of an incoming call. Also, [Figure 6-16](#) shows the transmission message of a station-to-station call.

Table 6-3 ASCII Code

CHARACTER	ASCII CODE									REMARKS
	HEX.	BINARY DIGIT								
		b7	b6	b5	b4	b3	b2	b1	b0	
0	30	0	0	1	1	0	0	0	0	
1	31	0	0	1	1	0	0	0	1	
2	32	0	0	1	1	0	0	1	0	
3	33	0	0	1	1	0	0	1	1	
4	34	0	0	1	1	0	1	0	0	
5	35	0	0	1	1	0	1	0	1	
6	36	0	0	1	1	0	1	1	0	
7	37	0	0	1	1	0	1	1	1	
8	38	0	0	1	1	1	0	0	0	
9	39	0	0	1	1	1	0	0	1	
SPACE	20	0	0	1	0	0	0	0	0	Special Characters Code
STX	02	0	0	0	0	0	0	1	0	
ETX	03	0	0	0	0	0	0	1	1	
SA	30	0	0	1	1	0	0	0	0	
UA	21	0	0	1	0	1	0	1	1	
*	2A	0	0	1	0	1	0	1	0	
#	23	0	0	1	0	0	0	1	1	

SYSTEM OPERATIONS

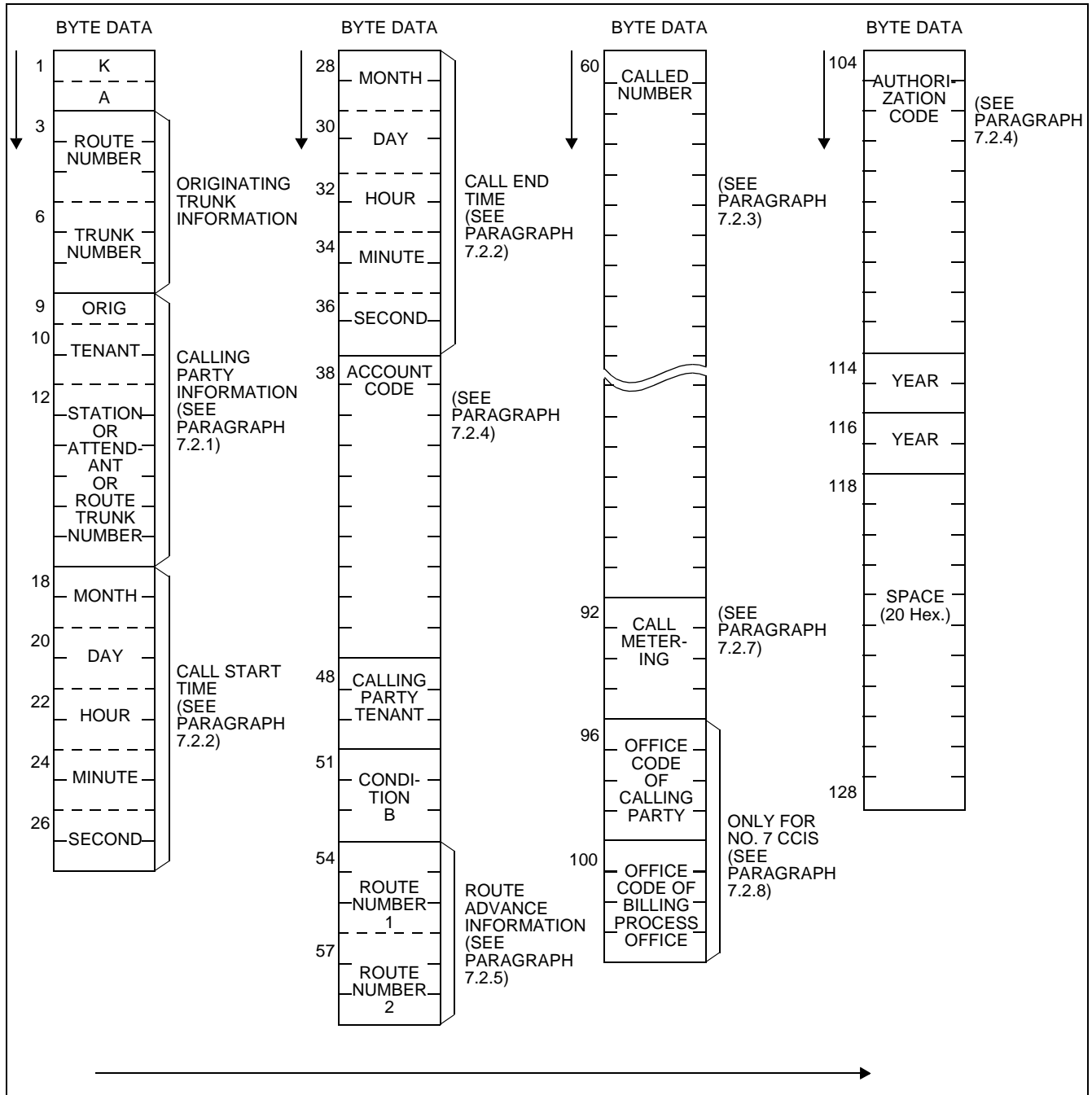


Figure 6-14 Message Format for Outgoing Call

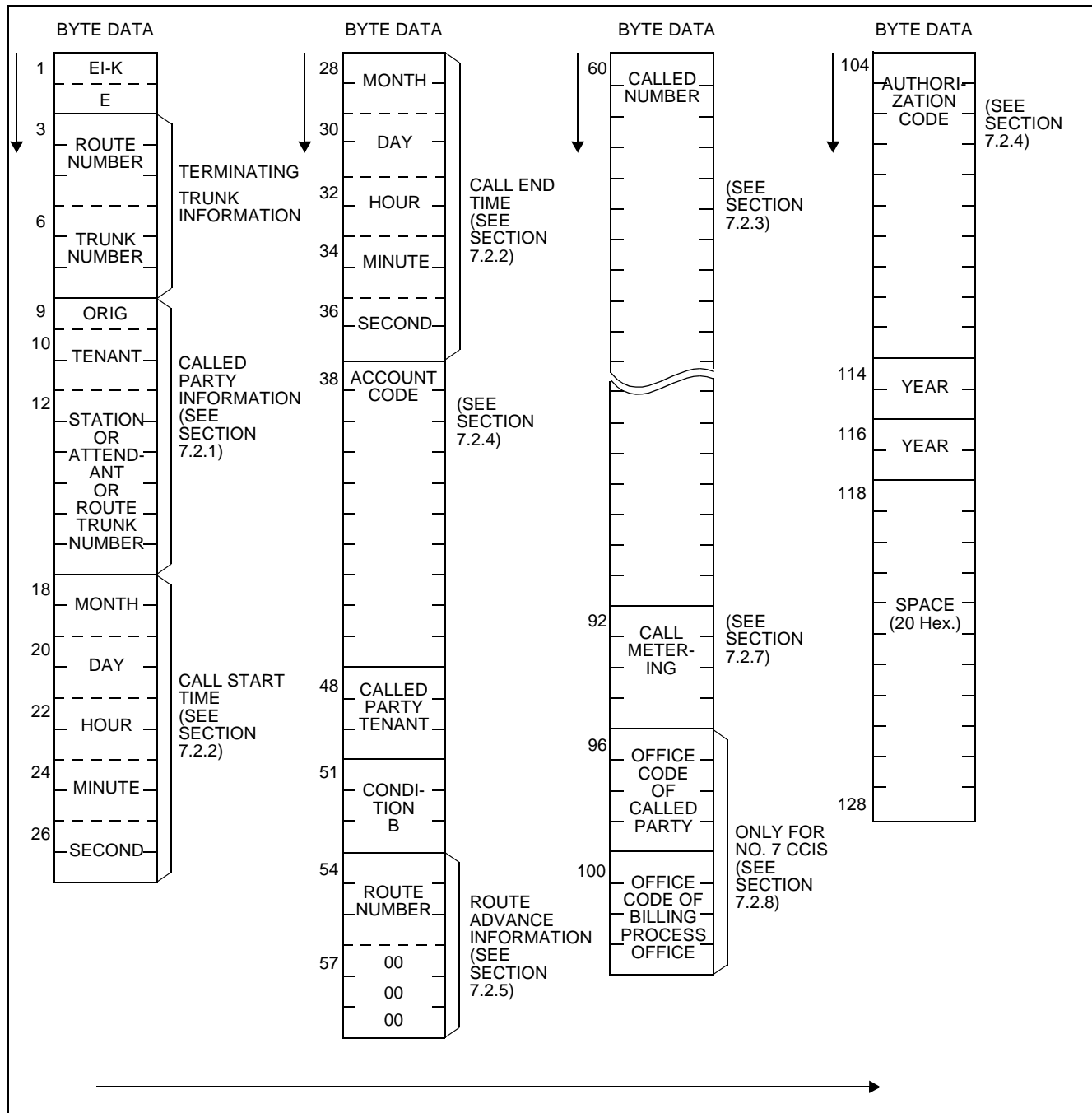


Figure 6-15 Message Format for Incoming Call

SYSTEM OPERATIONS

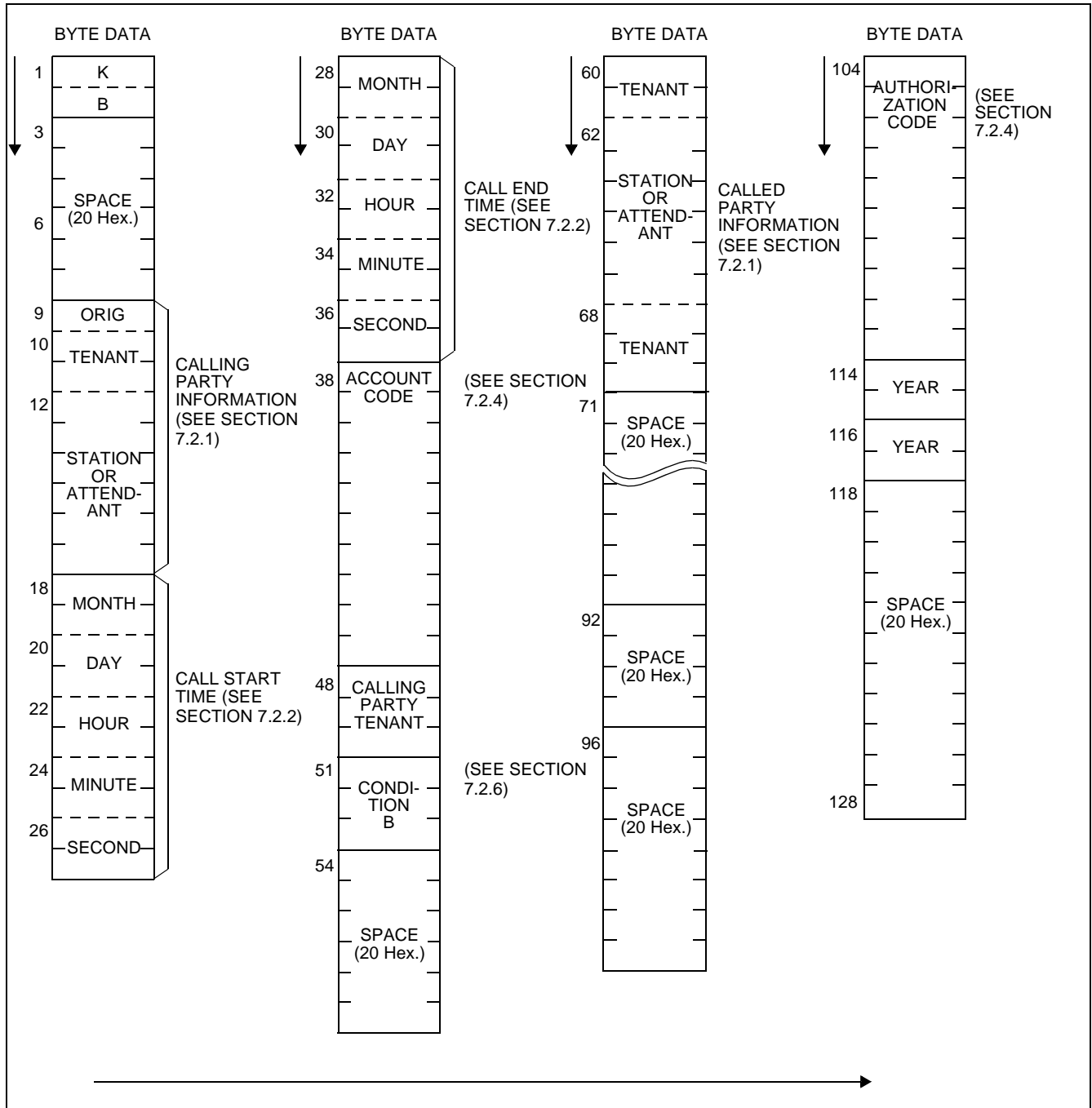


Figure 6-16 Message Format for Station-to-Station Call

7.2 Details on Transmission Data

7.2.1 Calling Party Information/Called Party Information

- The 9th byte indicates the type of the calling (or called) party. The 10th through 17th bytes are data pertaining to this calling (or called) party.

ORIG (Originating Source Identification):

0 = Calling (or called) Party is a station

1 = Calling (or called) Party is an Attendant

2 = Calling (or called) Party is an outside (inside) party

- The contents of 12th through 17th bytes vary with the type of the calling (or called) party.

(1) For a station (ORIG = 0): Data showing Station Number

BYTE	DATA	EXAMPLE
12	1st DIGIT	4
13	2nd DIGIT	0
14	3rd DIGIT	0
15	4th DIGIT	1
16	5th DIGIT	SPACE
17	6th DIGIT	SPACE

(2) For an Attendant (ORIG = 1): Data showing Attendant Number

BYTE	DATA	EXAMPLE
12	1st DIGIT	1
13	2nd DIGIT	0
14	3rd DIGIT	SPACE
15	4th DIGIT	SPACE
16	5th DIGIT	SPACE
17	6th DIGIT	SPACE

(3) For a trunk (ORIG = 2): Data showing Route Number and Trunk Number

Byte	Data	Example
12	1st DIGIT	0
13	2nd DIGIT	0
14	3rd DIGIT	1
15	1st DIGIT	0
16	2nd DIGIT	5
17	3rd DIGIT	0

Route Number (Bytes 12-14) RT No. = 1
 Trunk Number (Bytes 15-17) TR No. = 50

SYSTEM OPERATIONS

7.2.2 Call Start/Call End Time Information

- The data which indicates Call Start Time is as follows:

BYTE	DATA	EXAMPLE	
18	MONTH	0	THIS INFORMATION SHOWS THAT THE CALL STARTED AT 1 O'CLOCK P.M. ON JUNE 1st, 1998
19	(01-12)	6	
20	DAY	0	
21	(01-31)	1	
22	HOUR	1	
23	(00-23)	3	
24	MINUTE	0	
25	(00-59)	0	
26	SECOND	0	
27	(00-59)	0	
114	YEAR	9	YEAR INFORMATION IS SENT OUT ONLY BY THE LAST TWO DIGITS AS IN '98 FOR 1998.
115	(00-99)	8	

- The data which indicates Call End Time is as follows:

BYTE	DATA	EXAMPLE	
28	MONTH	1	THIS INFORMATION SHOWS THAT THE CALL ENDED AT 9 O'CLOCK 10 MIN. 30 SEC. A.M. ON OCT. 20, 1998.
29	(01-12)	0	
30	DAY	2	
31	(01-31)	0	
32	HOUR	0	
33	(00-23)	9	
34	MINUTE	1	
35	(00-59)	0	
36	SECOND	3	
37	(00-59)	0	
116	YEAR	9	YEAR INFORMATION IS SENT OUT ONLY BY THE LAST TWO DIGITS AS IN '98 FOR 1998.
117	(00-99)	8	

7.2.3 Called Number

- The data which indicates the Called Number is as follows:

BYTE	DATA	EXAMPLE
60	1st DIGIT	0
61	2nd DIGIT	4
62	3rd DIGIT	7
63	4th DIGIT	1
64	5th DIGIT	8
65		3
66		0
67		3
68		5
69		1
70		SPACE
71	12th DIGIT	SPACE
90	30th DIGIT	SPACE
91	32nd DIGIT	SPACE

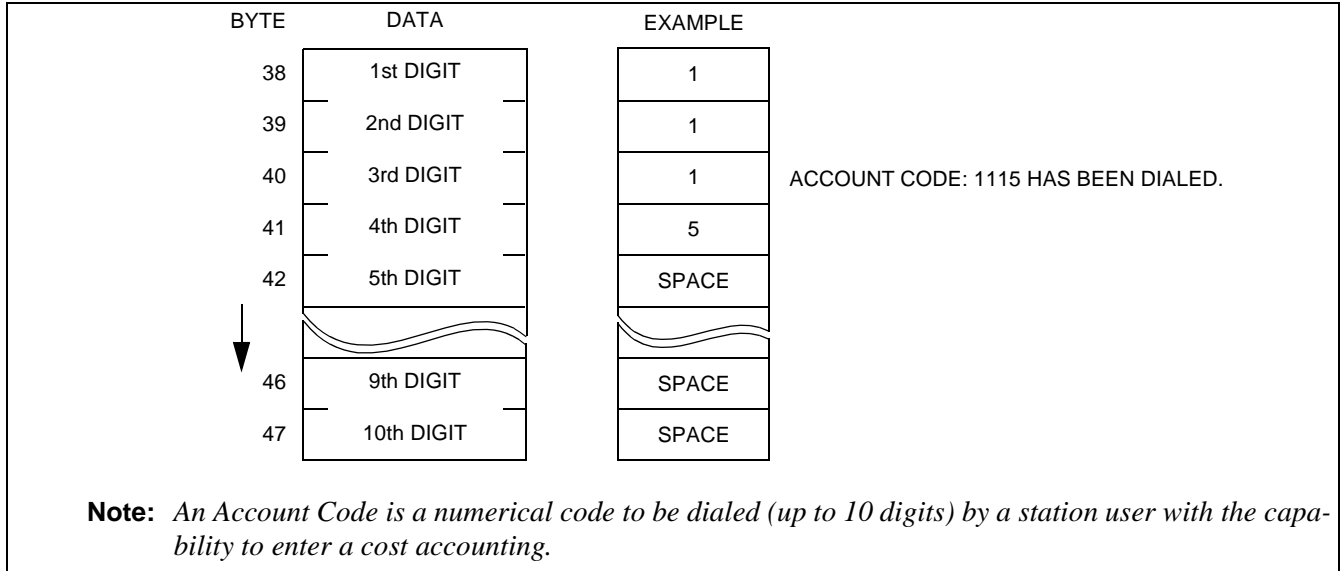
9-0471-83-0351 HAS BEEN DIALED.

9: OG ACCESS CODE

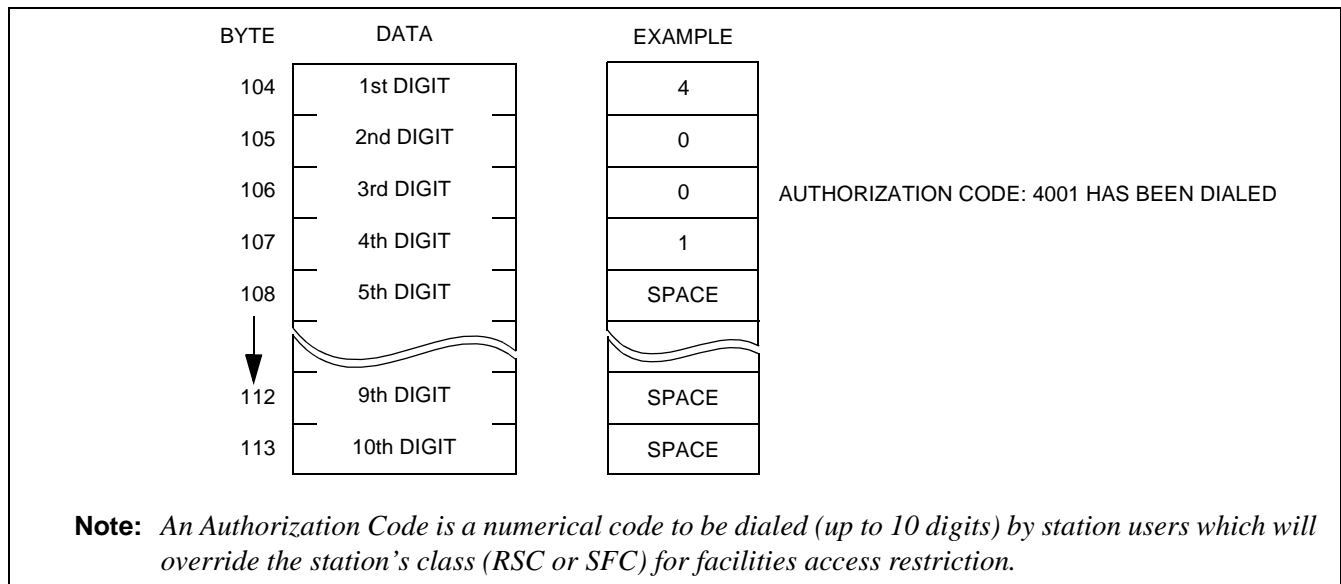
SYSTEM OPERATIONS

7.2.4 Account Code/Authorization Code

- The data which indicates the Account Code is as follows:

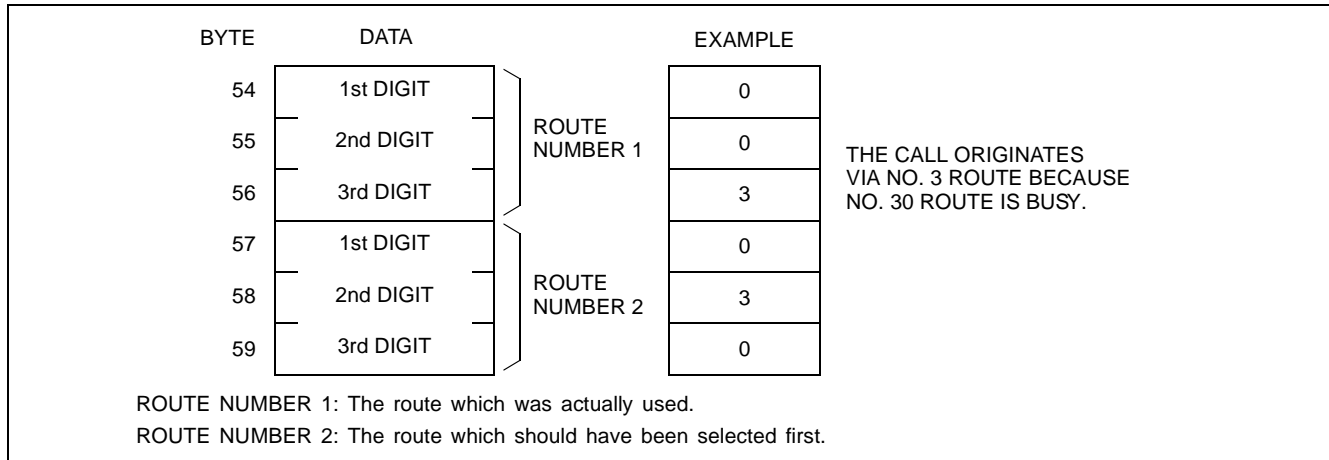


- The data which indicates the Authorization Code is as follows:



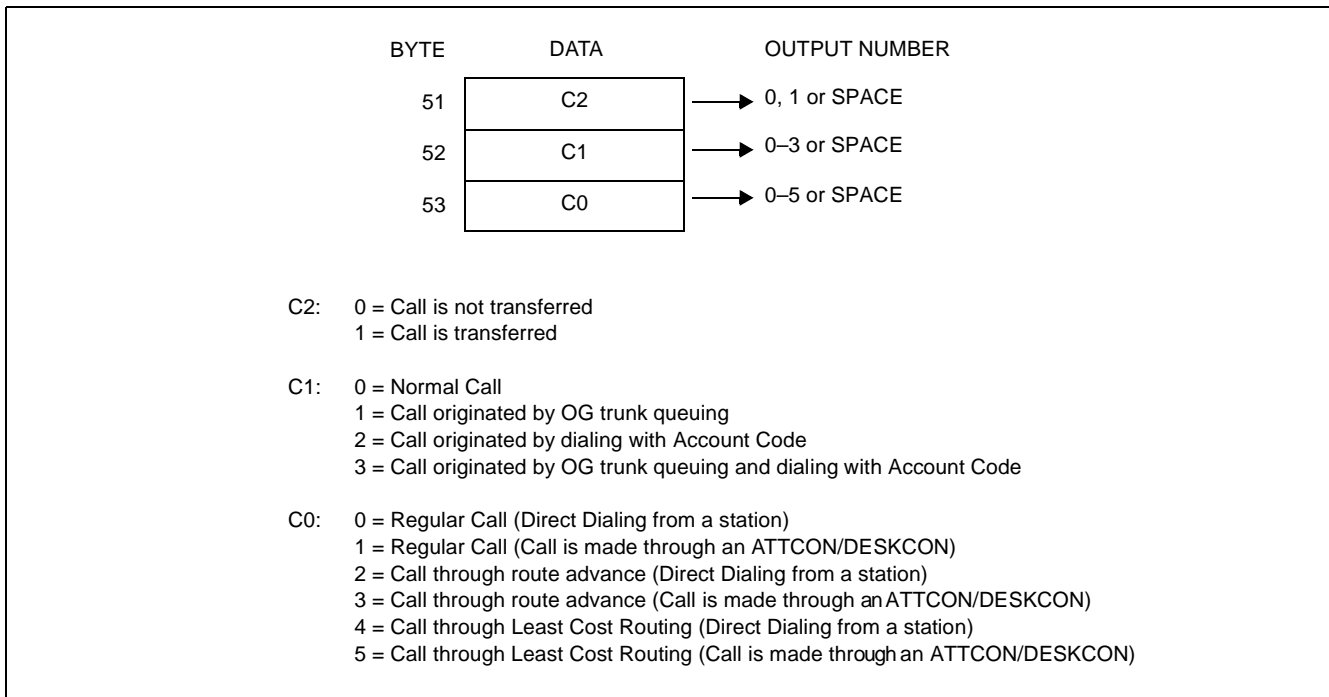
7.2.5 Route Advance Information

When a call has been originated by route advancing, the following data is transmitted.



7.2.6 Condition B Information

The 51st through 53rd bytes are Condition B Information. The Condition B Information indicates the following data:



SYSTEM OPERATIONS

7.2.7 Call Metering Information

The value of call metering from the Central Office is transmitted via the data from the 92nd byte to 95th byte.

BYTE	DATA	EXAMPLE	
92	1000	5	WHEN 5200 METERING PULSES ARE RECEIVED FROM C.O.
93	100	2	
94	10	0	
95	1	0	

7.2.8 Office Code of Calling (Called) Party and Billing Process Office

The 96th byte through 99th byte indicates the Office Code of Calling (Called) Party terminated via CCIS line.

The 100th byte through 103rd byte indicates the Office Code of the office processing centralized billing for CCIS network.

Note: *Office Code includes the CCIS line access code.*

BYTE	DATA		EXAMPLE	
96	1st DIGIT	OFFICE CODE OF CALLING (CALLED) PARTY	8	OFFICE CODE = 812
97	2nd DIGIT		1	
98	3rd DIGIT		2	
99	4th DIGIT		SPACE	
100	1st DIGIT	OFFICE CODE OF BILLING PROCESS OFFICE	8	OFFICE CODE = 813
101	2nd DIGIT		1	
102	3rd DIGIT		3	
103	4th DIGIT		SPACE	

7.2.9 Text Format of Centralized Billing - Fusion

Below is the text format for billing information (Fusion) to be transmitted to the SMDR equipment. On the following pages, Figure 6-17 through Figure 6-19, provide detailed information.

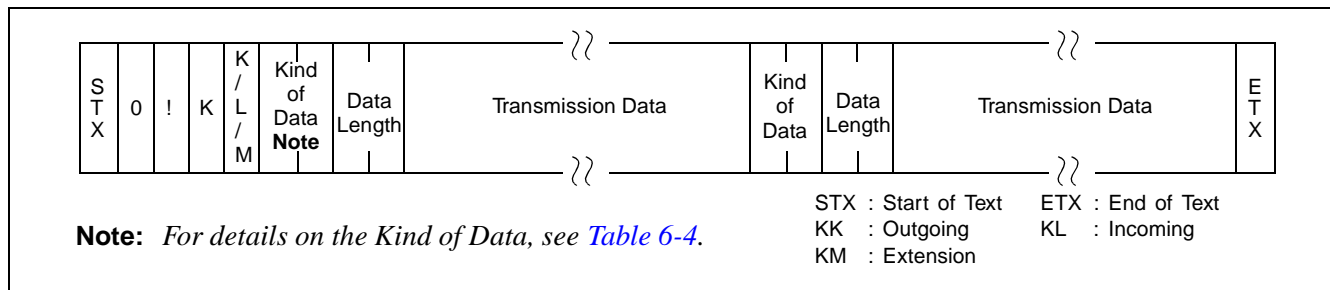


Table 6-4 Centralized Billing—Fusion Kinds of Data

KIND OF DATA	CONTENTS	KK (OUTGOING)	KL (INCOMING)	KM (STATION)
00	Not Used			
01	Outgoing Trunk/Incoming Trunk Information	Provided	Provided	-
02	Calling Party Information (Station Number)	Provided	-	Provided
03	Calling Party Information (Telephone Number)	Conditionally Provided	-	Conditionally Provided
04	Called Party Information (Station Number)	-	Provided	Provided
05	Called Party Information (Telephone Number)	-	Conditionally Provided	Conditionally Provided
06	Call Start/Call End Time	Provided	Provided	Provided
07	Account Code	Conditionally Provided	Conditionally Provided	Conditionally Provided
08	Condition B Information	Provided	Provided	Provided
09	Alternate Routing Information/Incoming Route Number	Provided	Provided	-
10	Dial Code	Provided	Conditionally Provided	-
11	Office Code Information (For CCIS)	Conditionally Provided	Conditionally Provided	-
12	Authorization Code	Conditionally Provided	Conditionally Provided	-
13	Condition C Information + Billing Info/Call Metalling Info	Provided	Conditionally Provided	-

SYSTEM OPERATIONS

Table 6-4 Centralized Billing—Fusion Kinds of Data (Continued)

KIND OF DATA	CONTENTS	KK (OUTGOING)	KL (INCOMING)	KM (STATION)
14	Condition D Information + Bill Notification Attendant Console Number	Conditionally Provided	-	-
15	Department Code	Conditionally Provided	-	-
16	Automatic Number Indication	Conditionally Provided	Conditionally Provided	-
17	Converted Number	Conditionally Provided	-	-
18-99	Not Used	-	-	-

Note: *Conditionally Provided: Information is provided when data is effective. Provided: Information is provided on every call with no exception. -: Not available.*

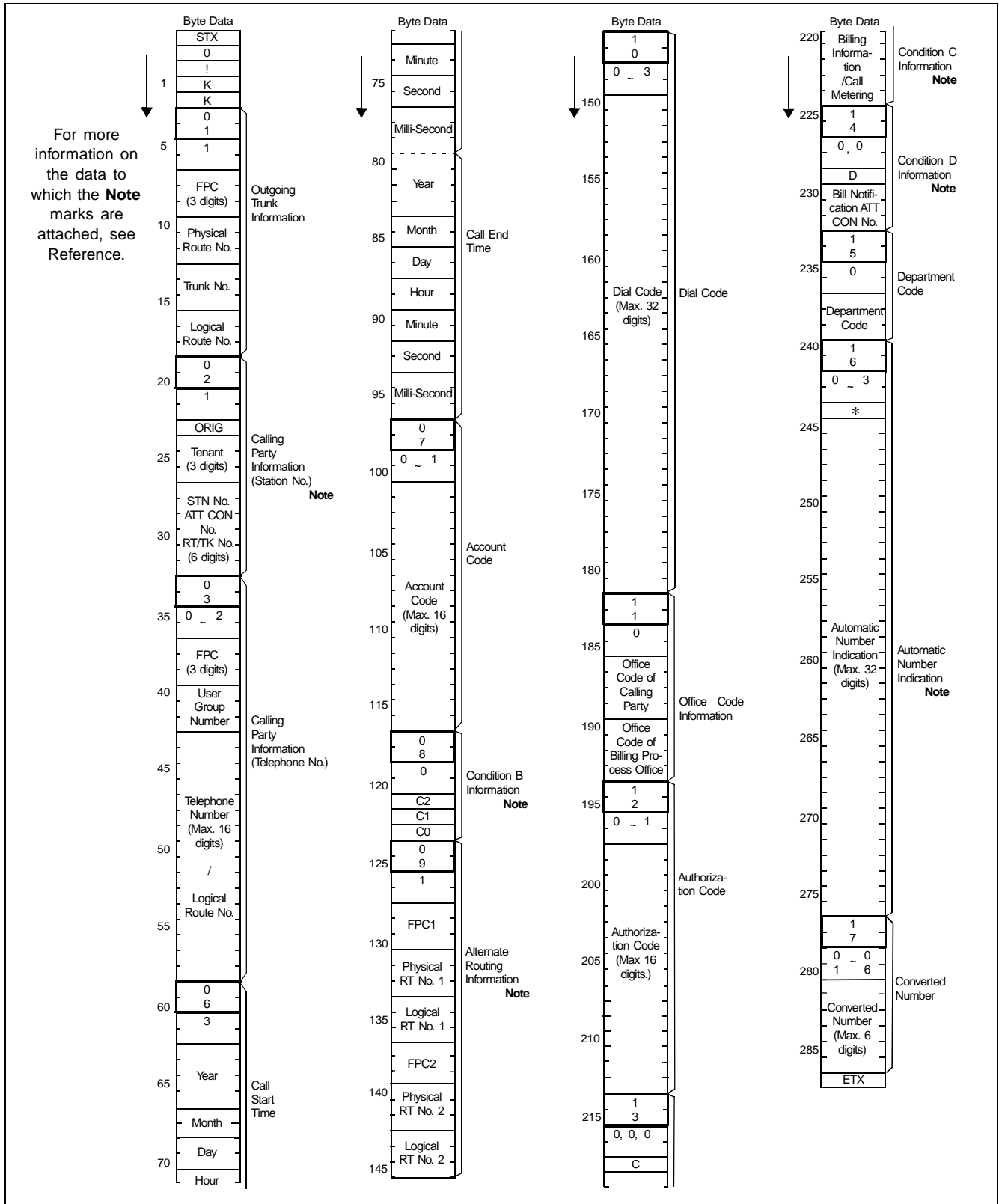


Figure 6-17 Message Format for Outgoing Call - Fusion

SYSTEM OPERATIONS

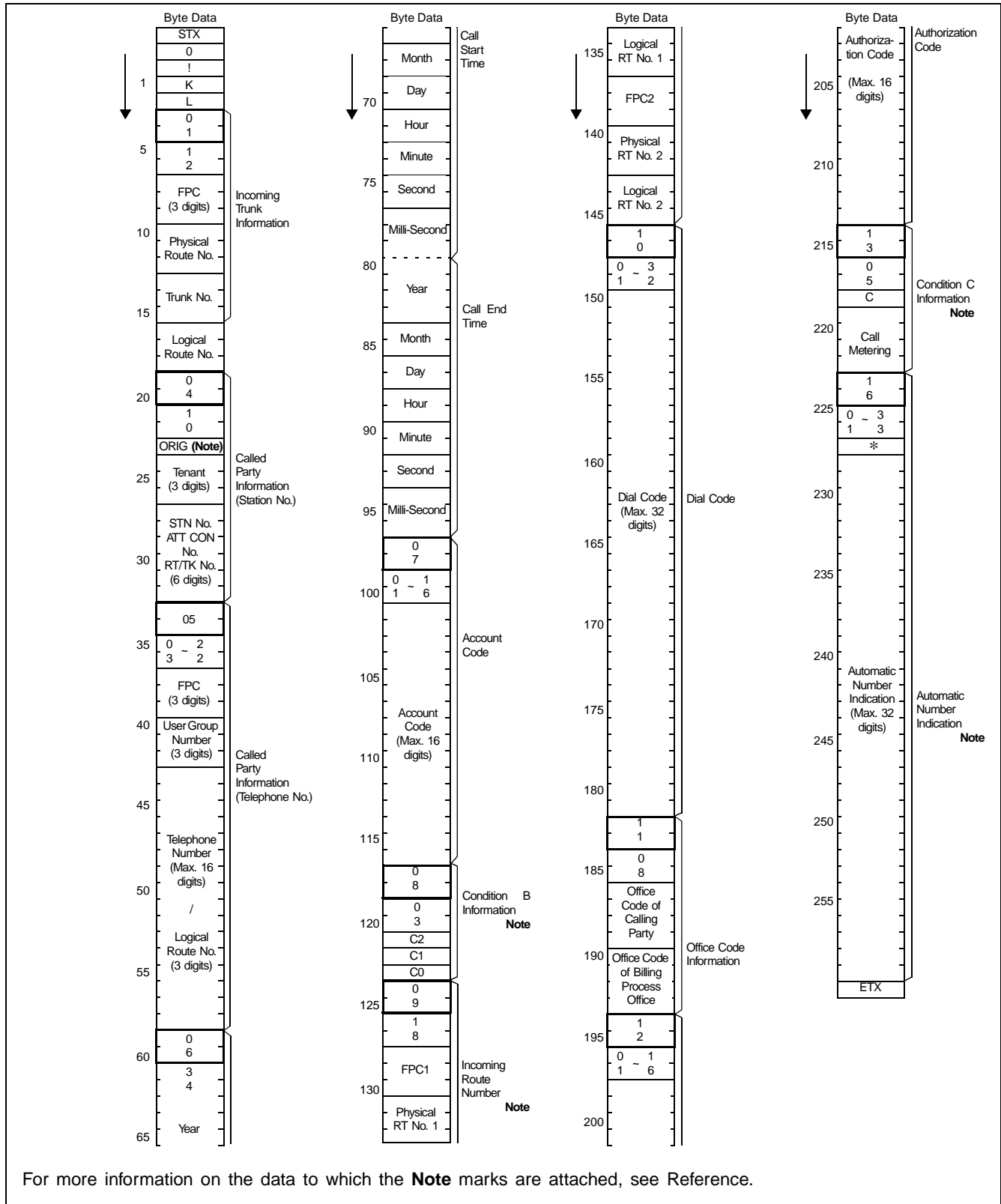
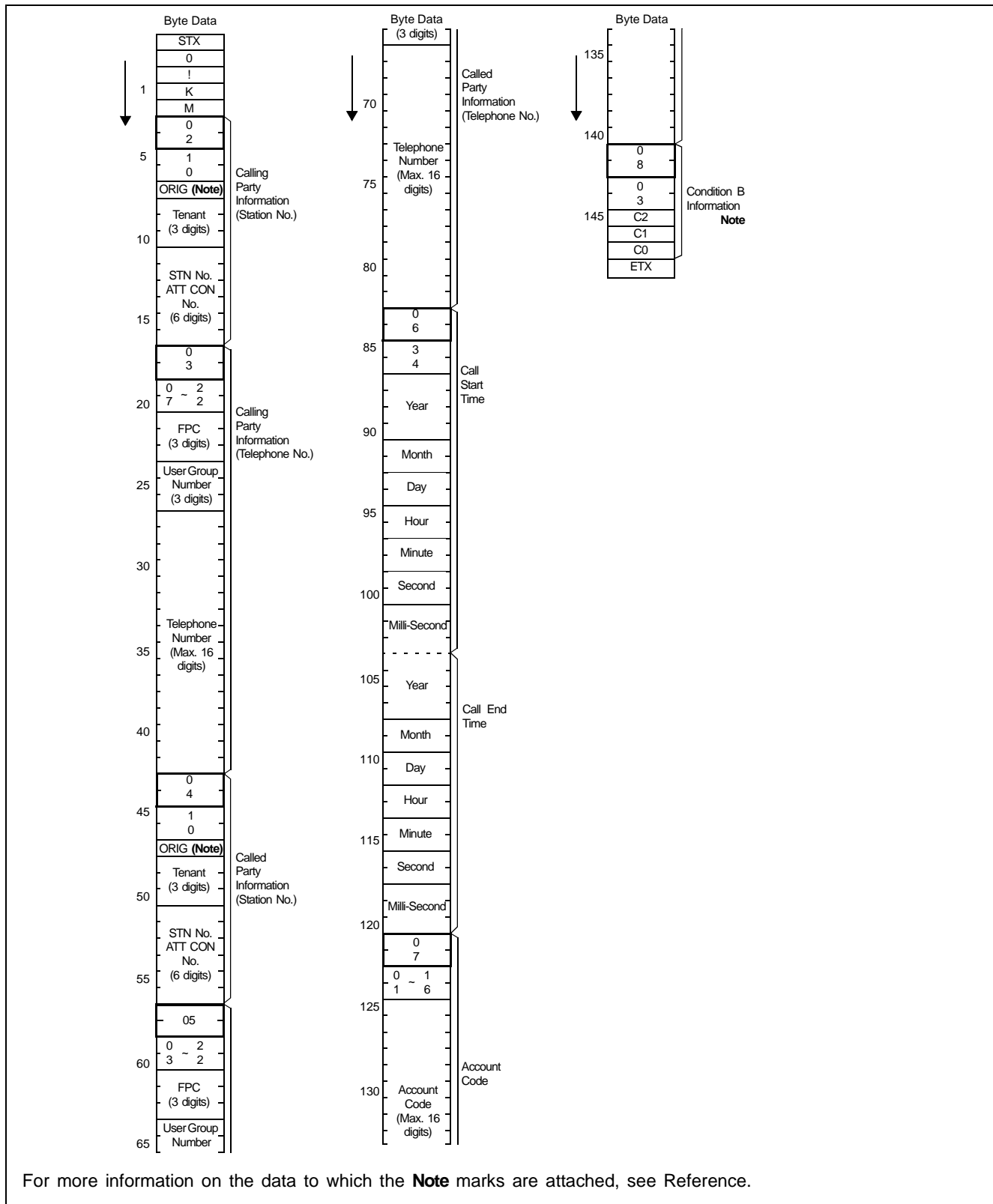


Figure 6-18 Message Format for Incoming Call - Fusion



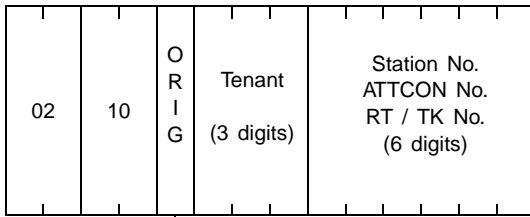
For more information on the data to which the **Note** marks are attached, see Reference.

Figure 6-19 Message Format for Station-to-Station Call - Fusion

SYSTEM OPERATIONS

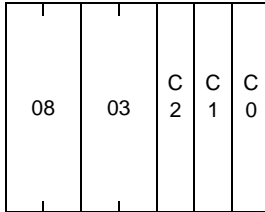
Reference

Data = 02: Calling Party Information (Station Number)



ORIG: Originating Source Identification
ORIG = 0: Transmitted data depicts information on Station
ORIG = 1: Transmitted data depicts information on Attendant Console
ORIG = 2: Transmitted data depicts information on Trunk

Data = 08: Condition B Information

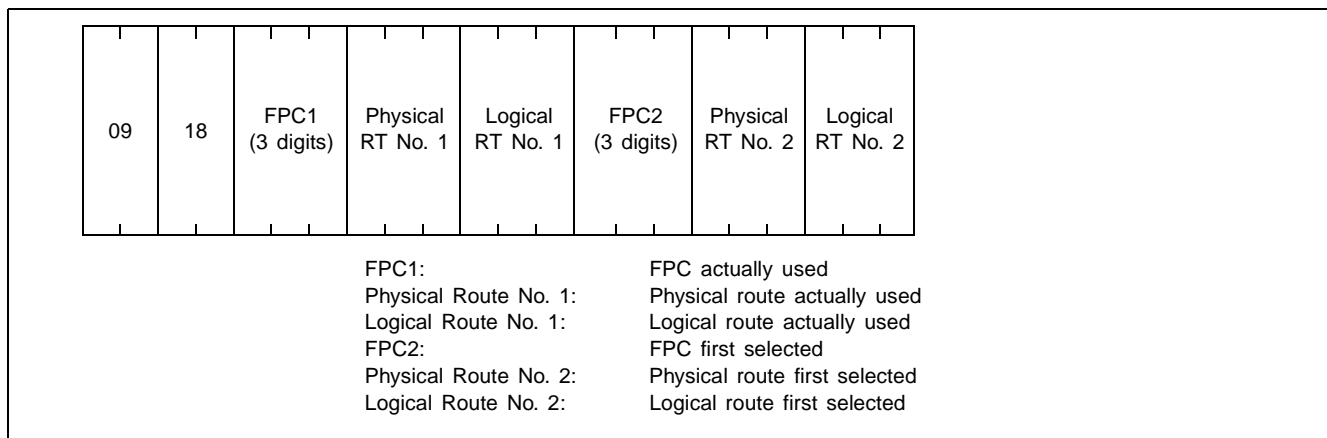


C0 = 0: Call Origination - Direct
1: Call Origination - via ATTCON
2: Call Origination - Direct (Alternate Routing)
3: Call Origination - via ATTCON (Alternate Routing)
4: Call Origination - Direct (LCR Routing)
5: Call Origination - via ATTCON (LCR Routing)
6: Call Origination - Direct (Called No. - first 6 digits of change code)
7: Call Origination - via ATTCON (Called No. - first 6 digits of change code)

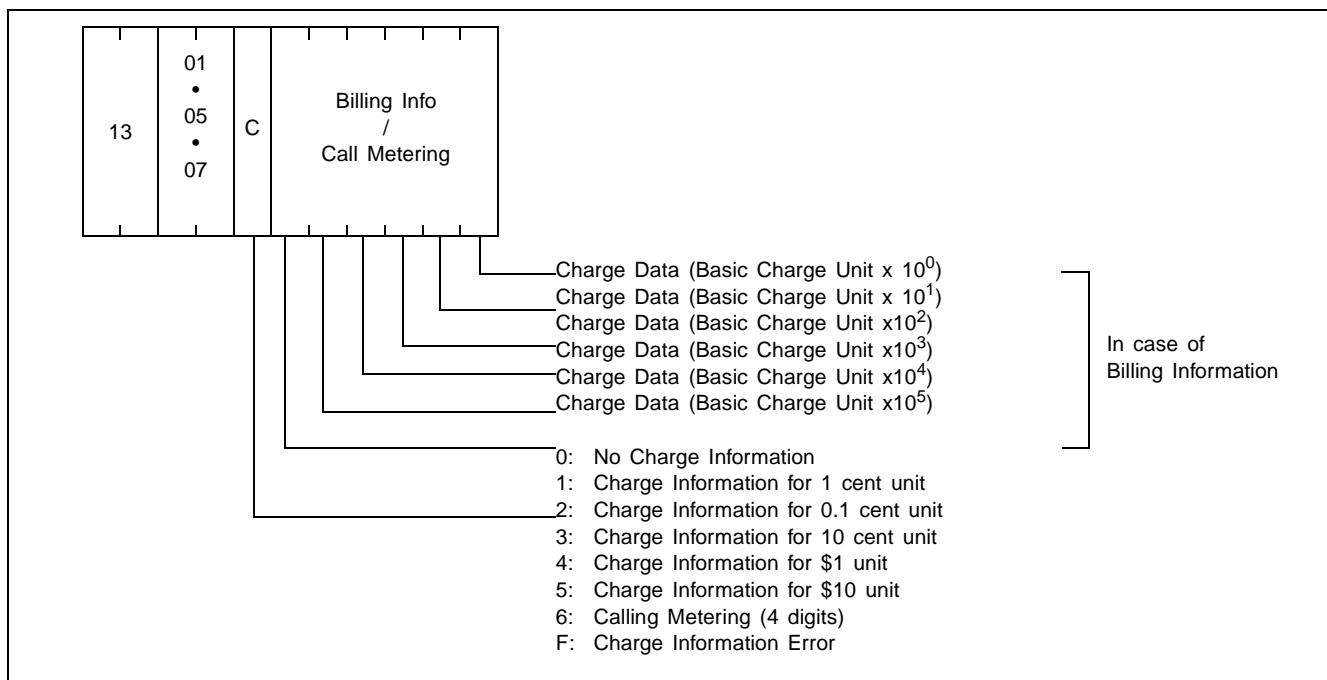
C1 = 0: -
1: Call Origination by OG Queuing
2: Call Origination by dialing with accounted code
3: Call Origination by OG Queuing & dialing with accounted code
4: Call Origination by Call Forwarding Outside
5: -
6: Call Origination by Call Forwarding Outside & dialing with accounted code

C2 = 0: -
1: Call was transferred
2: Billing is continued
3: Call was transferred & billing is continued
4: Call was transferred to last called party

Data = 09: Alternate Routing Information (KK) / Incoming Route Number (KL)

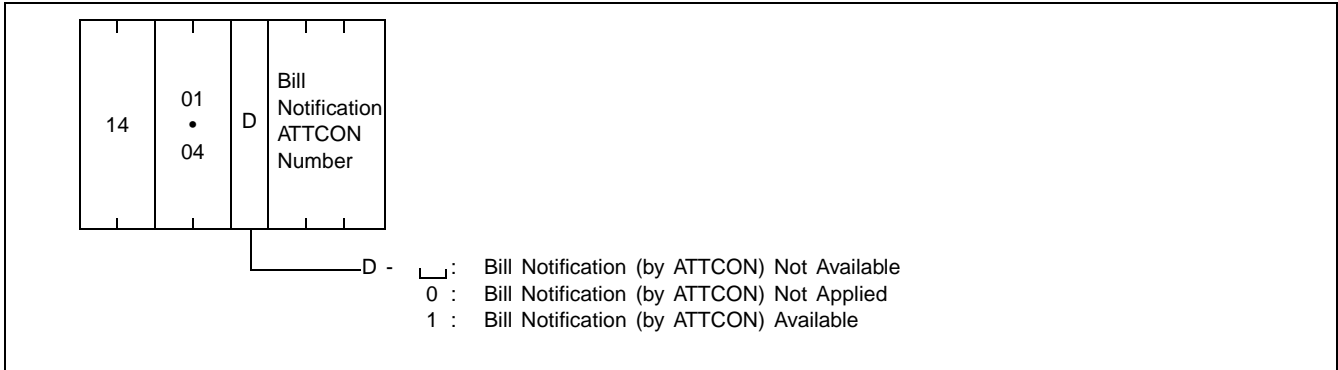


Data = 13: Condition C Information + Billing Info / Call Metering Info.

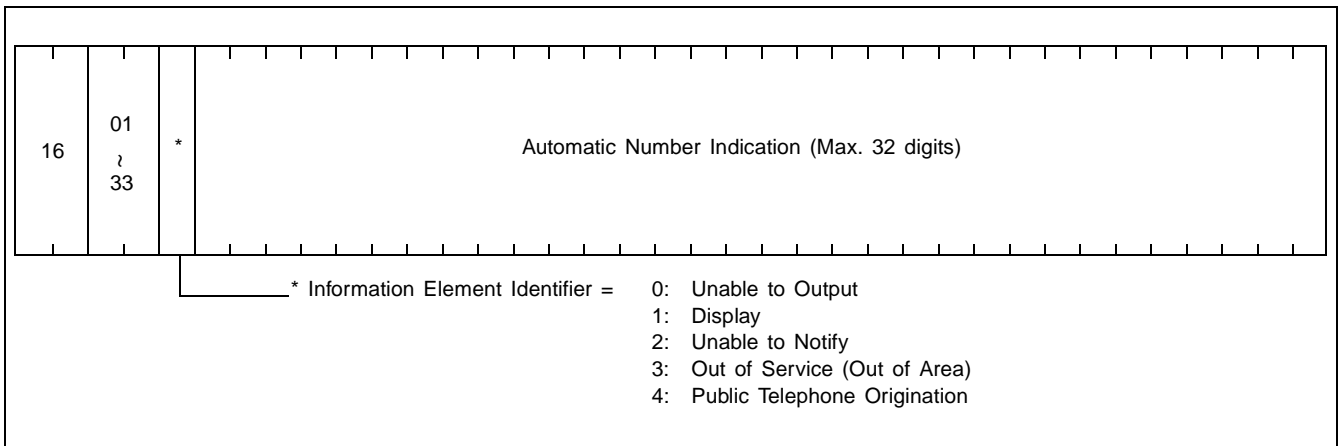


SYSTEM OPERATIONS

Data = 14: Condition D Information + Bill Notification ATT CON Number



Data = 16: Automatic Number Indication



7.2.10 Text Format of SMDR - TCP/IP Interface

When using SMDR - TCP/IP interface, billing information is output to the billing output devices connected by an external LAN in the form of socket interface as shown in Figure 6-20. This feature is available for software Release 3 or later.

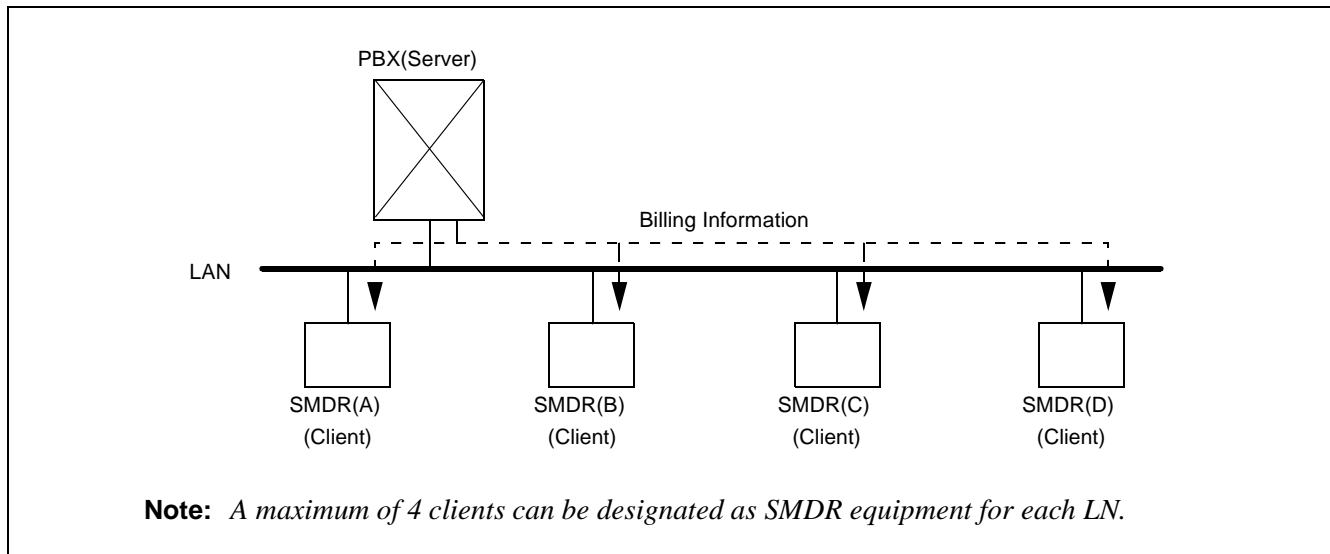


Figure 6-20 SMDR—TCP/IP Interface Billing Output Devices

Details on the text format for SMDR - TCP/IP Interface are explained below.

(1) Identifier 1: Data Request Text

A text to be sent by the client when it requests the server to send billing data.

S Y N	Text identifier (1)	Data length (00002)	Device No.	Parity
-------------	---------------------------	------------------------	---------------	--------

Text sending direction: Client → Server

SYSTEM OPERATIONS

(2) Identifier 2: Sending Data Text

A text for sending billing data in response to “(1) Data Request Text” from the client.

S Y N	Text identifier (2)	Data length (XXXXX)	Device No.	Sequence No.	Billing data (IMX Format) Note	Parity	
							}}
							}}

Note: Text format of billing data is IMX format only. (Refer to [Section 7.2.9, TextFormat of Centralized Billing - Fusion.](#))

Text sending direction: Client ← Server

The number of billing data records is 64 or less.

(3) Identifier 3: Server Response Text

A text to be sent to the client when there is no billing data to send in response to “(1) Data Request Text” or as a response to a “(5) Status Monitoring Text.”

S Y N	Text identifier (3)	Data length (00003)	Device No.	Response No.	Parity	

Text sending direction: Client ← Server

(4) Identifier 4: Client Response Text

A response text to be sent to the server by the client which has received the data by a “(2) Sending Data Text.”

S Y N	Text identifier (4)	Data length (00002)	Device No.	Se- quence No.	ACK/ NAK	Parity	

Text sending direction: Client → Server

(5) Identifier 5: Status Monitoring Text

A text for use in monitoring the server status from the client’s viewpoint or the client from the server’s viewpoint. At the same time, the text is used to notify the server of the client status.

S Y N	Text identifier (5)	Data length (00005)	Device No.	Client device information	ACK/NAK	Parity
-------------	---------------------	---------------------	------------	---------------------------	---------	--------

Text sending direction: Client → Server

(6) Identifier 6: Connection Disconnect Text

A text to be sent from the client to the server to disconnect the connection. In response to this text, the server promptly performs processing to disconnect the connection.

S Y N	Text identifier (6)	Data length (00003)	Device No.	ACK/NAK	Parity
-------------	---------------------	---------------------	------------	---------	--------

Text sending direction: Client → Server

8. TRAFFIC MANAGEMENT

To obtain the value of common equipment usage, the system provides traffic measurement feature. It can improve the system efficiency.

8.1 Kind of Traffic Measurement

Table 6-5 shows the kinds of traffic measurements.

Table 6-5 Traffic Measurement Types

TYPE	KIND OF MEASUREMENT	DESCRIPTION
1*	Terminal Traffic Measurement	Measurement of traffic on a per LENS basis, and measurement of the total traffic on a PIM basis.
2*	Route Traffic Measurement	Measurement of traffic on a per route basis.
3*	Station Peg Count	Measurement of the number of outgoing connections, intra-office calls, outgoing C.O. line calls, Tie Line calls, etc. originated by each station.

SYSTEM OPERATIONS

Table 6-5 Traffic Measurement Types (Continued)

TYPE	KIND OF MEASUREMENT	DESCRIPTION
4*	ATTCON Peg Count	Measurement of the number of each type of call handled at theATTCON/DESKCON.
5*	Route Peg Count	Measurement of the number of various types of call connections on a per route basis.
6	Service Peg Count	Measurement of the number of times the following services are operated: Call Hold Call Back Executive Right of Way Call Waiting Call Pickup - Group Call Pickup - Direct Call Forwarding - All Calls Call Forwarding - Busy Line Call Forwarding - Don't Answer Speed Calling - System Speed Calling - Station Off-Hook Outgoing Trunk Queuing Outgoing Trunk Queuing Consultation Hold - All Call Call Transfer - All Calls Three-Way Calling
8	UCD Route Peg Count	Measurement of the number of incoming calls, answered calls, and abandoned calls handled at UCD Groups on a per route basis.
9	UCD Group Peg Count	Measurement of the number of incoming calls, answered calls and abandoned calls on a UCD Group basis.
10	UCD Station Peg Count	Measurement of the number of incoming calls, answered calls and abandoned calls for each station on a UCD Group basis.
15	ATT Answer Peg Count	Measurement of the number of answered calls handled by each attendant.
18	Connection Route Peg Count	Measurement of the number of various type of call connection on a connection route basis.
19	Connection Route Traffic	Measurement of traffic on a connection route basis.

Note: Asterisk (*) identifies the traffic measurements that can be saved on the HD of the MAT.

8.2 Operating Procedure

1. Procedure for Set-up and Start

The procedure to set up and start the traffic measurement is as follows:

STEP 1 By using the ASYD/ASYDN command, assign the necessary system data as follows:

ASYD

- When performing traffic measurement *on a node basis*:
- SYS1, INDEX8 (Number of Tenants)
- SYS1, INDEX9 (Number of Attendant Consoles)
- SYS1, INDEX47, bit 0 (Unit of Traffic Measurement): 0/1 = CCS/Erlang
- SYS1, INDEX47, bit 7 (Traffic Measurement Service): 0/1 = Out/In Service Assign "1."

ASYDN

- When performing traffic measurement *on a network basis (via TCP/IP)*:
- SYS1, INDEX8 (Number of Tenants)
- SYS1, INDEX9 (Number of Attendant Consoles)
- SYS1, INDEX47, bit 0 (Unit of Traffic Measurement): 0/1 = CCS/Erlang
- SYS1, INDEX47, bit 7 (Traffic Measurement Service): 0/1 = Out/In Service Assign "1."

STEP 2 By using the ATRF/ATRFN command, assign the traffic measurement programs as follows:

ATRF

- When performing traffic measurement *on a node basis*: Assign traffic measurement "TYPE" (**Note**), "PORT" number to be used, and the output "INTERVAL" and "Time (HOUR/MINUTE)," etc. For more details, see the **ATRF** command in **CHAPTER 8**.

ATRFN

- When performing traffic measurement *on a network basis (via TCP/IP)*: Assign traffic measurement "TYPE" (**Note**), "PORT" number to be used, and the output "INTERVAL" and "Time (HOUR/MINUTE)," etc. For more details, see the **ATRF** command in **CHAPTER 8**.

Note: You can select one measurement "TYPE" at a time. If you need two or more measurement "TYPE," repeat the same steps, following the entry of this command.

STEP 3: Terminate all the MAT commands.

An image of IMX "MAT Menu" is shown in **Figure 6-21**. Terminate all MAT commands, and make sure no commands are currently running via the "Processes" button.

STEP 4: Set the programmed Traffic Measurement in routine operation.

Click the "Scan New Alarms/Traffic" and "Collect New Alarms" buttons on the IMX "MAT Menu" (confirm the clicked buttons remain in the pressed state). Then, the Traffic Measurement is activated as programmed.

END

SYSTEM OPERATIONS

Figure 6-21 shows the IMX “MAT Menu” display image. The display should look similar to the following:

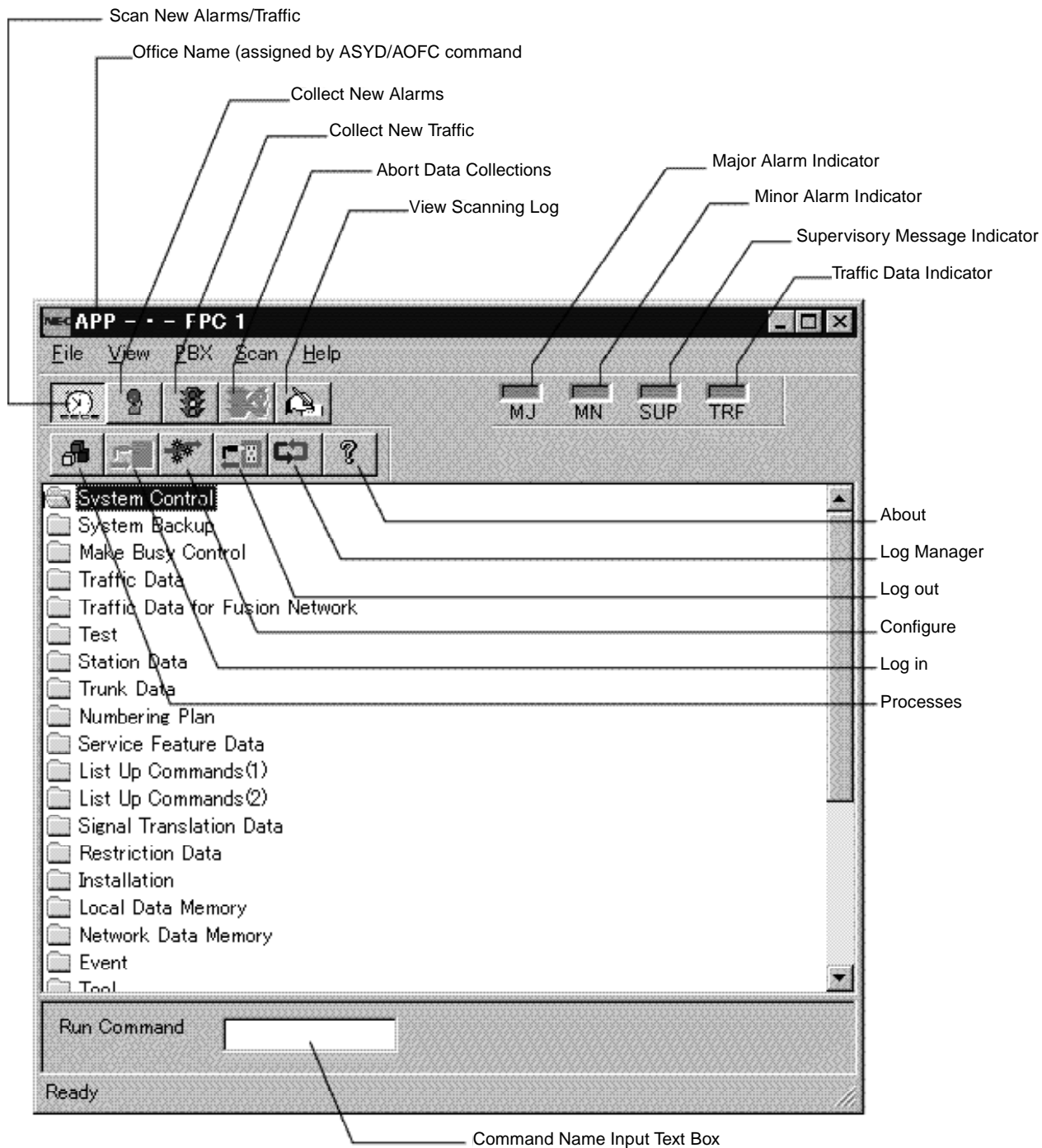


Figure 6-21 IMX “MAT Menu” Display Image (Example)

(2) Data Output - Details on DTFD/DTFDN Command

To obtain the collected Traffic data, you can use the “DTFxxx” or “DTFxxxN” command as shown below. The commands can be activated by your direct log-in operation onto the MAT, but in normal cases, the commands are to be activated automatically at predetermined intervals assigned by the ATRF/ATRFN command.

Also, each command below corresponds to the Traffic Measurement “TYPE” assigned by the ATRF/ATRFN command.

When performing traffic measurement *on a node basis*:

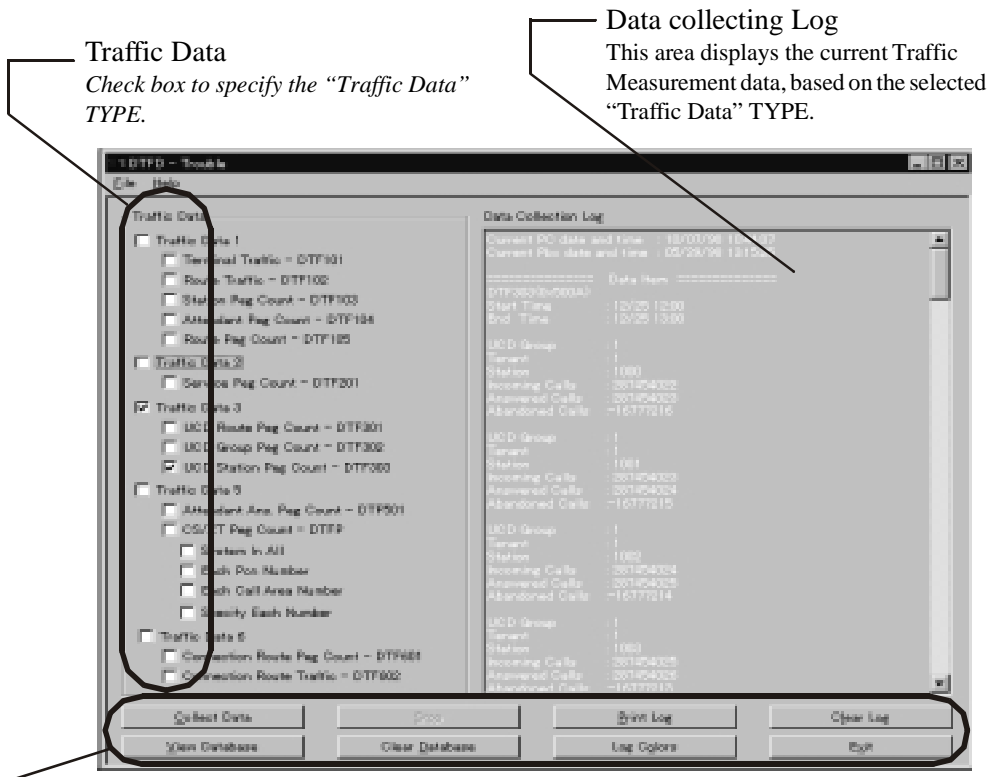
	Measurement “TYPE” (by ATRF Command)	Command Name	Full Command Name
1	Terminal Traffic	DTF101	Display of Terminal Traffic Data
2	Route Traffic	DTF102	Display of Route Traffic Data
3	Station Peg Count	DTF103	Display of Station Peg Count Data
4	ATTCON Peg Count	DTF104	Display of Attendant Peg Count Data
5	Route Peg Count	DTF105	Display of Route Peg Count Data
6	Service Peg Count	DTF201	Display of Service Peg Count Data
8	UCD Route Peg Count	DTF301	Display of UCD Route Peg Count Data
9	UCD Group Peg Count	DTF302	Display of UCD Group Peg Count Data
10	UCD Station Peg Count	DTF303	Display of UCD Station Peg Count Data
15	ATT Answer Peg Count	DTF501	Display of Attendant Answering Peg Count Data
18	Connection Route Peg Count	DTF601	Display of Connection Route Peg Count Data
19	Connection Route Traffic	DTF602	Display of Connection Route Traffic Data

When performing traffic measurement *on a network basis (via TCP/IP)*:

	Measurement “TYPE” (by ATRFN Command)	Command Name	Full Command Name
1	Terminal Traffic	DTF101N	Display of Terminal Traffic Data for Fusion Network
2	Route Traffic	DTF102N	Display of Route Traffic Data for Fusion Network
3	Station Peg Count	DTF103N	Display of Station Peg Count Data for Fusion Network
4	ATTCON Peg Count	DTF104N	Display of Attendant Peg Count Data for Fusion Network
5	Route Peg Count	DTF105N	Display of Route Peg Count Data for Fusion Network
6	Service Peg Count	DTF201N	Display of Service Peg Count Data for Fusion Network
8	UCD Route Peg Count	DTF301N	Display of UCD Route Peg Count Data for Fusion Network
9	UCD Group Peg Count	DTF302N	Display of UCD Group Peg Count Data for Fusion Network
10	UCD Station Peg Count	DTF303N	Display of UCD Station Peg Count Data for Fusion Network
15	ATT Answer Peg Count	DTF501N	Display of Attendant Answering Peg Count Data for Fusion Network
18	Connection Route Peg Count	DTF601N	Display of Connection Route Peg Count Data for Fusion Network
19	Connection Route Traffic	DTF602N	Display of Connection Route Traffic Data for Fusion Network

Note: For information on the command display images, see [Figure 6-22](#), [Figure 6-23](#), and [Figure 6-24](#).

Figure 6-22 shows the DTFD command display image (example). The DTFD/DTFDN command should look similar to this.



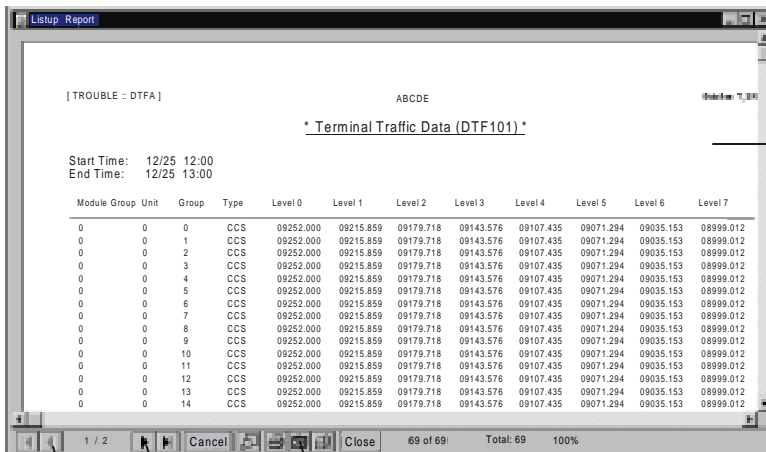
- **Collect Data**
Used to collect the Traffic report with regard to the selected "Traffic Data" TYPE. The result test is shown in the "Data Collection Log" display area.
- **Stop**
Used to quit the currently performed Traffic Data collection.
- **Print Log**
Used to print out the text data now displayed in the "Data Collection Log" area
- **View Database**
Used to view the whole data (based on the selected "Traffic Data" TYPE), so far stored in the database. More details are shown in figure 6-11-3.
- **Clear Database**
Used to delete (clear) the whole data (based on the selected "Traffic Data" TYPE), so far stored in the database.
- **Log Colors**
Used to designate/change the text font color of the "Data Collection Log" display area.
- **Exit**
Used exit this command. (Note that the database contents are not cleared by pressing this button.)

Figure 6-22 DTFD Command Display Image (Example)

Figure 6-23 shows a sample image of the “Listup Report” window for the DTFD/DTFDN command. This window appears by taking the following operations, and is used to obtain a sequence of Traffic data, so far collected and stored in the database. The window is also used to save the Traffic data text (now displayed in the window) onto your desired PC directory.

- To activate this window:

1. Designate a specific “Traffic Data” TYPE out of the DTFD/DTFDN command check boxes. (see Figure 6-22).
2. Press the “View Database” button on the left-bottom part of the DTFD/DTFDN command (see Figure 6-22).



Display Area
 This area displays the details on the Traffic report, specified by the “Page (UP)/Page (DOWN)” buttons. Shown here is an example of a certain first page of “Terminal Traffic Data (DTF101).”

Save Text File
 When saving the currently displayed text page, press this button. Then, a dialog box, as shown in Figure 6-24, appears.

Page (UP)
 Page (DOWN)
 Any Traffic data, now in the database, can easily be found via these buttons. Select “UP” or “DOWN,” according to the text display pattern: “the newest the first, the oldest the last.”

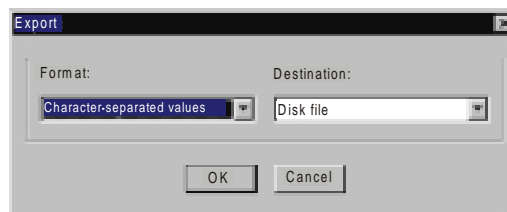
Note

Note: When this window is activated, the initial text to appear is the newest file data, out of a sequence of Traffic reports. Like this, the newest text (in the database) appears on the first page, and the next new, the next page.

Figure 6-23 “Listup Report” Window when “View Database” is Selected (Example)

The dialog box, as shown below, appears, if the “Save Text File” button is selected on the “Listup Report” window (see Figure 6-23 above). If the file is to be saved:

1. Select “*Character-separated values*” on the “Format” list box.
2. Select “*Disk file*” on the “Destination” list box.
3. Click **OK**.



After these steps, a new dialog, asking the saved file name and directory, also appears. Then, complete the data saving by filling out these necessary items.

Figure 6-24 “Export” Dialog for Traffic Report Text File Saving

SYSTEM OPERATIONS

(3) Service Conditions (when performing Traffic Measurement via TCP/IP)

- (a) The NDM (network-level) data for the traffic measurement order is replaced/updated, at each time the system is initialized or data change is requested from the ATRFN command.
- (b) When the network-level data is once assigned via the ATRFN command, the node-level data for ATRF command cannot be changed or modified.
- (c) When the network-level data is once assigned via the ATRFN command, the already assigned data by the ATRF command is not cleared, but becomes ineffective.
- (d) When a data transfer error occurs, the following are performed in order:
 - Traffic measurement is suspended momentarily and system message is displayed (notification of fault)
 - Traffic measurement, concerning all the remaining data except for the fault-involved one, is resumed
 - Retry is made repeatedly for the transfer of fault-involved data, until the fault has been eradicated
 - If the fault hasn't been eradicated still until the time of next measurement routine, the data is finally discarded, and next traffic measurement routine starts
- (e) When the same Individual ATT Numbers exist on the network, the traffic measurement concerning the ATTCON/DESKCON cannot be performed correctly.

9. OFFICE DATA MANAGEMENT

This section explains how to manage various kinds of data such as Call Forwarding Data, Individual Speed Calling Data, and Office Data, etc.

9.1 Office Data Stored Locations

The office data is stored in the memory (MEM) and on the Hard Disk (HD). While the system is in service, it operates by the office data stored in the memory. Should the contents of the office data be destroyed due to trouble, the system restarts its operations by loading the office data from the hard disk into the memory. The office data of the system in operation is being backed up by the hard disk.

9.2 Office Data Preservation

Since the PBX keeps operating by the assigned office data, be sure to preserve the latest office data. If the office data is not preserved, all office data must be reassigned if the contents of the data memory have been destroyed, because of trouble occurrence, etc. The system will remain in a system down state until reassignment of the office data is complete.

Practice to verify and confirm the valid office data by routine maintenance is considered an effective means to prevent loss of the office data and occurrence of trouble due to the office data. For this reason, be sure to keep the following items near the system at all times so that they may be available when needed.

(1) Office Data Programming Sheets

As the most up-to-date data must be recorded in the sheets, be sure to make entries by pencil.

(2) Floppy Disks for Data Saving

To back up the office data stored on the HD, use floppy disks. The necessary number of Floppy Disks (FD) is determined by the following factors:

- Mounting capacity of office data depends upon the system data (SYS1, Index30).
- Each floppy disk can save 1MB of data. After a large-scale office data change, in particular which includes system data, unpredictable failures might occur. To deal with such failures, prepare an FD for saving the office data before the changing. In addition, prepare an FD for saving the latest office data.

SYSTEM OPERATIONS

9.3 Office Data Management Procedure

The procedure generally taken when changing the office data is shown below. If your system uses software Release 1 or 2, refer to [Figure 6-25](#). If the software is Release 3 or later, refer to [Figure 6-26](#).

For systems using software Release 1 or 2

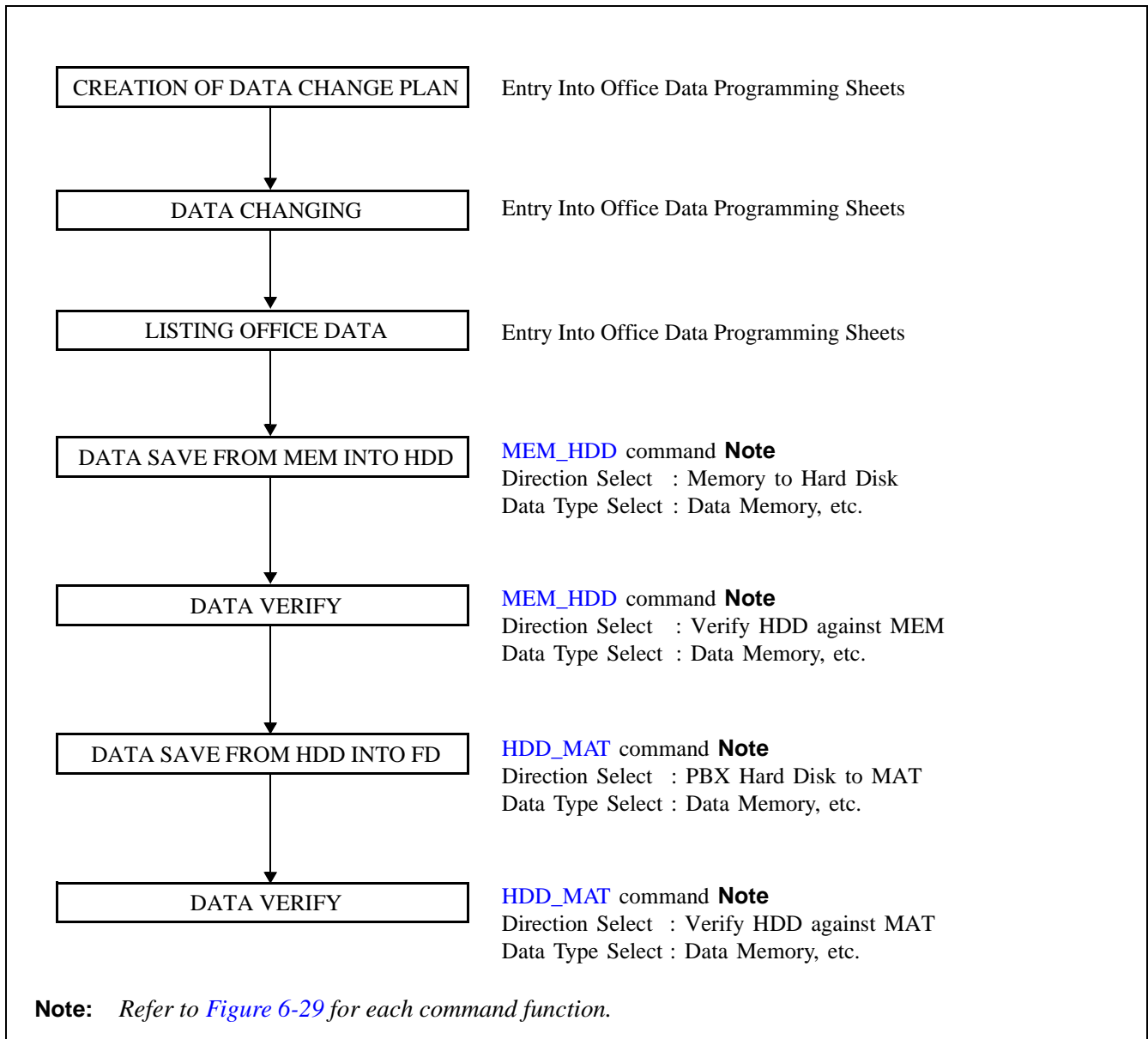


Figure 6-25 Office Data Change Procedure (for Release 1 or 2)

For systems using software Release 3 or Later

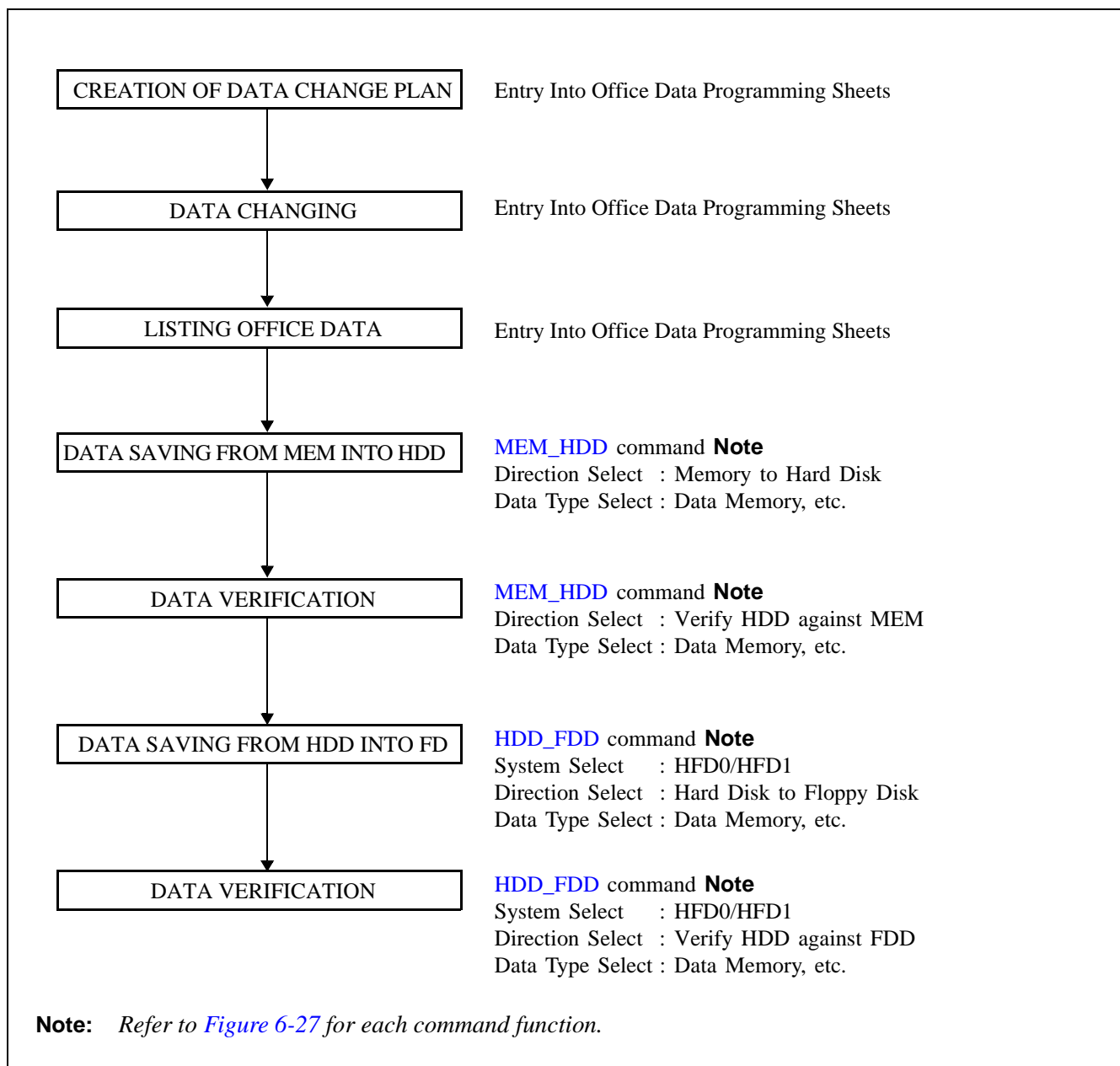


Figure 6-26 Office Data Change Procedure (for Release 3 or Later)

SYSTEM OPERATIONS

Figure 6-27 shows the function of three backup commands: HDD to FDD, HDD to MAT, and MEM to HDD.

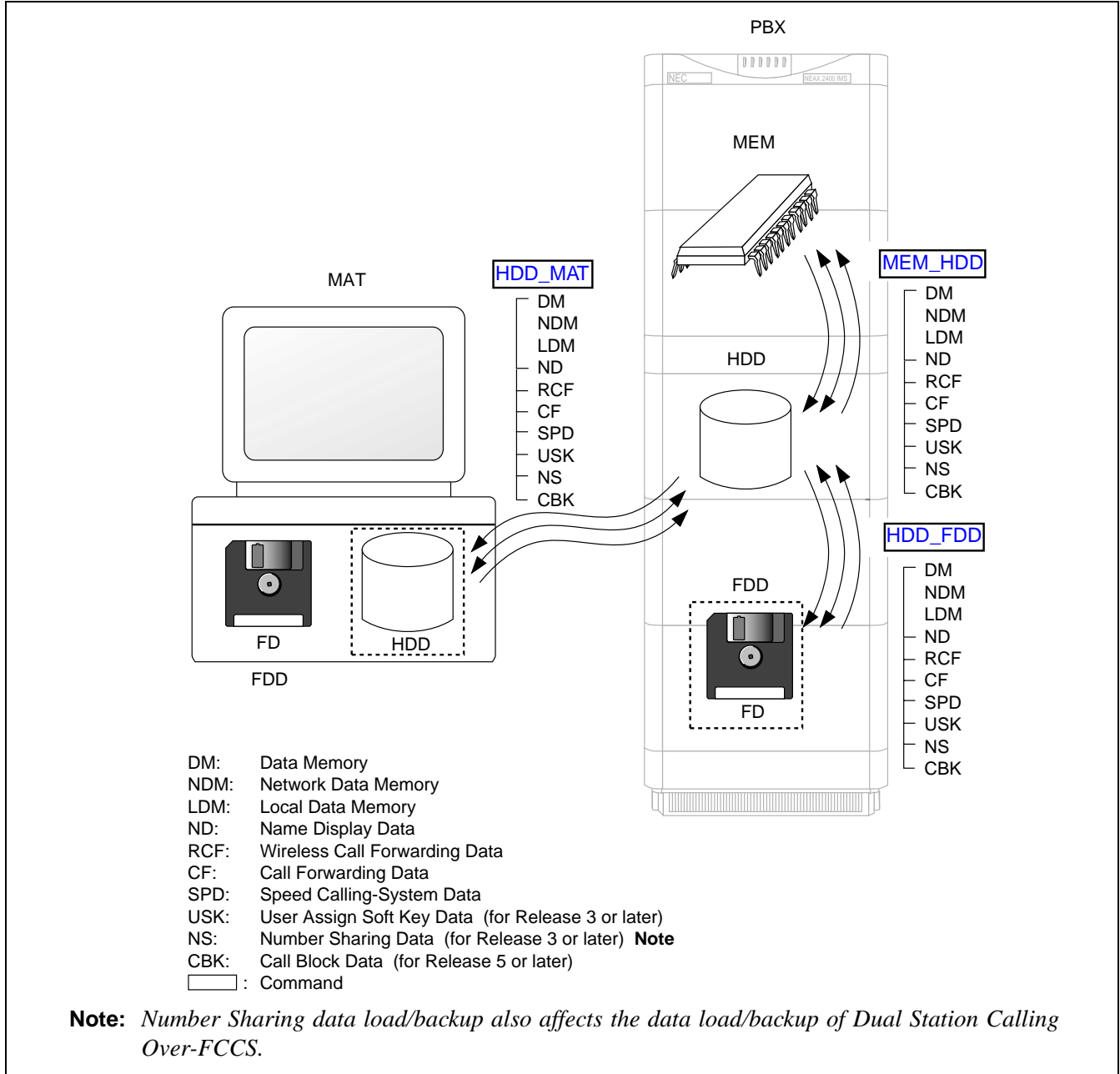


Figure 6-27 Backup Commands

9.4 Call Forwarding Data/Individual Speed Calling Data Management

Call Forwarding Data and Individual Speed Calling Data are changed at any time because these services are set/cancelled from the station involved. In the PBX, these data are backed up by FD.

Call Forwarding Data: HDD_MAT command

Individual Speed Calling Data: HDD_MAT command

9.5 One-Touch Speed Call Memory Data Management

One-Touch Speed Call Memory data of D^{term} is destroyed when DLC/ELC circuit card has been replaced with a spare or its mounting slot has been changed. The data can be backed up onto FD before replacement or mounting slot change of DLC/ELC card.

Backup: BOSD command

9.6 Data Management Commands

COMMAND	COMMAND FULL NAME
BOSD	One-Touch Speed Call Memory Data Backup
HDD_FDD	Data Control Between HDD and FDD
HDD_MAT	Data Control Between HDD and MAT
MEM_HDD	Data Control Between Memory and HDD

SYSTEM OPERATIONS

10. TEST OPERATIONS OF VARIOUS KINDS

This section explains the methods of test operations (shown in [Figure 6-28](#)) to be performed in case a fault recovery occurs.

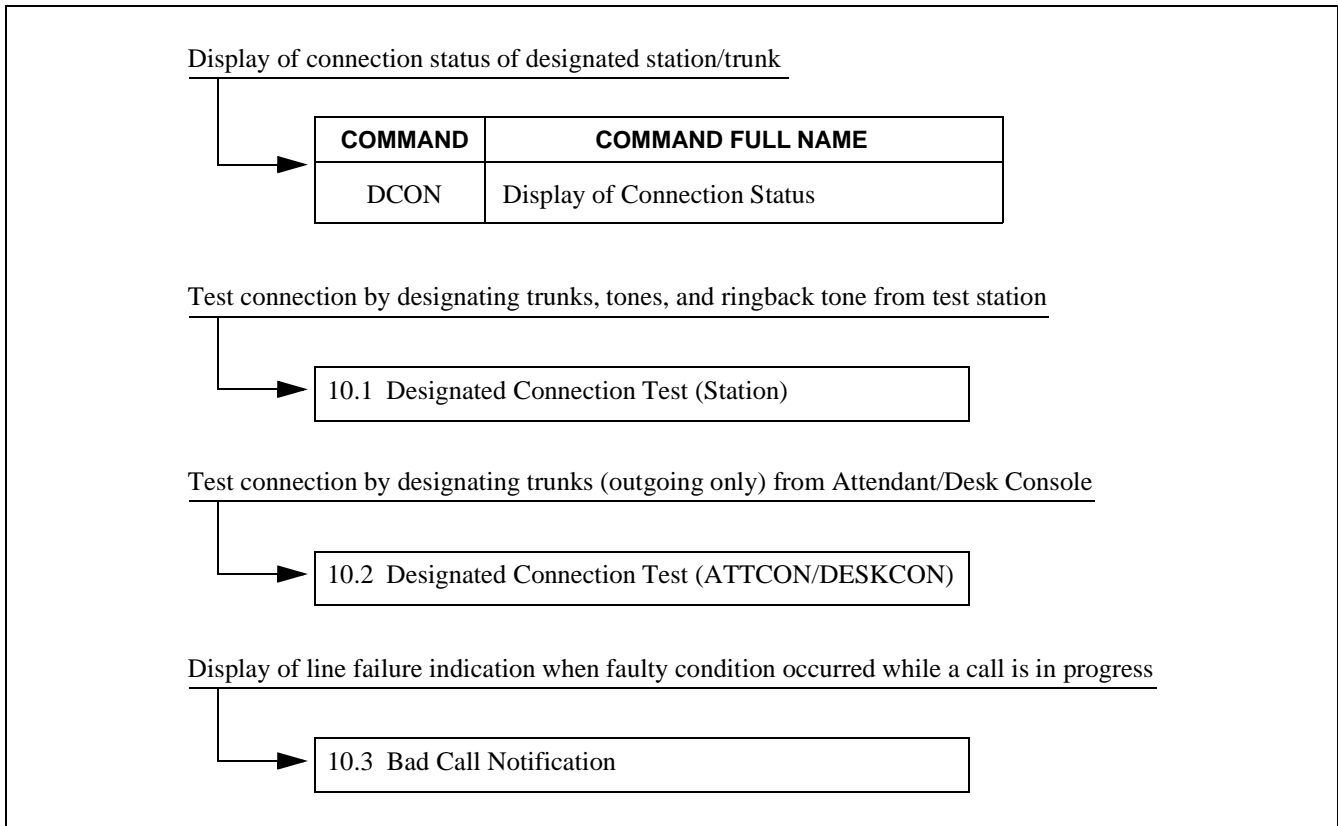


Figure 6-28 Test Operation Method Examples

10.1 Designated Connection Test (Station)

(1) General

The purpose of this test is to confirm the operations related to a trunk or tone that is designated from the test station. Refer to [Table 6-6](#). The test result displays on the MAT screen as system message [6-I].

Table 6-6 Designated Connection Test (Station) Operations

ITEM	TEST ITEM	CONTENT OF CONFIRMATION	REMARKS
1	Register (ORT/IRT)	Whether the dialed numbers (1, 2, 3, 4, 5, 6, 7, 8, 9, 0, *, #) can be received correctly is to be confirmed.	
2	Sender	Whether the numbers (1, 2, 3, 4, 5, 6, 7, 8, 9, 0, *, #) can all be sent out is to be confirmed.	
3	3-Party Conference Trunk	By connecting the test tone to each port of a 3-Party Conference Trunk, whether the test tone can be heard is to be confirmed.	
4	Tone	Various kinds of tone are to be confirmed.	
5	Interrupted Ringing (IR)	Interrupt ringing (IR) is to be confirmed.	
6	Trunk	Connections of trunks are to be confirmed.	

(2) Precaution

Designated connection to a trunk—A designated connection to trunk is limited only to an individual line of either 2nd DT system or sender system.

SYSTEM OPERATIONS

(3) Designated Connection Test Procedure

(a) Register Test Procedure

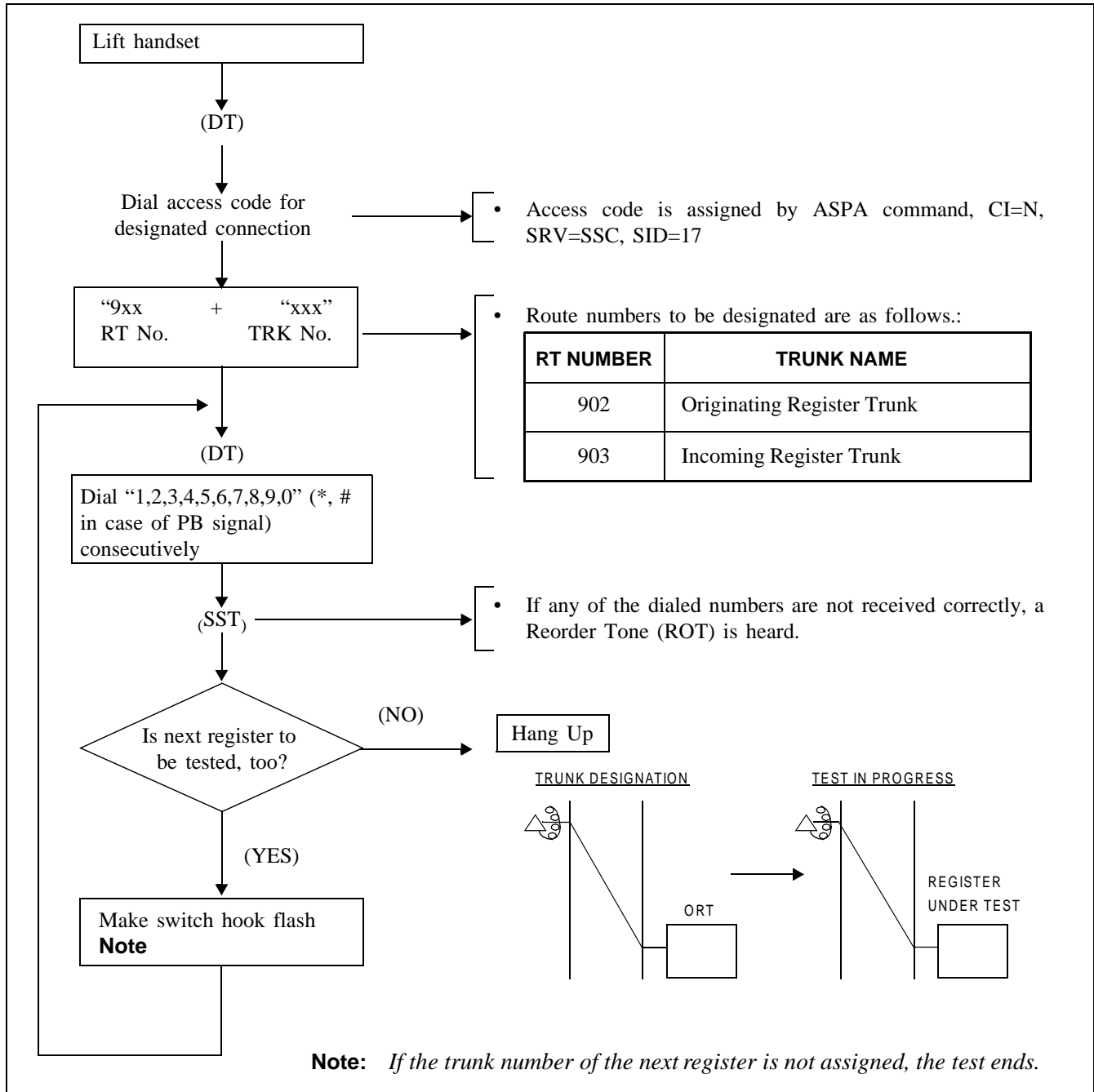


Figure 6-29 Register Test Procedure/Connection Diagram

(b) Sender Test Procedure

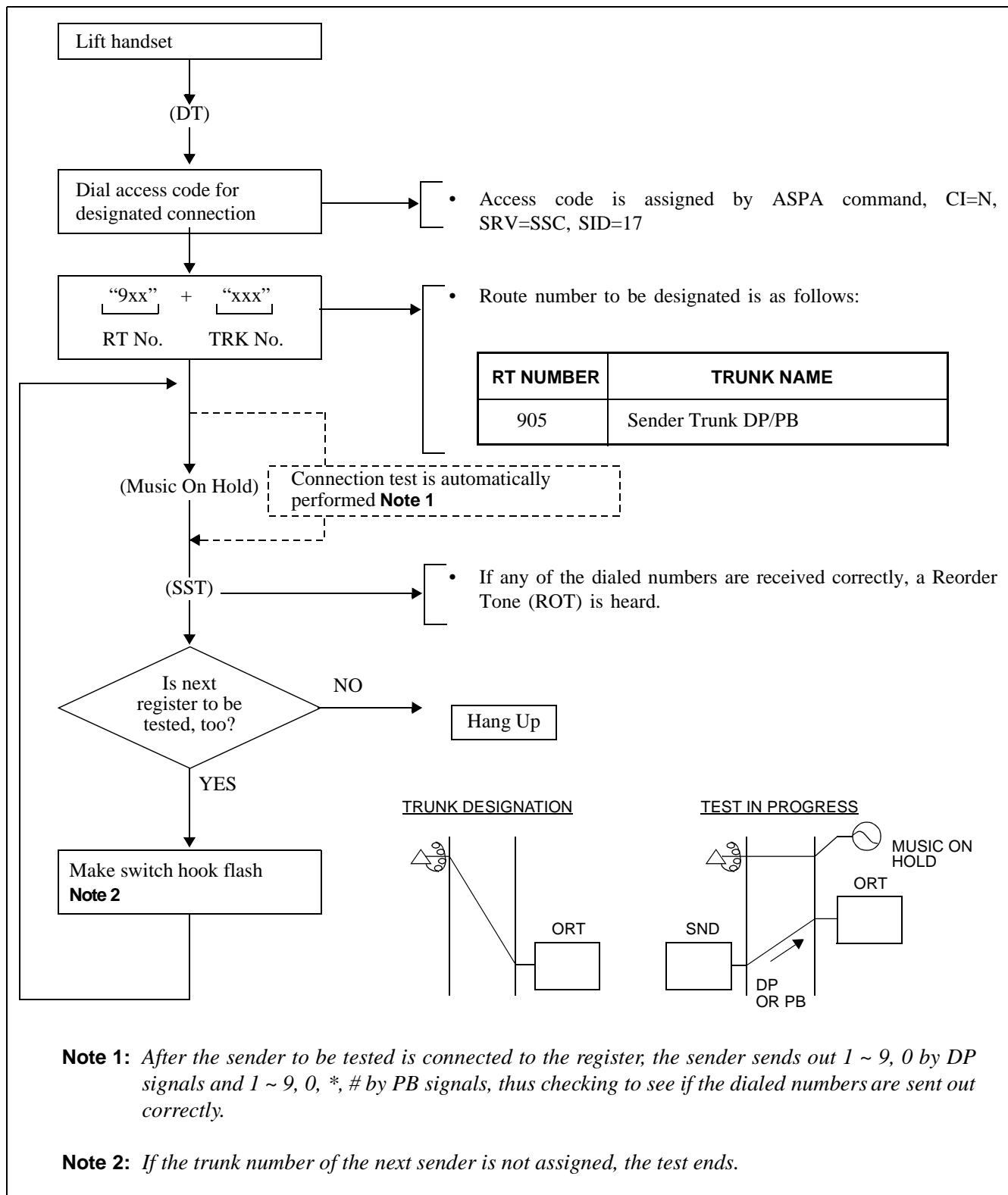


Figure 6-30 Sender Test Procedure/Connection Diagram

SYSTEM OPERATIONS

(c) 3-Party Conference Trunk Test Procedure

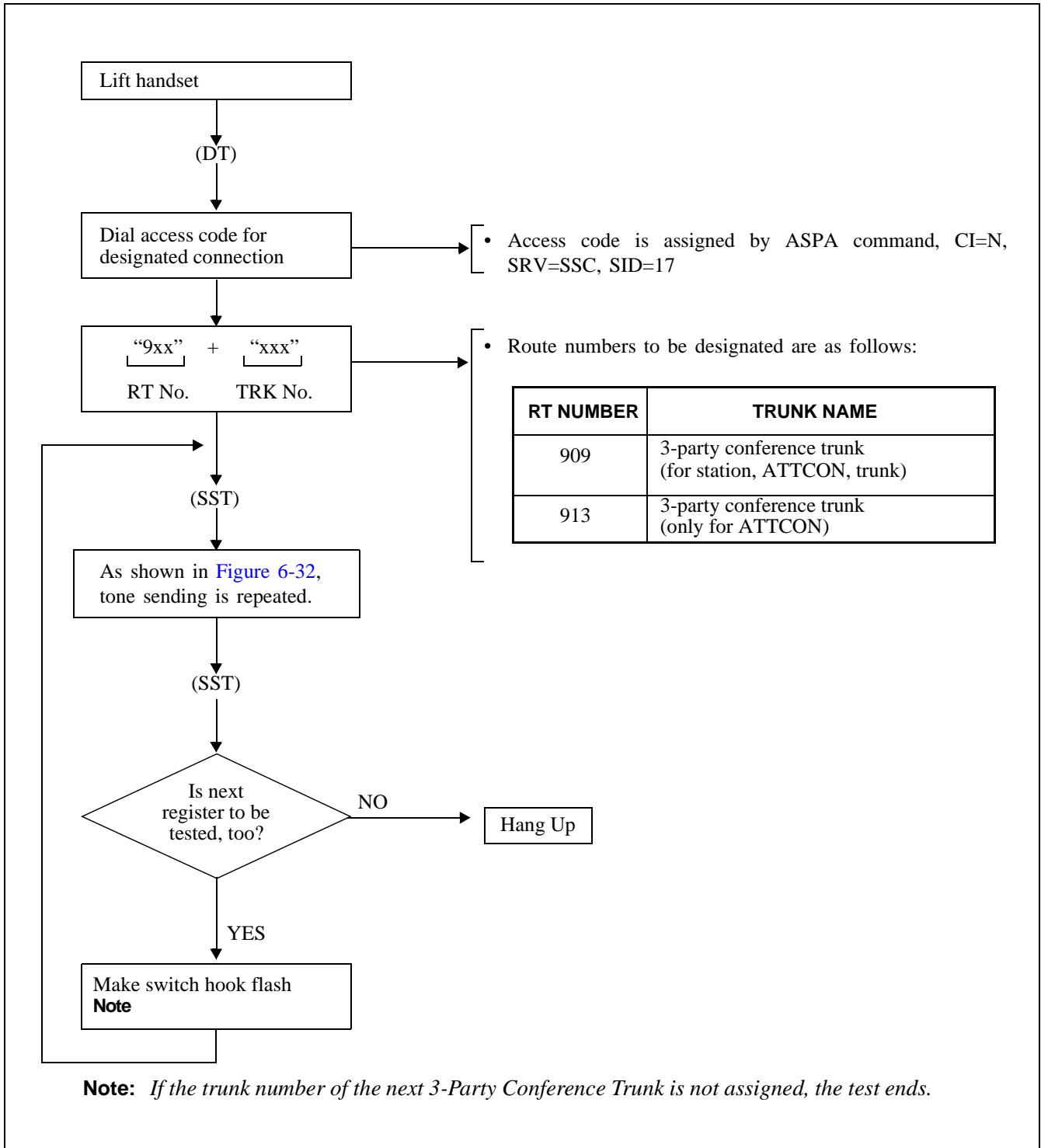


Figure 6-31 3-Party Conference Test Procedure

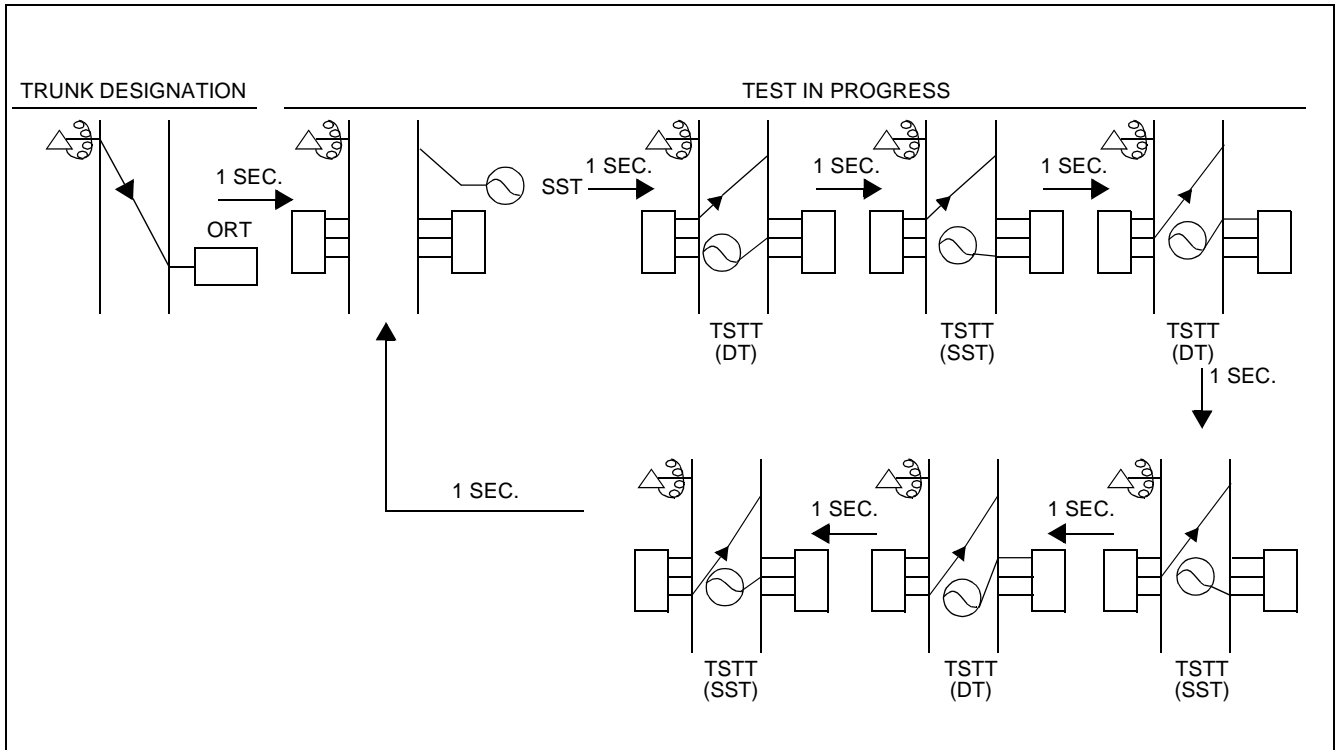


Figure 6-32 3-Party Conference Test Connection Diagram

SYSTEM OPERATIONS

(d) Tone Test Procedure

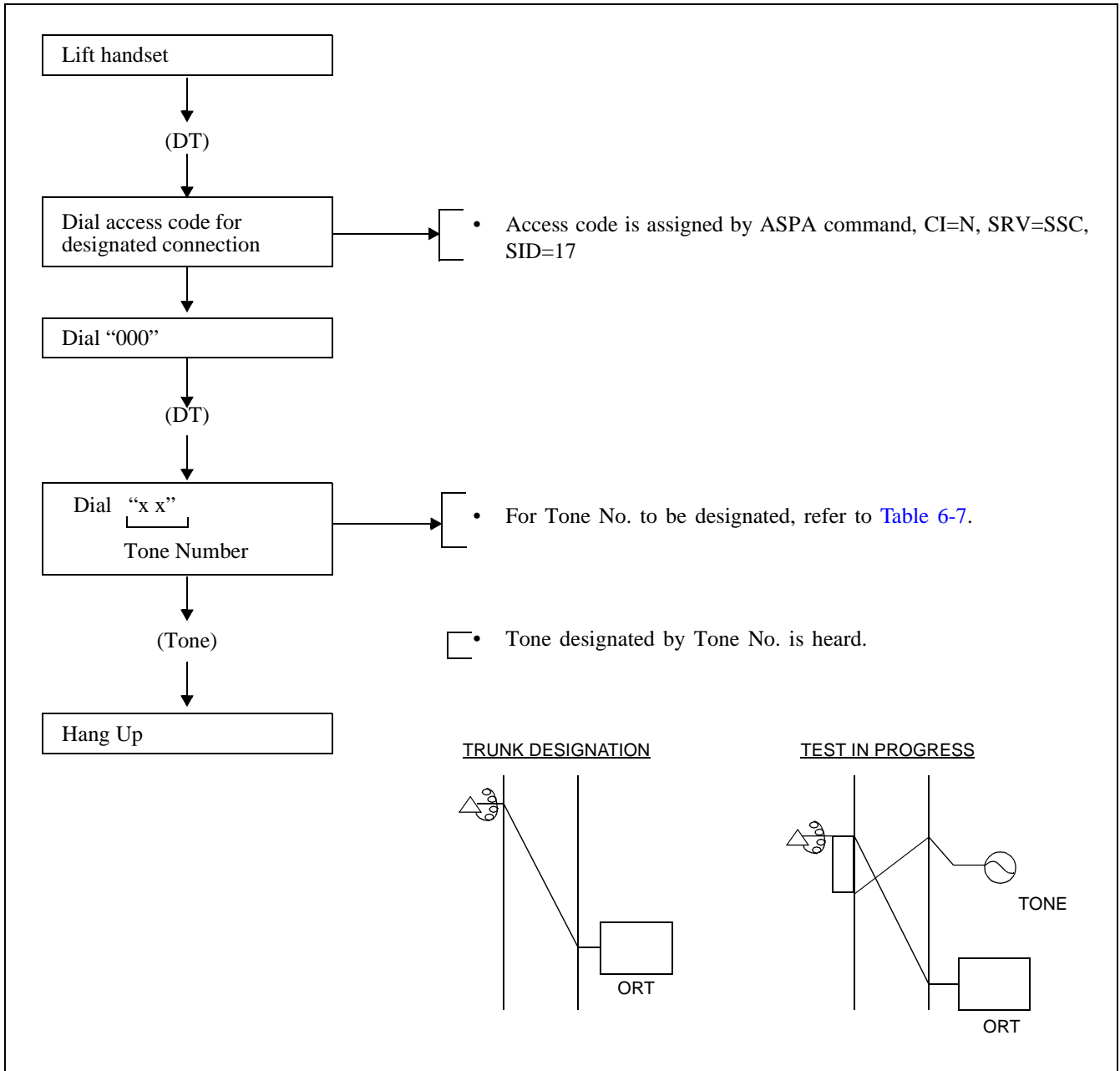


Figure 6-33 Tone Test Procedure/Connection Diagram

Table 6-7 Tone Numbers

TONE NO.	KIND OF TONE	REMARKS
00	Dial Tone (DT)	
01	Special Dial Tone (SPDT)	
02	Ring Back Tone (RBT)	
03	Continuous Ring Back Tone (CRBT)	
04	Busy Tone (BT)	
05	Reorder Tone (ROT)	
06	Service Set Tone (SST)	
07	Second Dial Tone (SDT)	
08	No Tone	
09	Sender Transmitting Tone (SDTT)	
10	Call Waiting Ring Back Tone (CWRBT)	
11	No Tone	
12	No Tone	
13	Test Tone (TSTT)	
14	Music On Hold (MSC)	
15	No Tone	

SYSTEM OPERATIONS

(e) Interrupt Ringing (IR) Test Procedure

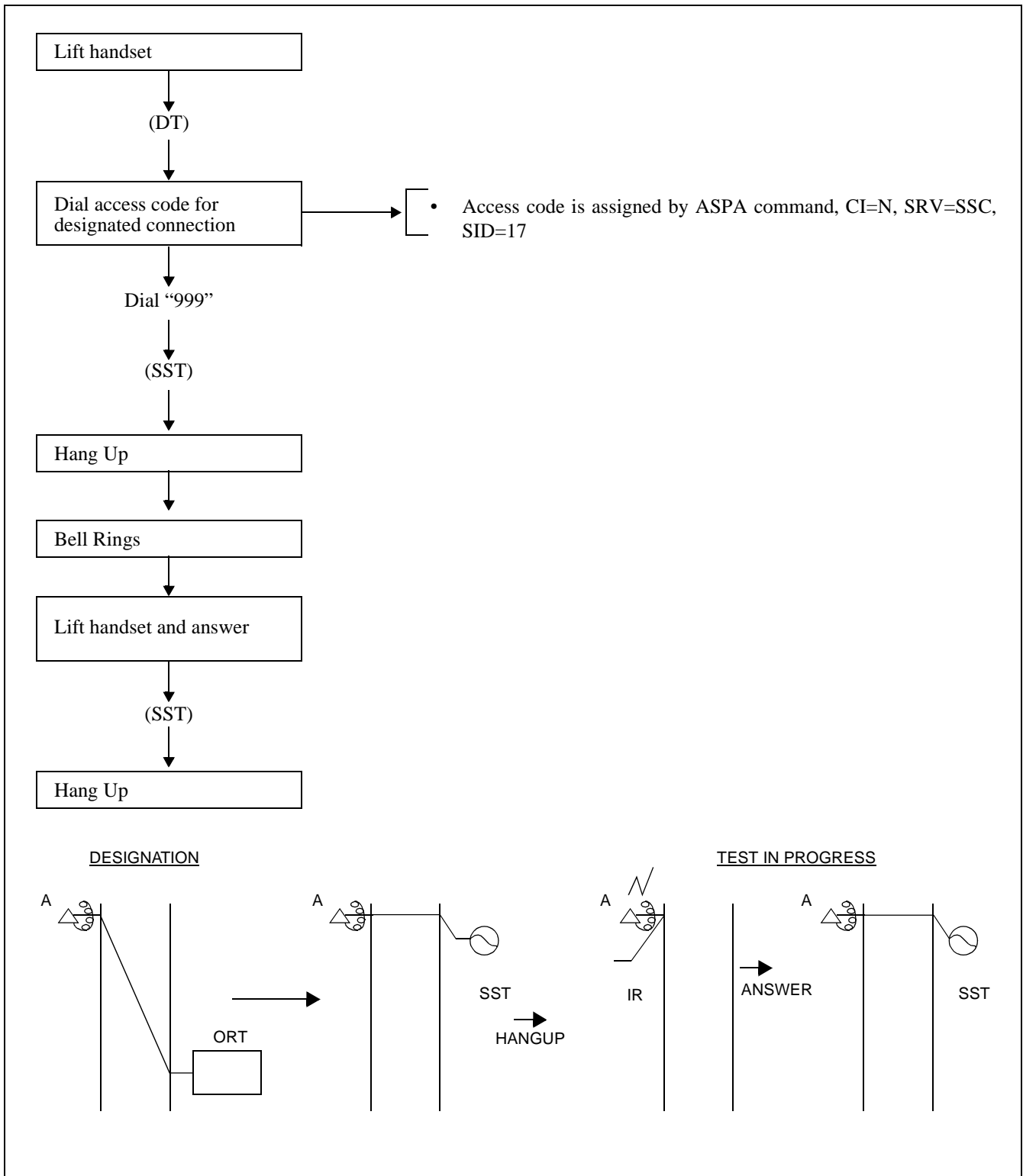


Figure 6-34 Interrupt Ringing (IR) Test Procedure/Connection Diagram

(f) Trunk Test Procedure

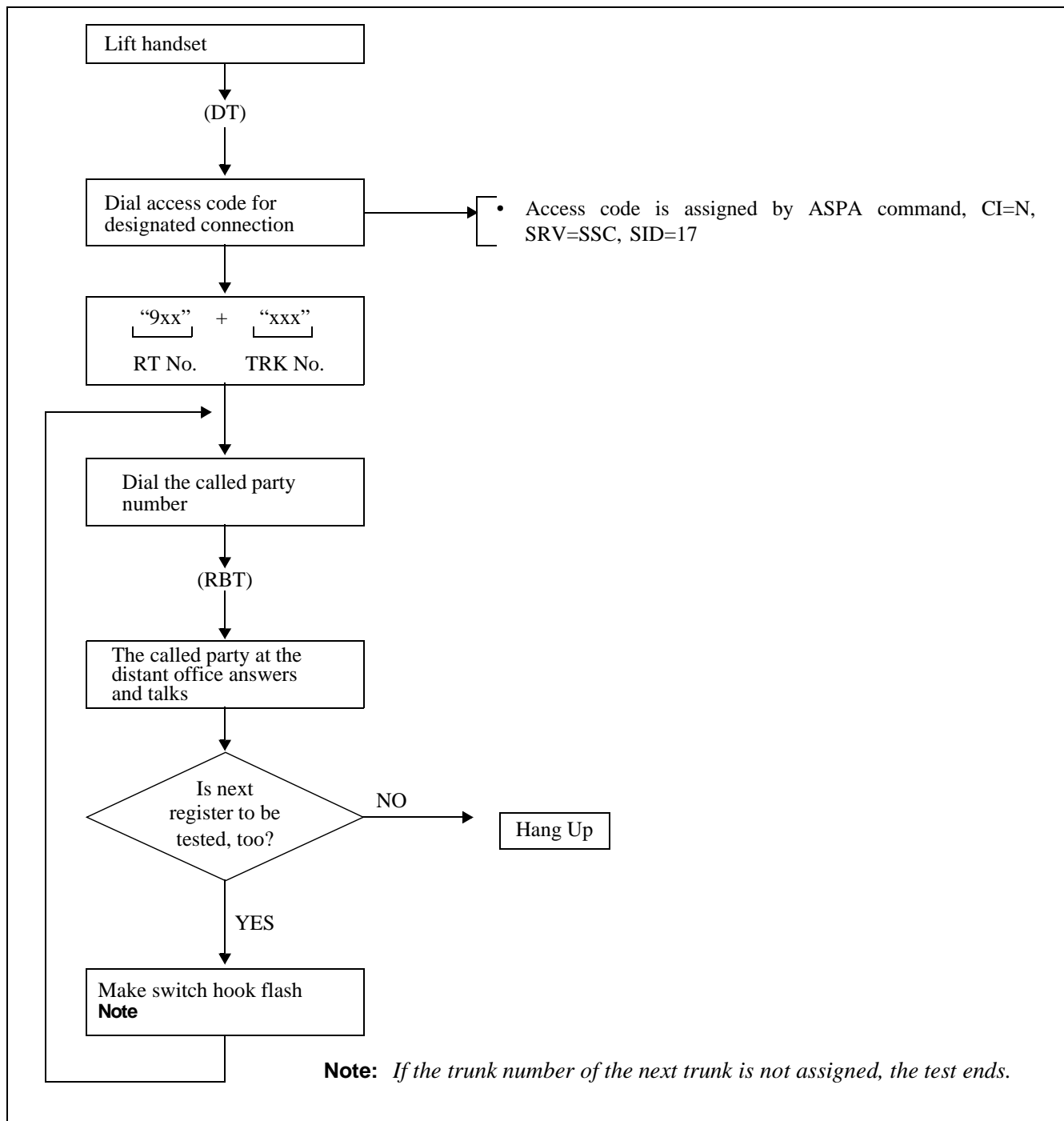


Figure 6-35 Trunk Test Procedure

SYSTEM OPERATIONS

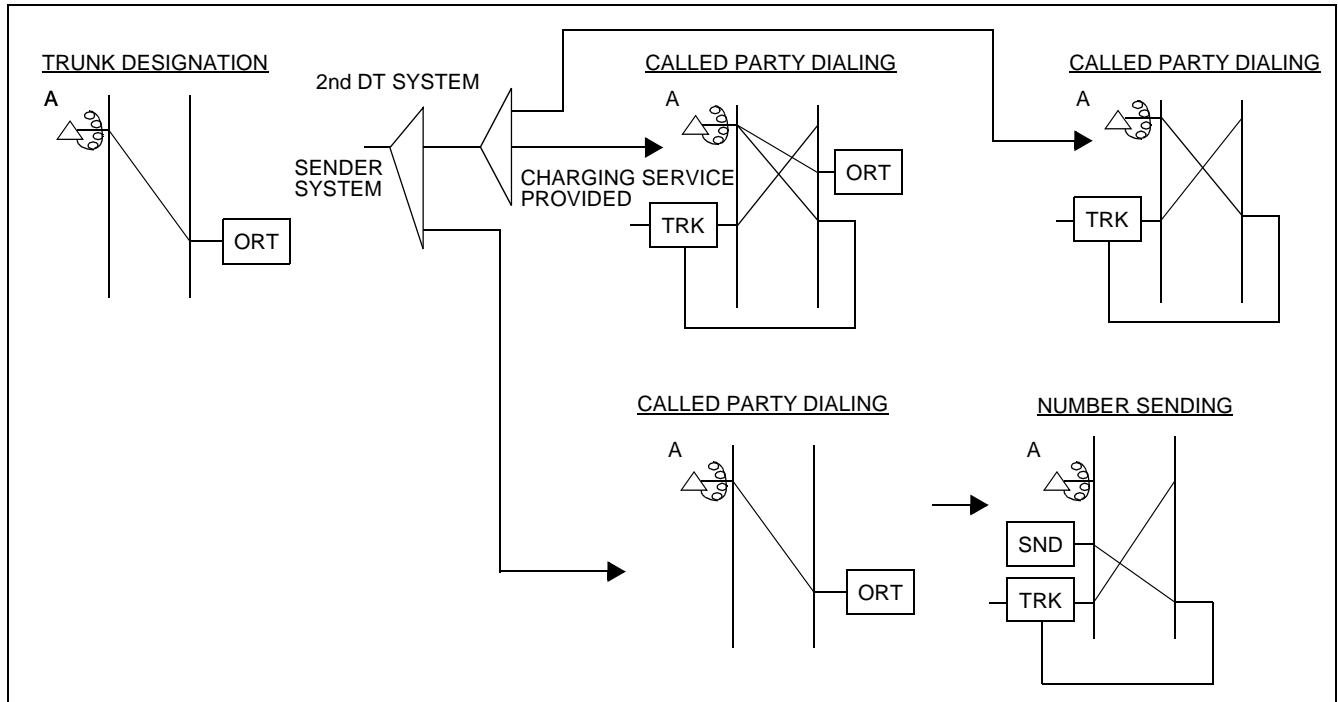


Figure 6-36 Trunk Test Connection Diagram

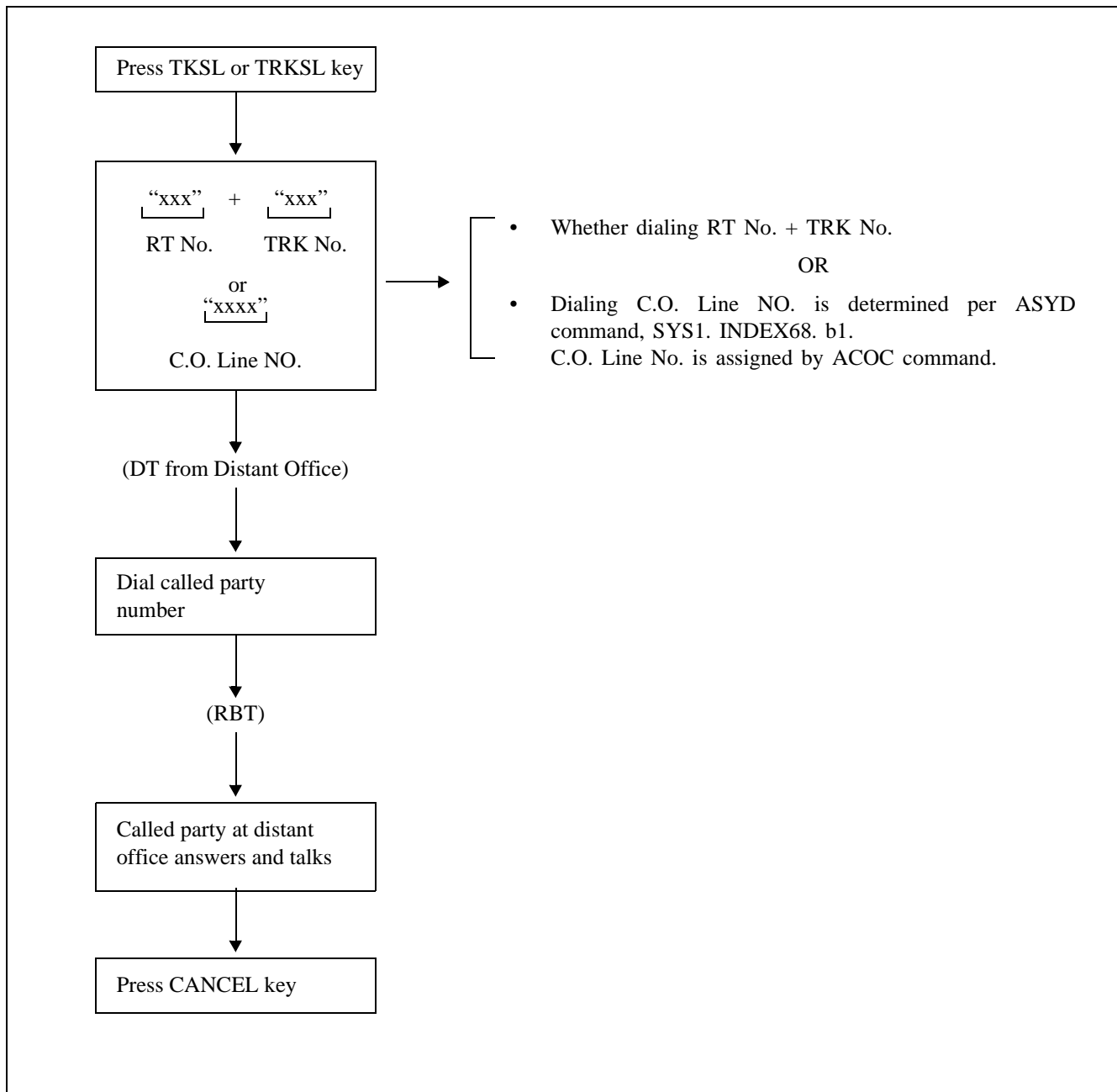
10.2 Designated Connection Test (DESKCON/ATTCON)

(1) General

The purpose of this test is to confirm the operations related to a trunk which has been designated from the Desk/Attendant Console (DESKCON/ATTCON).

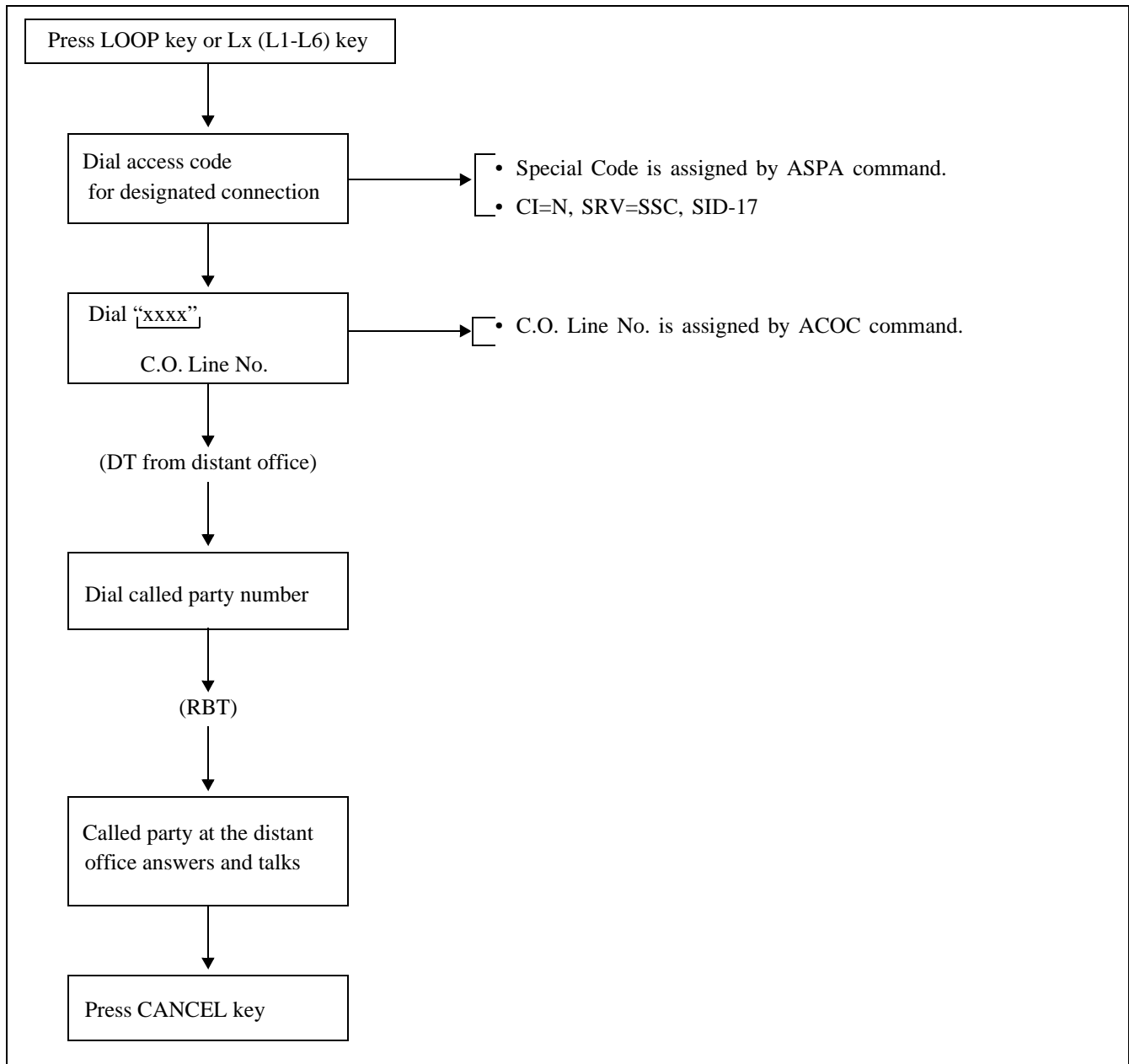
(2) Test Procedure

(a) Trunk seizure with TKSL key



SYSTEM OPERATIONS

(b) Trunk seizure by access code dialing



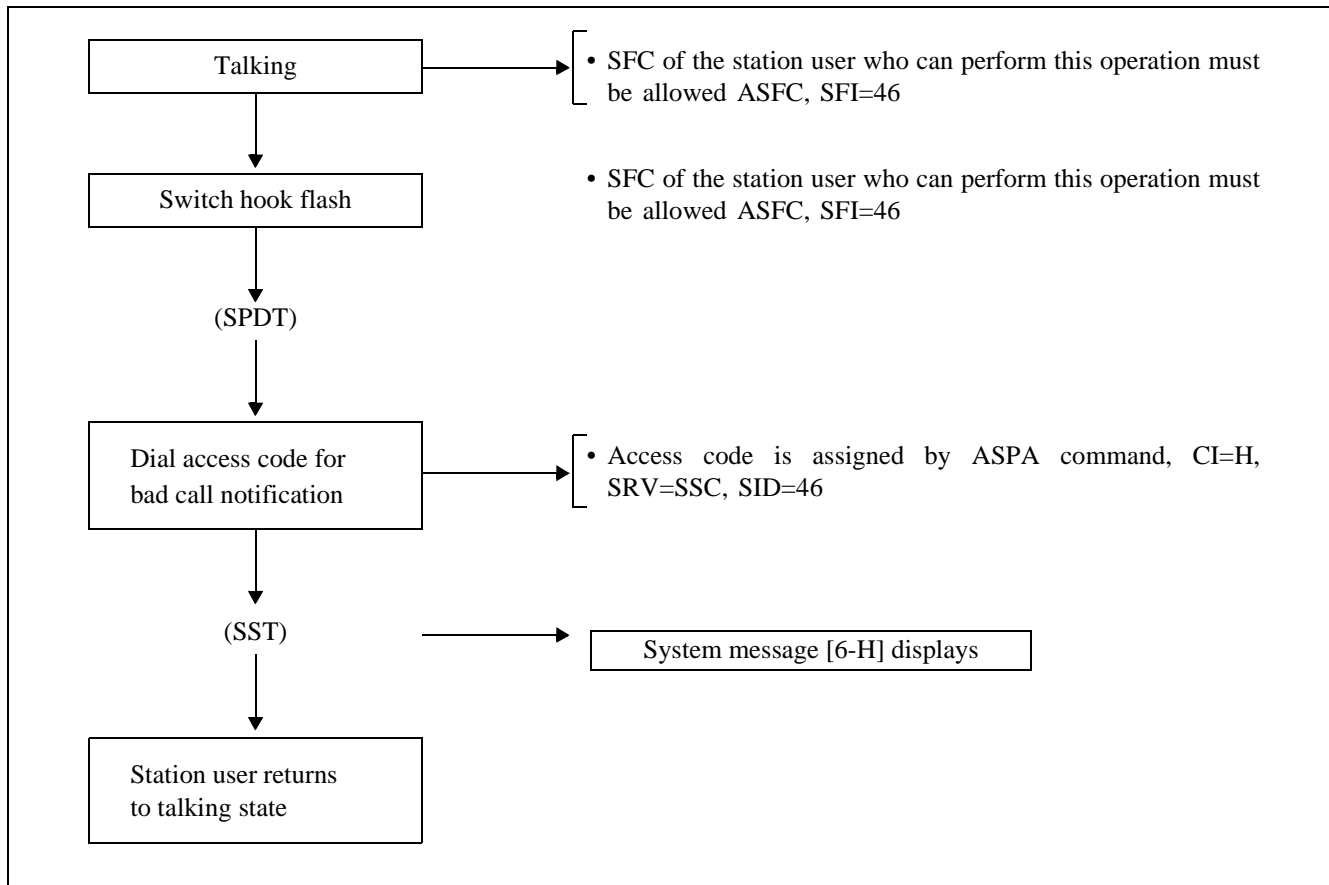
10.3 Bad Call Notification

(1) General

When a station user has trouble because of hearing noise during a call, or has other difficulty having a normal call, the line involved is recorded as a bad call notification.

The record displays on the MAT screen as system message [6-H], which indicates the recording source (Station Number), Called Station Number or Trunk Number, etc.

(2) Operating Procedure



SYSTEM OPERATIONS

11. ROUTINE DIAGNOSIS

For confirming its own servicing status, the system automatically executes self diagnosis every day, and displays the result of the diagnosis on a system message. By this function, possible causes for trouble can be discovered in an early stage and possible trouble can be prevented from remaining undetected.

11.1 Related System Data

- ASYD, SYS1, INDEX86,
 - b0 – When routine diagnosis starts, and the result of the routine diagnosis is normal, the result displays as system message [7-O].
0/1: Not displayed/To display
 - b1 – When the result of the routine diagnosis is abnormal, it displays as system message [7-P].
0/1: Not displayed/To display
 - b3, b2 – Processing at the time when Trunk Ineffective Hold is detected. **Note**

Bit		Except the trunks being held on two-way calls (station-to-station call, station-to-trunk, trunk-to-trunk call), the trunks being held at present are forcibly released	All trunks being held at present are forcibly released	LENS of the trunk detected display as system message [7-P]
b3	b2			
0	0	X	—	X
0	1	—	—	X
1	0	—	X	X

Note: *Trunk Ineffective Hold is a continuous state other than idle state within a predetermined duration while routine diagnosis is in progress. Whether it is to be detected/not detected is assigned by ASYD, SYS1, INDEX89.*

- SYS1, INDEX87, 88 - Routine Diagnosis Start Time
Start time should be such a time at which the traffic of the office is the lowest.

INDEX 87

0	2
---	---

 (Hour) 2:00 a.m. is the start time.
INDEX 88

0	0
---	---

 (Minute)

To stop the routine diagnosis, set FF respectively to INDEX87, 88.

- SYS1, INDEX89, 90 — Routine Diagnosis Items: The item corresponding to each bit is to execute once a day.
- Single System Configuration
 - INDEX89 b0 — Main Memory Check (MM Program Memory)
 0/1 = No/Yes
 - b1 — DM Check (DM = Data Memory)
 0/1 = No/Yes
 - b4 — Trunk Ineffective Hold Check
 0/1= No/Yes
 - b5 — Trunk Ineffective Hold Detection
 0/1 = No/Yes
 - INDEX90 b1 — Backup of Call Forwarding, Individual Speed Data, Name Display Data, User
 Assign Soft Key Data and Number Sharing Data to HDD (see Index 304)
 0/1 = No/Yes
 - b3 — Residual Link Detection
 0/1 = No/Yes
 - INDEX304 b0 — Individual Speed Calling Data Saving
 0/1 = Out/In Service (This data is valid when SYS1, INDEX90, b1=1)
 - b1 — Call Forwarding Data Saving
 0/1 = Out/In Service (This data is valid when SYS1, INDEX90, b1=1)
 - b3 — Name Display Data Saving
 0/1 = Out/In Service (This data is valid when SYS1, INDEX90, b1=1)
 - b4 — User Assign Soft Key Data Saving (for Release 3 or later)
 0/1 = Out/In Service (This data is valid when SYS1, INDEX90, b1=1)
 - b5 — Number Sharing Data Saving (for Release 3 or later)
 0/1 = Out/In Service (This data is valid when SYS1, INDEX90, b1=1)
- Dual System Configuration
 - INDEX89 b0 — Main Memory Check (MM Program Memory)
 0/1 = No/Yes
 - b1 — DM Check (DM = Data Memory)
 0/1 = No/Yes
 - b2 — TSW ACT/STBY Changeover for Dual Systems
 0/1 = No/Yes
 - b3 — CPU ACT/STBY Changeover for Dual Systems
 0/1 = No/Yes
 - b4 — Trunk Ineffective Hold Check
 0/1 = No/Yes
 - b5 — Trunk Ineffective Hold Detection
 0/1 = No/Yes

SYSTEM OPERATIONS

- b6 — Call Forwarding Data Clear (See Index 232)
0/1 = No/Yes
- INDEX90 b1 — Backup Call Forwarding, Individual Speed Data and Name Display Data to HDD (see Index 304)
0/1 = No/Yes
- b3 — Residual Link Detection
0/1 = No/Yes
- INDEX304 b0 — Individual Speed Calling Data Saving
0/1 = Out/In Service (This data is valid when SYS1, INDEX90, b1=1)
- b1 — Call Forwarding Data Saving
0/1 = Out/In Service (This data is valid when SYS1, INDEX90, b1=1)
- b3 — Name Display Data Saving
0/1 = Out/In Service (This data is valid when SYS1, INDEX90, b1=1)
- b4 — User Assign Soft Key Data Saving (for Release 3 or later)
0/1 = Out/In Service (This data is valid when SYS1, INDEX90, b1=1)
- b5 — Number Sharing Data Saving (for Release 3 or later)
0/1 = Out/In Service (This data is valid when SYS1, INDEX90, b1=1)

11.2 Routine Diagnosis Result

The result of routine diagnosis displays as a system message.

Normally ended: [7-O]

Abnormality detected [7-P] Refer to Chapter 3 for more details.

In case an abnormality is detected, initiate necessary processing explained in [Chapter 5](#).

12. SYSTEM CONTROL PROCEDURES

Although the system is remarkably maintenance free, maintenance technicians occasionally may confront a situation in which they have to manually control the system. This chapter describes system control procedures focusing on the following four items.

- Changeover/Make-busy/Make-busy Cancel of Equipment
- Initialization
- How to Turn On/Off the Whole System
- System Start-up

Note: *Changeover of equipment is available for common control equipment, which is provided in a dual configuration.*

12.1 Changeover/Make-Busy/Make-Busy Cancel of Equipment

12.1.1 General

This section explains system operations which are necessary for Changeover/Make-Busy/Make-Busy Cancel of equipment dividing them into the following two blocks.

- CPU Block
- Switching Block (TSW, PLO)

Prior to performing these operations, see [Figure 6-37](#) through [Figure 6-47](#) to obtain general understanding on the system configuration.

[Figure 6-37](#) shows a general block diagram of a dual-configuration system. Referring to the diagram, confirm the routes to be affected by any of the following operations:

CPU Changeover: The ACT/STBY of CPU can be changed over by using the CMOD command or operating the MBR key on the CPU front panel. If the system of CPU is changed over, the ACT/STBY of GT (in TSWM), as well as of the belonging ISAGT and LANI, are also changed over.

Note: *The changeover of CPU can be performed by operating the CPU SEL key on the EMA (PH-PC40) card. However, this method is not normally used except in cases of unavoidable circumstances. Refer to [Section 12.1.2, How to Control CPU Block](#).*

Speech Path Changeover: The ACT/STBY of Speech Path System can be changed over by using the CMOD command or operating the MBR key on the active GT circuit card. If the system of Speech Path is once changeover, all the TSW, DLKC, and MUX in the same switching block are also totally changed over.

SYSTEM OPERATIONS

PLO Changeover:

Though PLO is included in the switching block together with the TDSW, MUX, and DLKC, its ACT/STBY changeover should be performed independently by operating the MB key on the card. The changeover of PLO does not affect any other systems.

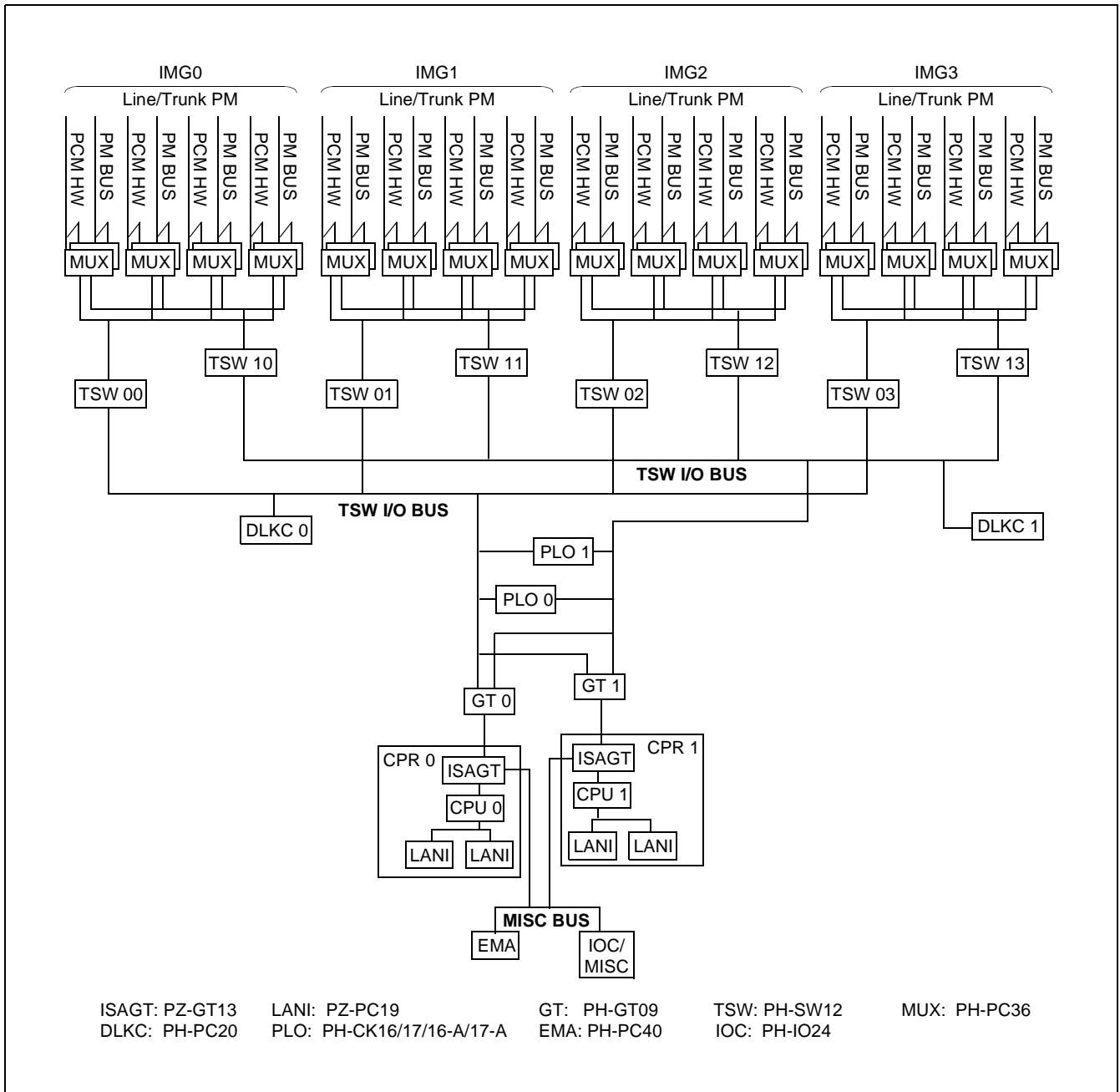


Figure 6-37 Switching Network General Block Diagram

To perform the ACT/STBY system changeover, check the lamp indicators shown in Figure 6-38, and then operate the related key.

Note 1: LED indications cited in Figure 6-38 are only an example. The indicating pattern (ON/Flash/OFF) can differ, depending on each system setting.

Note 2: STATUS 7-seg. LED provides information on ACT/STBY status of the belonging CPU. For details on the LED's checking method, refer Figure 6-41.

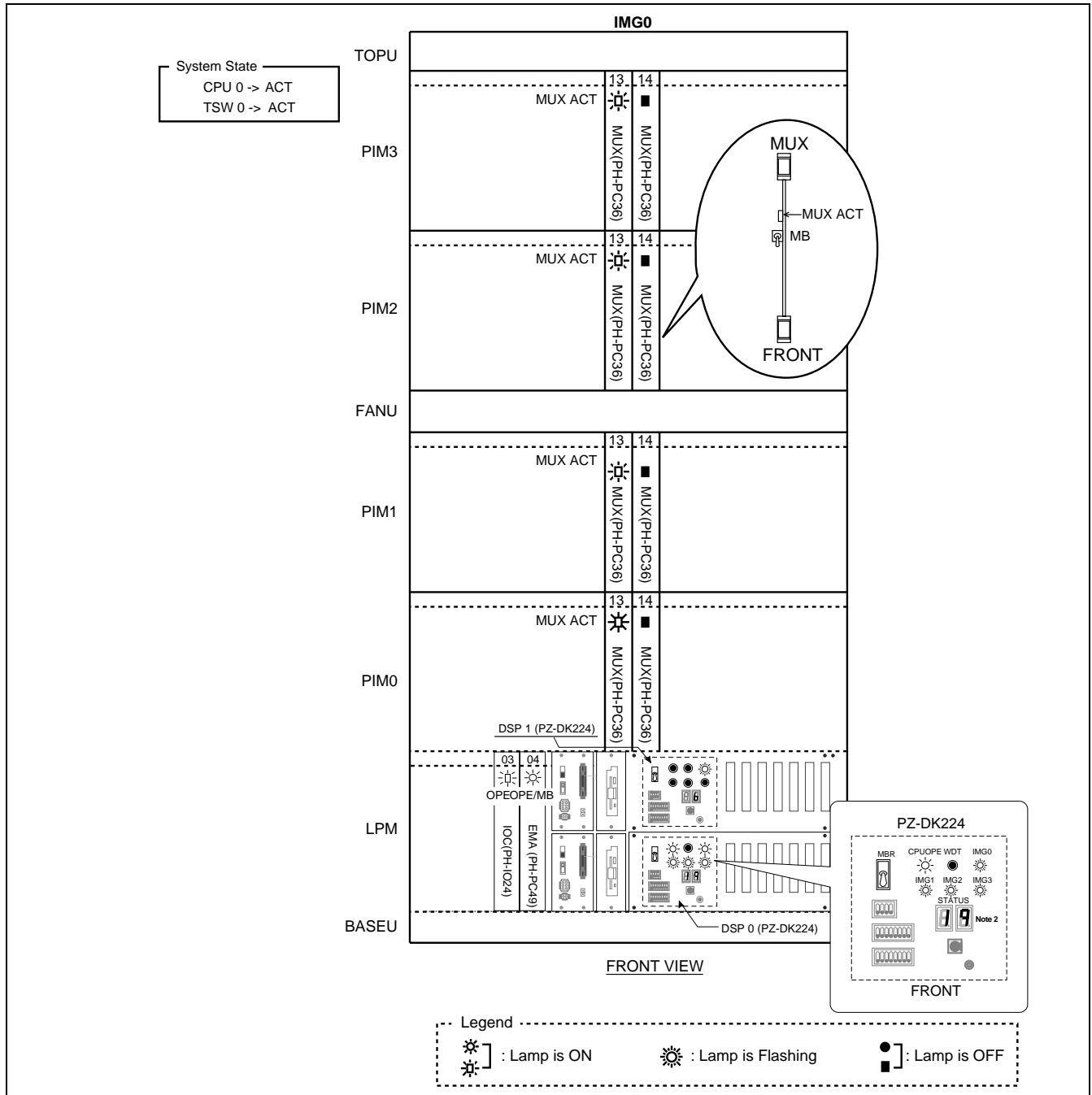


Figure 6-38 How to Check LEDs and SW Keys for System Changeover (IMG0)

SYSTEM OPERATIONS

To perform ACT/STBY system changeover, check the lamp indicators shown in [Figure 6-39](#), and then operate the related key.

Note: LED indications cited in [Figure 6-39](#) are only an example. The indicating patterns (ON/Flash/OFF) can differ, depending on each system setting.

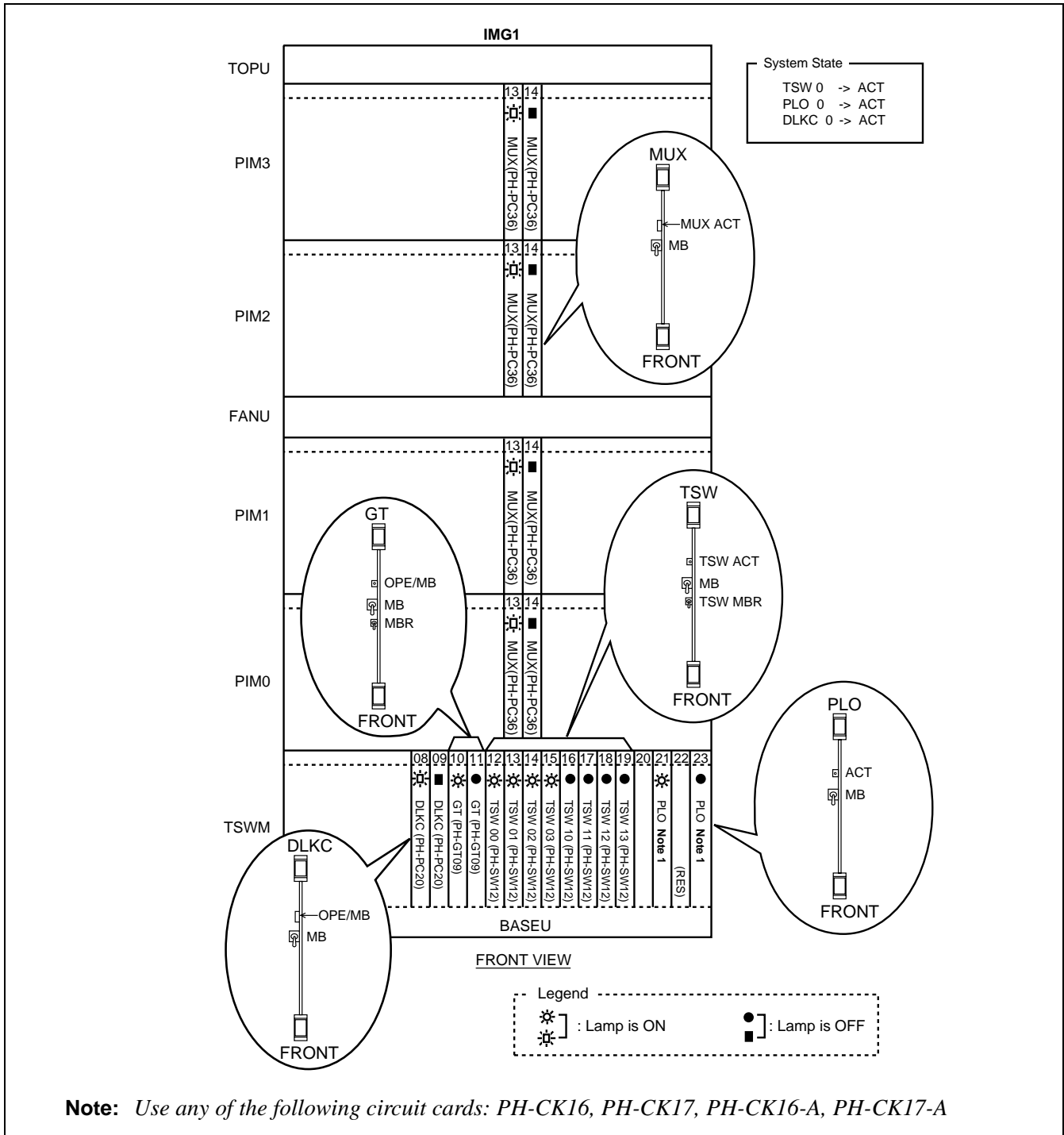


Figure 6-39 How to Check LEDs and SW Keys for System Changeover (IMG1)

To perform the ACT/STBY system changeover, check the lamp indicators shown in Figure 6-40, and then operate the related key.

Note: LED indications cited in Figure 6-40 are only an example. The indicating pattern (ON/Flash/OFF) can differ, depending on each system setting.

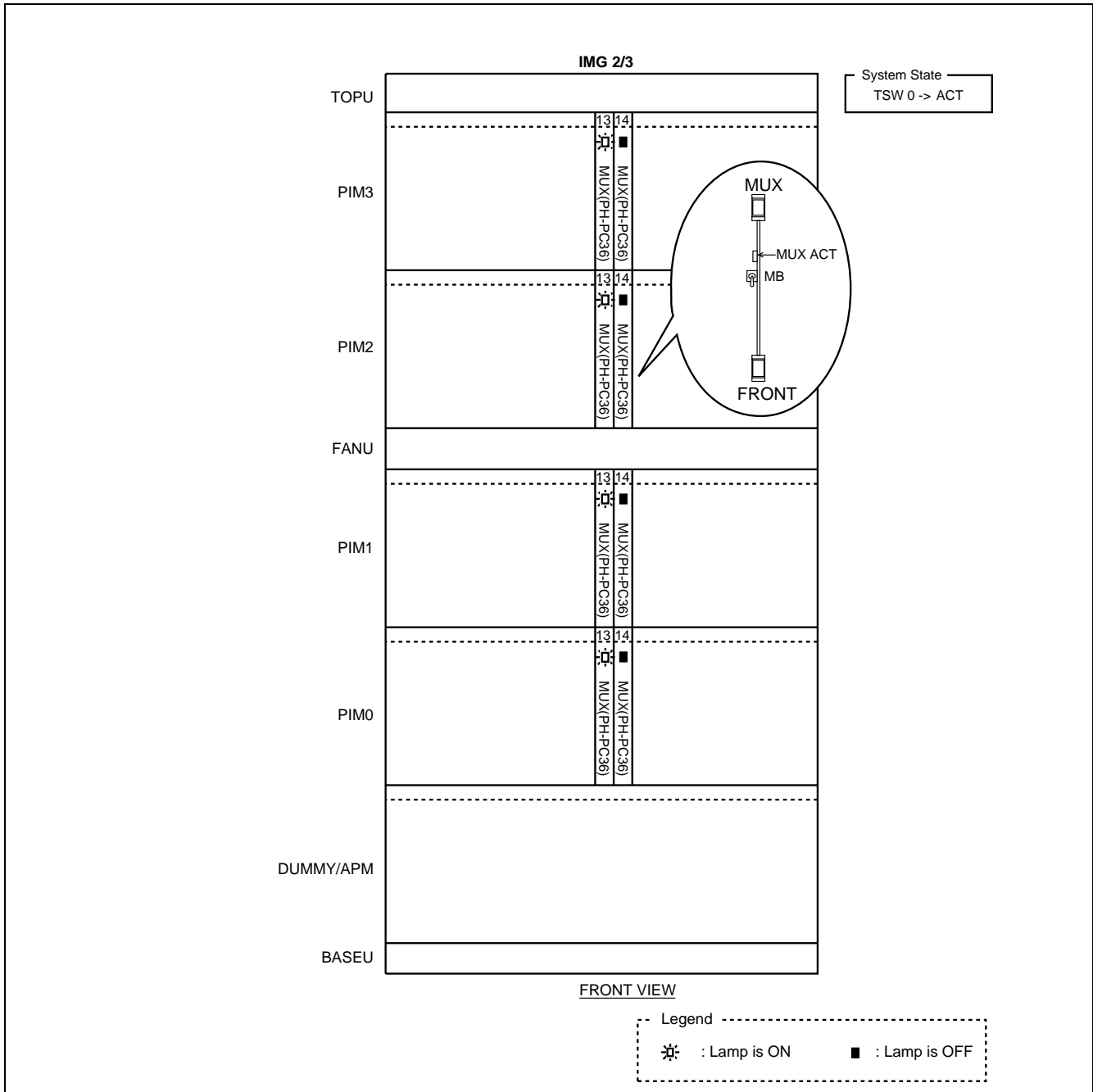


Figure 6-40 How to Check LEDs and SW Keys for System Changeover (IMG2/3)

SYSTEM OPERATIONS

- How to check the STATUS 7-segment LEDs

The ACT/STBY status of CPU can be confirmed by viewing the STATUS 7-segment LEDs. Visually check the LED indications and confirm which CPU is active in your system.

When the STATUS LEDs display any of the two-digit numbers (00 - 99), the belonging CPU is active. If the LEDs display the three letters (S, B and Y) in rotation, the CPU system is in STBY mode. Note that the numbers (00 - 99), displayed on the active CPU front panel (DSP), conform to the percentage points showing CPU occupancy rate.

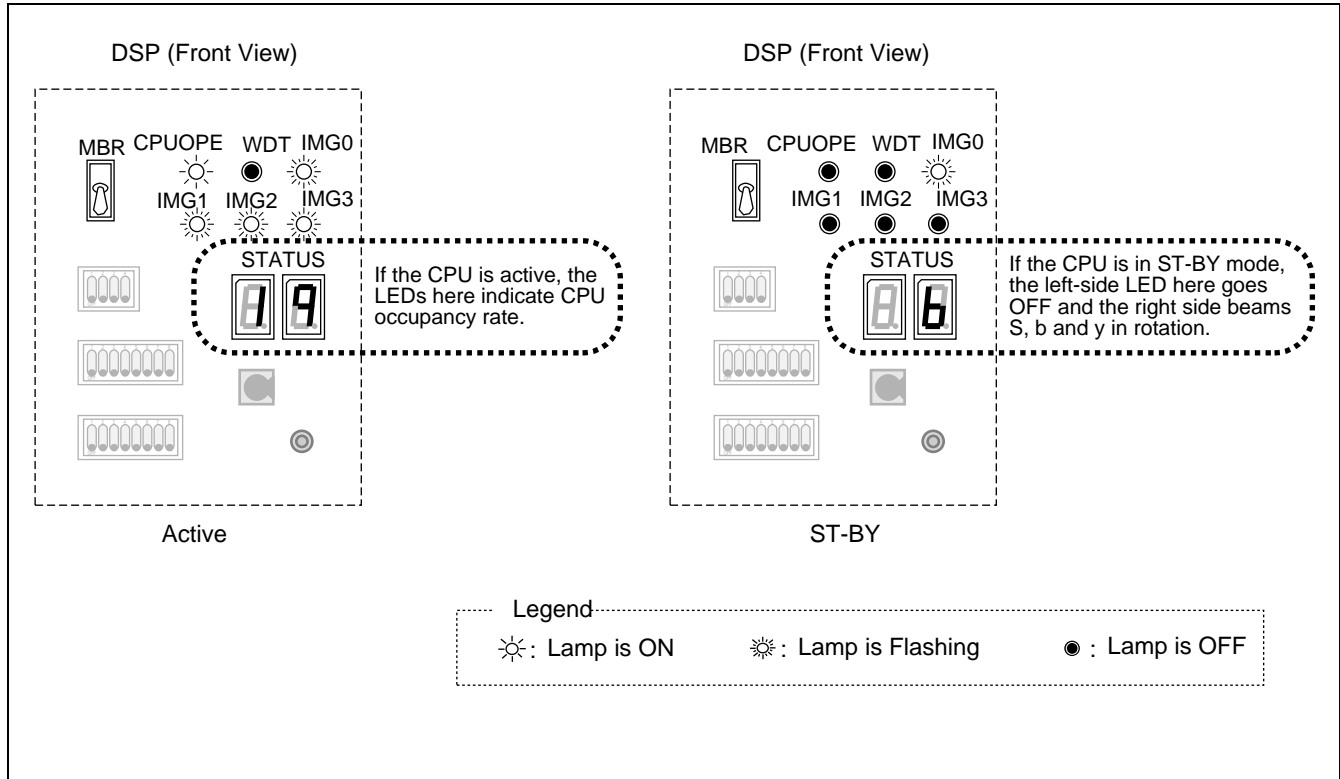


Figure 6-41 How to Check STATUS LEDs

Note: Except for the indication of the STATUS 7-segment LEDs, the ACT/STBY of the CPU also can be confirmed via the lamps on the DSP. If the CPU OPE lamp light steady-green and IMG0-3 are flashing, the CPU is active. If CPU OPE appears OFF and IMG0 is flashing, the CPU is in STBY mode.

12.1.2 How to Control CPU Block

The CPU, when it is provided in a dual configuration, can be switched over by one of the operations shown in [Table 6-8](#). If the system of CPU is changed over, the ACT/STBY of GT (in TSWM) also changes over.



Table 6-8 Changeover of CPU Block

TYPE	OPERATIONS	REMARKS
Changeover by CMOD Note 1	Use the CMOD command. See Chapter 8 .	CPU OPE lamp lights steady green on the DSP of the CPU, which is placed into act-mode by this operation. OPE/MB lamp of GT (PH-GT09) card, which is in the controlling route, lights green.
Changeover by key operation Note 1	Turn ON the MBR key on the active DSP of the active CPU. After a few seconds, return the MBR key to the previous position. See Section 12.1.3, Manual System Changeover of CPU .	
Forced Changeover Note 2	ACT/STBY mode of CPU can be controlled by CPU SEL key operation on the EMA (PH-PC40) card. UP: No. 0 system (ACT) DOWN: No. 1 system (ACT) Normally, this key must be placed in the center position when the CPU is provided in a dual configuration. See Section 12.1.4, Forced Changeover of CPU .	

Note 1: While changeover of the CPU is in progress, any call attempt is rejected. Already established calls, however, will not be affected.

Note 2: When the forced changeover is executed, the entire system is initialized. For this reason, do not use this operation except in unavoidable circumstances.

[Figure 6-42](#) shows a system block diagram centering upon the CPU and its controlling GT. Though the two sides have a complicated cable connection, the controlling route of CPU 0 directly goes to GT 0, and that of CPU 1 to GT 1. Therefore, if the system of CPU is changed over, the ACT/STBY of GT also changes over.

Because the ACT/STBY changeover of CPU also affects the GT status, the MBR key on the GT card is not used for GT system changeover. The key is used to switch over the Speech Path System, involving the TSW, DLKC, and MUX circuit cards. Refer to [Section 12.1.6, Manual System Changeover of Speech Path System](#).

SYSTEM OPERATIONS

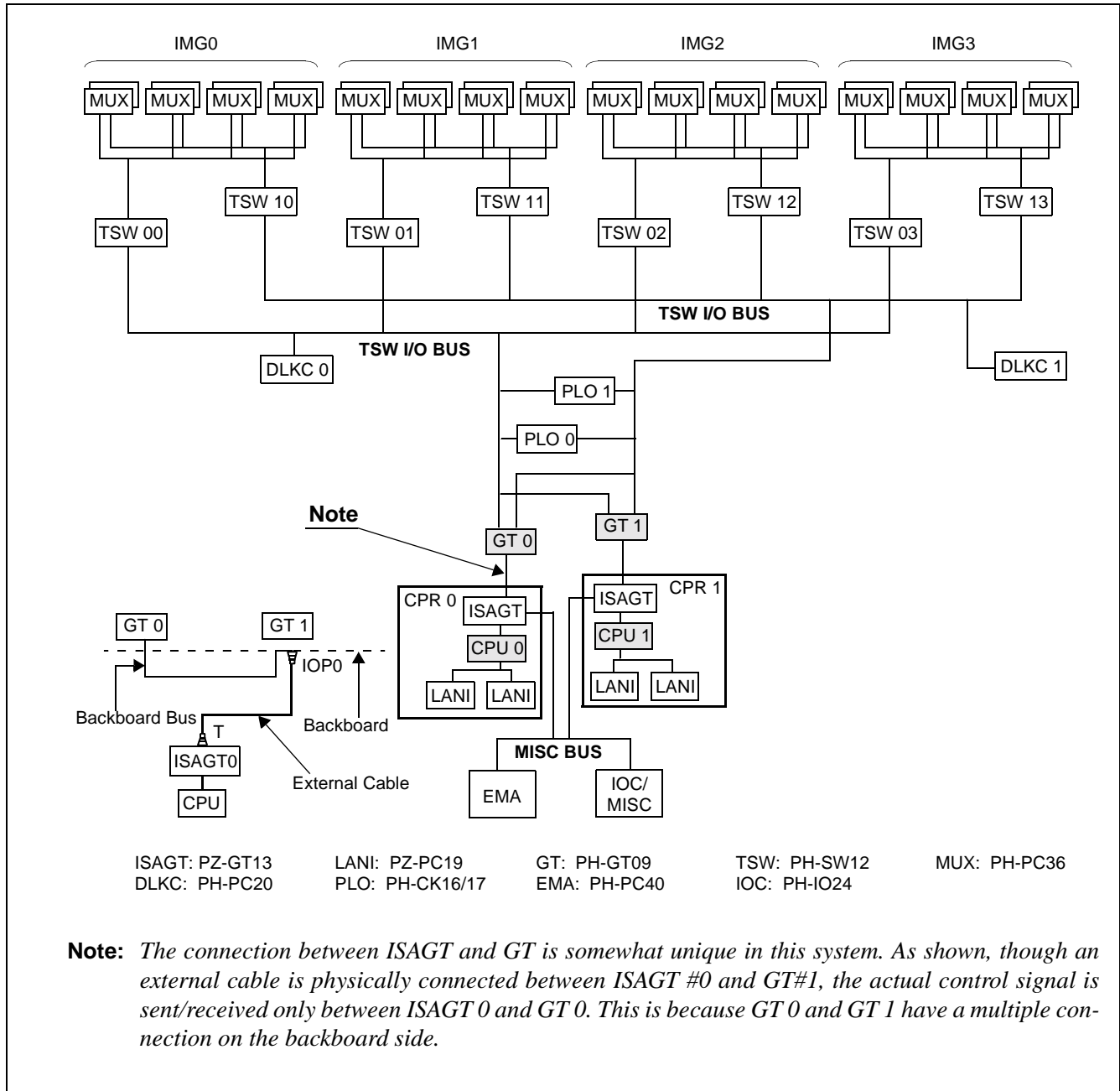


Figure 6-42 System Block Diagram (Switching Network Between CPU and GT)

12.1.3 Manual System Changeover of CPU

To change over the CPU system, the CMOD command is normally used. However, if the command cannot be used for some reason, use the key operations listed below:

Note: For system changeover via the command, see [Chapter 8](#).

WARNING Improper key operations may result in a system down. Operate the related keys, applying extreme care.

STEP 1 Determine which CPU is active.

(1) Check the lamp indications. Refer to [Figure 6-43](#) and [Table 6-8](#).

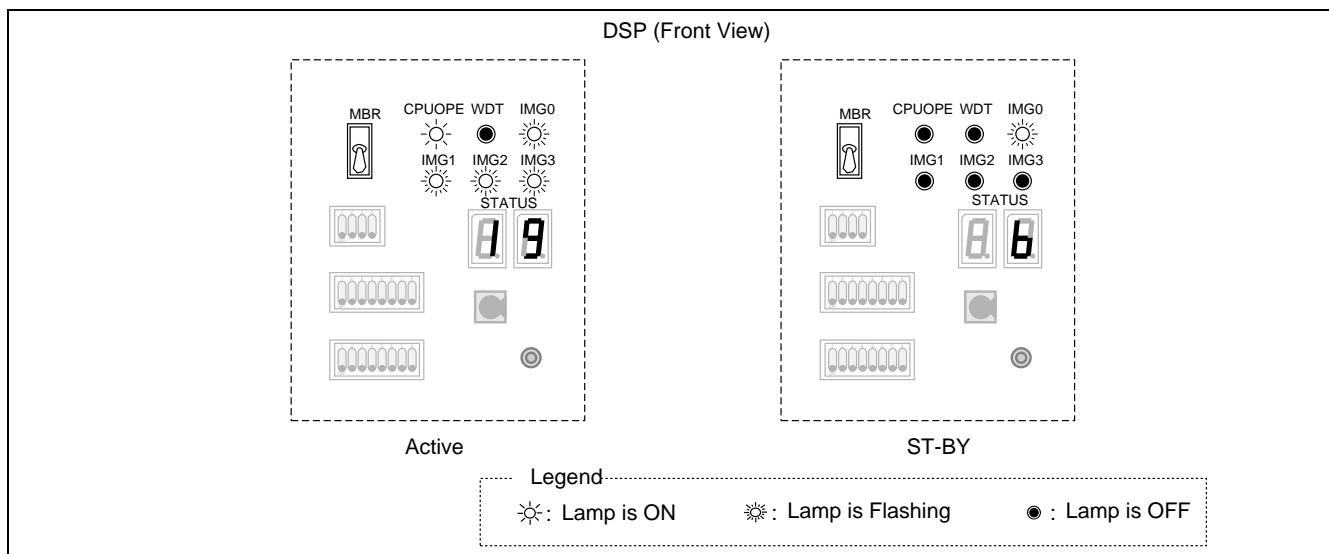


Figure 6-43 CPU in ACT/STBY Mode

The CPU changeover also affects the ACT/STBY of GT in the TSWM. Refer to [Figure 6-44](#) for more information, also check the lamp indications on the GT (PH-GT09) card.

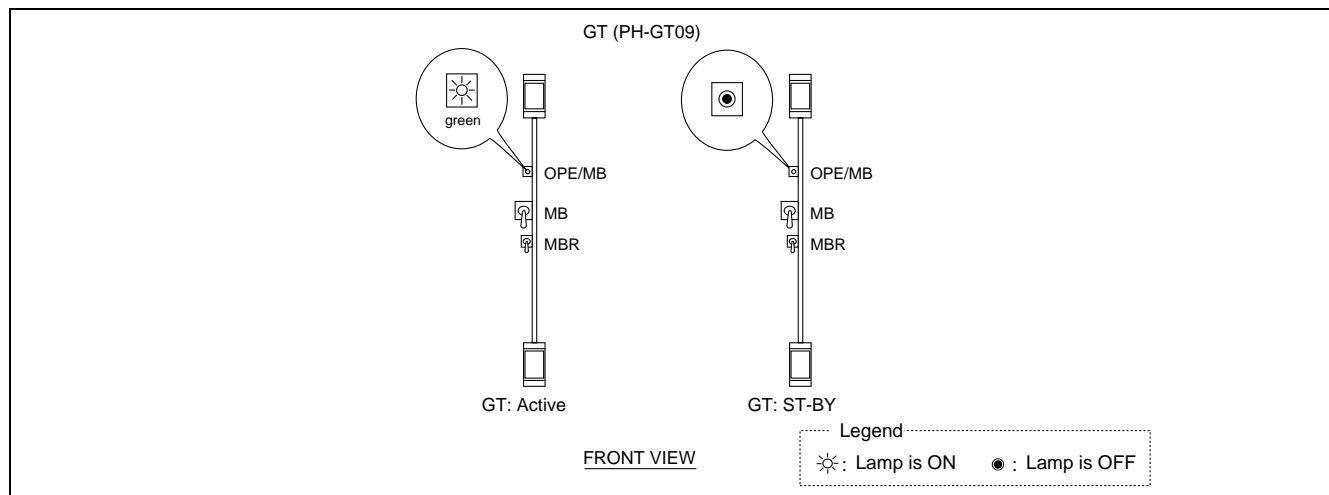


Figure 6-44 GT in ACT/STBY Mode

SYSTEM OPERATIONS

(2) Check the mate CPU's STBY mode. Also check the mate GT's STBY mode. Refer to [Figure 6-43](#) and [Figure 6-44](#).

WARNING The system changeover of CPU can be done only when the mate CPU is in STBY mode. Do not attempt the changeover if the mate CPU is closed.

STEP 2 Flip the MBR key on the DSP of the active CPU. Refer to [Figure 6-45](#).

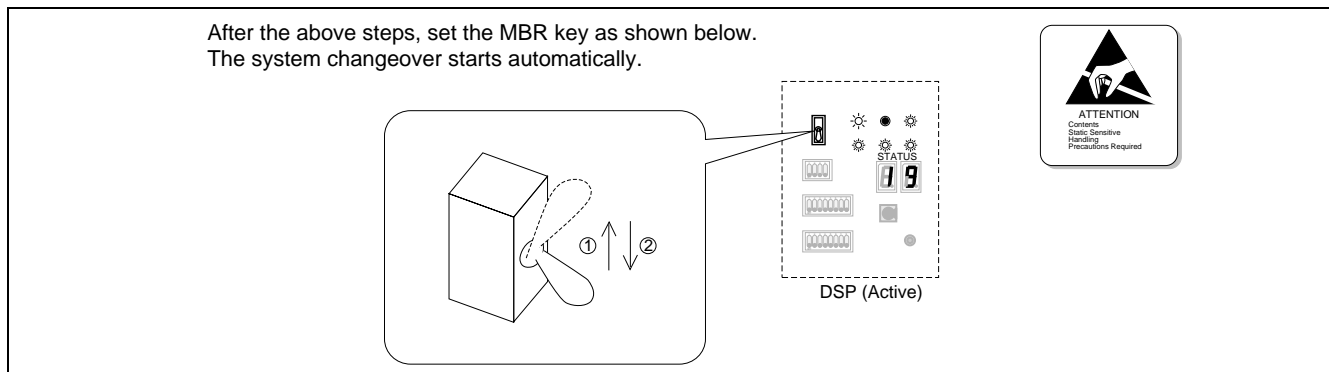


Figure 6-45 CPU Changeover via MBR Key

Note: If the MBR key remains in the UP position, the CPU stays in its make-busy status. Be sure to return the key to the DOWN position except in the case of a special purpose.

STEP 3 Confirm the changed lamp indications.

To confirm the CPU changeover, check the lamps in [Figure 6-46](#) on both DSPs. LED indications must change as shown when the CPU system has been correctly changed over.

CPU Formerly Active		After Changeover	
CPU OPE	: Steady-ON (green)	→	OFF
IMG0	: Flash (green)	→	Flash (green)
IMG1-3	: Flash (green)	→	OFF
MB/OPE (GT Card)	: Steady-ON (green)	→	OFF
CPU Formerly in STBY Mode		After Changeover	
CPU OPE	: OFF	→	Steady-ON (green)
IMG0	: Flash (green)	→	Steady-ON (green)
IMG1-3	: OFF	→	Flash (green)
MB/OPE (GT Card)	: OFF	→	Steady-ON (green)

Figure 6-46 LED Indications Before and After CPU Changeover

STEP 4 Analyze the displayed system messages.

After STEPs 1 through 3 are performed, the system messages [7-C] and [7-D] automatically display. Confirm that no errors occurred during the CPU changeover process.

Note: When the CPU mode change executes, the MAT (TCP/IP) is once disconnected. Then, log in to the system again.

12.1.4 Forced Changeover of CPU

Figure 6-47 shows how to perform the forced changeover of CPU by key operation on the EMA (PH-PC40) card. Because the key operation will cause the entire system to initialize, do not rely on this method except as a last resort.

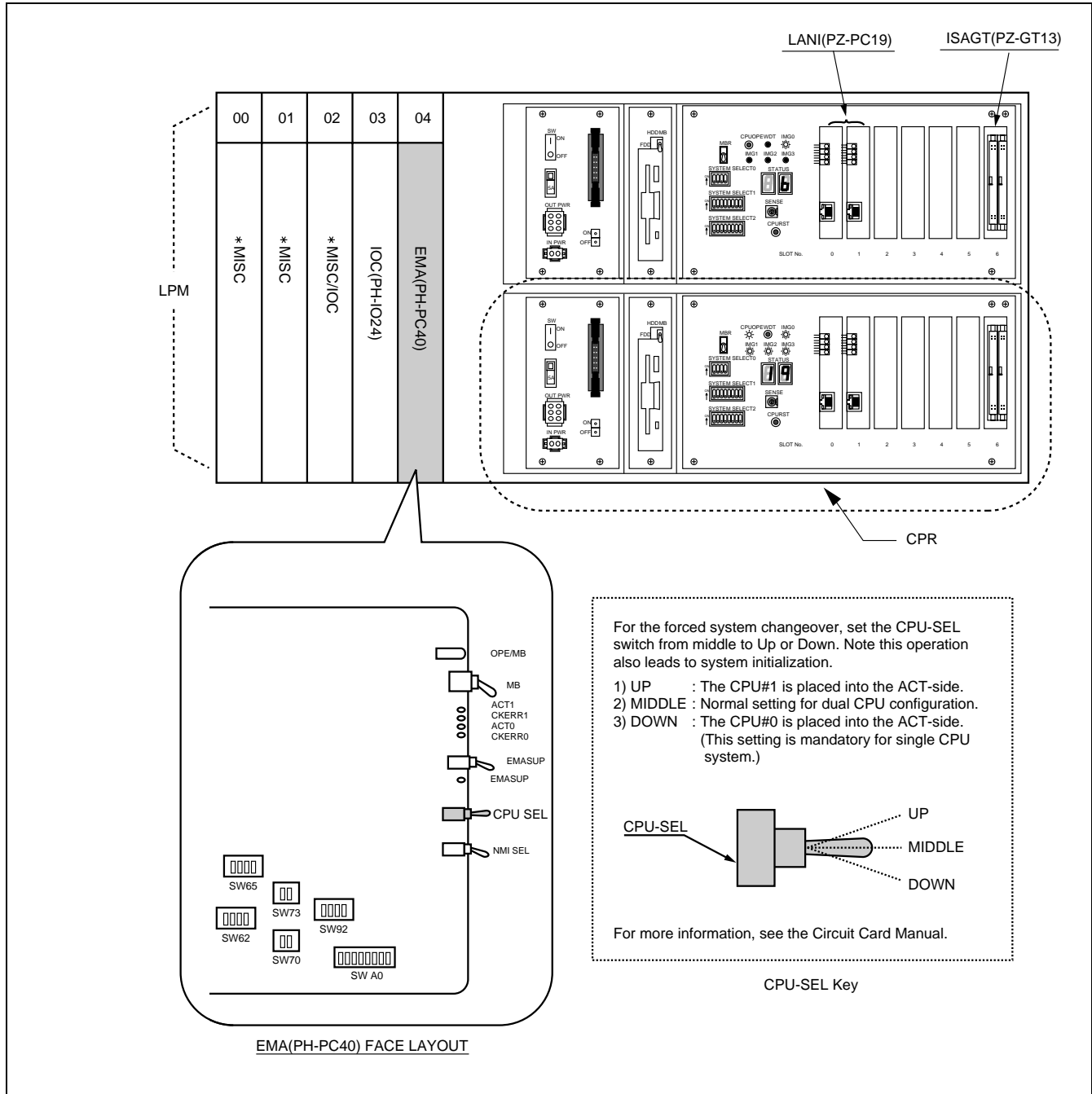


Figure 6-47 Forced CPU Changeover

SYSTEM OPERATIONS

12.1.5 How to Control Switching Block

The Switching Block denoted here includes the following system equipment:

- TSW (PH-SW12)
- MUX (PH-PC36)
- DLKC (PH-PC20)
- PLO (PH-CK16/17/16-A/17-A)



Perform the required system changeover by using the CMOD command or by operating the relevant key on the GT/PLO card. Refer to [Table 6-9](#).

Table 6-9 Changeover of Switching Block

Type	Operations	Remarks
Speech Path Changeover by the CMOD command	Use CMOD command.	All OPE or ACT lamps on the Speech Path System, which were formerly active, go OFF.
Note	See Chapter 8 .	All OPE or ACT lamps on the Speech Path System, which were formerly STBY, light steady-green.
Speech Path System Changeover by Key Operation on the active GT card	On active GT card, turn MBR key UP. Return MBR key to original position (DOWN) after OPE/MB lamp goes OFF on GT card.	All OPE or ACT lamps on the Speech Path System, which were formerly active, go OFF.
Note	See Section 12.1.6, Manual System Changeover of Speech Path System .	All OPE or ACT lamps on the other side Speech Path System, light steady-green.
PLO Changeover by Key Operation	On active PLO card, turn MBR key UP. Return MB key to original position (DOWN) after ACT lamp goes OFF on PLO card.	ACT lamp on the PLO card, which was formerly active, goes OFF.
Note	See Section 12.1.7, Manual System Changeover of PLO .	ACT lamp on the PLO card, which was formerly STBY, goes steady-green.

Note: *These operations cause a momentary interruption in speech paths. Since the interruption is momentary, it can be ignored as far as ordinary telephone calls are concerned. However, care should be taken when data communications are involved, as the interruption might cause bit errors.*

12.1.6 Manual System Changeover of Speech Path System

To changeover the ACT/STBY of Speech Path System, the CMOD command is normally used. However, if for some reason the command cannot be used, use the key operations listed below.

- Note 1:** *As explained in this section, the ACT/STBY of the Speech Path System can be changed over via the MBR key on the GT (PH-GT09) card. Because each GT (GT0 and GT1) can control both the Speech Path System #0 and #1, perform the key operation on the active GT card, not on the card in STBY mode. Refer to [Figure 6-48](#).*
- Note 2:** *[Figure 6-48](#) shows a system block diagram centering upon the GT and its controlling Speech Path System. By changing over the ACT/STBY of Speech Path System, all the related systems, such as TDSW/INT, DLKC, and MUX, are totally switched over. The changeover can be executed by a key operation on the active GT card. If the MBR key is flipped on the active GT card, all the Speech Path-related systems (TSW/INT, DLKC, and MUX) in the same switching block are totally changed over. However, the ACT/STBY of GT and PLO is not affected.*

SYSTEM OPERATIONS

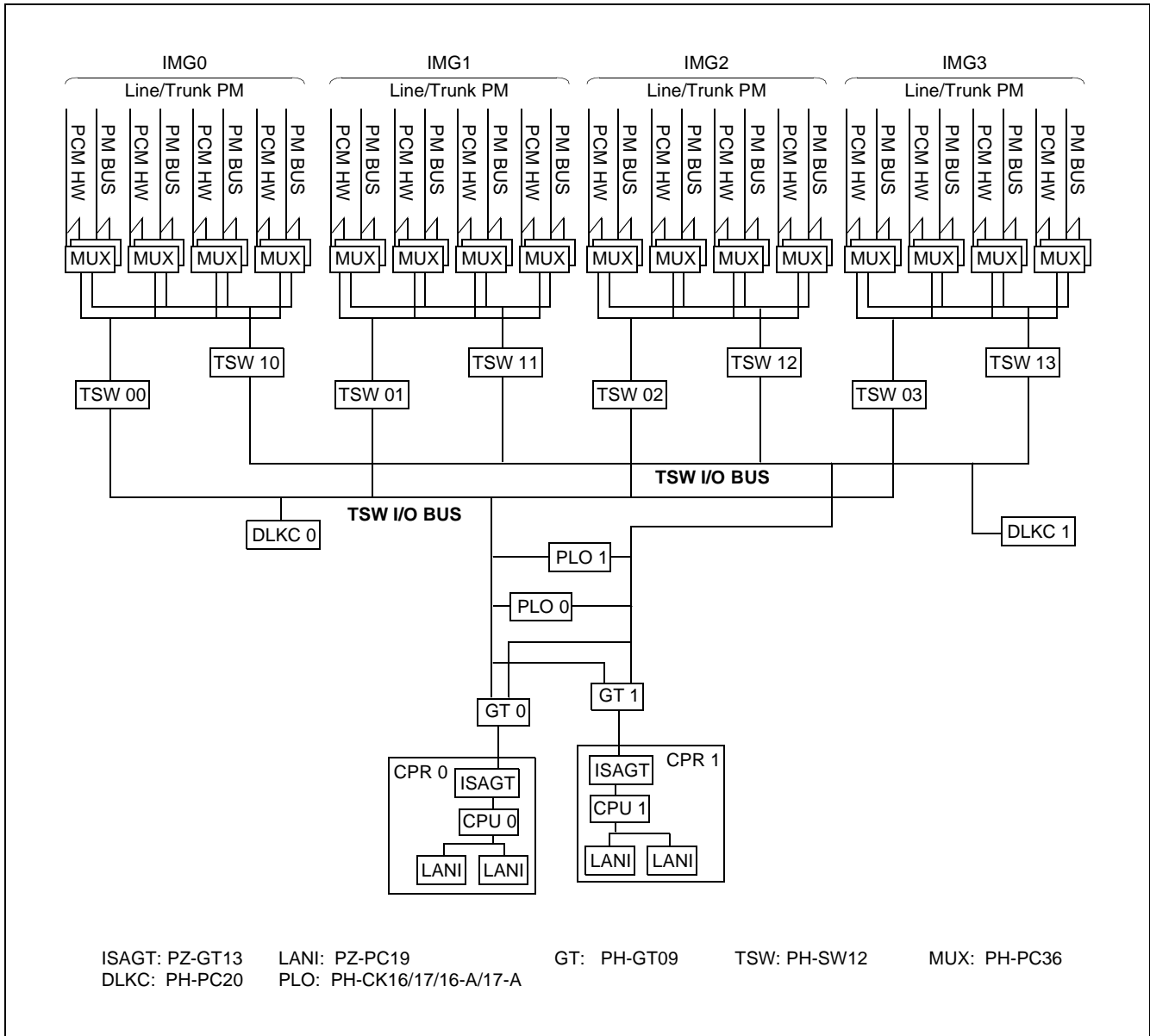


Figure 6-48 System Block Diagram (Switching Network for Speech Path System)

STEP 1 Make sure the active Speech Path System.

(1) Check all the lamp indications in Figure 6-49, which are in the same switching block.

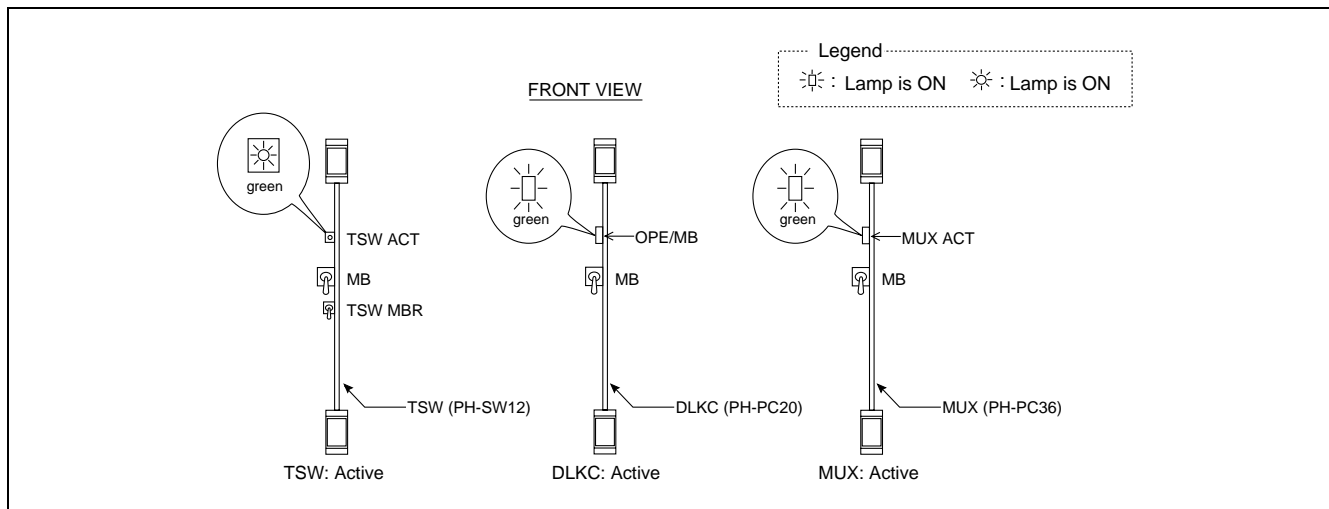


Figure 6-49 TSW/DLKC/MUX in ACT Mode

Note: Because this 4-IMG uses multiple TSW and MUX cards, be sure to check all the circuit cards concerned, which are in the same Switching Block. For example, if your system adopts the fully expanded system, you must check a total of 4 TSW cards and a total of 16 MUX cards in this step.

(2) Make sure the STBY mode of mate Speech Path System. Check all the lamp indications in Figure 6-50, which are in the same Switching Block.

WARNING The ACT/STBY of Speech Path System can be changed over only when the mate system is in STBY mode. Do not attempt the changeover if the mate Speech Path System is closed.

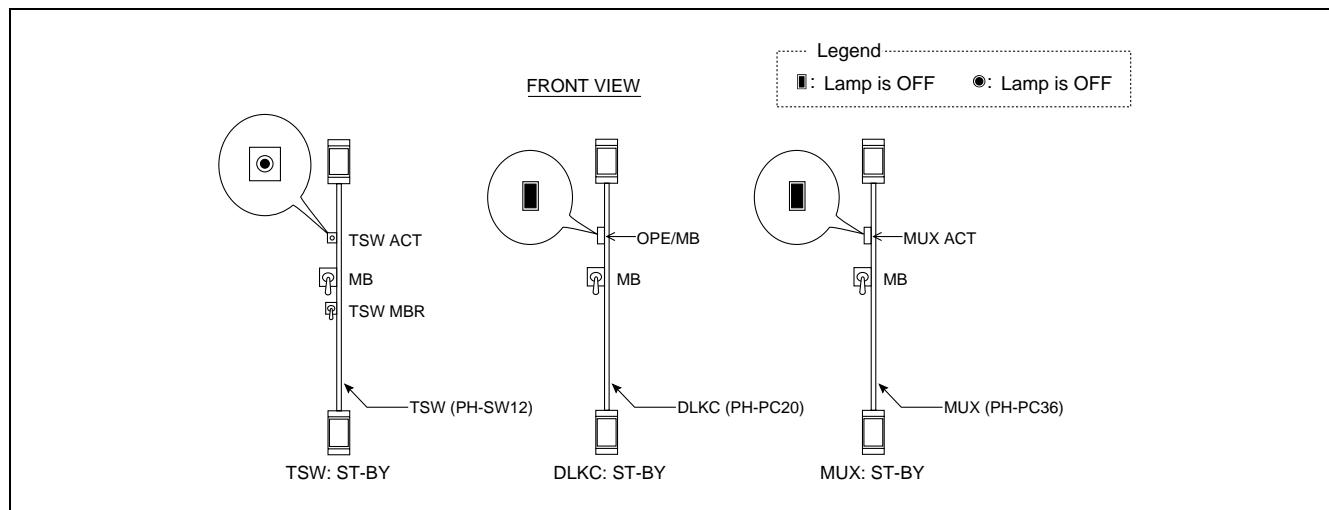


Figure 6-50 TSW/DLKC/MUX in STBY Mode

SYSTEM OPERATIONS

Note: Because this 4-IMG uses multiple TSW and MUX cards, be sure to check all the circuit cards concerned, which are in the same Switching Block. For example, if your system adopts the fully expanded system, you must check a total of 4 TSW cards and a total of 16 MUX cards in this step.

WARNING Improper key operations may result in a system down. Operate the related keys, using extreme care.

STEP 2 Flip the MBR key on the active GT card. Refer to [Figure 6-51](#).

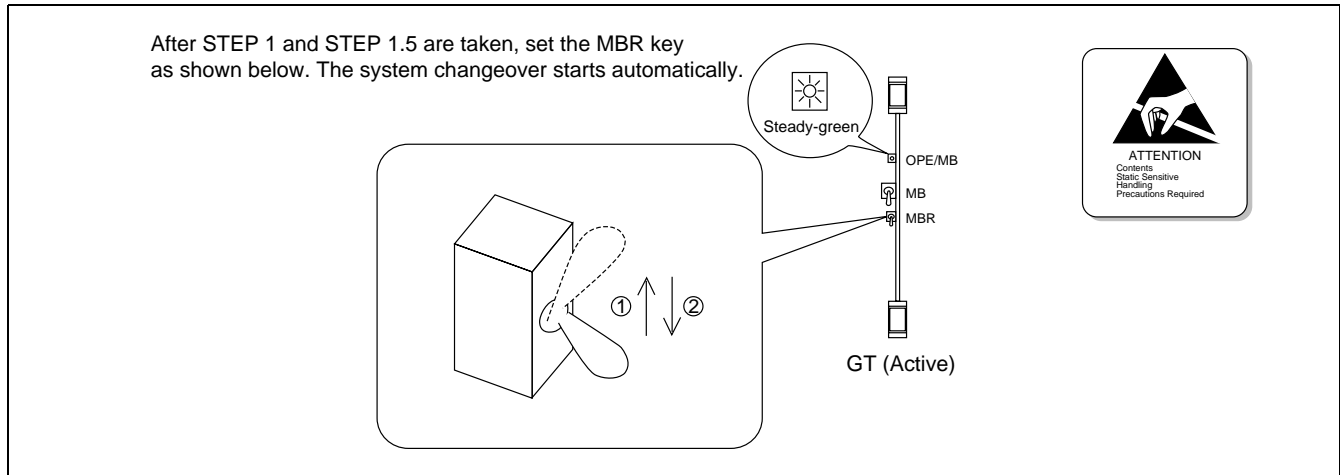


Figure 6-51 Speech Path System Changeover via Active GT MBR Key

Note: If the MBR and MB keys are turned ON (UP), the GT card is forcibly placed in a make-busy status. Therefore, do not operate the MB key by mistake. Also, after the MBR key is flipped, be sure to return the key to the original position (DOWN).

STEP 3 Confirm the changed lamp indications.

(1) To confirm the imposed Speech Path System changeover, check all the lamps on the cards shown in [Figure 6-52](#), which are in the relevant switching blocks.

Switching Block Formerly Active		After Changeover	
TSW ACT	: Steady-ON (green)	➔	OFF
OPE/MB (DLKC)	: Steady-ON (green)	➔	OFF
MUX ACT	: Steady-ON (green)	➔	OFF
Switching Block Formerly STBY		After Changeover	
TSW ACT	: OFF	➔	Steady-ON (green)
OPE/MB (DLKC)	: OFF	➔	Steady-ON (green)
MUX ACT	: OFF	➔	Steady-ON (green)

Figure 6-52 LED Indications Before and After Speech Path System Changeover

- (2) If the system uses PH-CK16 or PH-CK17 as the PLO, make sure the active PLO and the newly activated TSW systems are in the same Switching Block. Refer to [Figure 6-53](#).

Because this card's MUSIC ROM supplies hold tones only to the TSW cards that are in the same Switching Block, be sure to check the active PLO and the newly activated TSW systems are all in the same Switching Block. If not, perform the PLO changeover, referring to [Section 12.1.7, Manual System Changeover of PLO](#).

Note: *If the system has PH-CK16-A/PH-CK17-A card, this step is not required.*

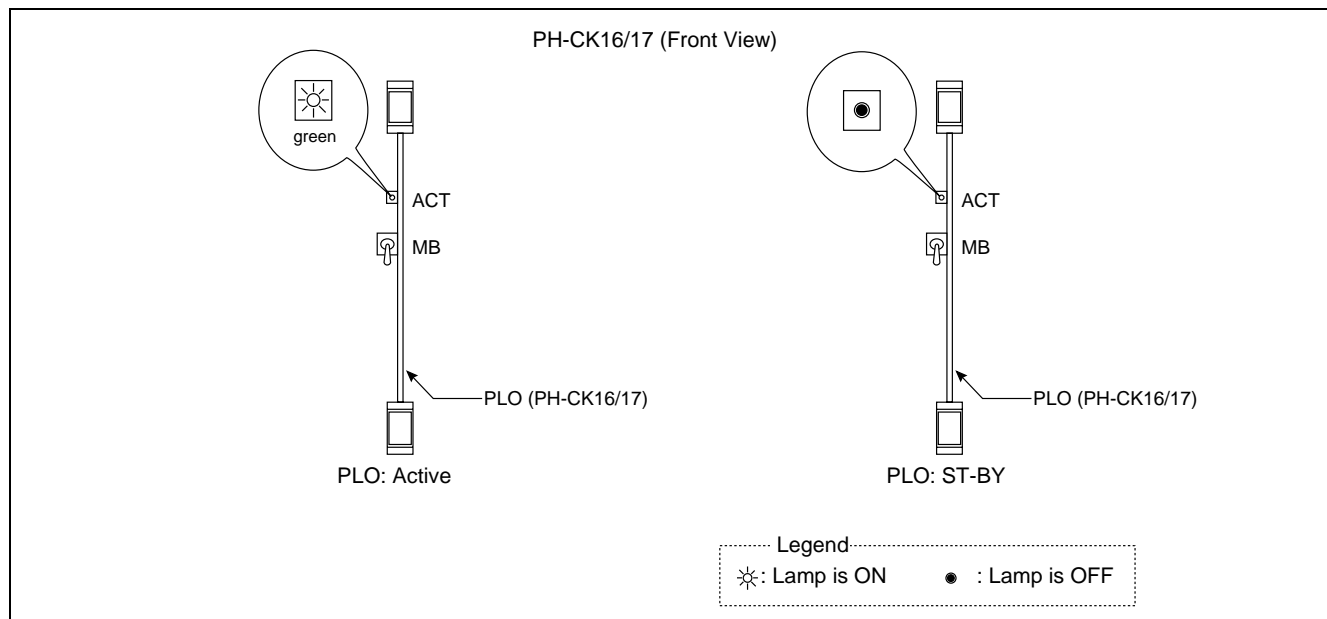


Figure 6-53 Check of Active PLO

STEP 4 Analyze the displayed system messages.

After STEPs 1 through 3 are performed, the system messages [7-E], [7-F], and [1-T] will automatically display. Confirm that no errors occurred during the Speech Path System changeover process.

SYSTEM OPERATIONS

12.1.7 Manual System Changeover of PLO

To change over the system of Phase Lock Oscillator (PLO), use the key operations listed below.

Note: Though the PLO belongs to the Switching Block as explained in [Section 12.1.5](#), its ACT/STBY Switching Network is separate from that of the Speech Path System. Therefore, the changeover of the PLO must be independently performed.

WARNING Improper key operations may result in a system down. Operate the related keys, using extreme care.

STEP 1 Make sure the PLO system is active.

- (1) When the PLO system is active, ACT or OPE lamp on the PLO card lights green. If the LED is OFF, the system is STBY mode.
- (2) Check the mate PLO's STBY mode. Refer to [Figure 6-54](#).

WARNING The changeover of PLO system can be done only when the mate PLO is in STBY mode. Do not attempt the changeover if the mate PLO is closed.

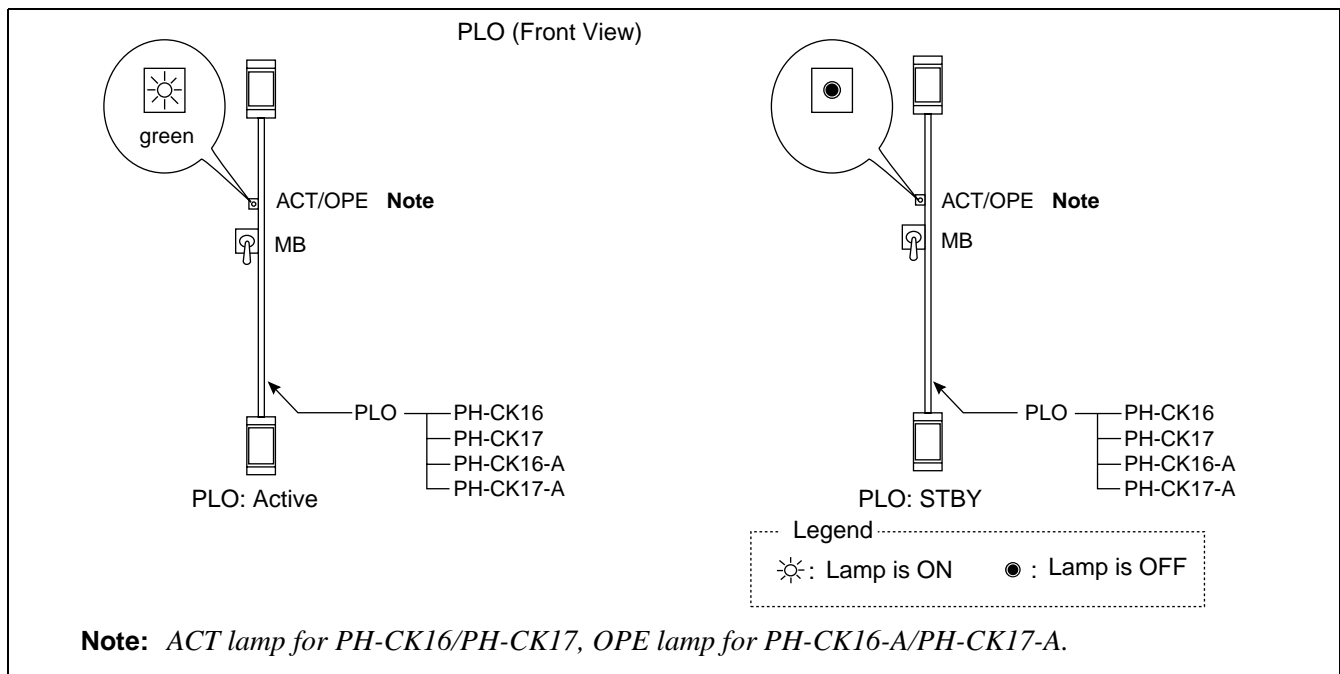


Figure 6-54 PLO in ACT/STBY Mode

STEP 2 Flip the MB key on the PLO card. Refer to [Figure 6-55](#).

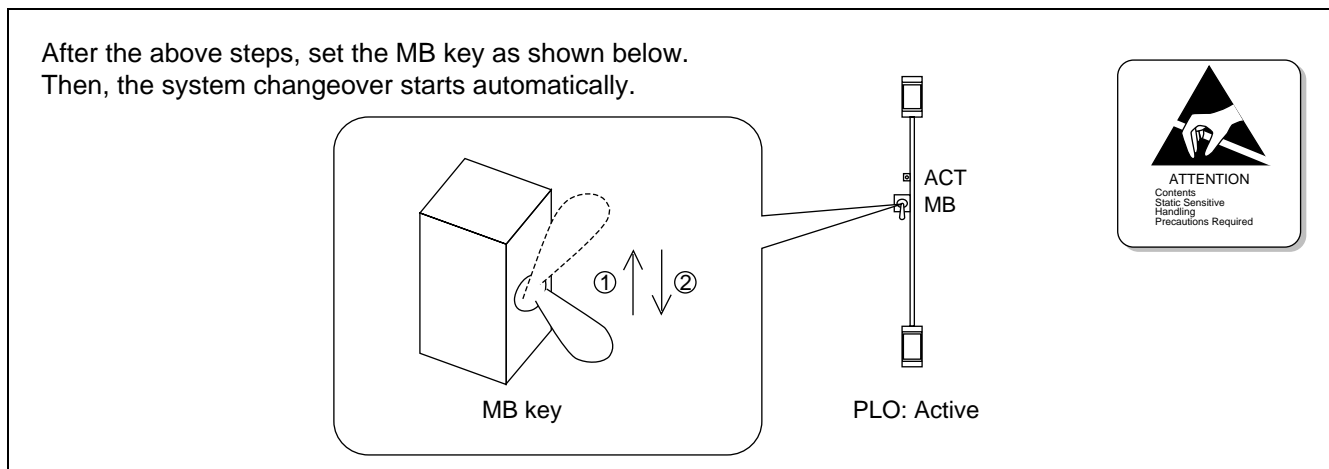


Figure 6-55 PLO Changeover via MB Key

Note: *If the MB key remains in the UP position, the PLO system also stays in its make-busy status. Be sure to return the key DOWN except in the case of a special purpose.*

STEP 3 Confirm the changed lamp indications.

- (1) To confirm the imposed PLO changeover, check the following lamps on both PLO cards. The LED indications must change as shown in [Figure 6-56](#) when the PLO system has been correctly changed over.

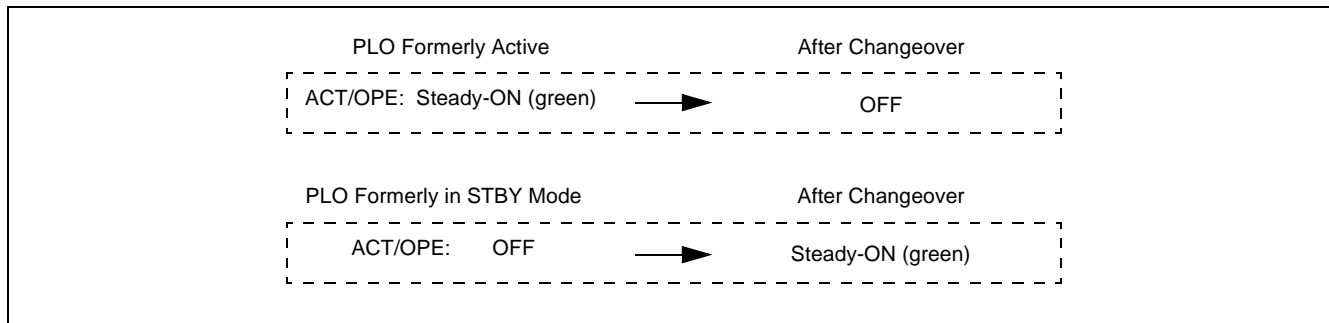


Figure 6-56 LED Indications Before and After PLO Changeover

- (2) If your system uses PH-CK16/PH-CK17, make sure the active TSW cards and the newly activated PLO are in the same switching block.

Because this card's MUSIC ROM does not supply hold tones to the TSW cards which are in different Switching Blocks, make sure the newly activated PLO and currently active TSW cards are both in the same Switching Block. If not, perform the Speech Path System changeover, referring to Section 12.1.6.

Note: *If the system uses PH-CK16-A/PH-CK17-A, this step is not required.*

SYSTEM OPERATIONS

STEP 4 Analyze the displayed system messages.

After STEPs 1 through 3 are performed, the system messages [7-U] and [7-V] will automatically display. Make sure that no errors occurred during the PLO changeover process.

12.2 Initialization

12.2.1 General

This section explains the initialization types:

System Initialization

- System Initialization by Turning ON the Power Supply, [Section 12.2.2](#)
- System Initialization by Key Operations on the TOPU, [Section 12.2.3](#)
Procedure #1 through Procedure #5
- System Initialization by the keys on the CPU Front Panel, [Section 12.2.4](#)
- System Initialization by the SINZ Command, [Section 12.2.5](#)

Peripheral Equipment Initialization (Line/Trunk Initialization), [Section 12.2.6](#)

12.2.2 System Initialization by Turning ON Power Supply

This initialization executes when the power supply to the system has stopped. Follow the procedure in [Table 6-10](#).



Table 6-10 System Initialization by Turning On Power Supply Procedure

ACTION	REMARKS
<p style="text-align: center;"><u>START</u></p> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;">Confirm all switches are turned OFF on PWR cards.</div> <p style="text-align: center;">↓</p> <p style="text-align: center;">Power supply to the PBX is restored.</p> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;">Confirm input source power to the PBX is normal.</div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;">Turn ON power supply at PWR cards.</div> <p style="text-align: center;">↓</p> <p style="text-align: center;">Execution of Initialization</p> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;"> Confirm the following lamp indications: [CPU DSP#0] CPU OPE: steady-green IMG0-3: flash (green) [CPU DSP#1] IMG0: flash (green) </div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;">Clear alarm by pressing ALM RST key on TOPU.</div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;">Use ATIM command to adjust date and time.</div> <p style="text-align: center;">↓</p> <p style="text-align: center;"><u>END</u></p>	<p>Refer to Section 12.3.</p> <p>Check INPUT voltage is normal at power terminals.</p> <p>Refer to Section 12.3.</p> <p>When initialization completes, ACT0 lamp lights green and ACT1 lamp goes OFF on EMA (PH-PC40) card.</p>

SYSTEM OPERATIONS

12.2.3 System Initialization by Key Operations on TOPU

Table 6-11 shows the system initialization procedure. Figure 6-57 shows the initial program load conceptual diagram.

Table 6-11 System Initialization Procedure Types

TYPE		DESCRIPTION
Procedure #1 (Table 6-12)	System Initialization without Loading	Whole system is initialized. All communications are forcibly released. System restarts with current Main Memory Files and Office Data Files that exist on DRAM.
Procedure #2 (Table 6-13)	System Initialization with Office Data Loading	Whole system is initialized. All communications are forcibly released. System transfers Office Data Files from HDD to DRAM. System restarts with the transferred Office Data Files and the current Main Memory Files.
Procedure #3 (Table 6-14)	System Initialization with Program Loading	Whole system is initialized. All communications are forcibly released. System transfers Main Memory Files from HDD to DRAM. System restarts with the transferred Main Memory Files and the current Office Data Files.
Procedure #4 (Table 6-15)	System Initialization with Office Data and Program Loading	Whole system is initialized. All communications are forcibly released. System transfers both Main Memory Files and Office Data Files from HDD to DRAM. System restarts with the transferred Main Memory Files and the transferred Office Data Files.
Procedure #5 (Table 6-16)	System Initialization by Phase 1 Restart	<p>System is initialized. All communications, except for the following two-way connections that have already been established, are forcibly released:</p> <ul style="list-style-type: none"> • Basic two-way connections (STN-STN, STN-TRK, TRK-TRK) • Fixed connections • Two-way connections established on a Fusion Link <p>Note 1: <i>STN-ATT connection is not included in the two-way connection list cited above. These kind of calls are forcibly released once the initialization executes.</i></p> <p>Note 2: <i>When a calling party hears the Ring Back Tone, the ORT is additionally provided, and the call is placed into the Dial Tone (DT) connection.</i></p>

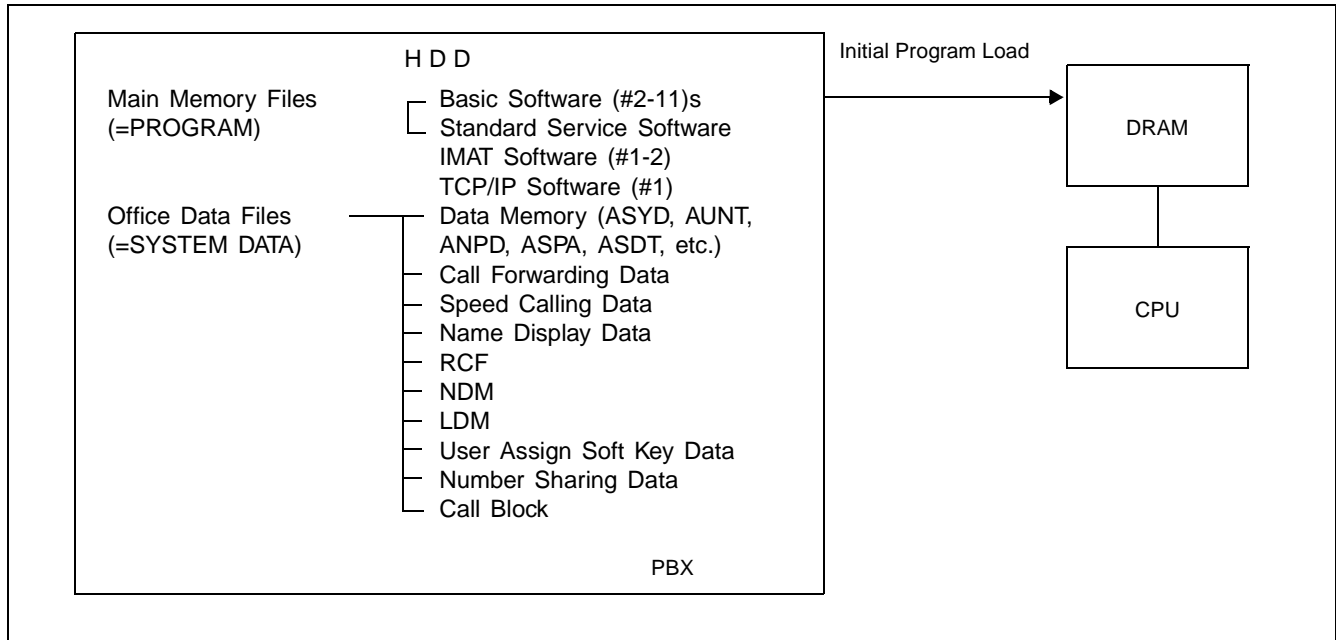


Figure 6-57 Conceptual Diagram of Initial Program Load

SYSTEM OPERATIONS

To initialize the system, check the lamp indications in [Figure 6-58](#), and operate the keys on PZ-DK222 (TOPU).

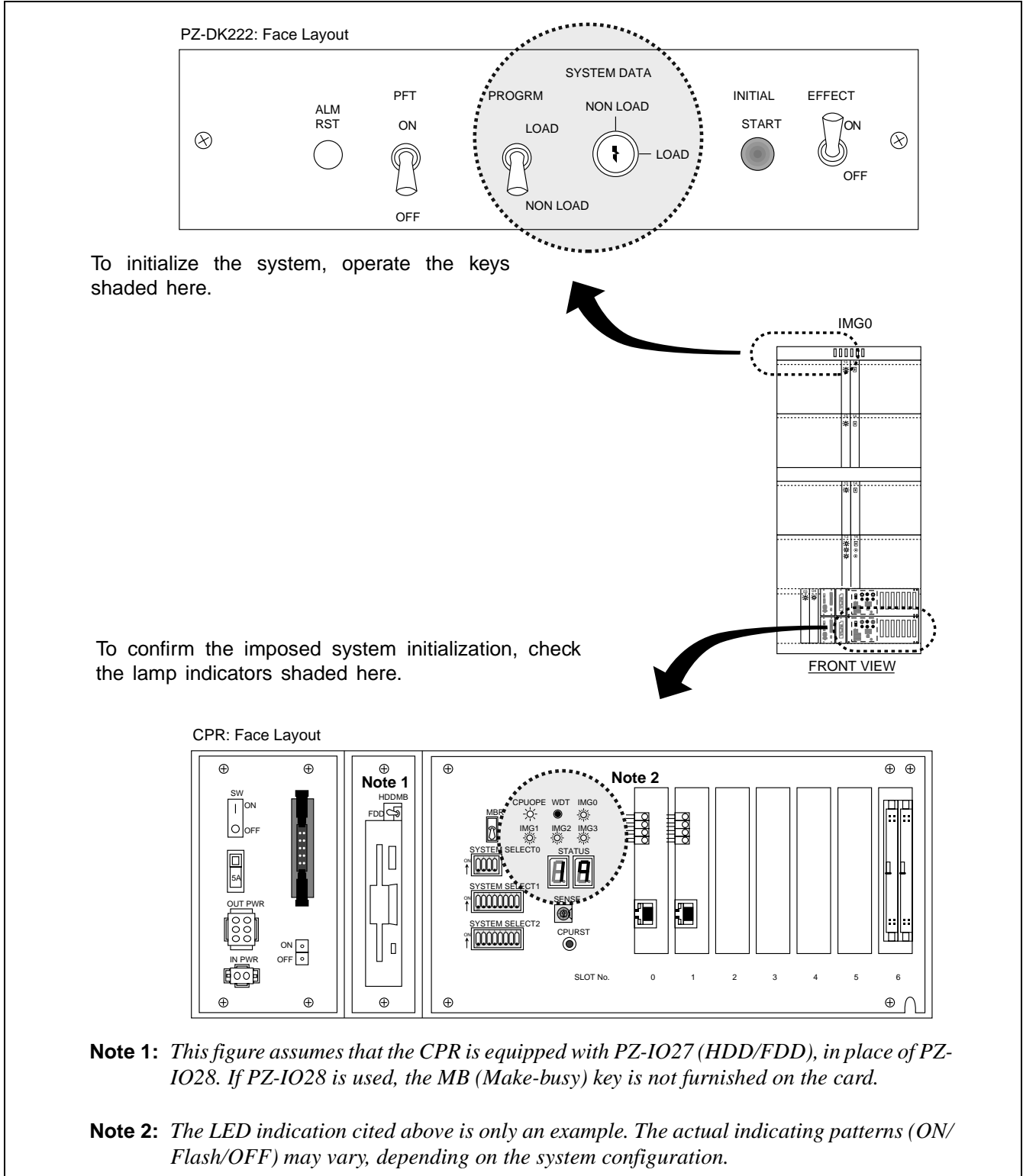


Figure 6-58 Related Keys and LEDs for System Initialization

Table 6-12 System Initialization Without Loading [Procedure #1]

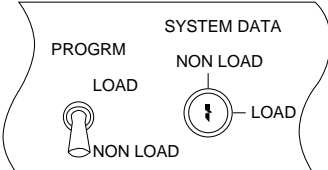
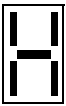
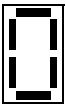
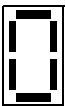
ACTION	7SEG LED/OPE LAMP/KEY SETTINGS
<p style="text-align: center;"><u>START</u></p> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;"> <p style="text-align: center;">Confirm system is operating normally.</p> </div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;"> <p style="text-align: center;">Turn ON the EFFECT key on the TOPU. (See Figure 6-58)</p> </div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;"> <p>Set the keys on the TOPU as follows.</p> <ul style="list-style-type: none"> • PROGRAM KEY → NON LOAD • SYSTEM DATA KEY → NON LOAD </div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;"> <p style="text-align: center;">Press INITIAL START button on the TOPU.</p> </div> <p style="text-align: center;">↓</p> <ul style="list-style-type: none"> • HD Initial • System Initialization • System starts up again. <p style="text-align: center;">↓</p> <p style="text-align: center;"><u>END</u></p>	<p>CPU OPE lamp on the DSP of active CPU lights steadily green. IMG0-3 lamps flash.</p> <p>IMG0 lamp on the DSP of mate CPU flashes green.</p> <div style="text-align: center;">  <p>PZ-DK222</p> </div> <p>CPU OPE and IMGX lamps on both DSP go OFF.</p> <p>STATUS LED (right) on the CPU is ON. </p> <p>STATUS LED (right) on the DSP of CPU is ON. </p> <p>CPU OPE lamp on the DSP of active CPU lights steadily green. IMG0-3 lamps flash.</p> <p>IMG0 lamp on the DSP of mate CPU flashes green.</p> <p>STATUS LED (right) on the DSP of active CPU is ON. (ON LINE) </p>

Table 6-13 System Initialization With Office Data Loading From HD [Procedure #2]

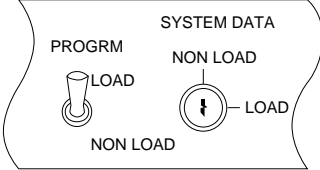
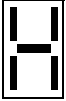

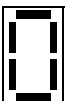

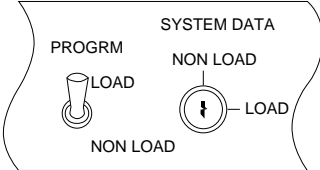
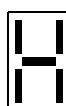

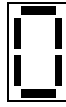
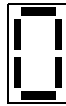
ACTION	7SEG LED/OPE LAMP/KEY SETTINGS
<p style="text-align: center;"><u>START</u></p> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;"> <p style="text-align: center;">Confirm system is operating normally.</p> </div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;"> <p style="text-align: center;">Turn ON the EFFECT key on the TOPU. (See Figure 6-58)</p> </div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;"> <p>Set the keys on the TOPU as follows.</p> <ul style="list-style-type: none"> • PROGRAM KEY → NON LOAD • SYSTEM DATA KEY → LOAD </div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;"> <p style="text-align: center;">Press INITIAL START button on the TOPU.</p> </div>	<p>CPU OPE lamp on the DSP of active CPU lights steadily green. IMG0-3 lamps flash.</p> <p>IMG0 lamp on the DSP of mate CPU flashes green.</p> <div style="text-align: center;">  <p>PZ-DK222</p> </div> <p>CPU OPE and IMGX lamps on both DSP go OFF.</p> <p>STATUS LED (right) on the DSP of CPU is ON. </p> <p>STATUS LED (right) on the DSP of CPU is ON. </p> <p>STATUS LED (right) on the DSP of active CPU is ON. </p> <p>CPU OPE lamp on the DSP of active CPU lights steadily green. IMG0-3 lamps flash.</p> <p>IMG0 lamp on the DSP of mate CPU flashes green.</p> <p>STATUS LED (right) on the DSP of active CPU is ON. (ON LINE) </p>
<p style="text-align: center;">↓</p> <ul style="list-style-type: none"> • HD Initialization • Office Data Load • System Initialization • System starts up again. <p style="text-align: center;">↓</p> <p style="text-align: center;"><u>END</u></p>	

Table 6-14 System Initialization with Program Loading From HD [Procedure #3]

ACTION	7SEG LED/OPE LAMP/KEY SETTINGS
<p style="text-align: center;"><u>START</u></p> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;"> <p style="text-align: center;">Confirm system is operating normally.</p> </div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;"> <p style="text-align: center;">Turn ON the EFFECT key on the TOPU. (See Figure 6-58)</p> </div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;"> <p>Set the keys on the TOPU as follows.</p> <ul style="list-style-type: none"> • PROGRAM KEY → LOAD • SYSTEM DATA KEY → NON LOAD </div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;"> <p style="text-align: center;">Press INITIAL START button on the TOPU.</p> </div> <p style="text-align: center;">↓</p> <ul style="list-style-type: none"> • HD Initialization • Program Load • System Initialization • System starts up again. <p style="text-align: center;">↓</p> <p style="text-align: center;"><u>END</u></p>	<p>CPU OPE lamp on the DSP of active CPU lights steadily green. IMG0-3 lamps flash.</p> <p>IMG0 lamp on the DSP of active CPU flashes green.</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;">  <p style="text-align: center; font-size: small;">PZ-DK222</p> </div> <p>CPU OPE and IMGX lamps on both DSP go OFF.</p> <p>STATUS LED (right) on the DSP of CPU is ON. </p> <p>STATUS LED (right) on the DSP of CPU is ON. </p> <p>STATUS LED (right) on the DSP of active CPU is ON. </p> <p>CPU OPE lamp on the DSP of active CPU lights steadily green. IMG0-3 lamps flash.</p> <p>IMG0 lamp on the DSP of mate CPU flashes green.</p> <p>STATUS LED (right) on the DSP of active CPU is ON. (ON LINE) </p>

SYSTEM OPERATIONS

Table 6-15 System Initialization With Office Data And Program Loading From HD [Procedure #4]

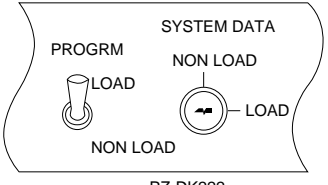
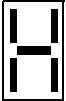
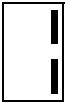
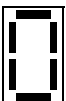
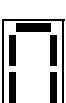
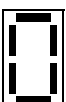
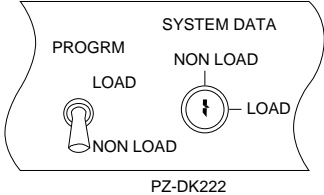
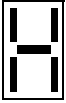
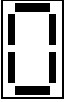
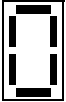
ACTION	7SEG LED/OPE LAMP/KEY SETTINGS
<p style="text-align: center;"><u>START</u></p> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;">Confirm system is operating normally.</div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;">Turn ON the EFFECT key on the TOPU. (See Figure 6-58)</div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;"> Set the keys on the TOPU as follows. <ul style="list-style-type: none"> • PROGRAM KEY → LOAD • SYSTEM DATA KEY → LOAD </div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;">Press INITIAL START button on the TOPU.</div> <p style="text-align: center;">↓</p> <ul style="list-style-type: none"> • HD Initialization • Program Load • Office Data Load • System Initialization • System starts up again. <p style="text-align: center;">↓</p>	<p>CPU OPE lamp on the DSP of active CPU lights steadily green. IMG0-3 lamps flash.</p> <p>IMG0 lamp on the DSP of mate CPU flashes green.</p> <div style="text-align: center;">  <p>PZ-DK222</p> </div> <p>CPU OPE and IMGX lamps on both DSP go OFF.</p> <p>STATUS LED (right) on the DSP of CPU is ON. </p> <p>STATUS LED (right) on the DSP of CPU is ON. </p> <p>STATUS LED (right) on the DSP of CPU is ON. </p> <p>STATUS LED (right) on the DSP of active CPU is ON. </p> <p>CPU OPE lamp on the DSP of active CPU lights steadily green. IMG0-3 lamps flash.</p> <p>IMG0 lamp on the DSP of mate CPU flashes green.</p> <p>STATUS LED (right) on the DSP of active CPU is ON. (ON LINE) </p>

Table 6-16 System Initialization by Phase 1 Restart [Procedure #5]

ACTION	7SEG LED/OPE LAMP/KEY SETTINGS
<p style="text-align: center;"><u>START</u></p> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;">Confirm system is operating normally.</div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;">Set the SENSE switch on the DSP of CPR to “3”.</div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;">Turn ON the EFFECT key on the TOPU. (See Figure 6-58)</div> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;"> Set the keys on the TOPU as follows. <ul style="list-style-type: none"> • PROGRAM KEY → NON LOAD • SYSTEM DATA KEY → NON LOAD </div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;">Press INITIAL START button on the TOPU.</div>	<p>CPU OPE lamp on the DSP of active CPU light steadily green. (IMG0-3 lamps flash.)</p> <p>IMG0 lamp on the DSP of mate CPU flashes green.</p>  <p style="text-align: center;">PZ-DK222</p> <p>CPU OPE and IMGX lamps on both DSP go OFF.</p>
<ul style="list-style-type: none"> • HD Initialization 	<p>STATUS LED (right) on the CPU is ON. </p>
<ul style="list-style-type: none"> • System Initialization 	<p>STATUS LED (right) on the DSP of CPU is ON. </p>
<ul style="list-style-type: none"> • System starts up again. 	<p>CPU OPE lamp on the DSP of active CPU lights steady green. (IMG0-3 lamps flash.)</p> <p>IMG0 lamp on the DSP of mate CPU flashes green.</p> <p>STATUS LED (right) on the DSP of active CPU is ON. (ON LINE) </p>
<p style="text-align: center;">↓</p> <p style="text-align: center;"><u>END</u></p>	

SYSTEM OPERATIONS

12.2.4 System Initialization by Keys on CPU Front Panel

This initialization executes when the INITIAL key on the TOPU cannot be used. The CPU's active status must be confirmed before executing this type of initialization. Perform the procedure in [Table 6-17](#).



Table 6-17 System Initialization by Keys on CPU Front Panel Procedure

ACTION	REMARKS
<p style="text-align: center;">START</p> <p style="text-align: right;">EMA: PH-PC40</p> <p style="text-align: center;">Check ACT0/ACT1 lamps on the EMA card.</p> <p>ACT0 lights green.)</p> <p>(ACT1 lights green.)</p> <p>Confirm SENSE switch on the DSP of CPU #0 is 2 (DM Load Restart).</p> <p>Press CPU RST key on the DSP of CPU #0.</p> <p>(CPU #0 is being initialized.)</p> <p>Confirm ACT0 lamp lights green again.</p> <p>Confirm SENSE switch on the DSP of CPU #1 is 2 (DM Load Restart).</p> <p>Press CPU RST key on the DSP of CPU #1.</p> <p>(CPU #1 is being initialized.)</p> <p>Confirm ACT1 lamp lights green again.</p> <p>Use ATIM command to adjust date and time. (Refer to Chapter 8)</p> <p style="text-align: center;">END</p>	

12.2.5 System Initialization by SINZ Command

The entire system can be initialized by execution of the SINZ command from the MAT, which is useful for maintenance technicians who have to control the system from a distant location. Perform the procedure in [Table 6-18](#).

Table 6-18 System Initialization by SINZ Command Procedure

ACTION	REMARKS
<div style="text-align: center;"> <p><u>START</u></p> <p>↓</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Use SINZ command to execute initialization.</div> <p>↓</p> <p>Execution of Initialization</p> <p>↓</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> Confirm the following lamp indications: [CPU DSP #0] CPU OPE: steady-green IMG0-3: flash (green) [CPU DSP #1] IMG0: flash (green) </div> <p>↓</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Use ATIM command to adjust date and time.</div> <p>↓</p> <p><u>END</u></p> </div>	<p>For information about SINZ command, see Chapter 8.</p> <p>When the initialization completes, ACT0 lamp lights green and ACT1 lamp goes OFF on EMA (PH-PC40) card.</p> <p>Note: <i>When the system is initialized, the MAT is once disconnected. Then, log in to system again.</i></p>

12.2.6 Peripheral Equipment Initialization (Line/Trunk Initialization)

Line/trunk initialization can be divided into two types: initialization on an individual channel basis and initialization on a circuit card basis. Follow the procedure in [Table 6-19](#).



Table 6-19 Line/Trunk Initialization Procedure

ACTION	REMARKS
<pre> graph TD START([START]) --> Decision{Is initialization on individual channel basis or on circuit card basis?} Decision -- Individual channel basis --> Action1[Use RLST command. (Refer to Chapter 8)] Action1 --> END1([END]) Decision -- Circuit card basis --> Action2[Turn the MB switch UP on the circuit card.] Action2 --> Action3[Return MB switch to the previous position after the MB lamp has turned ON.] Action3 --> END2([END]) </pre>	<p>Note: When initialization executes on a circuit card basis, all channels on the circuit card are placed into make-busy state.</p>

12.3 How to Turn ON/OFF Whole System

A switching system, once put into service, is seldom stopped. However, there may be a case when a switching system must be stopped due to module expansion work, etc. In preparation for such a case, this section explains the procedure for stopping the system and turning ON the power supply.

12.3.1 How to Turn On Whole System

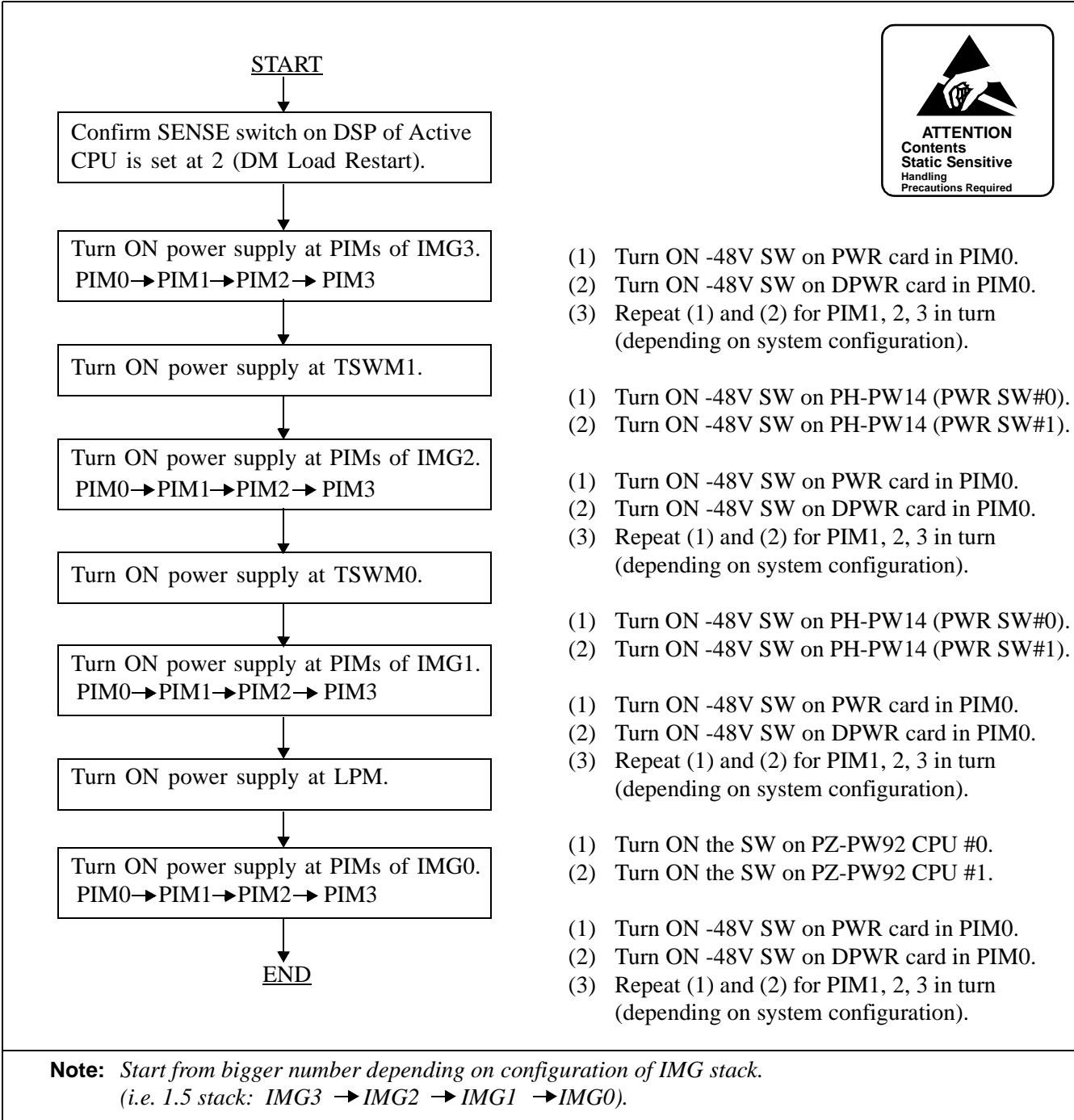


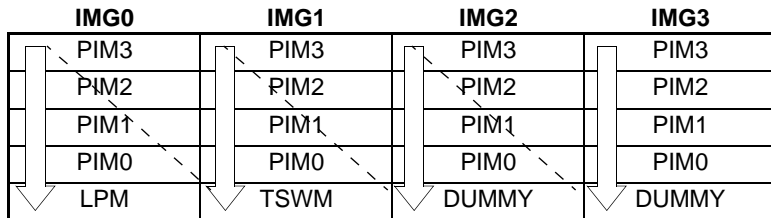
Figure 6-59 How to Turn ON the Whole System

SYSTEM OPERATIONS

12.3.2 How to Turn OFF Whole System

Confirm that the memory data has been backed up on the HD before turning OFF the system power. When turning OFF the power supply, follow the procedure shown below.

Turn OFF the power supply in the uppermost PIM of the IMG stack whose number is larger. Then move down to the bottommost PIM and repeat the procedure for the smaller IMGs.



- (1) Turn OFF -48V SW on DPWR (first) and PWR (next) cards in PIM3 of IMG3.
- (2) Repeat (1) for PIM2, PIM1, PIM0 (IMG3) in this order.
- (3) Turn OFF -48V SW on DPWR (first) and PWR (next) cards in PIM3 of IMG2.
- (4) Repeat (3) for PIM2, PIM1, PIM0 (IMG2) in this order.
- (5) Turn OFF -48V SW on DPWR (first) and PWR (next) cards in PIM3 of IMG1.
- (6) Repeat (5) for PIM2, PIM1, PIM0 (IMG1) in this order.
- (7) Turn OFF SW on PH-PW14 (both PWR SW #1 and #0) in TSWM.
- (8) Turn OFF -48V SW on DPWR (first) and PWR (next) cards in PIM3 of IMG0.
- (9) Repeat (8) for PIM2, PIM1, PIM0 (IMG0) in this order.
- (10) Turn OFF SW on PZ-PW92 of CPU #1.
- (11) Turn OFF SW on PZ-PW92 of CPU #0.

Figure 6-60 How To Turn OFF the Whole System

12.4 System Start-Up

The system start-up procedures consist of the following types:

- | | |
|--|--|
| Procedure #1 (see Table 6-20) | Executed when the Basic Software and Application Software have already been installed in the HD. Office Data has not been installed. |
| Procedure #2 (see Table 6-21) | Executed when the Basic Software, Application Software and Office Data have been already installed in the HD. |

Note: *For the start-up procedure in case any Basic Software, Application Software and Office Data have not been installed in the HD, refer to the Installation Manual (4-IMG Type).*

Table 6-20 Start-Up When Basic & Application Software Is Installed [Procedure #1]


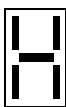
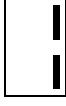
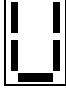
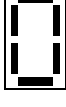
ACTION	7SEG LED/OPE LAMP/KEY SETTINGS
<div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p>① When Power is OFF</p> <p><u>START</u></p> <p>Set SENSE switch at "1" (DM Clear Restart) on the DSP of CPU #0.</p> <p>Turn ON the SW on the PZ-PW92 of CPU #0.</p> </div> <div style="width: 45%;"> <p>② When Power is ON and OFF LINE</p> <p><u>START</u></p> <p>Set SENSE switch at "1" (DM Clear Restart) on the DSP of active CPU.</p> <p>Press the CPU RST button on the DSP of active CPU. or Turn OFF the SW on the PZ-PW92 of active CPU and turn it ON again.</p> </div> </div> <div style="margin-top: 20px; text-align: center;"> <ul style="list-style-type: none"> • HD Initialization • Program Load • System Initial </div> <p style="text-align: center;">System starts up, clearing the Office Data on the HD.</p> <div style="margin-top: 10px;"> <ul style="list-style-type: none"> • The system starts up again <p>③ when Power is ON and ON LINE</p> <p><u>START</u></p> <div style="border: 1px solid black; width: 30px; height: 30px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">A</div> </div>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 20px; text-align: center;">  <p>ATTENTION Contents Static Sensitive Handling Precautions Required</p> </div> <p>STATUS LED (right) on the DSP of CPU is ON. </p> <p>STATUS LED (right) on the DSP of CPU is ON. </p> <p>STATUS LED (right) on the DSP of CPU is ON. </p> <p>CPU OPE lamp on the DSP of active CPU lights steady green. IMG0-3 lamps flash.</p> <p>IMG0 lamp on the DSP of mate CPU flashes green.</p> <p>STATUS LED (right) on the DSP of CPU is ON (ON LINE). </p>

Table 6-20 Start-Up When Basic & Application Software Is Installed [Procedure #1] (Continued)


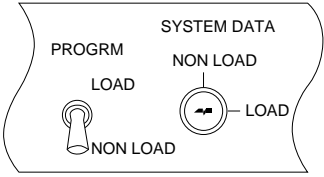




ACTION	7SEG LED/OPE LAMP/KEY SETTINGS
<p style="text-align: center;">A</p> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Set SENSE switch at "2" (DM Load Restart) on the DSP of active CPU.</div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Enter your Office Data.</div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Back up Office Data using the MEM_HDD command.</div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Turn ON the EFFECT key on the TOPU. (See Figure 6-58)</div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Set the keys on the TOPU as follows. <ul style="list-style-type: none"> • PROGRAM KEY → NON LOAD • SYSTEM DATA KEY → LOAD </div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Press INITIAL START button on the TOPU.</div>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 20px; text-align: center;">  <p>ATTENTION Contents Static Sensitive Handling Precautions Required</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 20px; text-align: center;">  <p>PZ-DK222</p> </div> <p>CPU OPE and IMGX lamps on both DSP go OFF.</p> <p>STATUS LED (right) on the DSP of CPU is ON. </p> <p>STATUS LED (right) on the DSP of CPU is ON. </p> <p>STATUS LED (right) on the DSP of CPU is ON. </p> <p>CPU OPE lamp on the DSP of active CPU lights steady-green. IMG0-3 lamps flash.</p> <p>IMG0 lamp on the DSP of mate CPU flashes green.</p> <p>STATUS LED (right) on the DSP of CPU is ON. (ON LINE) </p>
<p style="text-align: center;">↓</p> <ul style="list-style-type: none"> • HD Initial • DM Load • System Initial • System starts up again. <p style="text-align: center;">↓</p> <p style="text-align: center;"><u>END</u></p>	

Table 6-21 Start-Up When Basic, Application Software, and Office Data Installed [Procedure #2]








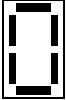
ACTION	7SEG LED/OPE LAMP/KEY SETTINGS
<div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p>① When Power is OFF</p> <p style="text-align: center;"><u>START</u></p> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">Set the SENSE switch at “2” (DM Load Restart) on the DSP of CPU #0.</div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px;">Turn ON the SW on the PZ-PW92 of CPU #0.</div> </div> <div style="width: 45%;"> <p>② When Power is ON and OFF LINE</p> <p style="text-align: center;"><u>START</u></p> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">Set the SENSE switch at “2” (DM Load Restart) on the DSP of active CPU.</div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px;">Press the CPU RST button on the DSP of active CPU. or Turn OFF the SW on the PZ-PW92 of active CPU and turn it ON again.</div> </div> </div> <p style="text-align: center;">↓</p> <ul style="list-style-type: none"> • HD Initial • Program Load • Office Data Load • System Initial <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">A</div>	<div style="text-align: center; margin-bottom: 20px;">  <p>ATTENTION Contents Static Sensitive Handling Precautions Required</p> </div> <p>STATUS LED (right) on the DSP of CPU is ON. </p> <p>STATUS LED (right) on the DSP of CPU is ON. </p> <p>STATUS LED (right) on the DSP of CPU is ON. </p> <p>STATUS LED (right) on the DSP of CPU is ON. </p>

Table 6-21 Start-Up When Basic, Application Software, and Office Data Installed [Procedure #2] (Continued)

ACTION	7SEG LED/OPE LAMP/KEY SETTINGS
<p style="text-align: center;">  ↓ • System starts up again. ↓ <u>END</u> </p>	<div style="text-align: center;">  </div> <p>CPU OPE lamp on the DSP of active CPU lights steady-green. IMG0-3 light steady-green.</p> <p>IMG0 lamp on the DSP of mate CPU flashes green.</p> <p>STATUS LED (right) on the DSP of CPU is ON. (ON LINE) </p>

This page is for your notes.

CHAPTER 7 ROUTINE MAINTENANCE PROCEDURE

1. GENERAL

When a fault has occurred in the system, (for example when a fault has occurred to No. 1 circuit on the 16LC card), the stations connected to No. 1 circuit become unserviceable. When the 16LC card has been replaced with a spare to analyze the cause of the fault or to repair the fault, other normal lines also become unserviceable. As in this example, even when the fault is restricted to a single component, it very often harms the system operations as a whole.

Even if the system is operating normally, it is necessary to perform a routine check to prevent a fault occurrence before it is too late to discover any latent cause of a fault.

This chapter categorizes the routine maintenance procedures of the PBX into the following three types, and explains the minimum required work steps and precautions pertaining to each of the three procedures.

- Daily Maintenance Procedure
- Monthly Maintenance Procedure
- Quarterly Maintenance Procedure

1.1 Flow of Procedures

The scheduling of routine maintenance (daily, monthly, quarterly) will vary with each installation and organization. Figure 7-1 shows the flow of the routine maintenance procedures.

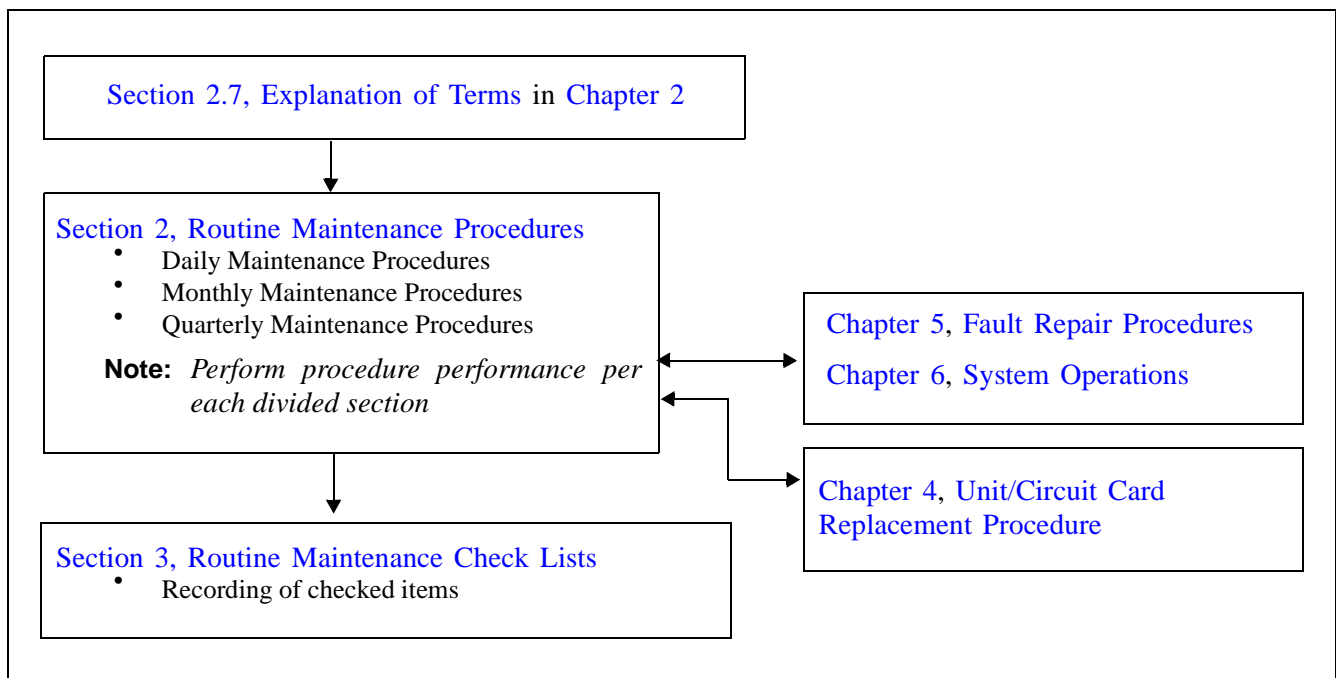


Figure 7-1 Flow of Procedures

ROUTINE MAINTENANCE PROCEDURE

1.2 Required Test Equipment and Tools

Table 7-1 shows the tools and equipment required for test procedures.

Table 7-1 Test Equipment and Tools

NO.	TEST EQUIPMENT/TOOLS	PURPOSE	REMARKS
1	Telephone Set	A telephone set is used when performing connection tests on trunks, etc.	
2	Blown Fuse	A blown fuse is used when performing alarm tests.	
3	VOM Digital Meter	VOM digital meter is used when checking output voltages of the rectifier and the battery.	
4	Phillips Screwdriver	A screwdriver is used when replacing the fan with a spare.	

2. ROUTINE MAINTENANCE PROCEDURES

This section explains general routine maintenance procedures to be performed on a daily, monthly, and quarterly basis. [Table 7-2](#) lists each procedure according to the time each procedure is to be performed. Use the Reference Section to locate the detailed procedure.

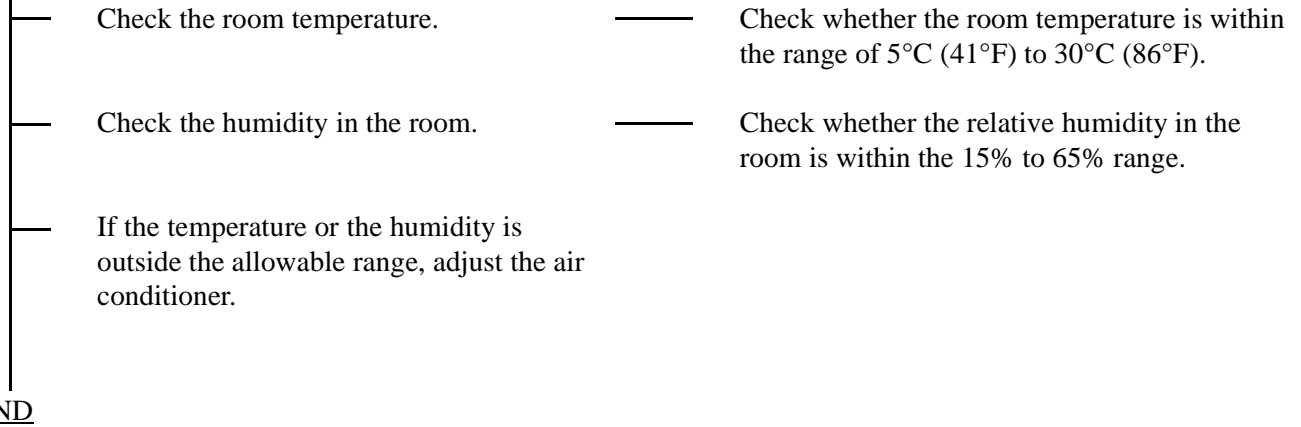
Table 7-2 List of Routine Maintenance Procedures

TIME	PROCEDURE	REFERENCE SECTION	REMARKS
Daily	Check the temperature and relative humidity in the switch room.	Section 2.1, Ambient Conditions in Switch Room Check	
	Check to see if any of the alarm indicator lamps on the TOPU are lit.	Section 2.2, Alarm Check	
	Check the operating status of the MAT and the printer, remaining quantity of paper, etc.	Section 2.3, MAT/Printer Check	
	Check to see if a system message indicating a fault is displayed.	Section 2.4, Collection of System Messages	
	Check whether any station is in lockout state.	Section 2.5, Display of Locked-out Station	
	Check whether the FANU is operating normally.	Section 2.6, Fan Unit Check	
Monthly	Generate an alarm and check whether an indication appears on the TOPU.	Section 2.7, Alarm Tests	
	Check the conditions of the rectifier and batteries.	Section 2.8, Main Power System Check	
	Check trunk circuits individually. Also check the RGU circuit in the PWR Supply of each Module.	Section 2.9, Trunk RGU Check	
	Check each operation and lamps of DESKCON/ATTCON.	Section 2.10, ATTCON/DESKCON Check	
Quarterly	Check the CPU, TSW, and line/trunk Port Micro-processors (PMs).	Section 2.11, System Check	

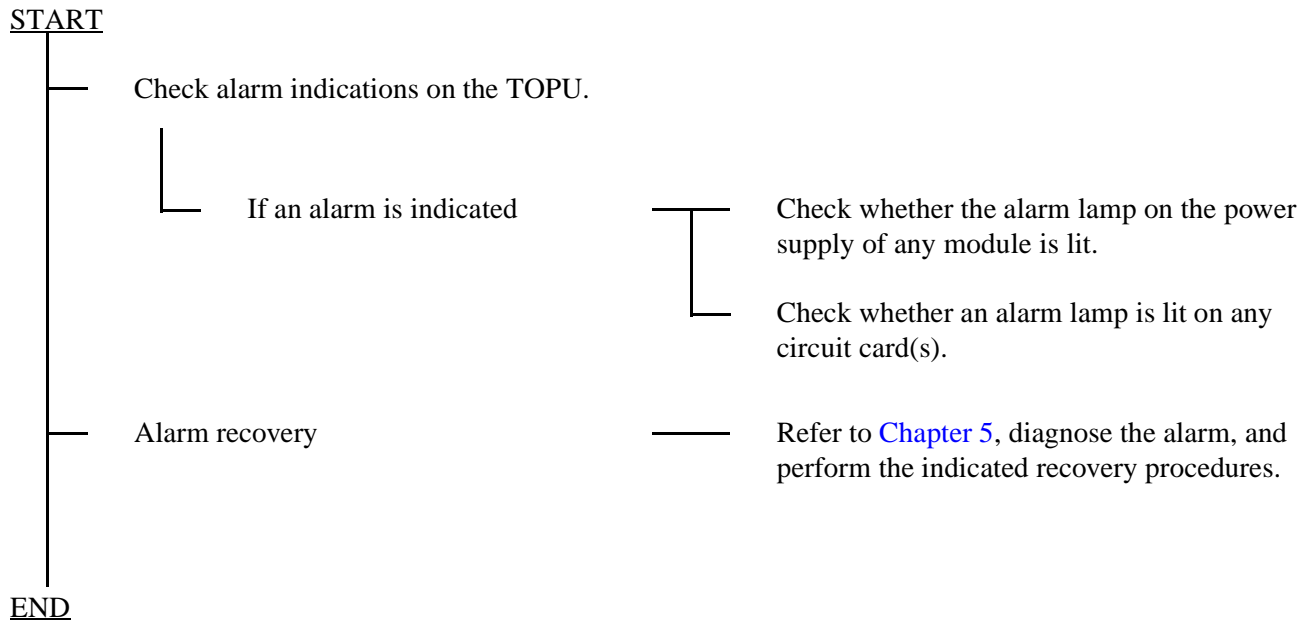
ROUTINE MAINTENANCE PROCEDURE

2.1 Ambient Conditions in Switch Room Check

START

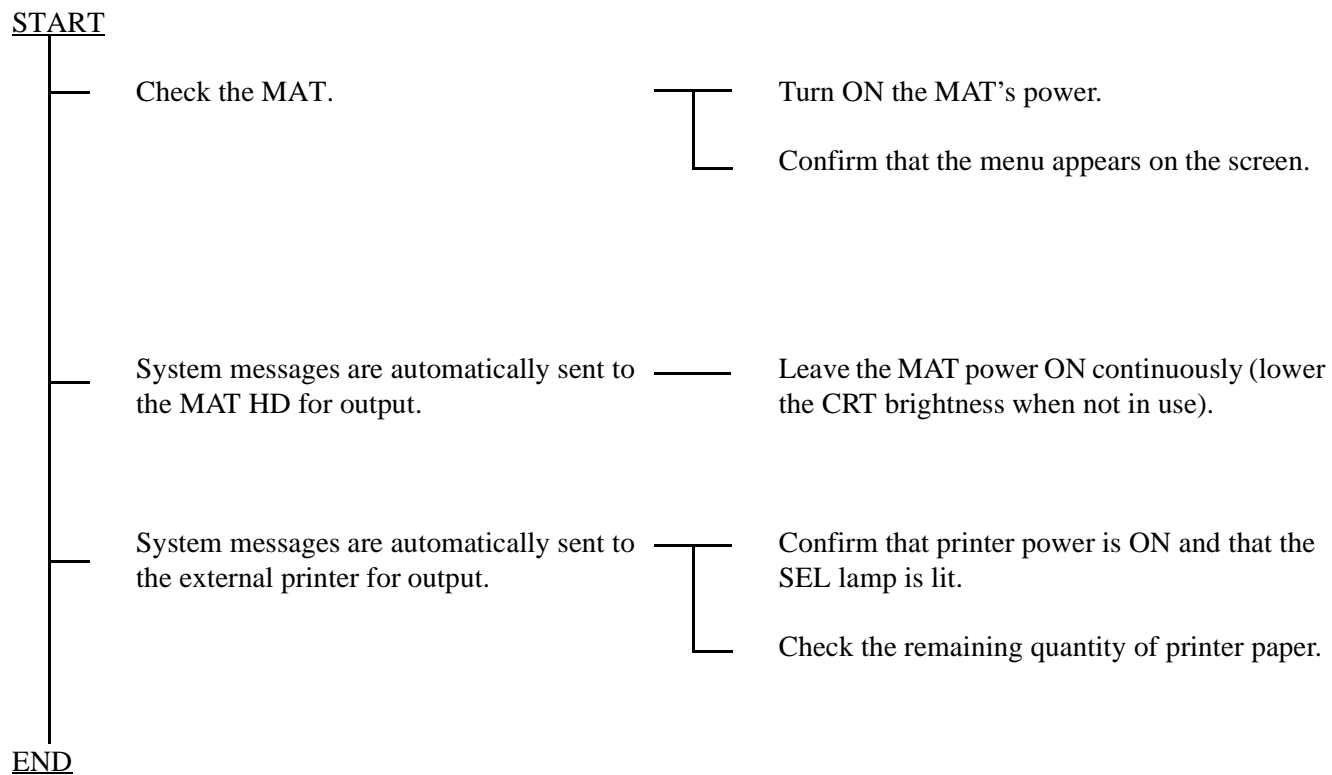


2.2 Alarm Check



ROUTINE MAINTENANCE PROCEDURE

2.3 MAT/Printer Check



2.4 Collection of System Messages

START

Cause system messages to be displayed.

Refer to [Chapter 3](#).

When a system message is displayed.

If the system message indicates a fault, diagnose the fault by referring to [Chapter 5](#), and perform fault recovery.

Check the results of routine diagnosis.

System message [7-O] indicates that the system is normal.

System message [7-P] indicates that the system is abnormal. Perform fault recovery by referring to [Chapter 3](#) or [Chapter 5](#).

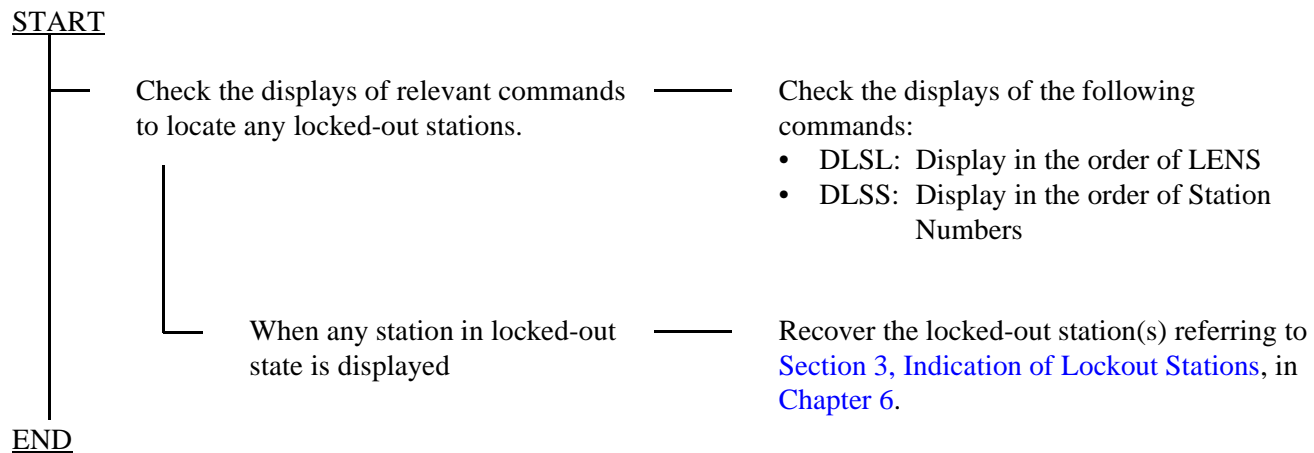
When the system is operating normally or after a fault is restored

Use the RALM command to clear the alarm indication and registered system message.

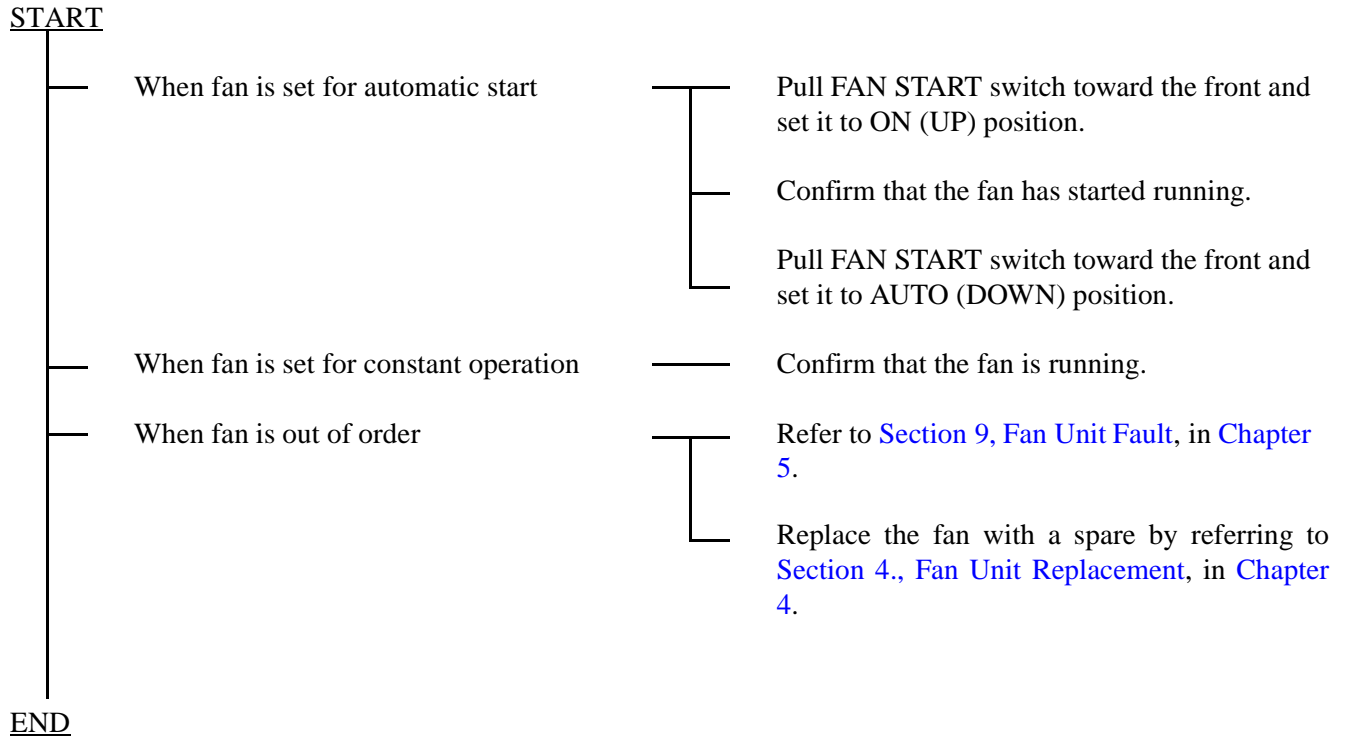
END

ROUTINE MAINTENANCE PROCEDURE

2.5 Display of Locked-out Station



2.6 Fan Unit Check



ROUTINE MAINTENANCE PROCEDURE

2.7 Alarm Tests

START

An alarm is to be generated which will be displayed at the DESKCON/ATTCON. Be sure to inform the attendant of the test in advance.

Replace the -48V fuse in the FANU with a blown fuse.

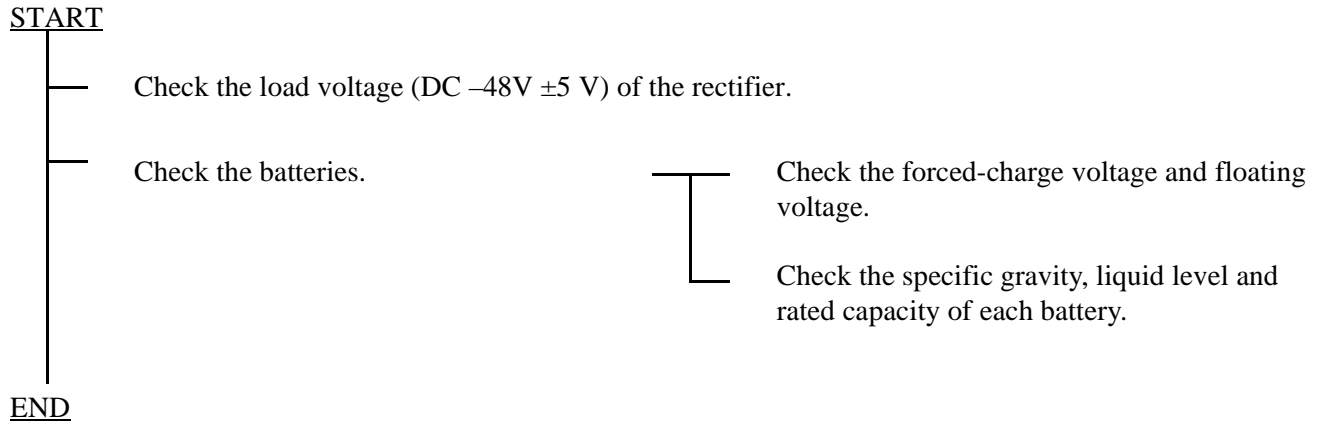
Confirm that an alarm is indicated on the TOPU.

Replace the blown fuse with the original -48V fuse.

Using the RALM command, reset all alarm indications.

END

2.8 Main Power System Check



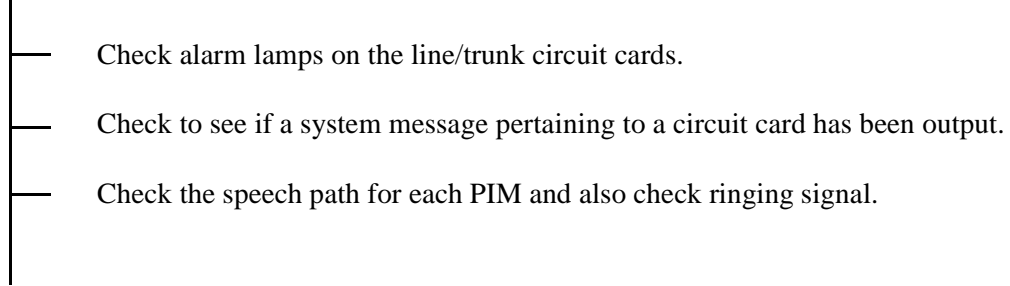
Note: *For a longer battery life, observe the following items:*

- *Place the batteries in a dark, cool place.*
- *Keep the room temperature within the range of 10°C to 35°C (40°F to 85°F).*
- *Floating voltage must be kept within the range of the battery specification at all times.*
- *After discharging, perform equalized charging as per the battery specification.*

ROUTINE MAINTENANCE PROCEDURE

2.9 Trunk RGU Check

START



END

2.10 ATTCON/DESKCON Check

(1) Attendant Console Check

START

Ask the operator at each ATTCON if the ATTCON is operating normally.

Each operator presses the LCHK button on the ATTCON and confirms that all the lamps on the control panel light up.

When the ATTCON is equipped with a Time Indicator Section, the operator also checks the displayed time.

END

Note: *Adjusting Time Method (see [Figure 7-2.](#))*

- *If the Hour (H) button is pushed once, the time will advance one hour. (To push the button, use a thin object, such as a toothpick.)*
- *If the H button is held continuously, the time will advance one hour each second.*
- *If the Minute (M) button is pushed once, the time will advance one minute.*
- *If the M button is held continuously, the time will advance one minute each second.*

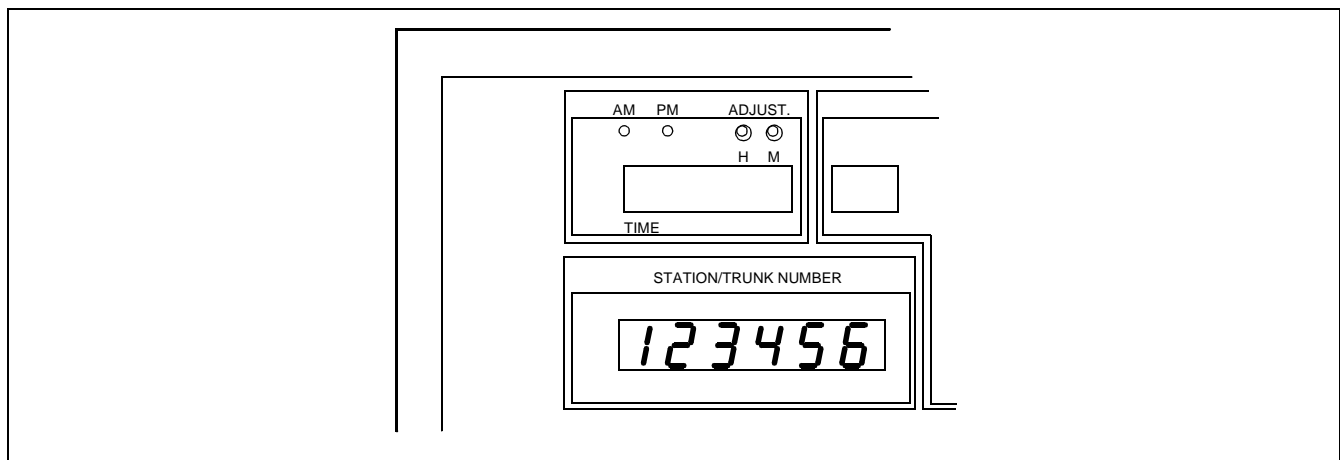


Figure 7-2 Adjusting Time on ATTCON

ROUTINE MAINTENANCE PROCEDURE

(2) Desk Console Check

START

- Ask the operator at each DESKCON if the DESKCON is operating normally.
- On the DESKCON control panel, each operator presses the L3, SRC, and Release keys simultaneously and confirms that all the lamps on the control panel light red.
- Operator presses the # key and confirms that all the lamps on the same transverse line between the EMG and Mute lamps light green. Refer to [Figure 7-3](#).
- Operator presses the # key and confirms that all the green lamps (in the step above) go OFF and the LCD on the DESKCON displays black.
- Operator presses the # key and confirms the black LCD display is cleared and a ringing tone is heard.
- Operator presses the # key and confirms the provided ringing tone has suspended.
- Operator presses the keys on the DESKCON one by one and confirms that each lamp, corresponding to the pressed key, emits a light and the name of the key displays on the LCD, respectively.
- Operator presses the * button and completes the lamp checks. **Note 1**
- Operator checks the displayed time on the right part of LCD. **Note 2**

END

Note 1: *The lamp checks can be suspended any time when the * key on the control panel is pressed.*

Note 2: *The DESKCON obtains time information only from the PBX side. Therefore, adjust the time and date using the MAT command.*

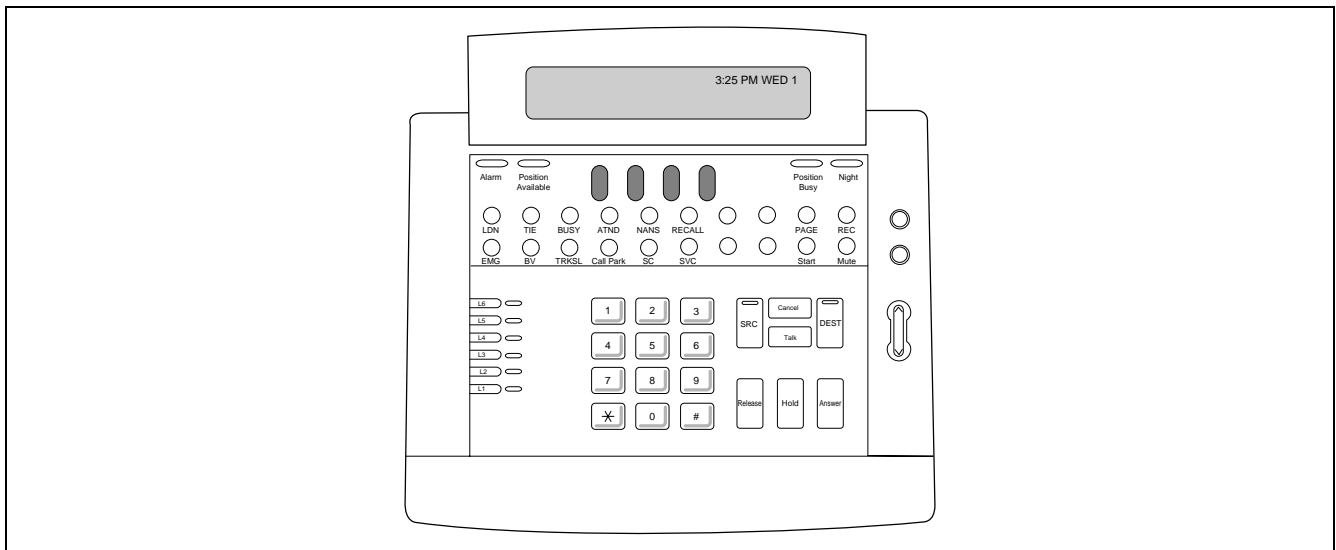


Figure 7-3 Desk Console

2.11 System Check

START

Check the OPE lamps (green) on all circuit cards.

Check whether a system message pertaining to the CPU/TSW has been output.

Check speech conditions by establishing a station-to-station connection at each PIM.

If the condition is abnormal, determine the nature of the problem (dial tone cannot be heard, no speech can be established, etc.)

Does the condition occur in No. 0 TSW or in No. 1 TSW?

Does the condition occur in No. 0 CPU or in No. 1 CPU?

Using MEM_HDD command, check the data memory.

END

ROUTINE MAINTENANCE PROCEDURE

3. ROUTINE MAINTENANCE CHECK LISTS

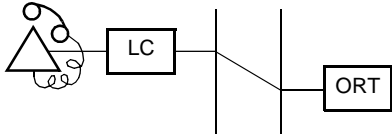
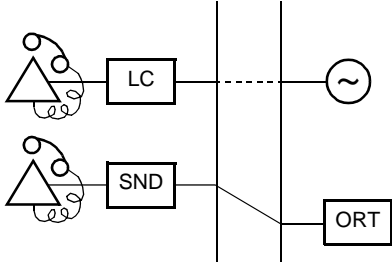
This section provides check lists (Maintenance Procedure Reports) to be used when performing routine maintenance. The Routine Maintenance Check Lists consists of the following items:

- Maintenance Procedure Report
- C.O. Trunk/Tie Line
- Register/Sender Trunk (RST)
- Digital Conference Function
- Speech Path for each PIM, and Ringing Generator Unit
- Attendant/Desk Console

ROUTINE MAINTENANCE PROCEDURE

USER NAME		SIGNATURE OF SUPERVISOR		WORK TIME (FROM -)			
Name of User (Company)		Date:		Maintenance Classification		Routine/Non-routine	
		Control No.		Maintenance Company			
Name of Equipment			Room Temperature - °C °F & humidity %		Name of Worker		
Reference Section	Item	Detail	Check	Reference Section	Item	Detail	Check
2.1	Check of Ambient Conditions in the Switch Room	Ambient Temperature		2.9	Trunk RGU Check	SND Trunk	
		Relative humidity				DCF Function	
2.2	Alarm Check	TOPU				Tone	
2.3	MAT/Printer Check	MAT				MAT	
		Printer				2.10	ATTCON Check
2.4	Collection of System Messages	Related to Fault				2.11	System Check
		Result of Routine Diagnosis		CPU			
2.5	Display of Locked-out Station	Locked out Stations		TSW			
2.6	Fan Unit Check			PM			
2.7	Alarm Tests	TOPU					
2.8	Main Power System Check	Rectifier					
		Battery					
2.9	Trunk RGU Check	C.O. Trunk					
		Tie Trunk					
		ORT					
		IRT					
Condition And Cause							
Procedure and Parts Used							

Register/Sender Trunk (RST)

TEST TYPE	TEST ITEM	CONNECTION DIAGRAM
ORT Function	<ul style="list-style-type: none"> Perform the test by specifying an ORT using the Connection Test-Station. Confirm that [6-I] system message displays as a result of the test. 	<p>DP/PB</p> 
SENDER Function	<ul style="list-style-type: none"> Perform the test by specifying an ORT using the Connection Test-Station. Confirm that [6-I] system message displays as a result of the test. 	

ROUTINE MAINTENANCE PROCEDURE

RST (/)

TRUNK NO.		FUNCTION		ORT		SENDER	REMARKS
		ORT0	SND0	PB RECEIVING	DP RECEIVING		
RST No.		ORT0	SND0				
		1	1				
		2	2				
		3	3				
		4	4				
		5	5				
		6	6				
RST No.		7	7				
		0	0				
		1	1				
		2	2				
		3	3				
		4	4				
		5	5				
RST No.		6	6				
		7	7				
		0	0				
		1	1				
		2	2				
		3	3				
		4	4				
RST No.		5	5				
		6	6				
		7	7				
		0	0				
		1	1				
		2	2				
		3	3				
RST No.		4	4				
		5	5				
		6	6				
		7	7				

Digital Conference Function

TEST TYPE	TEST ITEM	CONNECTION DIAGRAM
Three-way Conversation	<ul style="list-style-type: none"> Perform the test by specifying an 8CFT using the Connection Test-Station. Confirm that [6-I] system message displays as a result of the test. 	

TRUNK NO.	FUNCTION	SPEECH	RELEASE	REMARKS
	CFT0			
1				
2				
3				
4				
5				
6				
7				

Speech Path for Each PIM, and Ringing Generator Unit

NO.	TEST TYPE	TEST ITEM	CONNECTION DIAGRAM
1	The ATTCON/DESKCON is called from one station in each PIM.	Normal speech path is confirmed by calling the attendant from a station located in each PIM.	

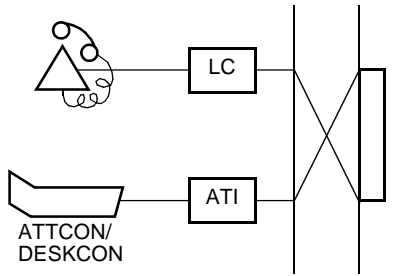
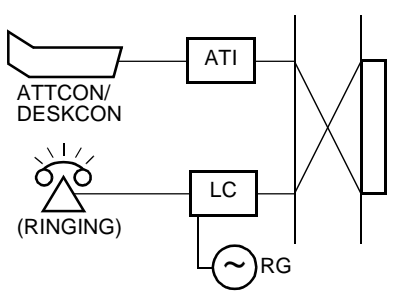
ROUTINE MAINTENANCE PROCEDURE

Speech Path for Each PIM, and Ringing Generator Unit (Continued)

NO.	TEST TYPE	TEST ITEM	CONNECTION DIAGRAM
2	The operator calls the station back.	After normal speech path has been confirmed, the attendant calls the station back. Confirm that the station rings.	

MOUNTING LOCATION		CHECK	REMARKS
MODULE NAME	UNIT NAME		
PIM1	0		
	1		
	2		
	3		
PIM2	0		
	1		
	2		
	3		
PIM3	0		
	1		
	2		
	3		
PIM4	0		
	1		
	2		
	3		

Attendant Console (ATTCON/DESKCON)

TEST TYPE	TEST ITEM	CONNECTION DIAGRAM
Call Termination Test	<ul style="list-style-type: none"> Station dials the operator access code and confirm that the call termination is indicated at all the ATTCON/DESKCON. Station dials the operator access code. An attendant answers and speaks with the caller. This process is repeated at all the ATTCON/DESKCON. 	
Call Origination Test	<ul style="list-style-type: none"> Attendant originates a call to the station by pressing LOOP keys one after another. 	

ROUTINE MAINTENANCE PROCEDURE

FUNCTION ATTCON/ DESKCON NO.	CALL TERMINATION			CALL ORIGINATION		REMARKS
	INCOMING CALL INDICATION	SPEECH	RELEASE	SPEECH	RELEASE	
0						
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

CHAPTER 8 MAINTENANCE COMMANDS

1. GENERAL

This chapter explains various commands and list up commands which are used in the system administrative management procedure. The table below shows the list of commands.

Table 8-1 Command List

COMMAND	COMMAND FULL NAME	REMARKS
ALLC	Assignment of Line Load Control	
ALMG	Assignment of Alarm Grade Data	
ATRF	Assignment of Traffic Measurement Order	
ATRFN	Assignment of Traffic Measurement Order for Fusion Network	
BOSD	Back Up One-Touch Speed Call Memory Data	
CADSD	Continuous Assignment of Station Data	
CATK	Continuous Assignment of Trunk Data	
CBCN	Control of Broadcasting for NDM	
CCSE	Change of Common Signaling Channel Equipment	
CDBU	Change of Dch Backup	
CMOD	Change of System Mode	
CMWL	Control Message Waiting Lamp	
CMWL_T	Control Message Waiting Lamps – Telephone Number	
CPRS	Controlled Alternate PRSCs	
CSCL	Continuous Change of Station Class	
CSTN	Continuous Change of Station Number	
DCBD	Display of Call Block Entry Data	
DCEN	Display of Connection Trunk LENS Data for LDM	
DCON	Display of Connection Status	
DFTD	Display of System Message Details	
DISS	Display of Program Issue	
DLEN	Display of LENS Data	
DLSL	Display of Lockout Station - LENS	
DLSS	Display of Lockout Station - Number	
DLSS_T	Display of Lock Out Station – Number – Telephone Number	

MAINTENANCE COMMANDS

Table 8-1 Command List (Continued)

COMMAND	COMMAND FULL NAME	REMARKS
DLTEL	Display of Telephone Number from LENS for LDM	
DNTEL	Display of Telephone Number from LENS for NDM	
DPKG	Display of Setting Port Package	
DPSW	Display Package Switch Status	
DSTN	Display of Station Data	
DTELN	Display of Telephone Number Data for NDM	
DTF101	Display of Terminal Traffic Data	
DTF102	Display of Route Traffic Data	
DTF103	Display of Station Peg Count Data	
DTF104	Display of Attendant Peg Count Data	
DTF105	Display of Route Peg Count Data	
DTF201	Display of Service Peg Count Data	
DTF301	Display of UCD Route Peg Count Data	
DTF302	Display of UCD Group Peg Count Data	
DTF303	Display of Station Peg Count Data	
DTF501	Display of Attendant Answering Peg Count Data	
DTF601	Display of Connection Route Peg Count Data	
DTF602	Display of Connection Route Traffic Data	
DTF101N	Display of Terminal Traffic Data for Fusion Network	
DTF102N	Display of Route Traffic Data for Fusion Network	
DTF103N	Display of Station Peg Count Data for Fusion Network	
DTF104N	Display of Attendant Peg Count Data for Fusion Network	
DTF105N	Display of Route Peg Count Data for Fusion Network	
DTF201N	Display of Service Peg Count Data for Fusion Network	
DTF301N	Display of UCD Route Peg Count Data for Fusion Network	
DTF302N	Display of UCD Group Peg Count Data for Fusion Network	
DTF303N	Display of UCD Station Peg Count Data for Fusion Network	
DTF501N	Display of Attendant Answering Peg Count Data for Fusion Network	
DTF601N	Display of Connection Route Peg Count Data for Fusion Network	
DTF602N	Display of Connection Route Traffic Data for Fusion Network	

Table 8-1 Command List (Continued)

COMMAND	COMMAND FULL NAME	REMARKS
FLINST	File Install	
HDD_FDD	Data Control Between HDD and FDD	
HDD_MAT	Data Control Between HDD and MAT	
HDD_MAT_N	Data Control Between HDD and MAT for NDM	
HDFP	HDD Format of PBX	
MBCT	Make Busy of Connection Trunk for LDM	
MBLE	Make Busy of LENS	
MBPM	Make Busy of Port Microprocessor	
MBRT	Make Busy of Route	
MBSM	Make Busy of System Message Printout	
MBST	Make Busy of Station	
MBST_T	Make Busy of Station – Telephone Number	
MBTC	Make Busy of Trunk-Continuous	
MBTK	Make Busy of Trunk	
MEM_HDD	Data Control Between Memory and HDD	
MEM_HDD_N	Data Control Between Memory and HDD for NDM	
MFCH	Make Busy of FCCH	
PMBU	Port Microprocessor Back Up	
RALM	Release Alarm	
RALMN	Release Alarm for NDM	
RLST	Release Station/Trunk	
RLST_T	Release of Station/Trunk – Telephone Number	
SINZ	System Initialization	
SPTS	Scanning of Port Status	
SRTS	Scanning of Route Status	
XHFD	X-RAY HD or FDD Diagnosis	

MAINTENANCE COMMANDS

ALLC: Assignment of Line Load Control

1. Functional Outline

This command designates the start and stop of line load control.

2. Parameters

Input Data

ALL/ONE: Operation Mode Selection (1,2)

A=All LPs A is not valid for 1-IMG-system.

O=Only One LP

LP: Local Partition (LP) Number

Note: *This parameter appears when O (only one LP) is set in ALL/ONE input data.*

The data is designated as 00 for 1-IMG-system.

STATUS: Line Load Control Status (0-3)

0=Stop Line Load Control

1=Start Line Load Control

2=Automatic Line Load Control is in effect (display only)

3=Status of all LPs do not match (display only)

ALMG: Assignment of Alarm Grade Data**1. Functional Outline**

This command makes a flexible change of system message output grades. Thus, the PBX user can give a proper alarm grade to each system message according to their requirements. When no data is assigned, the default alarm grades are automatically adopted.

Note: *This command cannot change the alarm grade for [6-A] system message.*

2. Parameters

Input data

FK: Fault Message Kind (0-7, 10-17, 20-27, 30-37)

FI: Fault Message Index (A-Z)

LMP: Fault Message Lamp Data (0-3)

0=Lamp OFF

1=SUP Lamp ON

2=MN Lamp ON

3=MJ Lamp ON

GRD: Printout Grade (0-3)

TYPE: Listup Type (1-3)

1=All Data

2=Changed Data

3=Default Data

SYSM GRD: System Message Output Grade

0=All Messages

1=Not Used

2=MN/MJ Grade Messages

3=MJ Grade Messages

MAINTENANCE COMMANDS

ATRF: Assignment of Traffic Measurement Order

1. Functional Outline

This command is used to assign and delete traffic measurement programs. A request for traffic measurement is performed when a traffic measurement instruction has been assigned by this command. The collected traffic measurement data can be stored on the HD of the MAT, which can be designated on the basis of traffic measurement type.

2. Parameters

Input Data

TYPE: Type of Traffic Measurement (1-19) (See [Table 8-2.](#))

Table 8-2 Type of Traffic Measurement Explanation

DATA	MEANING	DATA	MEANING
1	Terminal Traffic	2	Route Traffic
3	Station Peg Count	4	ATT Peg Count
5	Route Peg Count	6	Service Peg Count
8	UCD Route Peg Count	9	UCD Group Peg Count
10	UCD Station Peg Count	15	ATT Answering Peg Count
18	Connection Route Peg Count	19	Connection Route Traffic

PORT: Traffic Information Output Terminal Number (0-7:IOC, 8:LAN, 9:NMS)

INTERVAL: Output interval (0, 30-120)

Assign the data (30-120) in 10 minute increments. When assigning 0 (available when any of TYPE 3-18 is selected), instead specify your desired output time in the "OUTPUT HOUR/MINUTE" parameters below.

START HOUR [Note 1](#)

START MINUTE [Note 1](#)

END HOUR [Note 1](#)

END MINUTE [Note 1](#)

OUTPUT HOUR: This data is valid only when INTERVAL=0.

OUTPUT MINUTE: This data is valid only when INTERVAL= 0.

START RT: Start External Route Number (available when TYPE 2/5/8 is selected)

END RT: End External Route Number (available when TYPE 2/5/8 is selected)

START C_RT: Start Connection Route Number (available when TYPE 18/19 is selected)

END C_RT: End Connection Route Number (available when TYPE 18/19 is selected)

Note 1: Assign the traffic measurement time period between START HOUR/MINUTE and END HOUR/MINUTE longer than an hour. Also, if the measurement should be executed throughout a day, assign the same data in both START HOUR/MINUTE and END HOUR/MINUTE parameters.

Note 2: Traffic Type 15 only works on Ring Down Trunks.

ATRFN: Assignment of Traffic Measurement Order for Fusion Network

1. Functional Outline

This command is used to assign and delete traffic measurement programs available on the Ethernet. A request for traffic measurement is performed on a network basis when a traffic measurement instruction has been assigned by this command. The collected traffic measurement data can be stored on the HD of the MAT (connected to the NCN: Network Control Node), which can be designated on the basis of traffic measurement type. Note that this command can be used at the NCN only.

2. Parameters

Input Data

TYPE: Type of Traffic Measurement (1-19) (See [Table 8-3](#))

Table 8-3 Type of Traffic Measurement Explanation

DATA	MEANING	DATA	MEANING
1	Terminal Traffic	2	Route Traffic
3	Station Peg Count	4	ATT Peg Count
5	Route Peg Count	6	Service Peg Count
8	UCD Route Peg Count	9	UCD Group Peg Count
10	UCD Station Peg Count	15	ATT Answering Peg Count
18	Connection Route Peg Count	19	Connection Route Traffic

PORT: Traffic Information Output Terminal Number (0-7: IOC, 8: LAN, 9:NMS)

INTERVAL: Output interval (0, 30-120)

Assign the data (30-120) in 10 minute increments. When assigning 0 (available when any of TYPE 3-18 is selected), instead specify your desired output time in the “OUTPUT HOUR/MINUTE” parameters below.

START HOUR [Note 2, Note 3](#)

START MINUTE [Note 2, Note 3](#)

END HOUR [Note 2, Note 3](#)

END MINUTE [Note 2, Note 3](#)

OUTPUT HOUR: This data is valid only when INTERVAL=0.

OUTPUT MINUTE: This data is valid only when INTERVAL=0.

START RT: Start External Route Number (available when TYPE 2/5/8 is selected)

END RT: End External Route Number (available when TYPE 2/5/8 is selected)

START C_RT: Start Connection Route Number (available when TYPE 18/19 is selected)

END C_RT: End Connection Route Number (available when TYPE 18/19 is selected)

Note 1: The selected traffic measurement data, except for TYPE 1 (Terminal Traffic), is collected with the whole network systems as a single unit.

Note 2: When time difference exists between the nodes, confirm that the related time difference data, based on the UCT (Universal Coordinated Time) standard, has been assigned at each node via the ATDF command.

Note 3: Assign the traffic measurement time period between START HOUR/MINUTE and END HOUR/MINUTE longer than an hour. Also, if the measurement should be executed throughout a day, assign the same data in both START HOUR/MINUTE and END HOUR/MINUTE parameters.

Note 4: If the data for this command is once assigned, the node-level data by the ATRF command is not cleared, but loses its validity (the network-level data takes precedence).

MAINTENANCE COMMANDS

BOSD: Back Up One-Touch Speed Call Memory Data

1. Functional Outline

- Save Function
- Saves the data residing in the One-Touch Speed Call Memory of DLC/ELC card onto a floppy disk.
- Verify Function
- Verifies the One-Touch Speed Call Memory data saved on the floppy disk with the data residing in the One-Touch Speed Call Memory of DLC/ELC card.
- Load Function
- Loads the One-Touch Speed Call Memory data saved in the floppy disk into the One-Touch Speed Call Memory of DLC/ELC card.

2. Parameters

Input data

Direction Select: PBX Memory to MAT
MAT to PBX Memory
Verify MAT against MEM

Data Type Selection: by Station
by LEN

Begin TN: **Note 1**

End TN: **Note 1**

Begin STN: **Note 1**

End STN: **Note 1**

Begin LEN: **Note 2**

End LEN: **Note 2**

Auto Verify Afterward: Click ON=Checked
OFF=Unchecked

File Name and Path

Note 1: *When by Station is designated*

Note 2: *When by LEN is designated*

CADSD: Continuous Assignment of Station Data

1. Functional Outline

This command can assign/delete many station data simultaneously which have consecutive numbers.

2. Parameters

Input Data

Type: Assign/Delete

[When *Assign* is selected in the Type selection list box]

TN(START):	Start Tenant Number	
TN(END):	End Tenant Number	
STN(START):	Start Station Number [Max. 6 digits]	Note 1
STN(END):	End Station Number [Max. 6 digits]	Note 1
STEP:	Station Count-up Step	Note 2
	If using * and # → [1-12]	
	If not using * and # → [1-10]	
LENS(START):	First Line Equipment Number [6 digits]	
LENS(END):	Last Line Equipment Number [6 digits]	
GROUP(START):	First Group Number [0-31]	
GROUP(END):	Last Group Number [0-31]	
LEVEL(START):	First Level Number [0-7]	
LEVEL(END):	Last Level Number [0-7]	

Note 1: In the bottom part of the display, a check box is provided to determine whether to use "*" and "#" as a part of the Station Number. If necessary, check the box.

Note 2: In the parameter here, specify the size of increment between the consecutive station numbers to be assigned. See the example below:

Example:	Input data	Result
	STN(START)=100	Station Number is assigned by 10 increments:
	STN(END)=200	∇ When * and # are not used as part of STN
	STEP=10	100 110 120 130 ... 190 200
		∇ When * and # are used as part of STN
		10* 118 126 134 ... 1** 1#8

MAINTENANCE COMMANDS

TEC:	Telephone Equipment Class [1-31]	
	1=DP (10pps)	2=PB
	3=DP/PB	4=DP (20pps)
	5-11=Not used	12=D ^{term}
	13=Data Terminal via D ^{term}	14=Hot Line
	15=CAS Line	16=Data Terminal via Data Module
	17=Not used	18=Virtual Line Appearance (for D ^{term} Multi-Line)
	19-22=Not used	23=ISDN Terminal
	24-26=Not used	27=8 Conference Equipment
	28-31=Not used	

RSC: Route Restriction Class [0-15]

SFC: Service Feature Class [0-15]

Buttons

Execute: Click to make the input data valid.

Cancel: Click to cancel the input data.

Exit: Click to exit this command.

Display Data (after "Execute" button is pressed)

TN: Tenant Number

STN: Assigned Station Number

LENS: Line Equipment Number

STATUS: Data Entry Result

OK=Data Assignment is successful **Note**

Note: *If not OK (i.e. the data entry is not successful), related error message is displayed here.*

When *Delete* is selected in the Type selection list box

Input Data

- TN(START): First Tenant Number
- TN(END): Last Tenant Number
- STN(START): First Station Number [Max. 6 digits]
- STN(END): Last Station Number [Max. 6 digits]
- STEP: Station Count-up Step **Note 1**
 If using * and # → [1-12]
 If not using * and # → [1-10]

Note 1: *In this parameter, specify the size of increment between the consecutive station numbers to be deleted. See the example below:*

Example:	Input data	→	Result
	STN(START)=100 STN(END)=200 STEP=10	}	Station Number is deleted by 10 increments: ∇ When * and # are not used as part of STN 100 110 120 130 ... 190 200 ∇ When * and # are used as part of STN 10* 118 126 134 ... 1** 1#8

Buttons

- Execute: Click to delete the input data.
- Cancel: Click to cancel the deletion.
- Exit: Click to exit this command.

Display Data

- TN: Tenant Number
- STN: Station Number
- STATUS: Result of Deletion **Note 2**

Note 2: *When the deletion is successful, OK is displayed here. Otherwise (i.e. the deletion is rejected), related error message is displayed.*

MAINTENANCE COMMANDS

CATK: Continuous Assignment of Trunk Data

1. Functional Outline

This command can assign/delete many trunk data simultaneously which have consecutive numbers.

2. Parameters

Type/KIND (**Note**): Assign/Delete

Note: *Type* (for software Release 6 or earlier)
KIND (for software Release 7 or later)

When “Assign” is selected in the “Type/KIND” selection list box

Input Data

RT: Route Number
TK (START): First Trunk Number [1-768]
TK (END): Last Trunk Number [1-768]
STEP: Trunk Count-up Step [1-10] **Note 1**
LENS (START): First Line Equipment Number [6 digits]
LENS (END): Last Line Equipment Number [6 digits]
TN: Tenant Number
RSC: Route Restriction Class [0-15] **Note 2**
SFC: Service Feature Class [0-15] **Note 2**
GROUP (START): First Group Number [0-31]
GROUP (END): Last Group Number [0-31]
LEVEL (START): First Level Number [0-7]
LEVEL (END): Last Level Number [0-7]
TYPE: Count-up Type [1-6] **Note 3**
1 = LEVEL → GROUP → UNIT
2 = LEVEL → UNIT → GROUP
3 = GROUP → UNIT → LEVEL
4 = GROUP → LEVEL → UNIT
5 = UNIT → LEVEL → GROUP
6 = UNIT → GROUP → LEVEL

Note 1: *In this parameter, specify the size of increment between the consecutive trunk numbers to be assigned. See the example below:*

Example:	Input data	Result
	TK(START)=1 TK(END)=21 STEP=2	→ Trunk Number is assigned by 2 increments: 1 3 5 7 9 11 ... 19 21

Note 2: *Data entry for this parameter is necessary when RT is 901 or 915.*

Note 3: *The TYPE parameter determines how to arrange the trunk data. See [Details on Trunk Arrangement “TYPE”] (later pages) for details.*

Buttons

Execute: Click to make the input data valid.

Cancel: Click to cancel the input data.

Exit: Click to exit this command.

Display Data

TK: Assigned Trunk Number

LENS: Line Equipment Number

STATUS: Data Entry Result

OK=Data Assignment is successful **Note 4**

Note 4: *If not OK (i.e. the data entry is not successful), related error message is displayed here.*

MAINTENANCE COMMANDS

When “Delete” is selected in the “Type/KIND” selection list box

Input Data

RT: Route Number
TK(START): First Trunk Number [1-768]
TK(END): Last Trunk Number [1-768]
STEP: Trunk Count-up Step [1-10] **Note 1**

Buttons

Execute: Click to delete the input data.
Cancel: Click to cancel the deletion.
Exit: Click to exit this command.

Display Data

TK: Trunk Number
STATUS: Result of Deletion
OK=Deletion Success **Note 2**

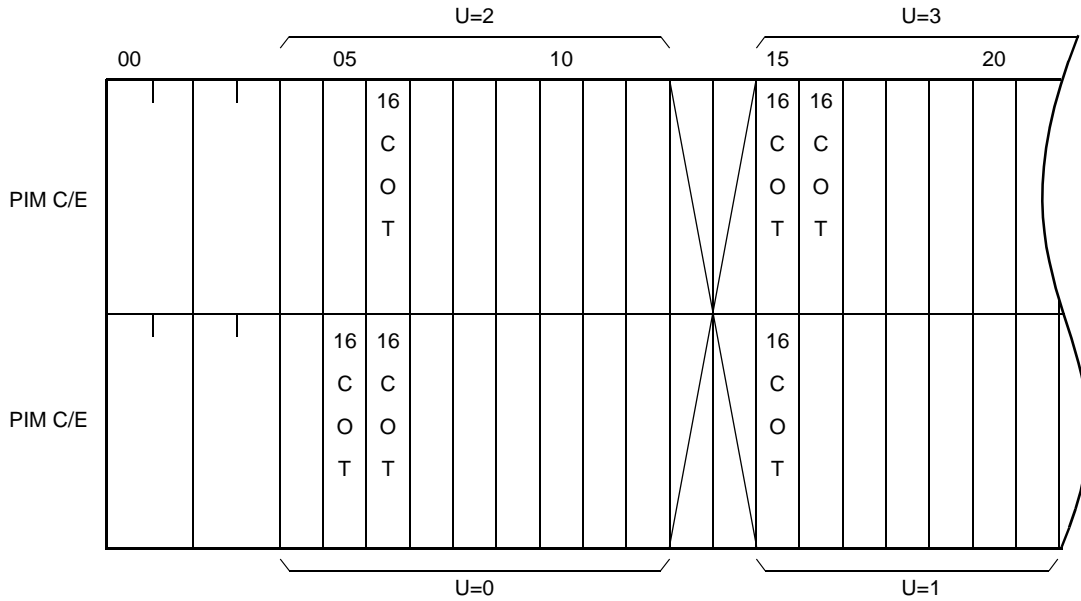
Note 1: *In this parameter, specify the size of increment between the consecutive trunk numbers to be deleted. See the example below:*

Example:	Input data		Result
	TK(START)=1 TK(END)=21 STEP=2	→	Trunk Number is deleted by 2 increments: 1 3 5 7 9 11 ... 19 21

Note 2: *When the deletion is successful, OK is displayed here. Otherwise (i.e. the deletion is rejected), related error message is displayed.*

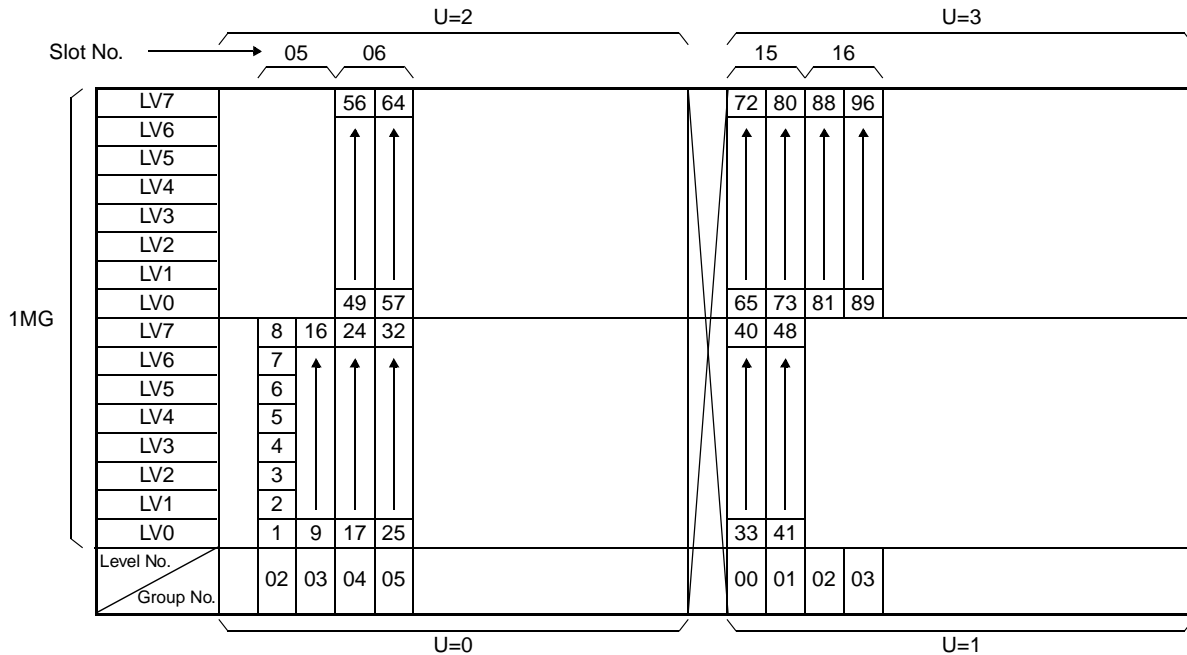
Details on Trunk Arrangement TYPE

When assigning the consecutive trunk data by using the CATK command, you must select the trunk arrangement type (1-6) in the TYPE parameter. The following are examples of accommodated 16 COT circuit cards:



TYPE=1 (Level → Group → Unit)

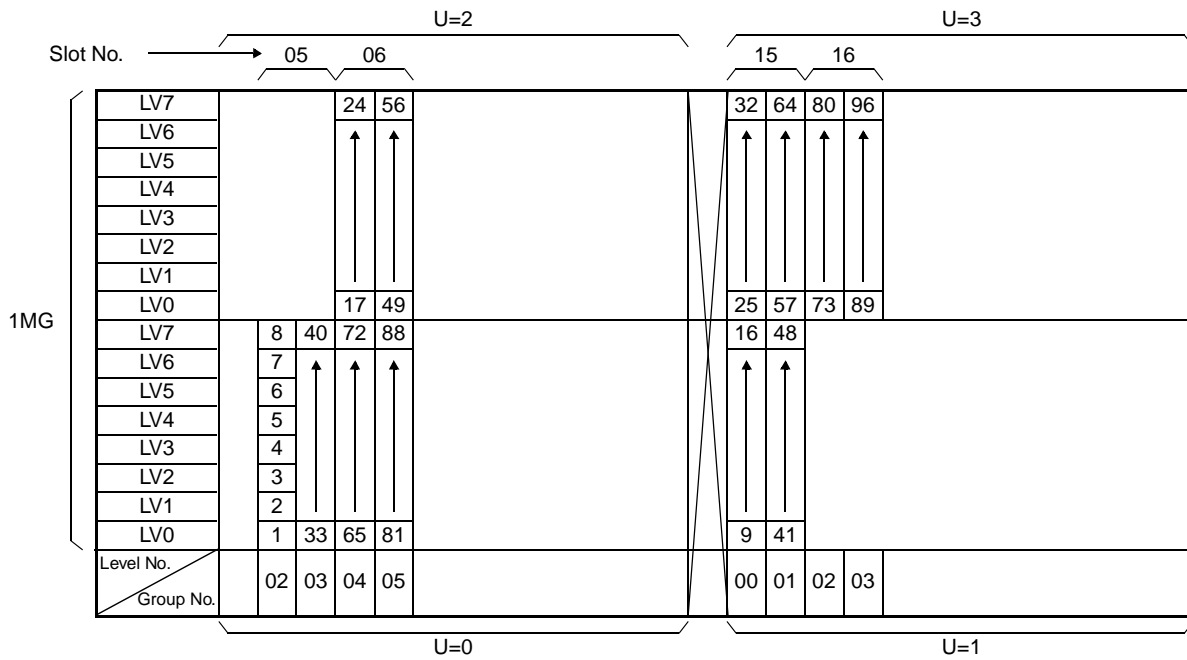
Trunk data is arranged in the following numerical order.



MAINTENANCE COMMANDS

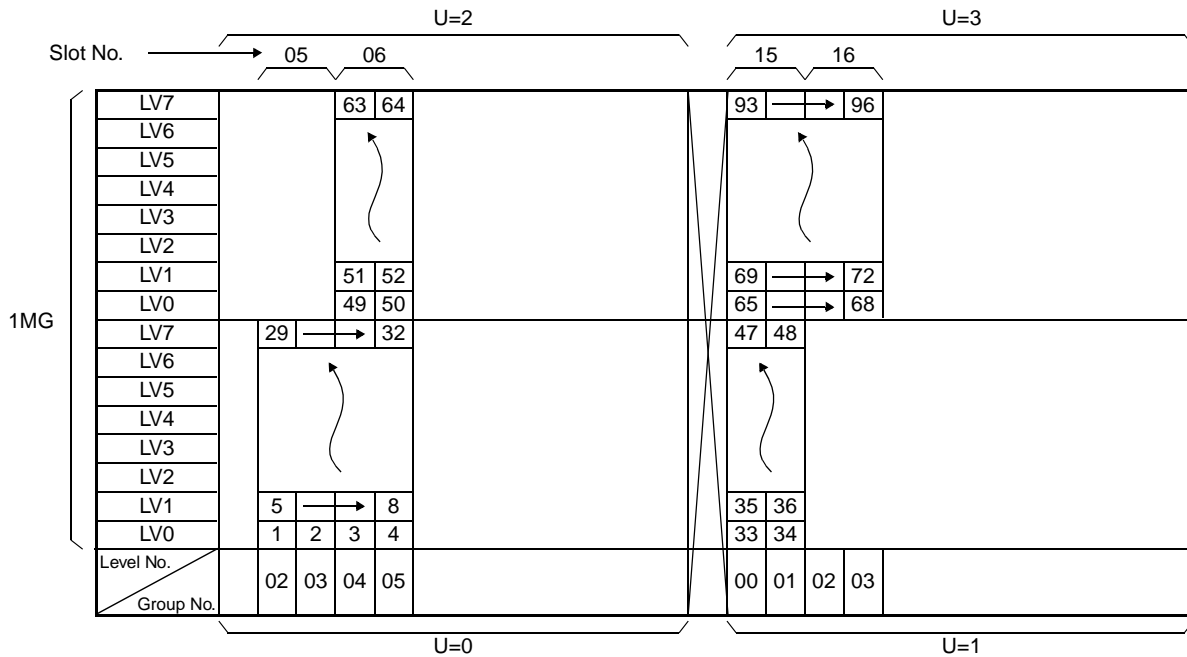
TYPE=2 (Level → Unit → Group)

Trunk data is arranged in the following numerical order.



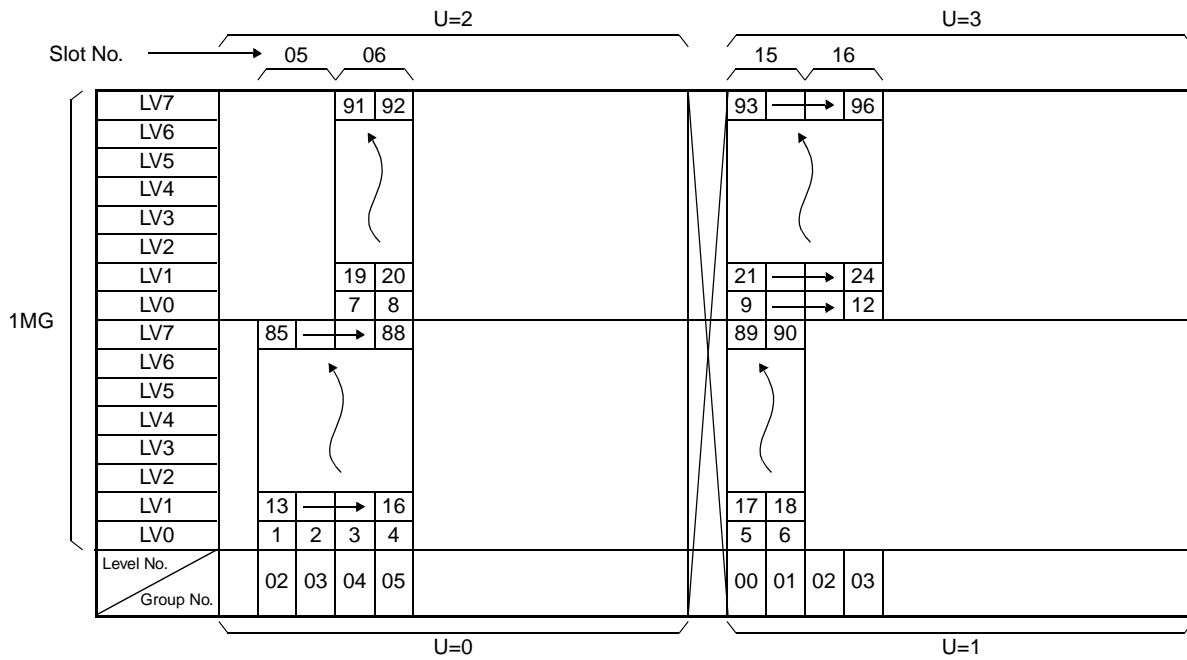
TYPE=3 (Group → Level → Unit)

Trunk data is arranged in the following numerical order.



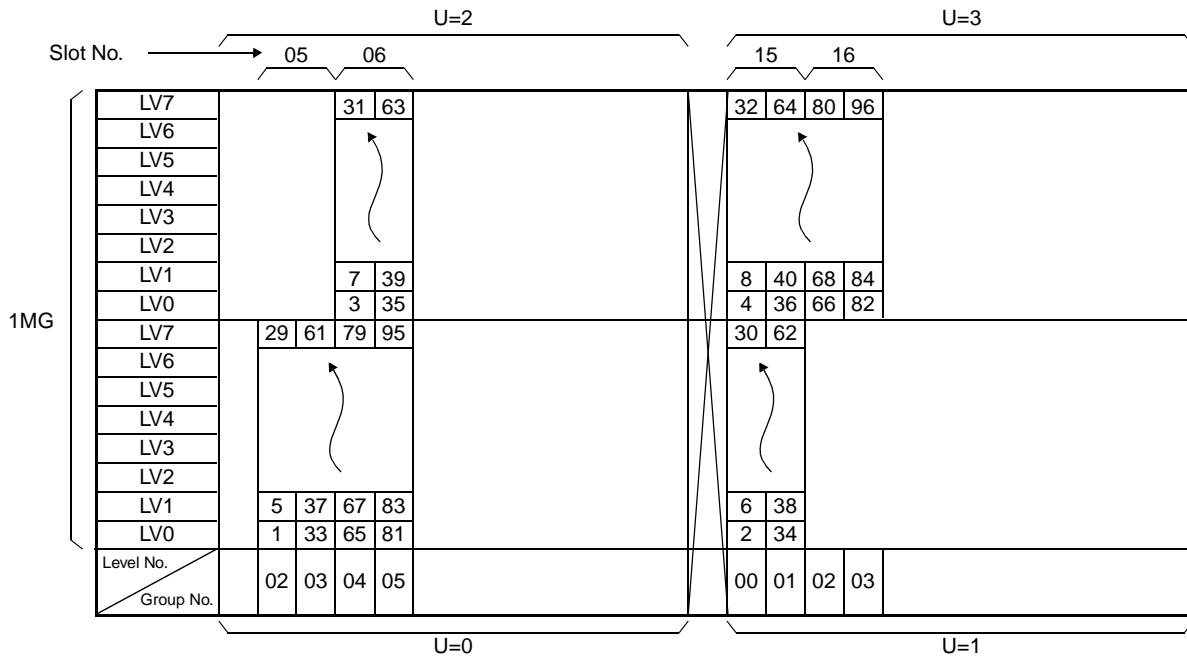
TYPE=4 (Group → Unit → Level)

Trunk data is arranged in the following numerical order.



TYPE=5 (Unit → Level → Group)

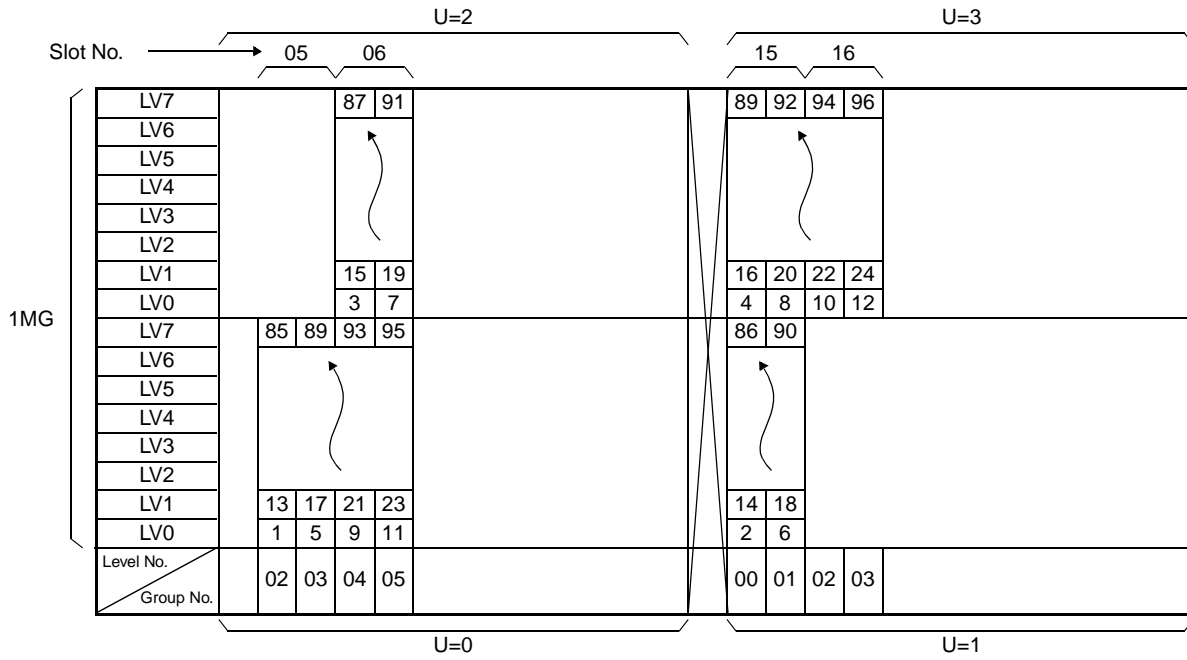
Trunk data is arranged in the following numerical order.



MAINTENANCE COMMANDS

TYPE=6 (Unit → Group → Level)

Trunk data is arranged in the following numerical order.



CBCN: Control of Broadcasting for NDM

1. Functional Outline

This command is used to specify the destination of NDM data broadcast from the NCN. This command is available only at the Network Control Node (NCN).

2. Parameters

Input data

TYPE: ALL=(All the Nodes)/ONE (One designated Node)

FPC: FPC of the designated Node **Note**

Interval: Broadcasting Interval

Note: *This parameter appears when ONE is selected as TYPE parameter.*

MAINTENANCE COMMANDS

CCSE: Change of Common Signaling Channel Equipment

1. Functional Outline

This command is used to set/reset the make busy state of CCH circuit card.

2. Parameters

CCH LENS: Line Equipment Number of CCH circuit card [5 digits]

MG=XX, UNIT=X, GROUP=XX

LINK: Link Status [0-2]

0=Link Open

1=Link Close

2=Not Available

MB: Make Busy Information [0-2]

0=Make Idle

1=Make Busy

2=Not Available

Note: *This command cannot be used for the ISDN-related circuit card (such as PRT, DCH card).*

CDBU: Change of Dch Backup**1. Functional Outline**

This command is used to execute the D-channel route changeover, associated with the D-CHANNEL BACKUP-PRI feature (for AT&T/NT/N-ISDN2).

2. Parameters

Input Data

MG:	Module Group Number [00-07]	Note
CNT:	Number of Dch Backup Route [1-32]	Note

Buttons

Get:	Click to get information on the Dch Routes.
Change:	Click to execute the Dch route changeover.
Stop:	Click to cancel the Dch route changeover.
Exit:	Click to exit this command.

Display Data

RT:	External Route Number
STS0:	Primary-side DCH Status [ACT/ST-BY/OOS (out of service)]
STS1:	Backup-side DCH Status [ACT/ST-BY/OOS (out of service)]
P-LENS:	Primary DCH LENS (6 digits)
B-LENS:	Backup DCH LENS (6 digits)
CHG-STS:	Change Status [Completed/Executing]

Note: *Data entry procedure by this command is as follows:*

1. *Specify the Module Group No. in the "MG" parameter.*
 2. *Click the "Get" button. Then, the related Dch data appears in the display data field.*
 3. *Referring to the display data, enter the "CNT" No. attached to the Dch to be changed over.*
 4. *Click the "Change" button.*
- *Now, the Dch changeover starts automatically.*

MAINTENANCE COMMANDS

CMOD: Change of System Mode

1. Functional Outline

This command is used to execute ACT/ST-BY change of the processor (CPU)/TSW and display the status of CPU/CLK/TSW.

2. Parameters

Input Data

TYPE:	Type of Process (1,2) 1/2=Change Operating Mode/Make Busy of TSW	
DEVICE:	Device to be changed (1,2) 1=CPU 2=TSW	Note 1 Note 2
SW:	Type of Switch 1=TSW (fixed)	Note 3
SYSTEM:	System of Switch (0,1) 0/1=System 0/System 1	Note 3

Note 1: *This parameter appears only when TYPE=1.*

Note 2: *When the CPU mode change is executed, the MAT (TCP/IP) is once disconnected. Then, log in to the system again (For software Release 5 or earlier).*

Note 3: *This parameter appears only when TYPE=2.*

Display data

Status:	CPU 0/1, TSW 0/1, PLO 0/1 (0-3) 0=Not Mounted 1=Standby 2=ACT 3=Make-Busy
---------	---

CMWL: Control Message Waiting Lamp

1. Functional Outline

This command indicates ON/OFF status and controls the Message Waiting Lamp ON/OFF (MW Lamp) at the station. If the station is a D^{term}, this command can also control Message Waiting Display on the D^{term}.

2. Parameters

Input Data

TYPE:	Type of Input (1,2) 1=Designation by Station Number 2=Designation by LEN
TN:	Note 1
STN:	Maximum 5 digits for Business system, and 6 digits for Hotel system. Note 1
LENS:	Note 2
MCI:	Message Center MW Status (0,1) 0=OFF 1=ON
ATT:	Attendant Console MW Status (0,1) 0=OFF 1=ON
STA:	Station MW Status (0,1) 0=OFF 1=ON
VMM:	Voice Mail Module MW Status (0,1) 0=OFF 1=ON

Note 1: *This parameter appears when TYPE=1.*

Note 2: *This parameter appears when TYPE=2.*

MAINTENANCE COMMANDS

CMWL_T: Control Message Waiting Lamps – Telephone Number

1. Functional Outline

This command is used to control/display the Message Waiting Lamp's ON/OFF status, by using Telephone Numbers. When the station is a D^{term}, this command can also be used to control the Message Waiting Lamp Display. This command is available at NCN (for Fusion network) only.

2. Parameters

Input Data

TYPE:	Designation by Telephone Number/Designation by LEN	
UGN:	User Group Number	Note 1
TELN:	Telephone Number (max. 16 digits)	Note 1
LENS:	Line Equipment Number	Note 2
MWLAMP:	MW Lamp Status OFF/ON	
MCI:	Message Center MW Status OFF/ON	
ATT:	Attendant Console MW Status OFF/ON	
STA:	Station MW Status OFF/ON	
VMM:	Voice Mail Module MW Status OFF/ON	

Note 1: *This parameter is valid when Type =1 is selected.*

Note 2: *This parameter is valid when Type =2 is selected.*

Display Data

FPC:	Fusion Point Code (1-253)	Note 3
TN:	Tenant Number	Note 3
STN:	Physical Station Number (max. 5 digits for Business/max. 6 digits for Hotel system)	

Note 3: *These parameters are for display only.*

Buttons

Get:	Click to get information on the MW status.
Set:	Click to execute the assigned MW lamp control.
Exit:	Click to exit this command.

CPRS: Controlled Alternate PRSCs**1. Functional Outline**

This command is necessary for the Controlled Alternate PRSCs function. It either selects the class used between two priority restriction classes (Normal or Urgent), or indicates the class used. This command is allowed only when bit1 of SYS 1, INDEX 59 is "1" (Controlled Alternate PRSCs in service).

2. Parameters

N/U: Priority Restriction Class [N/U]

N=Normal

U=Urgent

MAINTENANCE COMMANDS

CSCCL: Continuous Change of Station Class

1. Functional Outline

This command can change the station class information (TEC, RSC, SFC) en bloc by designating the range of the station number.

2. Parameters

Input Data

TN:	Tenant Number	
STN(START):	First Station Number [0-9, #, * (Max. 6 digits)]	Note 1
STN(END):	Last Station Number [0-9, #, * (Max. 6 digits)]	Note 1
TEC(OLD):	Telephone Equipment Class before change [1-31]	Note 2, Note 3
TEC(NEW):	Telephone Equipment Class after change [1-31]	Note 2
RSC(OLD):	Route Restriction Class before change [0-15]	Note 3
RSC(NEW):	Route Restriction Class after change [0-15]	
SFC(OLD):	Service Feature Class before change [0-15]	Note 3
SFC(NEW):	Service Feature Class after change [0-15]	

Note 1: In the bottom part of the display, a check box is provided to determine whether to use "*" and "#" as a part of the Station Number. If necessary, check the box.

Note 2: Details on TEC (Telephone Equipment Class) are shown below:

1=DP (10pps)	2=PB
3=DP/PB	4=DP (20pps)
5-11=Not used	12=D ^{term}
13=Data Terminal via D ^{term}	14=Hot Line
15=CAS Line	16=Data Terminal via Data Module
17=Not used	18=Virtual Line Appearance (for D ^{term} Multi-Line)
19-22=Not used	23=ISDN Terminal
24-26=Not used	27=8 Conference Equipment
28-31=Not used	

Note 3: If you want to change all classes of all specified stations, enter "*" for this parameter.

Buttons

Execute:	Click to make the input data valid.
Cancel:	Click to cancel the input data.
Exit:	Click to exit this command.

Display Data

STN:	Station Number
STATUS:	Data Entry Result
	OK=Data Assignment is successful Note

Note: If not OK (i.e. the data entry is not successful), related error message is displayed here.

CSTN: Continuous Change of Station Number

1. Functional Outline

This command can change the consecutive station numbers en bloc by designating the station number range.

2. Parameters

Input Data

TN:	Tenant Number	
OLD STN(START):	First Station Number before change [0-9, #, * (Max. 6 digits)]	Note
OLD STN(END):	Last Station Number before change [0-9, #, * (Max. 6 digits)]	Note
NEW STN(START):	First Station Number after change [0-9, #, * (Max. 6 digits)]	Note
NEW STN(END):	Last Station Number after change [0-9, #, * (Max. 6 digits)]	Note

Note: *In the bottom part of the display, a check box is provided to determine whether to use “*” and “#” as a part of the Station Number. If necessary, check the box.*

Buttons

Execute:	Click to make the input data valid.
Cancel:	Click to cancel the input data
Exit:	Click to exit this command.

Display Data

OLD STN:	Station Number before change
NEW STN:	Station Number after change
STATUS:	Data Entry Result
	OK=Data Assignment is successful Note

Note: *If not OK (i.e. the data entry is not successful), related error message is displayed here.*

MAINTENANCE COMMANDS

DCBD: Display of Call Block Entry Data

1. Functional Outline

This command is used to display the following Call Block data, assigned to a station:

- Number of station/trunk whose call is to be blocked (in the remainder of this page, denoted as “Restriction Number”)
- Registered “Restriction Numbers” in total

These data can be obtained by entering any of the station’s Telephone Number (TYPE 1), Physical Station Number (TYPE 2) or LENS (TYPE 3) in the parameters below:

2. Parameters

Input Data

TYPE: Selection of Input Data Type

TYPE 1 (Input Data = UGN, TELN) **Note**

TYPE 2 (Input Data = FPC, TN, STN) **Note**

TYPE 3 (Input Data = FPC, LENS) **Note**

READ (button to view the Display Data)

EXIT (button to exit)

Note: *When using this command, first choose the input data type (Type 1 - 3) in the “TYPE” selection list box. Then the following parameters appear, according to the selected data type.*

- When TYPE 1 is selected : UGN (User Group Number)
TELN (Telephone Number [Max.16 digits])
- When TYPE 2 is selected : FPC (Fusion Point Code [1-253])
TN (Tenant Number [Max.3 digits])
STN (Physical Station Number [Max.6 digits])
- When TYPE 3 is selected : FPC (Fusion Point Code [1-253])
LENS (Line Equipment Number)

Display Data

CNT: Registered "Restriction Numbers" in total (1-5)

DC: Each "Restriction Number"

- When Physical Station Number is registered – Max. 6 digits
- When Telephone Number is registered – Max. 16 digits
- When Trunk Call Number is registered – Max. 32 digits

MAINTENANCE COMMANDS

DCEN: Display of Connection Trunk LENS Data for LDM

1. Functional Outline

This command is used to display the registered connection trunk/route data by designating LENS.

2. Parameters

Input Data

C_LENS: Line Equipment Number [6 digits]

Display Data

C_RT: Connection Route Number [1-1023]

C_TK: Connection Trunk Number [1-4095]

RT: External Route Number

TK: Trunk Number [1-255]

TN: Tenant Number

DCON: Display of Connection Status

1. Functional Outline

This command displays the connection status of the station and trunks. If the specified station or trunk is busy, the connected party is displayed.

2. Parameters

Input data

Type:	Kind of Connection Status (1-4) 1=Station of Connection Status 2=Trunk of Connection Status 3=LENS of Connection Status 4=Connection Trunk of Connection Status (Fusion Network)
TN:	Note 1
STN:	Maximum number of digits is 5 for Business system, and 6 for Hotel system. Note 1
RT:	Note 2
TK:	Note 2
LEN:	Note 3
C_RT:	Connection Route Number (1-1023) Note 4
C_TK:	Connection Trunk Number (1-4095) Note 4

Note 1: *This data is valid when Type=1.*

Note 2: *This data is valid when Type=2.*

Note 3: *This data is valid when Type=3.*

Note 4: *This data is valid when Type=4.*

MAINTENANCE COMMANDS

DFTD: Display of System Message Details

1. Functional Outline

This command is necessary to print the system messages detected by the Fault Diagnostic programs.

When the fault scanning (Scanning PBX) is effective, the MAT can scan the PBX status by polling every 20 sec, (default setting is Effective.)

If the PBX has faults, this command executes automatically.

2. Parameters

Input data

New/Old

Show Details: YES/NO

DISS: Display of Program Issue

1. Functional Outline

This command outputs to the printer and displays at the MAT, the program information (version, issue No. and date) in the main memory, and the program information (SP No. and issue No.) in the port microprocessor memory mounted in each circuit card in the PBX.

2. Parameters

Input data

Type of Issue: Main Memory
Port Microprocessor

Module Group: **Note 1**

Unit: **Note 1**

Display data

Type: Main Memory
Boot ROM
IP
ACDP **Note 2**

Version: **Note 2**

Issue: **Note 2**

Date: **Note 2**

Group: 00-23 **Note 1**

SP No.: 4 digits **Note 1**

Issue: ASCII 2 digits **Note 1**

Note 1: *This data is valid when Port Microprocessor is designated.*

Note 2: *This data is valid when Main Memory is designated.*

MAINTENANCE COMMANDS

DLEN: Display of LENS Data

1. Functional Outline

This command displays the data (station data or trunk data) assigned for a designated LEN. For Hotel system, Room Class and Floor Service Data [Annex (ANX), Ground/Underground (G), Floor (FLR)] displays also.

2. Parameters

Input data

LENS

Display data

TN

STN: Maximum 6 digits

TEC: Telephone Equipment Number (1-31) (See [Table 8-4.](#))

Table 8-4 Telephone Equipment Number Explanation

DATA	MEANING	DATA	MEANING
1	DP (10pps)	2	PB
3	DP/PB	4	DP (20 pps)
5-11	Not used	12	D ^{term}
13	Data Terminal via D ^{term}	14	Hot Line
15	CAS Line	16	Data Terminal via Data Module
17	Not used	23	ISDN Terminal
18	Virtual Line Appearance (for D ^{term} Multi-Line)	19-22	Not used
24-26	Not used	27	Eight Conference Equipment
28-31	Not used		

RSC: Route Restriction Class (0-15)

SFC: Service Feature Class (0-15)

ROOM CLASS: (0-15)

ANX: Annex (0-3)

G: 0=Ground
 1=Underground

FLR: Floor (1-127)

RT: Internal Route Number (See [Table 8-5.](#))

Table 8-5 Internal Route Number Explanation

DATA	MEANING	DATA	MEANING
901	Attendant Console	902	Originating Register Trunk
903	Incoming Register Trunk	904	MF Receiver
905	Sender Trunk DP/PB	906	PB Receiver for Automated Attendant Service
907	AMP	908	Not used
909	Three-Way Conference Trunk	910, 911	Not used
913	Three-Way Conference Trunk for ATTCON	914	Not Used
915	Night Attendant Console	916	MFC Register
917	MFC Sender	918	Not used
919-926	Modem	927, 928	Not used
929	Data Signaling Trunk-Option	930	Rate Adapter Conversion Trunk
931-947	Not used		

TK

C_RT: Connection Route Number (1-1023)

C_TK: Connection Trunk Number (1-4095)

MAINTENANCE COMMANDS

DLSL: Display of Lockout Station - LENS

1. Functional Outline

This command prints the LENS of stations in lockout state.

2. Parameters

Input data

Type: Type of Printout (1-3)
 1=Printout of all LEN in lockout
 2=Printout of locked out LEN in the designated Module Group
 3=Printout of locked out LEN in the designated Unit

MG: **Note 1, Note 2**

UNIT: **Note 2**

Note 1: *The parameter is valid only when Type=2.*

Note 2: *The parameter is valid only when Type=3.*

Display data

LENS

DLSS: Display of Lockout Station - Number

1. Functional Outline

This command prints the stations in lockout state by station number.

2. Parameters

Input data

Type: Type of Printout (1-3)
 1=Printout of all lockout stations
 2=Printout of lockout stations by tenant
 3=Printout of lockout stations within a specified range of station number.

TN: **Note 1, Note 2**

Start STN: Maximum 6 digits **Note 2**

End STN: Maximum 6 digits **Note 2**

Note 1: *The parameter is valid only when Type=2.*

Note 2: *The parameter is valid only when Type=3.*

Display data

CNT: Count

TN

STN

LENS

MAINTENANCE COMMANDS

DLSS_T: Display of Lock Out Station – Number – Telephone Number

1. Functional Outline

This command is used to print out stations in lockout state, by using Telephone Numbers. This command is available at NCN (for Fusion network) only.

2. Parameters

Input Data

TYPE:	Printout of all lockout stations Printout of lockout stations by tenant Printout of lockout stations within a specified range of station number	
UGN:	User Group Number	Note 1, Note 2
Start TELN:	First Telephone Number (max. 16 digits)	Note 2
End TELN:	End Telephone Number (max. 16 digits)	Note 2

Note 1: *This parameter is valid when “Type =Printout of lockout stations by tenant” is selected.*

Note 2: *This parameter is valid when “Type =Printout of lockout stations within a specified range of station number” is selected.*

Display Data

FPC:	Fusion Point Code (1-253)
TN:	Tenant Number
Start STN:	First Physical Station Number (max. 5 digits for Business/max. 6 digits for Hotel system)
End STN:	End Physical Station Number (max. 5 digits for Business/max. 6 digits for Hotel system)
CNT:	Count
UGN:	User Group Number
TELN:	Telephone Number (max. 16 digits)
LENS:	Line Equipment Number

Buttons

Get:	Click to get information on the lockout status.
Exit:	Click to exit this command.

DLTEL: Display of Telephone Number from LENS for LDM**1. Functional Outline**

This command, available at each Local Node (LN), is used to display the Telephone Number or other station data by designating a specific LEN.

2. Parameters

Input Data

LENS: Line Equipment Number [6 digits]

Display Data

UGN: User Group Number

TELN: Telephone Number [Max. 16 digits]

TN: Tenant Number

STN: Station Number [Max. 6 digits]

TEC: Telephone Equipment Class [1-31]

RSC: Route Restriction Class [0-15]

SFC: Service Feature Class [0-15]

MAINTENANCE COMMANDS

DNTEL: Display of Telephone Number from LENS for NDM

1. Functional Outline

This command, available at Network Control Node (NCN) only, is used to display the Telephone Number or other station data by designating a specific FPC and LEN.

2. Parameters

Input Data

FPC:	Fusion Point Code [1-253]
LENS:	Line Equipment Number [6 digits]

Display Data

UGN:	User Group Number
TELN:	Telephone Number [Max. 16 digits]
NID:	Network ID Note
TN:	Tenant Number
STN:	Station Number [Max. 6 digits]
TEC:	Telephone Equipment Number [1-31]
RSC:	Route Restriction Class [0-15]
SFC:	Service Feature Class [0-15]

Note: *Network ID (NID) is allocated automatically when the Module Group/Unit data is assigned by the AFMU command. Refer to the “Fusion Network System Manual” for more information.*

DPKG: Display of Setting Port Package

1. Functional Outline

This command is used to display the circuit card name accommodated in each Group of a specific UNIT.

Note: *When using this command, make sure that each circuit card related database files have already been installed to your MAT. (See FLINST command for more information.)*

2. Parameters

Input Data

MG: Module Group (MG) number [00-07]

UNIT: Unit (U) number [0-3]

Buttons

Get: Click to get information on mounted circuit cards.

Close: Click to exit this command.

Note: *When the Input Data above is entered and the “Get” button is pressed, the related circuit card name is displayed on a Group basis. However, if the name is not found for some reasons, the following mark may appear in the relevant display field.*

- # → Unidentifiable firmware type.
- ## → Data not found in the FMID (database).
- ### → Group data not assigned.
- * → Circuit card name not found (for the card is in make-busy state, etc.).

MAINTENANCE COMMANDS

DPSW: Display Package Switch Status

1. Functional Outline

This command is used to display the following information on a Line/Trunk or Control circuit card:
[When MAT is in On-Line Mode (=connected to the system)]

- Current status of each switch
- Explanation of each switch function

[When MAT is in Off-Line Mode (= not connected to the system)]

- Explanation of each switch function

Note 1: *When using this command, make sure that each circuit card related database files have already been installed to your MAT. (See FLINST command for more information.)*

2. Parameters

Input Data

KIND:	Display Kind (selection) <ul style="list-style-type: none">• (MAT=) On-Line Mode• (MAT=) Off-Line Mode	
TYPE:	Circuit Card Type (selection) <ul style="list-style-type: none">• Line Trunk Package• Control Package	
PMN:	Port Micro Processor Number	
PKG NAME:	Circuit Card Name	
LP:	Local Partition Number [00-06 (Even Number only)]	Note 2
SYSTEM:	System <ul style="list-style-type: none">0=No.0 System1=No.1 System	Note 2
MG:	Module Group Number [00-07]	Note 2
UNIT:	Unit Number [0-3]	Note 2
ACT/STBY:	ACT/ST-BY information <ul style="list-style-type: none">0=ACT1=ST-BY2=Not used	Note 2
No:	IOC Card Number [0/1]	Note 2

Note 2: *This parameter may appear when “Control Package” is selected in the “TYPE” parameter.*

Buttons

Get:	Click to view the display data
Page Up:	Click to view the next page data (when next page exists).
Page Down:	Click to return to the previous page data.
Exit:	Click to exit this command.

Display Data

PKG Name:	Circuit Card Name
Firm Name/Issue:	Firm Name/Issue of the circuit card

Each switch data is also displayed on the dedicated display page.

MAINTENANCE COMMANDS

DTELN: Display of Telephone Number Data for NDM

1. Functional Outline

This command is used to display the registered station data corresponding to specified User Group Number (UGN) and Telephone Number (TELN). The following data related to Number Group can be displayed by clicking the selection button for each data. This command can be used only when logging in to Network Control Node (NCN).

- ACPGN: Call Pickup Group (NDM)
- ACPEN: Call Pickup Expand Group (NDM)
- ASHUN: Station Hunting Group-UCD (NDM)
- ASHCN: Station Hunting Group-Circular (NDM)
- AHLSN: Hot Line Station (NDM)
- ASHPN: Station Hunting Group-Pilot (NDM)
- AKYD: Key Data for D^{term}

2. Parameters

Input Data

UGN: User Group Number
TELN: Telephone Number

Display Data

FPC: Fusion Point Code (1-253)
TN: Tenant Number
STN: Station Number
LENS: Line Equipment Number (6 digits)
MG: Module Group Number
UNIT: Unit Number
G: Group Number
LV: Level Number
TEC: Telephone Class (1-31)
RSC: Route Restriction Class (0-15)
SFC: Service Feature Restriction Class (0-15)

Selection Button

CPGN:	Call Pickup Group (NDM)
CPEN:	Call Pickup Expand Group (NDM)
SHUN:	Station Hunting Group-UCD (NDM)
SHCN:	Station Hunting Group-Circular (NDM)
HLSN:	Hot Line Station (NDM)
SHPN:	Station Hunting Group-Pilot (NDM)
KYD:	Key Data for D ^{term}

MAINTENANCE COMMANDS

DTF101: Display of Terminal Traffic Data

1. Functional Outline

This command displays the result of traffic measurement data for Type=1 (Terminal Traffic) assigned by the ATRF command.

2. Parameters

Traffic Data 1:	Terminal Traffic-DTF101
	Route Traffic-DTF102
	Station Peg Count-DTF103
	Attendant Peg Count-DTF104
	Route Peg Count-DTF105
Traffic Data 2:	Service Peg Count-DTF201
Traffic Data 3:	UCD Route Peg Count-DTF301
	UCD Group Peg Count-DTF302
	UCD Station Peg Count-DTF303
Traffic Data 5:	Attendant Ans. Peg Count-DTF501
Traffic Data 6:	Connection Route Peg Count-DTF601
	Connection Route Traffic-DTF602

DTF102: Display of Route Traffic Data

1. Functional Outline

This command displays the result of traffic measurement data for Type=2 (Route Traffic) assigned by the ATRF command.

2. Parameters

Traffic Data 1:	Terminal Traffic-DTF101
	Route Traffic-DTF102
	Station Peg Count-DTF103
	Attendant Peg Count-DTF104
	Route Peg Count-DTF105
Traffic Data 2:	Service Peg Count-DTF201
Traffic Data 3:	UCD Route Peg Count-DTF301
	UCD Group Peg Count-DTF302
	UCD Station Peg Count-DTF303
Traffic Data 5:	Attendant Ans. Peg Count-DTF501
Traffic Data 6:	Connection Route Peg Count-DTF601
	Connection Route Traffic-DTF602

MAINTENANCE COMMANDS

DTF103: Display of Station Peg Count Data

1. Functional Outline

This command displays the result of traffic measurement data for Type=3 (Station Peg Count) assigned by the ATRF command.

2. Parameters

Traffic Data 1:	Terminal Traffic-DTF101
	Route Traffic-DTF102
	Station Peg Count-DTF103
	Attendant Peg Count-DTF104
	Route Peg Count-DTF105
Traffic Data 2:	Service Peg Count-DTF201
Traffic Data 3:	UCD Route Peg Count-DTF301
	UCD Group Peg Count-DTF302
	UCD Station Peg Count-DTF303
Traffic Data 5:	Attendant Ans. Peg Count-DTF501
Traffic Data 6:	Connection Route Peg Count-DTF601
	Connection Route Traffic-DTF602

DTF104: Display of Attendant Peg Count Data

1. Functional Outline

This command displays the result of traffic measurement data for Type=4 (ATT Peg Count) assigned by the ATRF command.

2. Parameters

Traffic Data 1:	Terminal Traffic-DTF101
	Route Traffic-DTF102
	Station Peg Count-DTF103
	Attendant Peg Count-DTF104
	Route Peg Count-DTF105
Traffic Data 2:	Service Peg Count-DTF201
Traffic Data 3:	UCD Route Peg Count-DTF301
	UCD Group Peg Count-DTF302
	UCD Station Peg Count-DTF303
Traffic Data 5:	Attendant Ans. Peg Count-DTF501
Traffic Data 6:	Connection Route Peg Count-DTF601
	Connection Route Traffic-DTF602

MAINTENANCE COMMANDS

DTF105: Display of Route Peg Count Data

1. Functional Outline

This command displays the result of traffic measurement data for Type=5 (Route Peg Count) assigned by the ATRF command.

2. Parameters

Traffic Data 1:	Terminal Traffic-DTF101
	Route Traffic-DTF102
	Station Peg Count-DTF103
	Attendant Peg Count-DTF104
	Route Peg Count-DTF105
Traffic Data 2:	Service Peg Count-DTF201
Traffic Data 3:	UCD Route Peg Count-DTF301
	UCD Group Peg Count-DTF302
	UCD Station Peg Count-DTF303
Traffic Data 5:	Attendant Ans. Peg Count-DTF501
Traffic Data 6:	Connection Route Peg Count-DTF601
	Connection Route Traffic-DTF602

DTF201: Display of Service Peg Count Data

1. Functional Outline

This command displays the result of traffic measurement data for Type=6 (Service Peg Count) assigned by the ATRF command.

2. Parameters

Traffic Data 1:	Terminal Traffic-DTF101
	Route Traffic-DTF102
	Station Peg Count-DTF103
	Attendant Peg Count-DTF104
	Route Peg Count-DTF105
Traffic Data 2:	Service Peg Count-DTF201
Traffic Data 3:	UCD Route Peg Count-DTF301
	UCD Group Peg Count-DTF302
	UCD Station Peg Count-DTF303
Traffic Data 5:	Attendant Ans. Peg Count-DTF501
Traffic Data 6:	Connection Route Peg Count-DTF601
	Connection Route Traffic-DTF602

MAINTENANCE COMMANDS

DTF301: Display of UCD Route Peg Count Data

1. Functional Outline

This command displays the result of traffic measurement data for Type=8 (UCD Route Peg Count) assigned by the ATRF command.

2. Parameters

Traffic Data 1:	Terminal Traffic-DTF101
	Route Traffic-DTF102
	Station Peg Count-DTF103
	Attendant Peg Count-DTF104
	Route Peg Count-DTF105
Traffic Data 2:	Service Peg Count-DTF201
Traffic Data 3:	UCD Route Peg Count-DTF301
	UCD Group Peg Count-DTF302
	UCD Station Peg Count-DTF303
Traffic Data 5:	Attendant Ans. Peg Count-DTF501
Traffic Data 6:	Connection Route Peg Count-DTF601
	Connection Route Traffic-DTF602

DTF302: Display of UCD Group Peg Count Data

1. Functional Outline

This command displays the result of traffic measurement data for Type=9 (UCD Group Peg Count) assigned by the ATRF command.

2. Parameters

Traffic Data 1:	Terminal Traffic-DTF101
	Route Traffic-DTF102
	Station Peg Count-DTF103
	Attendant Peg Count-DTF104
	Route Peg Count-DTF105
Traffic Data 2:	Service Peg Count-DTF201
Traffic Data 3:	UCD Route Peg Count-DTF301
	UCD Group Peg Count-DTF302
	UCD Station Peg Count-DTF303
Traffic Data 5:	Attendant Ans. Peg Count-DTF501
Traffic Data 6:	Connection Route Peg Count-DTF601
	Connection Route Traffic-DTF602

MAINTENANCE COMMANDS

DTF303: Display of Station Peg Count Data

1. Functional Outline

This command displays the result of traffic measurement data for Type=10 (UCD Station Peg Count) assigned by the ATRF command.

2. Parameters

Traffic Data 1:	Terminal Traffic-DTF101
	Route Traffic-DTF102
	Station Peg Count-DTF103
	Attendant Peg Count-DTF104
	Route Peg Count-DTF105
Traffic Data 2:	Service Peg Count-DTF201
Traffic Data 3:	UCD Route Peg Count-DTF301
	UCD Group Peg Count-DTF302
	UCD Station Peg Count-DTF303
Traffic Data 5:	Attendant Ans. Peg Count-DTF501
Traffic Data 6:	Connection Route Peg Count-DTF601
	Connection Route Traffic-DTF602

DTF501: Display of Attendant Answering Peg Count Data

1. Functional Outline

This command displays the result of traffic measurement data for Type=15 (ATT Answering Peg Count) assigned by the ATRF command.

2. Parameters

Traffic Data 1:	Terminal Traffic-DTF101
	Route Traffic-DTF102
	Station Peg Count-DTF103
	Attendant Peg Count-DTF104
	Route Peg Count-DTF105
Traffic Data 2:	Service Peg Count-DTF201
Traffic Data 3:	UCD Route Peg Count-DTF301
	UCD Group Peg Count-DTF302
	UCD Station Peg Count-DTF303
Traffic Data 5:	Attendant Ans. Peg Count-DTF501
Traffic Data 6:	Connection Route Peg Count-DTF601
	Connection Route Traffic-DTF602

MAINTENANCE COMMANDS

DTF601: Display of Connection Route Peg Count Data

1. Functional Outline

This command displays the result of traffic measurement data for Type=18 (Connection Route Peg Count) assigned by the ATRF command.

2. Parameters

Traffic Data 1:	Terminal Traffic-DTF101
	Route Traffic-DTF102
	Station Peg Count-DTF103
	Attendant Peg Count-DTF104
	Route Peg Count-DTF105
Traffic Data 2:	Service Peg Count-DTF201
Traffic Data 3:	UCD Route Peg Count-DTF301
	UCD Group Peg Count-DTF302
	UCD Station Peg Count-DTF303
Traffic Data 5:	Attendant Ans. Peg Count-DTF501
Traffic Data 6:	Connection Route Peg Count-DTF601
	Connection Route Traffic-DTF602

DTF602: Display of Connection Route Traffic Data

1. Functional Outline

This command displays the result of traffic measurement data for Type=19 (Connection Route Traffic) assigned by the ATRF command.

2. Parameters

Traffic Data 1:	Terminal Traffic-DTF101
	Route Traffic-DTF102
	Station Peg Count-DTF103
	Attendant Peg Count-DTF104
	Route Peg Count-DTF105
Traffic Data 2:	Service Peg Count-DTF201
Traffic Data 3:	UCD Route Peg Count-DTF301
	UCD Group Peg Count-DTF302
	UCD Station Peg Count-DTF303
Traffic Data 5:	Attendant Ans. Peg Count-DTF501
Traffic Data 6:	Connection Route Peg Count-DTF601
	Connection Route Traffic-DTF602

MAINTENANCE COMMANDS

DTF101N: Display of Terminal Traffic Data for Fusion Network

1. Functional Outline

This command is used for displaying the result of traffic measurement data for “Type”=1 (Terminal Traffic) assigned by the ATRFN command.

2. Parameters

Traffic Data 1:	Terminal Traffic-DTF101N
	Route Traffic-DTF102N
	Station Peg Count-DTF103N
	Attendant Peg Count-DTF104N
	Route Peg Count-DTF105N
Traffic Data 2:	Service Peg Count-DTF201N
Traffic Data 3:	UCD Route Peg Count-DTF301N
	UCD Group Peg Count-DTF302N
	UCD Station Peg Count-DTF303N
Traffic Data 5:	Attendant Ans. Peg Count-DTF501N
Traffic Data 6:	Connection Route Peg Count-DTF601N
	Connection Route Traffic-DTF602N

DTF102N: Display of Route Traffic Data for Fusion Network

1. Functional Outline

This command is used for displaying the result of traffic measurement data for “Type”=2 (Route Traffic) assigned by the ATRFN command.

2. Parameters

Traffic Data 1:	Terminal Traffic-DTF101N
	Route Traffic-DTF102N
	Station Peg Count-DTF103N
	Attendant Peg Count-DTF104N
	Route Peg Count-DTF105N
Traffic Data 2:	Service Peg Count-DTF201N
Traffic Data 3:	UCD Route Peg Count-DTF301N
	UCD Group Peg Count-DTF302N
	UCD Station Peg Count-DTF303N
Traffic Data 5:	Attendant Ans. Peg Count-DTF501N
Traffic Data 6:	Connection Route Peg Count-DTF601N
	Connection Route Traffic-DTF602N

MAINTENANCE COMMANDS

DTF103N: Display of Station Peg Count Data for Fusion Network

1. Functional Outline

This command is used for displaying the result of traffic measurement data for “Type”=3 (Station Peg Count) assigned by the ATRFN command.

2. Parameters

Traffic Data 1:	Terminal Traffic-DTF101N
	Route Traffic-DTF102N
	Station Peg Count-DTF103N
	Attendant Peg Count-DTF104N
	Route Peg Count-DTF105N
Traffic Data 2:	Service Peg Count-DTF201N
Traffic Data 3:	UCD Route Peg Count-DTF301N
	UCD Group Peg Count-DTF302N
	UCD Station Peg Count-DTF303N
Traffic Data 5:	Attendant Ans. Peg Count-DTF501N
Traffic Data 6:	Connection Route Peg Count-DTF601N
	Connection Route Traffic-DTF602N

DTF104N: Display of Attendant Peg Count Data for Fusion Network

1. Functional Outline

This command is used for displaying the result of traffic measurement data for “Type”=4 (ATT Peg Count) assigned by the ATRFN command.

2. Parameters

Traffic Data 1:	Terminal Traffic-DTF101N
	Route Traffic-DTF102N
	Station Peg Count-DTF103N
	Attendant Peg Count-DTF104N
	Route Peg Count-DTF105N
Traffic Data 2:	Service Peg Count-DTF201N
Traffic Data 3:	UCD Route Peg Count-DTF301N
	UCD Group Peg Count-DTF302N
	UCD Station Peg Count-DTF303N
Traffic Data 5:	Attendant Ans. Peg Count-DTF501N
Traffic Data 6:	Connection Route Peg Count-DTF601N
	Connection Route Traffic-DTF602N

MAINTENANCE COMMANDS

DTF105N: Display of Route Peg Count Data for Fusion Network

1. Functional Outline

This command is used for displaying the result of traffic measurement data for “Type”=5 (Route Peg Count) assigned by the ATRFN command.

2. Parameters

Traffic Data 1:	Terminal Traffic-DTF101N
	Route Traffic-DTF102N
	Station Peg Count-DTF103N
	Attendant Peg Count-DTF104N
	Route Peg Count-DTF105N
Traffic Data 2:	Service Peg Count-DTF201N
Traffic Data 3:	UCD Route Peg Count-DTF301N
	UCD Group Peg Count-DTF302N
	UCD Station Peg Count-DTF303N
Traffic Data 5:	Attendant Ans. Peg Count-DTF501N
Traffic Data 6:	Connection Route Peg Count-DTF601N
	Connection Route Traffic-DTF602N

DTF201N: Display of Service Peg Count Data for Fusion Network

1. Functional Outline

This command is used for displaying the result of traffic measurement data for “Type”=6 (Service Peg Count) assigned by the ATRFN command.

2. Parameters

Traffic Data 1:	Terminal Traffic-DTF101N
	Route Traffic-DTF102N
	Station Peg Count-DTF103N
	Attendant Peg Count-DTF104N
	Route Peg Count-DTF105N
Traffic Data 2:	Service Peg Count-DTF201N
Traffic Data 3:	UCD Route Peg Count-DTF301N
	UCD Group Peg Count-DTF302N
	UCD Station Peg Count-DTF303N
Traffic Data 5:	Attendant Ans. Peg Count-DTF501N
Traffic Data 6:	Connection Route Peg Count-DTF601N
	Connection Route Traffic-DTF602N

MAINTENANCE COMMANDS

DTF301N: Display of UCD Route Peg Count Data for Fusion Network

1. Functional Outline

This command is used for displaying the result of traffic measurement data for “Type”=8 (UCD Route Peg Count) assigned by the ATRFN command.

2. Parameters

Traffic Data 1:	Terminal Traffic-DTF101N
	Route Traffic-DTF102N
	Station Peg Count-DTF103N
	Attendant Peg Count-DTF104N
	Route Peg Count-DTF105N
Traffic Data 2:	Service Peg Count-DTF201N
Traffic Data 3:	UCD Route Peg Count-DTF301N
	UCD Group Peg Count-DTF302N
	UCD Station Peg Count-DTF303N
Traffic Data 5:	Attendant Ans. Peg Count-DTF501N
Traffic Data 6:	Connection Route Peg Count-DTF601N
	Connection Route Traffic-DTF602N

DTF302N: Display of UCD Group Peg Count Data for Fusion Network

1. Functional Outline

This command is used for displaying the result of traffic measurement data for “Type”=9 (UCD Group Peg Count) assigned by the ATRFN command.

2. Parameters

Traffic Data 1:	Terminal Traffic-DTF101N
	Route Traffic-DTF102N
	Station Peg Count-DTF103N
	Attendant Peg Count-DTF104N
	Route Peg Count-DTF105N
Traffic Data 2:	Service Peg Count-DTF201N
Traffic Data 3:	UCD Route Peg Count-DTF301N
	UCD Group Peg Count-DTF302N
	UCD Station Peg Count-DTF303N
Traffic Data 5:	Attendant Ans. Peg Count-DTF501N
Traffic Data 6:	Connection Route Peg Count-DTF601N
	Connection Route Traffic-DTF602N

MAINTENANCE COMMANDS

DTF303N: Display of UCD Station Peg Count Data for Fusion Network

1. Functional Outline

This command is used for displaying the result of traffic measurement data for “Type”=10 (UCD Station Peg Count) assigned by the ATRFN command.

2. Parameters

Traffic Data 1:	Terminal Traffic-DTF101N
	Route Traffic-DTF102N
	Station Peg Count-DTF103N
	Attendant Peg Count-DTF104N
	Route Peg Count-DTF105N
Traffic Data 2:	Service Peg Count-DTF201N
Traffic Data 3:	UCD Route Peg Count-DTF301N
	UCD Group Peg Count-DTF302N
	UCD Station Peg Count-DTF303N
Traffic Data 5:	Attendant Ans. Peg Count-DTF501N
Traffic Data 6:	Connection Route Peg Count-DTF601N
	Connection Route Traffic-DTF602N

DTF501N: Display of Attendant Answering Peg Count Data for Fusion Network

1. Functional Outline

This command is used for displaying the result of traffic measurement data for “Type”=15 (ATT Answering Peg Count) assigned by the ATRFN command.

2. Parameters

Traffic Data 1:	Terminal Traffic-DTF101N
	Route Traffic-DTF102N
	Station Peg Count-DTF103N
	Attendant Peg Count-DTF104N
	Route Peg Count-DTF105N
Traffic Data 2:	Service Peg Count-DTF201N
Traffic Data 3:	UCD Route Peg Count-DTF301N
	UCD Group Peg Count-DTF302N
	UCD Station Peg Count-DTF303N
Traffic Data 5:	Attendant Ans. Peg Count-DTF501N
Traffic Data 6:	Connection Route Peg Count-DTF601N
	Connection Route Traffic-DTF602N

MAINTENANCE COMMANDS

DTF601N: Display of Connection Route Peg Count Data for Fusion Network

1. Functional Outline

This command is used for displaying the result of traffic measurement data for “Type”=18 (Connection Route Peg Count) assigned by the ATRFN command.

2. Parameters

Traffic Data 1:	Terminal Traffic-DTF101N
	Route Traffic-DTF102N
	Station Peg Count-DTF103N
	Attendant Peg Count-DTF104N
	Route Peg Count-DTF105N
Traffic Data 2:	Service Peg Count-DTF201N
Traffic Data 3:	UCD Route Peg Count-DTF301N
	UCD Group Peg Count-DTF302N
	UCD Station Peg Count-DTF303N
Traffic Data 5:	Attendant Ans. Peg Count-DTF501N
Traffic Data 6:	Connection Route Peg Count-DTF601N
	Connection Route Traffic-DTF602N

DTF602N: Display of Connection Route Traffic Data for Fusion Network

1. Functional Outline

This command is used for displaying the result of traffic measurement data for “Type”=19 (Connection Route Traffic) assigned by the ATRFN command.

2. Parameters

Traffic Data 1:	Terminal Traffic-DTF101N
	Route Traffic-DTF102N
	Station Peg Count-DTF103N
	Attendant Peg Count-DTF104N
	Route Peg Count-DTF105N
Traffic Data 2:	Service Peg Count-DTF201N
Traffic Data 3:	UCD Route Peg Count-DTF301N
	UCD Group Peg Count-DTF302N
	UCD Station Peg Count-DTF303N
Traffic Data 5:	Attendant Ans. Peg Count-DTF501N
Traffic Data 6:	Connection Route Peg Count-DTF601N
	Connection Route Traffic-DTF602N

MAINTENANCE COMMANDS

FLINST: File Install

1. Functional Outline

This command is used to install the DPSW-dedicated database files to your MAT. This command is necessary to provide each circuit card's various information (such as circuit card name, equipped switch names, etc.) when your system uses the DPSW/DPKG command.

2. Parameters

Input Data

None

Buttons

Copy: Click to start the data file install.

Exit: Click to exit this command.

<Data Install Procedure>

- (1) Start up the FLINST command from the Start menu.
- (2) Initial Display of the FLINST command appears. Make sure the proper FD drive name is selected in the FDD parameter.
- (3) Click the Copy button. Then, a message, requiring to insert the first FD into the FDD drive, appears.
- (4) Insert the first FD into the FDD of the MAT. Then, click OK.
- (5) File copy starts automatically, and the Copy End message appears upon completion.
- (6) Click OK. Another message asks you whether the next FD is to be installed or not.
- (7) Click OK.
- (8) A message, requiring you to insert the second FD into the FDD drive is displayed. Insert the second FD into the FDD, and click OK.
- (9) File copy starts automatically, and the Copy End message appears upon completion.
- (10) Click OK. A message asks you whether the next (fourth) FD is to be installed or not.
- (11) Click Cancel.

HDD_FDD: Data Control Between HDD and FDD**1. Functional Outline**

This command is used to install the program data from FDD of PBX to HDD of PBX, and to verify the program data between FDD of PBX and HDD of PBX.

2. Parameters

Input data [When system uses software Release 1 or 2]

System Select: HFD0
 HFD1

Direction Select: Floppy Disk to Hard Disk
 Verify HDD against FDD

Note: *Hard Disk to Floppy Disk cannot be selected.*

Data Type Selection: Program data (others are invalid.)

LP Select: Not used

Auto Verify Afterward

Input data [When system uses software Release 3 or later]

System Select: HFD0
 HFD1

Direction Select: Floppy Disk to Hard Disk
 Verify HDD against FDD
 Hard Disk to Floppy Disk

Data Type Selection: Data Memory **Note 1**
 Name Display
 Wireless Call Forwarding
 Program data **Note 2**
 Call Forwarding
 Speed Calling
 User Assign Soft Key

MAINTENANCE COMMANDS

Number Sharing **Note 3**

Call Block

ACD Data Memory

LP Select: This data appears when Call Forwarding, Speed Calling, User Assign Soft Key, Number Sharing or Call Block data is designated.

File Name Select

Auto Verify Afterward

Note 1: *When Data Memory is selected, Network Data Memory (NDM) and Local Data Memory (LDM) are also saved/verified simultaneously.*

Note 2: *Program data can be valid when Floppy Disk to Hard Disk option or Verify HDD against FDD option in the Direction Select list box is selected.*

Note 3: *By saving the Number Sharing data, the data concerning Dual Station Calling Over-FCCS is also saved/verified automatically.*

HDD_MAT: Data Control Between HDD and MAT

1. Functional Outline

This command is used to save the following data from HDD of PBX to MAT.

2. Parameters

Input data

Direction Select: PBX Hard Disk to MAT
 MAT to PBX Hard Disk
 Verify HDD against MAT

Data Type Selection: Data Memory **Note 1**
 Name display
 Wireless Call Forwarding
 Program data **Note 2**
 Call Forwarding
 Speed Calling
 User Assign Soft Key
 Number Sharing **Note 3**
 Call Block
 ACD Data Memory

LP Select: This data appears only when Call Forwarding, Speed Calling, User Assign Soft Key, Number Sharing, or Call Block data is designated.

Auto Verify Afterward

Note 1: *When Data Memory is selected, Network Data Memory (NDM) and Local Data Memory (LDM) are also saved/verified simultaneously.*

Note 2: *Program data can be valid when MAT to PBX Hard Disk option in the Direction Select list box is selected.*

Note 3: *By saving the Number Sharing data, the data concerning Dual Station Calling Over-FCCS is also saved/verified automatically.*

MAINTENANCE COMMANDS

HDD_MAT_N: Data Control Between HDD and MAT for NDM

1. Functional Outline

This command, available at the NCN only, installs (overwrites) the updated Program data from the centralized MAT onto the HDD of all local nodes. To use this command, first install the updated program data on the HDD of the MAT and then execute the program installing onto the HDD of each LN.

2. Parameters

Input data

Data Type Selection: Select all the listed program data

Execution Button: Installing of program data is to be executed

HDFP: HDD Format of PBX**1. Functional Outline**

This command is used to execute the formatting of the HDD of PBX.

2. Parameters

Input Data (Selection by check)

0 System: HDD of No.0 System

1 System: HDD of No.1 System

Buttons

Execute: Click to execute the formatting.

Close: Click to exit this command.

MAINTENANCE COMMANDS

MBCT: Make Busy of Connection Trunk for LDM

1. Functional Outline

This command is used to set/reset the make busy state of the connection trunk.

2. Parameters

Input Data

C_RT: Connection Route Number [1-1023]

C_TK: Trunk Number [1-4095]

MB: Make Busy Information [0/1]
0=Make Idle
1=Make Busy (Outgoing)

MBLE: Make Busy of LENS

1. Functional Outline

This command assigns the IDLE/BUSY status of Line Equipment Numbers (LENS).

2. Parameters

Input data

LENS

MB: 0=Make Idle

1=Make Busy

MAINTENANCE COMMANDS

MBPM: Make Busy of Port Microprocessor

1. Functional Outline

This command sets or resets the make-busy state of the circuit card that contains the port microprocessor. This setting and resetting is performed individually for each circuit card. If the location of the circuit card containing the port microprocessor is specified in this command, the operating state of all circuit cards mounted in the associated unit is displayed.

2. Parameters

Input data

MG

Unit

Group

MB

Display data

MB: 0=Make Idle

1=Make Busy

Note: *Idle/Busy status can be displayed and assigned by the MB parameter.*

MBRT: Make Busy of Route

1. Functional Outline

This command assigns Idle/Busy status for all the trunks in the route designated.

2. Parameters

Input data

RT: Route Number of the external route/internal route. [Table 8-6](#) provides the meaning of the internal route numbers.

MB: 0=Make Idle
1=Make Busy

Table 8-6 Route Number Explanation

DATA	MEANING	DATA	MEANING
901	Attendant/Desk Console	902	Originating Register Trunk
903	Incoming Register Trunk	904	MF Receiver
905	Sender Trunk DP/PB	906	PB Receiver for Automated Attendant Service
907	AMP	908	Not used
909	Three-Way Conference Trunk	910-912	Not used
913	Three-Way Conference Trunk for ATTCON	914	Not used
915	Night Attendant Console	916	MFC Register
917	MFC Sender	918	Not used
919-926	Modem	927, 928	Not used
929	Data Signaling Trunk-Option	930	Rate Adapter Conversion Trunk
931-947	Not used		

MAINTENANCE COMMANDS

MBSM: Make Busy of System Message Printout

1. Functional Outline

This command allows or inhibits the system message printer to output system messages.

2. Parameters

Input data

PORT NO.: Port Number of the printer

MB: 0=Make Idle

1=Make Busy

MBST: Make Busy of Station

1. Functional Outline

This command assigns the Idle/Busy status of stations.

2. Parameters

Input data

TN

STN: Maximum 5 digits for Business system/Maximum 6 digits for Hotel system.

MB: 0=Make Idle
1=Make Busy

MAINTENANCE COMMANDS

MBST_T: Make Busy of Station – Telephone Number

1. Functional Outline

This command is used to assign the IDLE/BUSY status of stations, by using Telephone Numbers. This command is available at NCN (for Fusion network) only.

2. Parameters

Input Data

UGN:	User Group Number
TELN:	Telephone Number (max. 16 digits)
MB:	Make Busy/Make Idle

Display Data

FPC:	Fusion Point Code (1-253)	Note
TN:	Tenant Number	Note
STN:	Physical Station Number (max. 5 digits for Business system/max. 6 digits for Hotel system)	Note

Note: *This data is for display only.*

Buttons

Get:	Click to get information on the station.
Set:	Click to execute the BUSY/IDLE performance.
Exit:	Click to exit this command.

MBTC: Make Busy of Trunk-Continuous**1. Functional Outline**

This command is used to assign the IDLE/BUSY status of trunks. By using this command, plural trunks can be placed into IDLE/BUSY state simultaneously per a route designated in “RT” parameter.

2. Parameters

Input Data

RT:	Route Number	
TK:	Trunk Number	Note 1
MB:	0=Make Idle	
	1=Make Busy (Outgoing)	
	2=Make Busy (Bothway)	Note 2

Note 1: *Multiple trunks can be assigned simultaneously per a route designated in “RT” parameter.*

Note 2: *2=Make Busy (Bothway) is not used.*

MAINTENANCE COMMANDS

MBTK: Make Busy of Trunk

1. Functional Outline

This command assigns the Idle/Busy status of trunks.

2. Parameters

RT: Route Number

TK: Trunk Number

MB: 0=Make Idle

1=Make Busy (Outgoing)

MEM_HDD: Data Control Between Memory and HDD**1. Functional Outline**

This command is used to save the following data from MEM of PBX to HDD of PBX, and vice versa.

2. Parameters

Input data

Direction Select: Memory to Hard Disk
 Hard Disk to Memory
 Verify HDD against MEM

Data Type Selection: Data Memory **Note 1**
 Name Display
 Wireless Call Forwarding
 Call Forwarding
 Speed Calling
 User Assign Soft Key
 Number Sharing **Note 2**
 Call Block
 ACD Data Memory

LP Select: This data is valid when Call Forwarding, Speed Calling, User Assign Soft Key, Number Sharing or Call Block data is designated.

Auto Verify Afterward

Note 1: *When Data Memory is selected, Network Data Memory (NDM) and Local Data Memory (LDM) are also saved/verified simultaneously.*

Note 2: *By saving the Number Sharing data, the data concerning Dual Station Calling Over-FCCS is also saved/verified automatically.*

MAINTENANCE COMMANDS

MEM_HDD_N: Data Control Between Memory and HDD for NDM

1. Functional Outline

This command, available at the NCN only, is used to save/verify a series of Office Data from the Memory of all Local Nodes to the HDD of each same node.

2. Parameters

Input data

Direction Select: MEM to HDD

Verify HDD against MEM

Data Type Selection: Data Memory **Note 1**

Name Display

Wireless Call Forwarding

Call Forwarding

Speed Calling

User Assign Soft Key

Number Sharing **Note 2**

Call Block (for software Release 5 or later)

LP Select: The parameter is valid when Call Forwarding, Speed Calling, User Assign Soft Key, Number Sharing or Call Block data is designated.

Auto Verify Afterward

Note 1: *When Data Memory is selected, Network Data Memory (NDM) and Local Data Memory (LDM) are also saved/verified simultaneously.*

Note 2: *By saving the Number Sharing data, the data concerning Dual Station Calling Over-FCCS (available for Release 5 or later software) is also saved/verified automatically.*

Display data

Information: FPC of Node in which saving/verifying is executed

Result of the execution

Direction: MEM to HDD

Verify HDD against MEM

Data Type: Selected Data Type

MFCH: Make Busy of FCCH**1. Functional Outline**

This command is used to set or reset the make busy state of the FCH card.

2. Parameters

Input Data

FCHN:	FCH Number [1-255]
MB:	Make Busy Information [0/1]
	0=Make Idle
	1=Make Busy

MAINTENANCE COMMANDS

PMBU: Port Microprocessor Back Up

1. Functional Outline

This command saves the contents of Port Microprocessor (PM) onto Floppy Disk (FD) or verifies them. Information of firmware (Program Code) also appears on the screen.

2. Parameters

Input data

Direction Select: Port Microprocessor to MAT
Verify Port Microprocessor
Verify PM with Error List Auto Verify Afterward can be performed when designating Port Microprocessor to MAT.

PM Information: Module Group
Unit
Group
Data Size (1-6)
1=2 Kbytes
2=4 Kbytes
3=8 Kbytes
4=16 Kbytes
5=32 Kbytes
6=64 Kbytes

Display data

Office

SP Number: Information of firmware (Program Code)

SP Issue: Information of firmware (Program Code)

RALM: Release Alarm

1. Functional Outline

This command clears the fault indications.

2. Parameters

Input data

WRT: Y=Alarm is released
 N=Not released

RETURN TO MENU?: Y=Return to MENU
 N=Start operation again

Display data

Alarms Released

MAINTENANCE COMMANDS

RALMN: Release Alarm for NDM

1. Functional Outline

This command, available at the NCN only, clears the fault indications of all the Nodes by clicking the release button on the display.

2. Parameters

Display data

FPC: FPC of alarm released Nodes

Status: Result of releasing the alarm

OK/NG

RLST: Release Station/Trunk

1. Functional Outline

This command releases a station or trunk.

2. Parameters

Input data

TYPE:	Type of Select (1-4)	
	1=Stations	
	2=Trunk	
	3=LENS	
	4=Connection Trunk	
TN:	Note 1	
STN:	Maximum 6 digits	Note 1
RT:	Note 2	
TK:	Note 2	
LENS:	Note 3	
Connection RT:	(1-1023)	Note 4
Connection TK:	(1-4095)	Note 4

Note 1: *This parameter is valid only when TYPE=1.*

Note 2: *This parameter is valid only when TYPE=2.*

Note 3: *This parameter is valid only when TYPE=3.*

Note 4: *This parameter is valid only when TYPE=4.*

Display data

STATUS:	Status of Station/Trunk (1-4)
	1=Idle
	2=Busy
	3=Lockout
	4=Make Busy
FPC:	Fusion Point Code (1-253)
INFORMATION:	Information of the connected party Note

Note: *This parameter appears only when STATUS=2.*

MAINTENANCE COMMANDS

RLST_T: Release of Station/Trunk – Telephone Number

1. Functional Outline

This command is used to release a station/trunk, by using Telephone Numbers. This command is available at NCN (for Fusion network) only.

2. Parameters

Input Data

TYPE:	Telephone Number Trunk LENS Connection Trunk	
UGN:	User Group Number	Note 1
TELN:	Telephone Number (max. 16 digits)	Note 1
RT:	External/Internal Route Number	Note 2
TK:	Trunk Number	Note 2
LENS:	Line Equipment Number	Note 3
C_RT:	Connection Route Number (1-1023)	Note 4
C_TK:	Connection Trunk Number (1-4095)	Note 4

Note 1: This parameter is valid when “Telephone Number” is designated in the “TYPE” selection list box.

Note 2: This parameter is valid when “Trunk” is designated in the “TYPE” selection list box.

Note 3: This parameter is valid when “LENS” is designated in the “TYPE” selection list box

Note 4: This parameter is valid when “Connection Trunk” is designated in the “TYPE” selection list box.

Display Data

FPC:	Fusion Point Code (1-253)	
TN:	Tenant Number	Note 5
STN:	Physical Station Number (max. 5 digits for Business/max. 6 digits for Hotel system)	Note 5

Note 5: This data is displayed when “Telephone Number” is designated in the “TYPE” selection list box.

STATUS:	Status of Station/Trunk (1-5) 1=Idle 2=Busy 3=Lockout 4=Make Busy 5=Now Calling	
INFORMATION:	Information on the connected party	Note 6
ERN:	Area Number (1-32)	Note 7
GRN:	Group Number (1-8)	Note 7
CSN/ZTN:	CS/ZT Number (1-32)	Note 7
PCN:	PHS Community Number (1-1024)	Note 7

Note 6: *This data is displayed when “STATUS” =2 (Busy).*

Note 7: *This data is for Wireless System only.*

Buttons

Get:	Click to get information on the station/trunk.
Release:	Click to execute the station/trunk release.
Exit:	Click to exit this command.

MAINTENANCE COMMANDS

SINZ: System Initialization

1. Functional Outline

This command initializes the PBX from the MAT. At the time of system initialization, this command allows the programs and the office data to be loaded from a Hard Disk of PBX into the RAM of PBX.

2. Parameters

Input data

TYPE: Kind of Initialization (1-4)

 1=System Initialize

 2=System Initialize Office Data Load & System Initialize

 3=System Initialize Program Load & System Initialize

 4=System Initialize Program & Office Data Load & System Initialize

Note: *When the system is initialized, the MAT is once disconnected. Then, log in to the system again.*

SPTS: Scanning of Port Status**1. Functional Outline**

This command displays momentarily the working status of Port Microprocessor (PM) on Module Group (MG), Unit, and Group basis.

2. Parameters

Input data

MG

Unit

Group

Interval: Unit for this parameter is in seconds.

Entry Procedure

Type 1: By MG

Display of Scanning by Designating MG ([Figure 8-1](#))

Package Status	PM:	Not Mounted Note
	ID:	Idle at least one
	BY:	All Busy
	MB:	Under Make Busy Status

Note: *This information appears when the circuit card is in make busy status (MB key is set upward) or when the designated location has no circuit card.*

MAINTENANCE COMMANDS

SPTS (Scanning of Port Status)

Type

1: by MG 3: by MG, Unit, Grou

2: by MG, Unit

MG

0

Interval

10

SCAN

STOP

EXIT

Dynamic Port Status Report (MG)

Package Status PM: Package is not Mounted or Package is make Busy.
 ID: More than one port in a Group is Idle.
 BY: All Port in a Group is Busy.
 MB: All Port in a Group is Hard Make Busy or Soft Make Busy.
 4: —

Group	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Unit 0	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	ID	ID	ID	ID	ID	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	MB	MB	PM	PM	PM	PM	PM
Unit 1	PM	PM	PM	PM	PM	PM	ID	ID	PM	PM	MB	MB	ID	ID	MB	MB	PM	PM	PM	PM	PM	PM	PM	PM	PM	MB	MB	PM	PM	PM	PM	PM
Unit 2	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	MB	MB	PM	PM	PM	PM	PM
Unit 3	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM

Figure 8-1 Port Status Report (MG) Display

Table 8-7 provides a list of the circuit cards and the working status of PM in each group.

Table 8-7 Type of Circuit Cards

TYPE OF CIRCUIT CARD	FUNCTION NAME
LC	Line Circuit
TK	Analog Trunk
RS	Register Sender
AI	Attendant Interface
DL	Digital Line Circuit
CF	3-Party Conference
MO	Modem Pool Trunk
DT	Digital Interface Trunk
DS	DST
DT	Digital Trunk

Type 2: By MG, Unit

Display of Scanning by Designating Unit (Figure 8-2)

Port Status on
Circuit Card Basis

- ID: On-Line Status
- BY: Make Busy/Not Mounted

Port Status on
Circuit Level Basis

- 0: Not Assigned
- 1: Line Idle
- 2: Line Busy
- 3: Make Busy
- 4: Lockout
- 5: Status 5

SPTS (Scanning of Port Status)

Type

1: by MG 3: by MG, Unit, Grou

2: by MG, Unit

MG

Unit

Interval

Dynamic Port Status Report (MG/UNIT)

Port Status
 0: Not Assigned 1: Line Idle
 2: Line Busy 3: Make Busy
 4: LockOut 5: Status5

Group	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Type	--	--	--	--	--	--	DL	--	--	--	--	TK	--	DT	--	DT	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Status	BY	BY	BY	BY	BY	BY	ID	BY	BY	BY	BY	ID	BY	ID	BY	ID	BY	BY	BY	BY	BY	BY	BY	BY	BY	BY	BY	BY	BY	BY	BY	
Level	7	0	0	0	0	0	0	3	0	0	0	0	3	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6	0	0	0	0	0	0	0	3	0	0	0	0	3	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5	0	0	0	0	0	0	0	3	0	0	0	0	3	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4	0	0	0	0	0	0	0	3	0	0	0	0	3	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3	0	0	0	0	0	0	0	1	0	0	0	0	3	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	0	0	0	0	0	0	0	1	0	0	0	0	3	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	0	0	0	0	0	0	0	1	0	0	0	0	3	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Figure 8-2 Port Status Report (MG, Unit) Display

MAINTENANCE COMMANDS

Type 3: By MG, Unit, Group

Display of Scanning by Designating Group

When Group is Designated (Figure 8-3)

STATUS: Idle = Idle
-- = Unassigned Port

TN: Tenant Number

STN: Station Number

TEC: Telephone Equipment Class

SPTS (Scanning of Port Status)

Type <input type="radio"/> 1: by MG <input checked="" type="radio"/> 3: by MG, Unit, Grou <input type="radio"/> 2: by MG, Unit	MG <input style="width: 40px;" type="text" value="0"/>	Unit <input style="width: 40px;" type="text" value="1"/>	Group <input style="width: 40px;" type="text" value="06"/>	Interval <input style="width: 40px;" type="text" value="10"/>	<input type="button" value="SCAN"/>
<input type="button" value="STOP"/> <input type="button" value="EXIT"/>					

Dynamic Port Status Report (MG/UNIT/GROUP)

PKG Type: DL
PKG Status: ID
SP No: 3124
Issue: 5

Level	STATUS	TN	STN	TEC	RT	TK	TCL
7	--						
6	--						
5	--						
4	--						
3	Idle	1	2002	Dterm			
2	Idle	1	2001	Dterm			
1	Idle	1	2000	Dterm			
0	--						

Figure 8-3 Port Status Report (MG, Unit, Group) Display—Designating Group

When Group-Trunk is Designated (Figure 8-4)

RT: See Table 8-8.
 TK: Trunk Number
 TCL: Trunk Class

SPTS (Scanning of Port Status)

Type
 1: by MG 3: by MG, Unit, Grou
 2: by MG, Unit

MG
0

Unit
0

Group
13

Interval
10

Dynamic Port Status Report (MG/UNIT/GROUP)

PKG Type: TK
 PKG Status: ID
 SP No: 3010
 Issue: 5

Level	STATUS	TN	STN	TEC	RT	TK	TCL
7	--						
6	--						
5	--						
4	--						
3	Idle				10	4	TIE Line
2	Idle				10	3	TIE Line
1	Idle				10	2	TIE Line
0	Idle				10	1	TIE Line

Figure 8-4 Port Status Report (MG, Unit, Group) Display—Designating Group-Trunk

Table 8-8 Route Number Explanation

DATA	MEANING	DATA	MEANING
901	Attendant Console	902	Originating Register Trunk
903	Incoming Register Trunk	904	MF Receiver
905	Sender Trunk DP/PB	906	PB Receiver for Automated Attendant Service
907	AMP	908	Not used
909	Three-Way Conference Trunk	910, 911	Not used
913	Three-Way Conference Trunk for ATTCON	914	Not used
915	Night Attendant	916	MFC Register
917	MFC Sender	918	Not used
919-926	Modem	927, 928	Not used
929	MFC Sender	930	Rate Adapter Conversion Trunk
931	Not used	932-947	Not used

MAINTENANCE COMMANDS

SRTS: Scanning of Route Status

1. Functional Outline

This command displays the designated trunk status (busy/idle) at predetermined intervals. A maximum of 15 routes can be scanned.

2. Parameters

Input data

RT: Route Number

Interval Time

Display data

Number of Idle TK

Number of Busy

XHFD: X-RAY HD or FDD Diagnosis

1. Functional Outline

This command is used to execute the following diagnoses.

- Hard Disk Diagnosis

By executing read/write check on the files in the hard disk of the PBX, this command diagnoses the hard disk for its normality.

If an error has been found as a result of the diagnosis, this command displays the information on the faulty logical drive and the number of faulty sectors on the MAT screen. The information can also be output by the printer.

- Floppy Disk Diagnosis

By executing cleaning of the floppy disk drive in the PBX, this command diagnoses the floppy disk drive for its normality.

If the cleaning has not finished normally, a diagnosis error has been found as a result of the diagnosis. The result message may be displayed on the MAT screen or printed out by the printer.

2. Parameters

Input Data

FUNCTION: HD/FDD Designation [1/2]
 1=Diagnosis of HD (Hard Disk)
 2=Diagnosis of FDD (Floppy Disk Drive)

AREA: Area Designation [0/1] **Note**
 0=All Files
 1=Program Files

SYSTEM: System (0/1)
 0=No.0 System
 1=No.1 System

Note: “AREA” parameter appears only when “1(=HD)” is selected in the “FUNCTION” parameter.

Buttons

Exe: Click to execute the diagnosis.
 Close: Click to exit this command.

MAINTENANCE COMMANDS

Display Data

FAULT DRIVE:	Fault Drive Number [0-4]
	0=-
	1=#0
	2=#1
	3=#2
	4=#3
FAULT SECTOR:	Number of Fault Sector [0-65535]
MESSAGE:	Result of diagnosis [0-255]
	0=Normal End
	1=Hard disk read test practice error
	2=Floppy disk drive cleaning practice error
	3=Common part parameter error (Data length error)
	4=FDD cleaning abnormal end (FD not in drive)
	5=Individual part parameter error (Function error)
	6=Individual part parameter error (Sub function error)
	7=Individual part parameter error (Device error)
	8=Individual part parameter error (Drive selection error)
	9=Individual part parameter error (Data ID error)
	10=Individual part parameter error (Processor ID error)
	11=Individual part parameter error (File ID error)
	12=Individual part parameter error (File name error)
	13=Request order error (Health check send error)
	14=Request order error (Data send signal error)
	15=Internal error (File open error)
	16=Internal error (File read error)
	17=Internal error (File close error)
	18=Internal error (FAT error)
	19=Internal error (SCSIC error)
	20=Internal error (other)
	21=Hard interface abnormal end
	22-255=-