SIEMENS

Communication Systems and Networks Groups

40/80 HYBRID KEY TELEPHONE SYSTEM FEATURE PACKAGE VI

Addendum to Issue 1, September 1988

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40/80 Feature Index

FEATURE	FEATURE PACKAGE			INTERNAL EQUIPMENT REQUIRED	EXTERNAL EQUIPMENT REQUIRED
	I	IV	VI		
Account Code	S	S	S	N	Printer
Account Code (Single Line)			**S**	**N**	**Printer**
Attendant Disable Outgoing Access			**S**	**N**	**N**
Amplified Central Office (COA)	O	O	O	COA	N
Attendant Recall	S	S	S	N	N
Automatic Pause Insertion	S	S	S	N	N
Automatic Privacy	S	S	S	N	N
Automatic Line Selection	S	S	S	N	N
Background Music	S	S	S	N	Music Source
Battery Backup-Memory	S	S	S	N	N
Battery Backup-System	O	O	O	BC	Battery Pkg
Busy Lamp Field	S	S	S	N	N
Call Announce Privacy	S	S	S	N	N
Call Back	S	S	S	N	N
Call Forwarding: Station					
Forward All	S	S	S	N	N
Forward Busy	S*	S*	S	N	N
Forward No Answer	S*	S*	S	N	N
Forward Busy/No Answer	S*	S*	S	N	N
Forward to Pilot (UCD, VM, Hunt)		S*	S	N	N
Station Off-Net Forward (via speed dial)			**S**	**APB**	**N**
Call Forwarding: Preset					
Preset to Stations	S	S	S	N	N
Preset to Hunt Groups			**S**	**N**	**N**
Preset to Off-Net (via speed dial)			**S**	**N**	**N**
Preset to UCD Groups			**S**	**N**	**N**
Preset to Voice Mail Groups			**O**	**N**	**Voice Mail System**
Call Forwarding: CO Lines					
Incoming CO Lines Off-Net (via speed dial)			**O**	**APB**	**N**
Calling Station Tone Mode Option			**S**	**N**	**N**
Call Park	S	S	S	N	N
Call Pick-up Group	S	S	S	N	N
Call Transfer	S	S	S	N	N
Camp-On	S	S	S	N	N
Camp-On Recall	S	S	S	N	N
Centrex Compatability	S	S	S	N	N
Chaining Speed Bins	S	S	S	N	N
CO Line Access	S	S	S	N	N
CO Line Control	S	S	S	N	N

S = Standard Feature; S* = Included in Version 1.1 or higher;
O = Optional: Requires additional hardware; N = No additional hardware required

40/80 Feature Index (Cont'd)

FEATURE	FEATURE PACKAGE			INTERNAL EQUIPMENT REQUIRED	EXTERNAL EQUIPMENT REQUIRED
	I	IV	VI		
CO Line Groups	S	S	S	N	N
CO Line Loop Supervision	S	S	S	N	N
CO Line Queue	S	S	S	N	N
CO Line Incoming Ring Assignment:					
Assigned Per CO Button Appearance	S	S		N	N
Assigned Per CO Line			**S**	**N**	**N**
CO Ring Detect	S	S	S	N	N
Conference:					
Add-on	S	S	S	N	N
Multi-Line	S	S	S	N	N
Unsupervised Trunk-to-Trunk	O	O	O	APB	N
SLT - Add-on	S	S	S	N	N
SLT - Multi-Line			**S**	**N**	**N**
SLT - Conference with Personal Park			**S**	**N**	**N**
Conference Enable/Disable Per Station			**S**	**N**	**N**
Conference Enable/Disable Per CO Line			**S**	**N**	**N**
Day/Night Class of Service (COS)			**S**	**N**	**N**
Dial Pulse Sending	S	S	S	N	N
Dialing Privileges	S	S	S	N	N
Direct CO Line Ringing:					
To Stations	S	S	S	N	N
To UCD Groups		S	S	N	N
To Hunt Groups			**S**	**N**	**N**
To Off-Net (via speed dial)			**S**	**N**	**N**
To Voice Mail Groups			**S**	**N**	**Voice Mail System**
DISA:	O	O	O	APB	N
Programmable Access Code		S	S	N	N
CO Line Group Access		S	S	N	N
Station Access		S	S	N	N
Direct Station Selection	S	S	S	N	N
Directed Call Pick-up:					
Pick-up from Stations	S	S	S	N	N
Pick-up from UCD Groups		S*	S	N	N
Do Not Disturb (DND)	S	S	S	N	N
One-Time Do Not Disturb			**S**	**N**	**N**
DTMF Sending	S	S	S	N	N
Emergency Transfer	O	O	O	PFT	SLT's
Exclusive Hold	S	S	S	N	N
Executive Override			**S**	**N**	**N**

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40/80 Feature Index (Cont'd)

FEATURE	FEATURE PACKAGE			INTERNAL EQUIPMENT REQUIRED	EXTERNAL EQUIPMENT REQUIRED
	I	IV	VI		
Executive/Secretary Transfer	S	S	S	N	N
Executive Speed Dial			**S**	**N**	**N**
Expanded Station Speed Bins (1280)			**S**	**N**	**N**
Flash	S	S	S	N	N
Flash on Intercom			**S**	**N**	**N**
Flash with Speed Dial	S	S	S	N	N
Flexible Attendant(s)	S	S	S	N	N
Flexible Button Assignment	S	S	S	N	
Hunt Groups: (8 x 8)					
Pilot Hunting			**S**	**N**	**N**
Station Hunting			**S**	**N**	**N**
Hunt Group Chaining			**S**	**N**	**N**
Hold Preference	S	S	S	N	N
Hold Recall	S	S	S	N	N
Intercom Calling	S	S	S	N	N
Intercom Signaling Select	S	S	S	N	N
Last Number Redial	S	S	S	N	N
LCD Display	S	S	S	N	Exec Telephone
Least Cost Routing (LCR):					
3 Digit Tables		S	S	N	N
6 Digit Tables		S	S	N	N
Route List Tables		S	S	N	N
Insert/Delete Tables		S	S	N	N
Weekly Time Tables		S	S	N	N
Daily Start Time Tables		S	S	N	N
Exception Tables		S	S	N	N
Default LCR Database			**S**	**N**	**N**
LCR Routing for Toll Information			**S**	**N**	**N**
'*' and '#' Entries in Insert/Delete Tables			**S**	**N**	**N**
Loud Bell Control (LBC)	O	O	O	PFT	Gen & Bells
Meet Me Page	S	S	S	N	N
Message Waiting	S	S	S	N	N
Message Waiting Reminder Tone	S	S	S	N	N
Music On Hold	S	S	S	N	Music Source
Mute Key	S	S	S	N	N
Name in LCD Display			**S**	**N**	**Exec Telephone**
Night Service:					
Manual Operation	S	S	S	N	N
Automatic Operation			**S**	**N**	**N**

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40/80 Feature Index (Cont'd)

FEATURE	FEATURE PACKAGE			INTERNAL EQUIPMENT REQUIRED	EXTERNAL EQUIPMENT REQUIRED
	I	IV	VI		
Night Service: (Cont'd)					
Weekly Night Mode Schedule			S	N	N
Night Class of Service (COS)			**S**	**N**	**N**
Universal Night Answer (UNA)	S	S	S	N	N
Off-Hook Voice Announce (OHVA)	O	O	O	KSB/OHV	34 Btn w/OHVA
Off-Premise Extensions (OPX)	O	O	O	OPX/APB/RG	OPX Circuit
On Hook Dialing	S	S	S	N	N
Paging-External	O	O	O	APB	Paging Equip
Paging-Internal	S	S	S	N	N
Paging Access Restriction	S	S	S	N	N
Pause Timer	S	S	S	N	N
PBX Dial Codes	S	S	S	N	N
Personalized Messages	S	S	S	N	N
Personalized Message Code on a Flex Key			**S**	**N**	**N**
Preferred Line Answer	S	S	S	N	N
Pulse-To-Tone Switchover	S	S	S	N	N
Privacy Release:					
System-wide Option	S	S		N	N
Per Station Option			**S**	**N**	**N**
Per CO Line Option			**S**	**N**	**N**
Private Line	S	S	S	N	N
Remote Administration (Database)		S	S	N	N
Remote System Monitor and Maintenance			**S**	**N**	**Optional Modem**
Save Number Redial (SNR)	S	S	S	N	N
Single Line Telephone (SLT) Compatability	O	O	O	SLT/APB/RG	2500 Type SLT
SLT Personal Park:					
SLT Personal Park Transfer			**S**	**N**	**N**
SLT Conference with Personal Park			**S**	**N**	**N**
SLT "Flip-Flop" Hold			**S**	**N**	**N**
SMDR	S	S	S	RSM	Printer
Speakerphone	S	S	S	N	N
Station Speed Dial	S	S	S	N	N
System Capacity:					
up to 24x48 Configuration	S	S		N	N
up to 32x64 Configuration	O	O	O	Expansion KSU	N
up to 40x96 Configuration			**O**	**Expansion KSU**	**N**
System Hold	S	S	S	N	N
System Speed Dial	S	S	S	N	N
Transfer Recall	S	S	S	N	N

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40/80 Feature Index (Cont'd)

FEATURE	FEATURE PACKAGE			INTERNAL EQUIPMENT REQUIRED	EXTERNAL EQUIPMENT REQUIRED
	I	IV	VI		
Universal Call Distribution (UCD): (8 x 8)					
Alternate UCD Group Assignments		S	S	N	N
Overflow Station Assignment		S	S	N	N
Incoming CO Direct Ringing		S	S	N	N
Recorded Announcements (RAN)		O	O	N	RAN Device
Two Recorded Announcements for Transferred CO Calls			**O**	**N**	**RAN Device**
Number of Calls in Queue Display			**S**	**N**	**N**
UCD Auto Wrap-up with Timer			**S**	**N**	**N**
Universal Night Answer (UNA)	S	S	S	N	N
Voice Mail Groups: (8 x 8)					Voice Mail System
In Band Signaling Integration		O*	O	APB (Rev 1A)	N
Voice Mail Message Waiting Indication		S*	S	N	N
Voice Mail CO Disconnect Signal Pass thru			**S**	**APB (Rev 1A)**	**N**
Voice Mail Tone Mode Calling Option			**S**	**N**	**N**
Volume Control	S	S	S	N	N

S = Standard Feature; S* = Included in Version 1.1 or higher;
O = Optional: Requires additional hardware; N = No additional hardware required

FP VI GENERAL DESCRIPTION

1 FEATURE PACKAGE VI SOFTWARE

This new Feature Package (FP VI), replacing the current Feature Package V, brings to the 40/80 system significant enhanced Features and Flexibility. This feature package is a composite of all previously released features contained in FP V, with the addition of the features described in the following sections.

FP VI is installed in the Central Processor Board (CPB) without the need for additional hardware or modifications to existing hardware. The software is intended to be backward compatible and will work with all existing hardware including KSU's, PCB's, and the complete line of Siemens key telephones.

2 SYSTEM AND STATION FEATURES

2.1 Attendant Disable Outgoing Access

This feature allows the first Attendant station to dial a code and disable a CO line from outgoing CO calls. This applies to all station(s) that have access to that line. Incoming status is not affected. This feature is a part of the "Maintenance" package.

2.2 Station Off-Net Forward

stations will be allowed to forward intercom and transferred CO line calls to an off-net location. This allows a station to reroute calls that would normally be lost. Calls can be forwarded to home or another off-net site. Initially ringing CO calls cannot be forwarded with this feature (see Incoming CO lines Off-Net Forward, feature).

2.3 Call Forwarding: Preset

This feature allows the system data base to be configured so that incoming CO Lines, which are programmed to ring at a particular station, can be forwarded elsewhere in the system predetermined by programming. This feature is active if the station ringing is not answered in a specified time. This is particularly useful in "overflow" applications where a Voice Mail or Auto Attendant may be in use.

Each station in the system may, independently, have incoming CO calls preset forwarded to:

- another station in the system
- to a UCD, VM or Hunt group
- Off-Net (via Speed Dial)

A station may have one designated preset forward location defined in the data base.

2.4 Incoming CO Lines Off-Net Forward

Allows the first attendant to forward incoming CO calls to an off-net location. The attendant can forward one CO line, a group of CO lines or all CO lines to a off-net location. The attendant must have a direct appearance of the CO line(s) to be forwarded. Off-net forwarding is accomplished via use of a speed dial bin and requires the APB card to be installed in the system.

2.5 Calling station Tone Mode Option

This feature will provide a easy means for a Calling

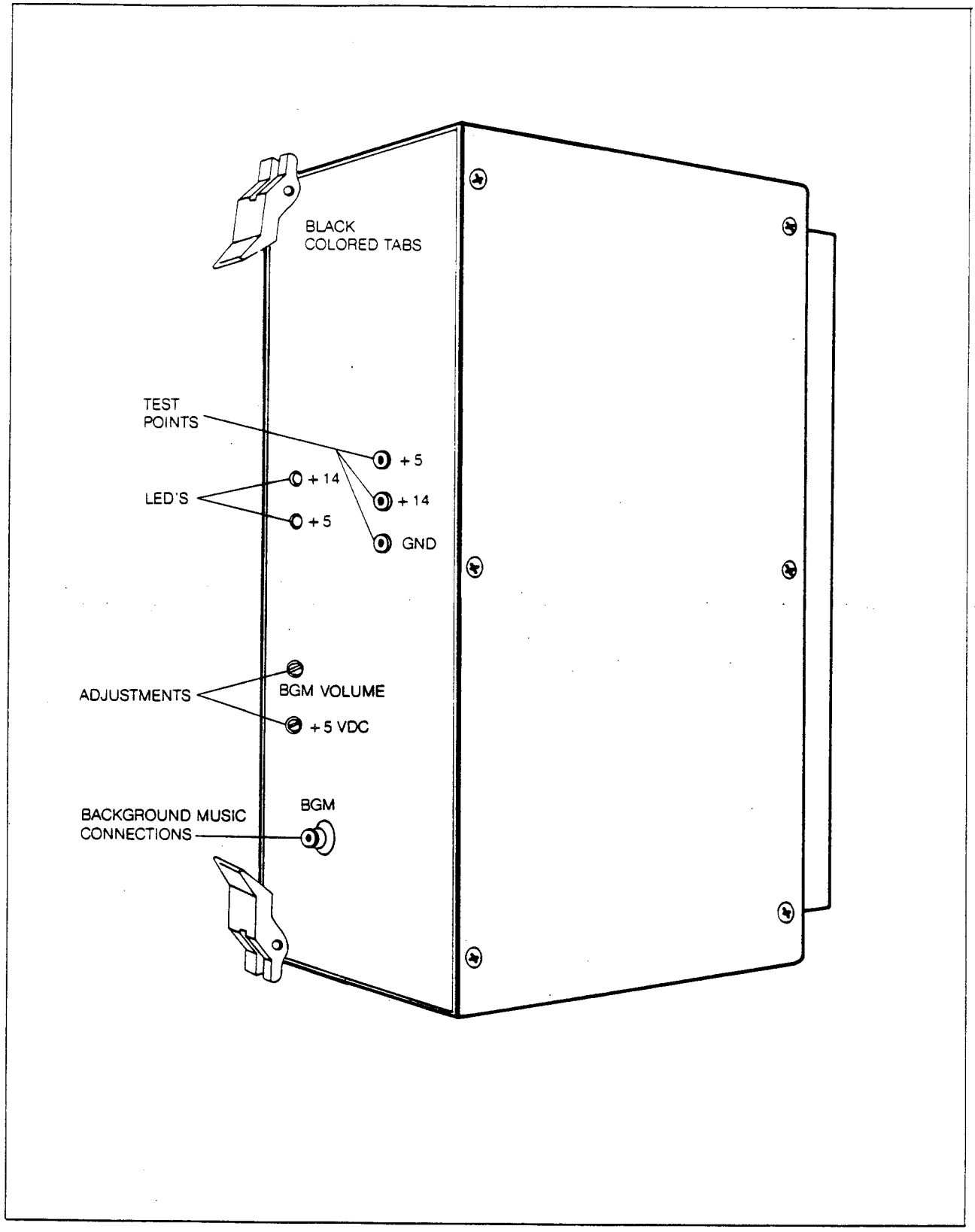

Figure 5-15 DC/DC Converter Unit (DCU)

5.19 External Paging Connections

External paging amplifier equipment (customer provided) may be connected to the System for dial access from any telephone in the System (except those denied paging access). One optional non-amplified external paging zone is provided with the APB board. The output impedance of the paging zone is 600 ohms at 0 dBm. The low level voice signal output is specified at 5 milliwatts maximum. Two sets of dry control contacts are provided to switch on the external amplifier equipment and/or to momentarily remove background music if supplied to the paging device. Connection is made on the APB board (Refer to Figures 5-13, 5-16, and 5-17).

The voice output is provided on the EPT and EPR pair. The break contacts are pair EPB and the make contacts are pair EPM.

5.20 RS-232C Connections

One RS-232C type connector is provided and is located on the CPB board. There is an optional second RS-232C connector which can be installed on the APB board. The RS-232C connector on the CPB can be used for either Station Message Detail Recording (SMDR) or for on-line (Remote) database programming through the RS-232C port using a data terminal. If the second RS-232C connector is installed on the APB board, this connector can be used for SMDR only. The RS-232C pinout is shown in Figure 5-18.

Either an 80 character or 29 character printing device may be connected to the RS-232C connector. Switch 6 on the CPB board must be programmed to provide either the desired 29 or 80 character display field and Switch 2 must be set in the on position to enable CTS signal.

5.21 Installing the RSM (Additional RS-232C port)

a. Remove the Application Board (APB) from the KSU.

b. Set the RSM baud rate (Refer to Figure 5-19).

c. Locate the S1 connector on the APB board and the S1 pins on the RSM unit.

d. Gently push the S1 pins of the RSM onto the S1 pin connector on the APB board (connections for the RS-232C output are shown in Figure 5-18).

e. Re-insert the APB board.

f. Set switch seven on the CPB to the APB (ON) position.

5.22 Installing the Expansion KSU

NOTE

The second Power Supply (PS) must be added to the External Power Supply Housing (EPS) when the Expansion KSU is added.

The Expansion KSU can be installed at the same time as the Basic KSU, or later. In either case the system power must be turned off prior to the installation.

a. Refer to section 5.3 – KSU Mounting. The Expansion KSU mounts directly to the right of the Basic KSU (Refer to Figure 5-1). Using the template provided, identify the screw hole locations. Insert the two screws into the wooden backboard and tighten enough to hold the weight of the unit.

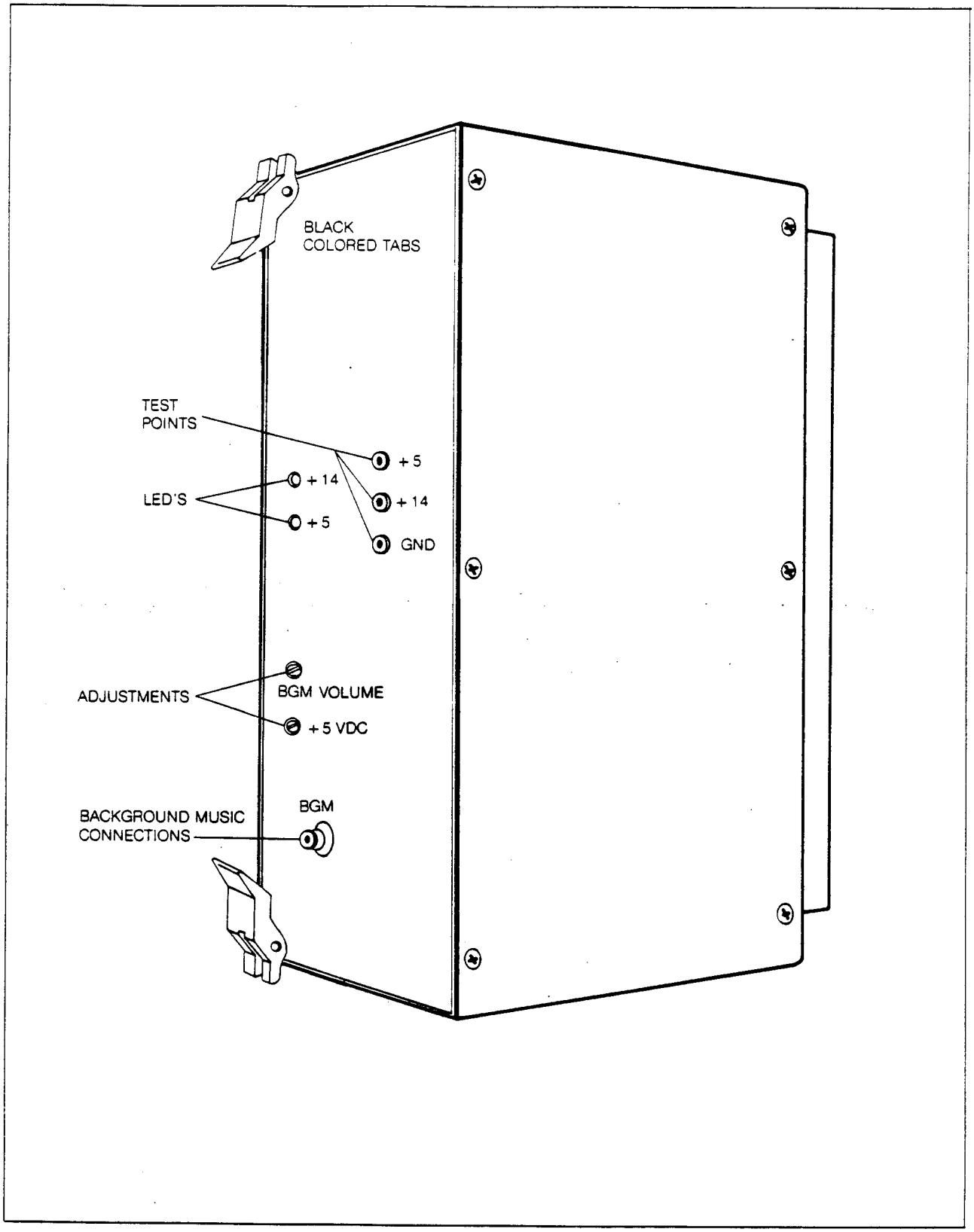

Figure 5-15 DC/DC Converter Unit (DCU)

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Either an 80 character or 29 character printing device may be connected to the RS-232C connector. Switch 6 on the CPB board must be programmed to provide either the desired 29 or 80 character display field and Switch 2 must be set in the on position to enable CTS signal.

5.21 Installing the RSM (Additional RS-232C port)

a. Remove the Application Board (APB) from the KSU.

b. Set the RSM baud rate (Refer to Figure 5-19).

c. Locate the S1 connector on the APB board and the S1 pins on the RSM unit.

d. Gently push the S1 pins of the RSM onto the S1 pin connector on the APB board (connections for the RS-232C output are shown in Figure 5-18).

e. Re-insert the APB board.

f. Set switch seven on the CPB to the APB (ON) position.

5.22 Installing the Expansion KSU

NOTE

The second Power Supply (PS) must be added to the External Power Supply Housing (EPS) when the Expansion KSU is added.

The Expansion KSU can be installed at the same time as the Basic KSU, or later. In either case the system power must be turned off prior to the installation.

a. Refer to section 5.3 – KSU Mounting. The Expansion KSU mounts directly to the right of the Basic KSU (Refer to Figure 5-1). Using the template provided, identify the screw hole locations. Insert the two screws into the wooden backboard and tighten enough to hold the weight of the unit.

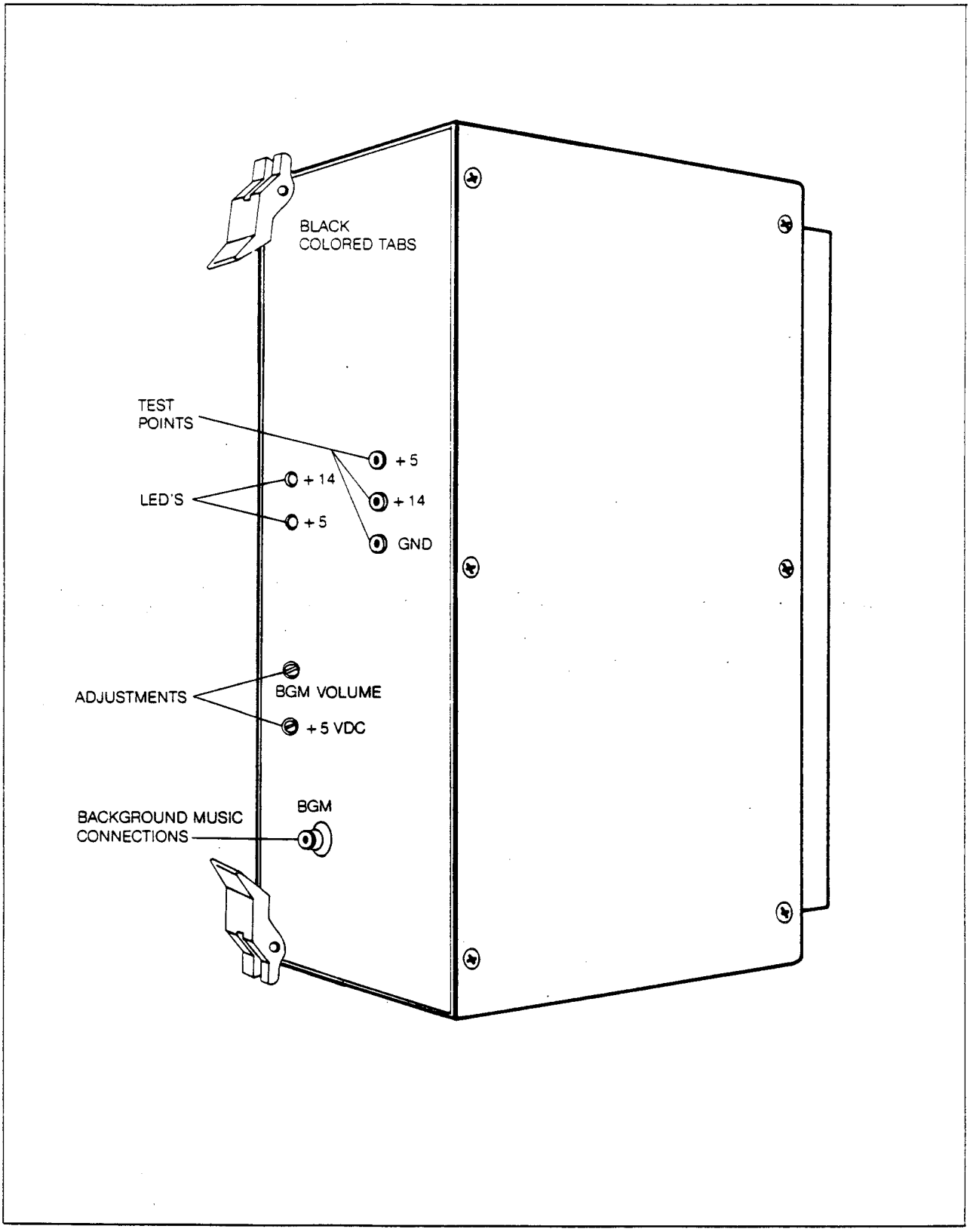

Figure 5-15 DC/DC Converter Unit (DCU)

5.19 External Paging Connections

External paging amplifier equipment (customer provided) may be connected to the System for dial access from any telephone in the System (except those denied paging access). One optional non-amplified external paging zone is provided with the APB board. The output impedance of the paging zone is 600 ohms at 0 dBm. The low level voice signal output is specified at 5 milliwatts maximum. Two sets of dry control contacts are provided to switch on the external amplifier equipment and/or to momentarily remove background music if supplied to the paging device. Connection is made on the APB board (Refer to Figures 5-13, 5-16, and 5-17).

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Either an 80 character or 29 character printing device may be connected to the RS-232C connector. Switch 6 on the CPB board must be programmed to provide either the desired 29 or 80 character display field and Switch 2 must be set in the on position to enable CTS signal.

5.21 Installing the RSM (Additional RS-232C port)

a. Remove the Application Board (APB) from the KSU.

b. Set the RSM baud rate (Refer to Figure 5-19).

c. Locate the S1 connector on the APB board and the S1 pins on the RSM unit.

d. Gently push the S1 pins of the RSM onto the S1 pin connector on the APB board (connections for the RS-232C output are shown in Figure 5-18).

e. Re-insert the APB board.

f. Set switch seven on the CPB to the APB (ON) position.

5.22 Installing the Expansion KSU

NOTE

The second Power Supply (PS) must be added to the External Power Supply Housing (EPS) when the Expansion KSU is added.

The Expansion KSU can be installed at the same time as the Basic KSU, or later. In either case the system power must be turned off prior to the installation.

a. Refer to section 5.3 – KSU Mounting. The Expansion KSU mounts directly to the right of the Basic KSU (Refer to Figure 5-1). Using the template provided, identify the screw hole locations. Insert the two screws into the wooden backboard and tighten enough to hold the weight of the unit.

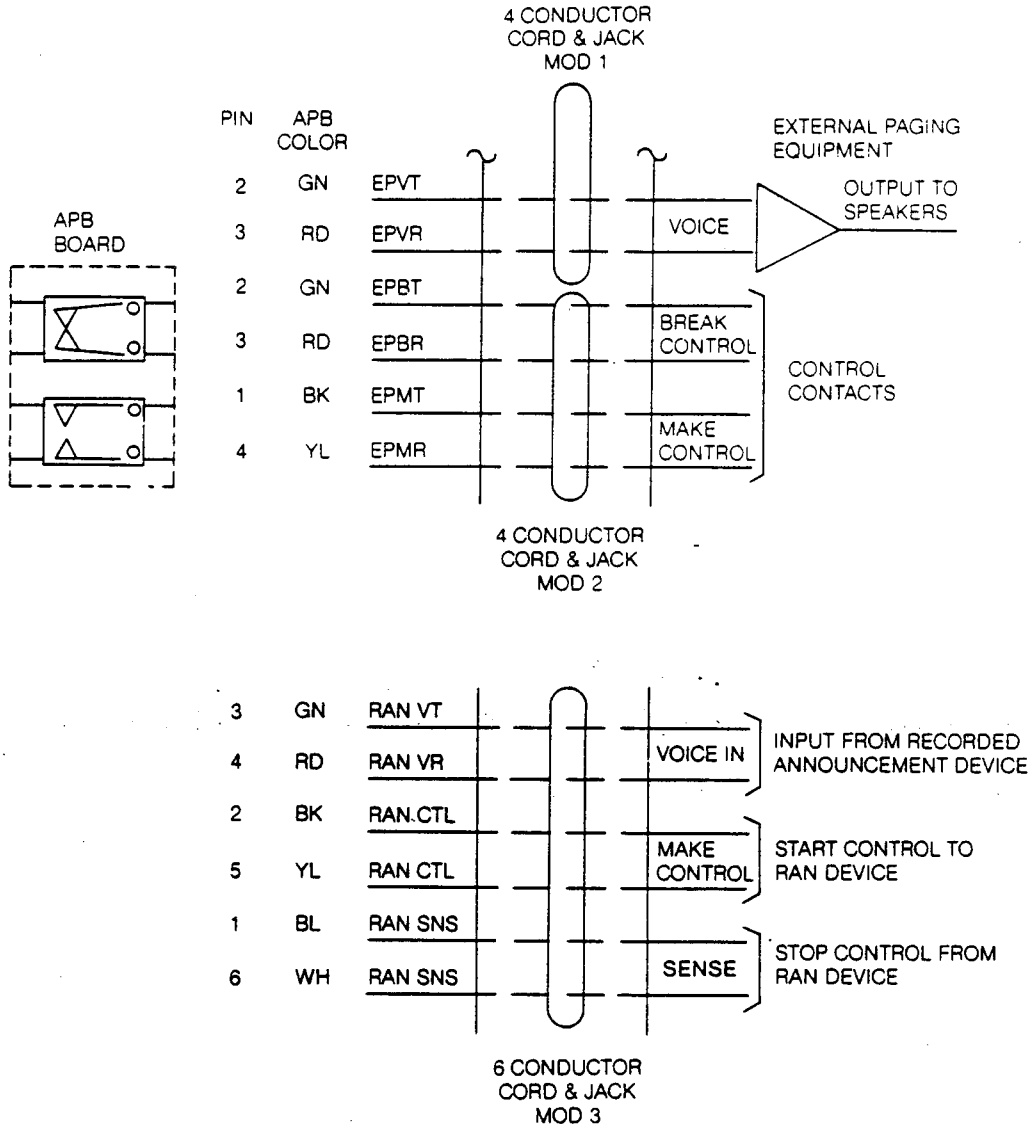
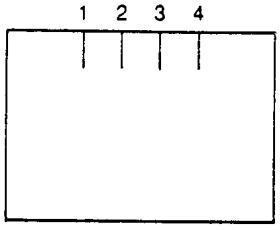


Figure 5-16 Application Board Connections

EXTERNAL PAGE OUTPUT CONNECTIONS

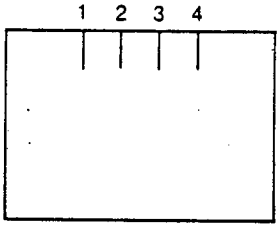
APB MOD 1 JACK



1 — NOT USED
2 — EPVT (VOICE)
3 — EPVR (VOICE)
4 — NOT USED

EXTERNAL PAGE CONTROL CONTACTS

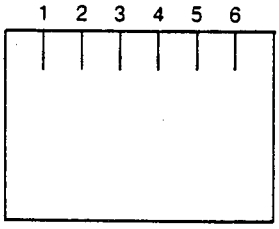
APB MOD 2 JACK



1 — EPMT (MAKE CONTACT)
2 — EPBT (BREAK CONTACT)
3 — EPBR (BREAK CONTACT)
4 — EPMR (MAKE CONTACT)

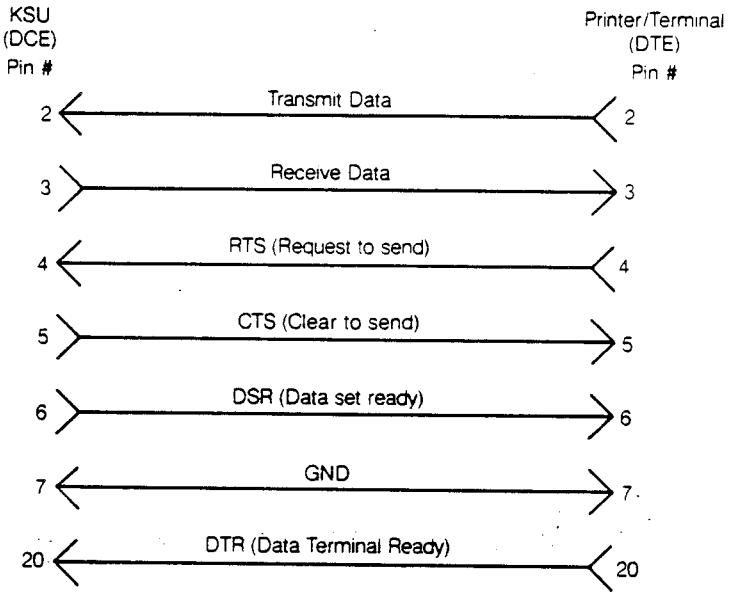
RECORDED ANNOUNCEMENT (RAN) JACK

APB MOD 3 JACK



1 — RAN SENSE (STOP)
2 — RAN CONTROL (START)
3 — RAN VT (VOICE)
4 — RAN VR (VOICE)
5 — RAN CONTROL (START)
6 — RAN SENSE (STOP)

Figure 5-17 Application Board Connectors



RS-232C PINOUT

Data Communication Requirements are
A) Serial Port Compatible
B) ASCII Code Compatible
C) 7 Data Bits and 1 Stop Bit
D) No Parity

Figure 5-18 RS-232C Connections

Table 5-7 SMDR Printout

The SMDR feature provides detailed records of all outgoing and/or incoming, long distance only or all calls exceeding 30 seconds. This feature is enable or disabled in system programming. By default, SMDR is not enabled and is set to record long distance calls only. A printout format of 80 characters maximum or 29 character maximum may be selected in system programming. The standard format is 69 characters on a single line, A 29 charcter format will generate 3 lines per message. If the SMDR feature is enabled, the system starts collecting information about the call as soon as it starts and terminates when the call ends. If the call was longer then 30 seconds, the following information is printed:

80 Chararter format selected

AAA BB HH:MM HH:MM:SS HCCCCCCCCCCCCCCCCCCCCCCCC MM/DD/YY GGGGGGGGGGGG (CR) (LF)

29 Character format selected

AAA BB HH:MM HH:MM:SS (CR) (LF)
HCCCCCCCCCCCCCCCCCCCCCCCC (CR) (LF)
GGGGGGGGGGGG (CR) (LF)

- AAA = Station originator
- BB = Outside Line Number
- HH:HH = Duration of call in Hours and Minutes
- HH:MM:SS = Time of day in Hours, Minutes and Seconds
- CC....CC = Number Dialed
- MM/DD/YY = Date of call
- GG....GG = Account code (optional)
- H = Indicates Call Type
  - "I" = Incoming
  - "O" = Outgoing
  - "T" = Transferred
- (CR) = Carriage return
- (LF) = Line Feed

RSM Module Switch Settings

	Switch Settings			
Baud Rate	1	2	3	4
300	O	X	X	X
1200	X	O	X	X
4800	X	X	O	X
9600	X	X	X	O

X = OFF
O = ON

Equipment Needed

1 Phillips Screwdriver

Two screws with washers are used to mount the RSM to the Application Board (APB).

RSM Module

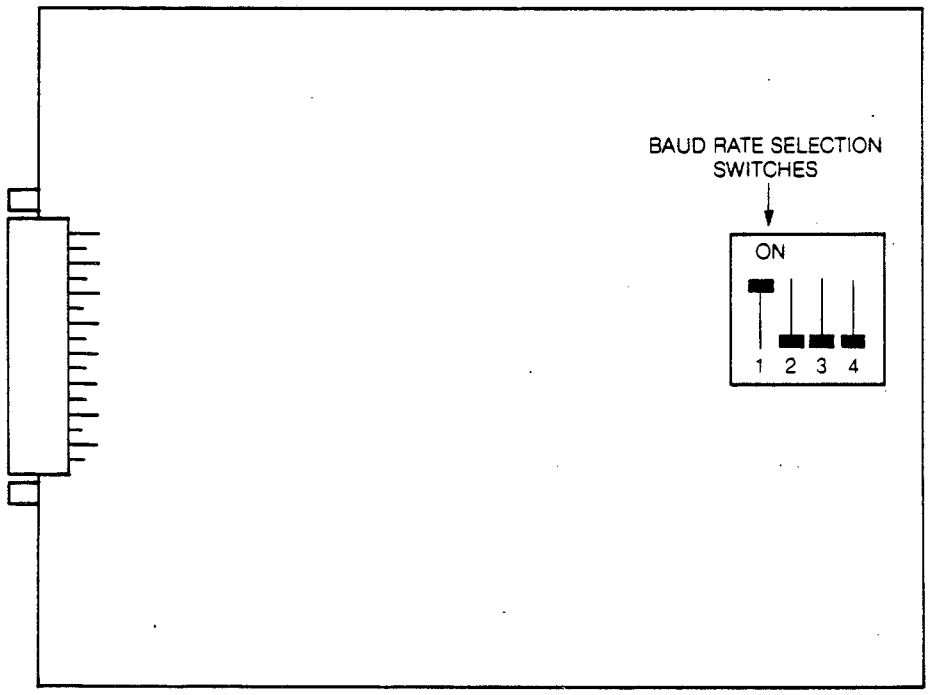


Figure 5-19 RSM Baud Rate Selection

b. Remove the connector cover on the right side of the Basic KSU (Refer to Figure 5-3). Remove the last three cards on the right side of the Basic KSU.

c. Secure the two cabinets together by hooking the mounting brackets on the left side of the Expansion KSU over the ones on the right side of the Basic KSU and at the same time position the Expansion KSU on the two screws inserted in Step a above. Tighten the screws on the right side of the Expansion KSU.

d. Feed the three ribbon cables through the slot created by removing the side cover the plug them into the Basic KSU (Refer to Figure 5-20).

e. Take the power cable located in the Expansion KSU and feed it through the slot in the Basic KSU and plug it in. Then take the ribbon cable previously connected to the Basic KSU and connect it to the Expansion KSU.

NOTE

KSB card slots (last two slots) and COI (last slot) must operate with Feature Package V software installed.

5.23 Installing the Single Line Ring Generator and Message Wait Power Supply Unit

When the Siemens 40/80 System is equipped with single line telephones, a Single Line Ring Generator and Message Wait Power Supply Unit (RG) is needed to provide ringing and power for message waiting SLT's. The RG is mounted inside the External Power Supply Housing (EPS) on the bottom shelf. Insert the RG with components facing right (Refer to Figure 5-4).

5.24 Installing Recorded Announcement

The Recorded Announcement feature (RAN) is used with the Uniform Call Distribution feature (UCD) to provide unanswered incoming CO calls or calls in queue with a Recorded Announcement while waiting for an available UCD station. The System may be programmed to provide this announcement at specified RAN output ports on the System (unused SLT and COI ports, and the APB RAN port). The System can be programmed to connect the waiting caller to a different RAN port for the second, and subsequent RAN messages.

For connections made on the MOD 3 modular jack of the Applications Board (APB) refer to Figures 5-13, 5-16, and 5-17. The VT and VR pair are for connection to the customer supplied Recorded Announcement device. CTLT and CTLR pair are the control contacts that provide closure (momentary) when a call is connected to the RAN voice pair (VT, VR). The Sense leads are used by the 40/80 system to detect contact closure provided by RAN device when the message is completed.

When a CO line port is used, a 24V dc power source must be connected to the CO line port for talk battery. A Loud Bell Control contact assigned to that CO line port in programming would provide contact closure to start the Recorded Announcement device.

When an SLT port is used, the RAN device must be configured for ring trip operation. The 90V ac voltage sent to the SLT port will be recognized by the RAN device which will then answer the call.

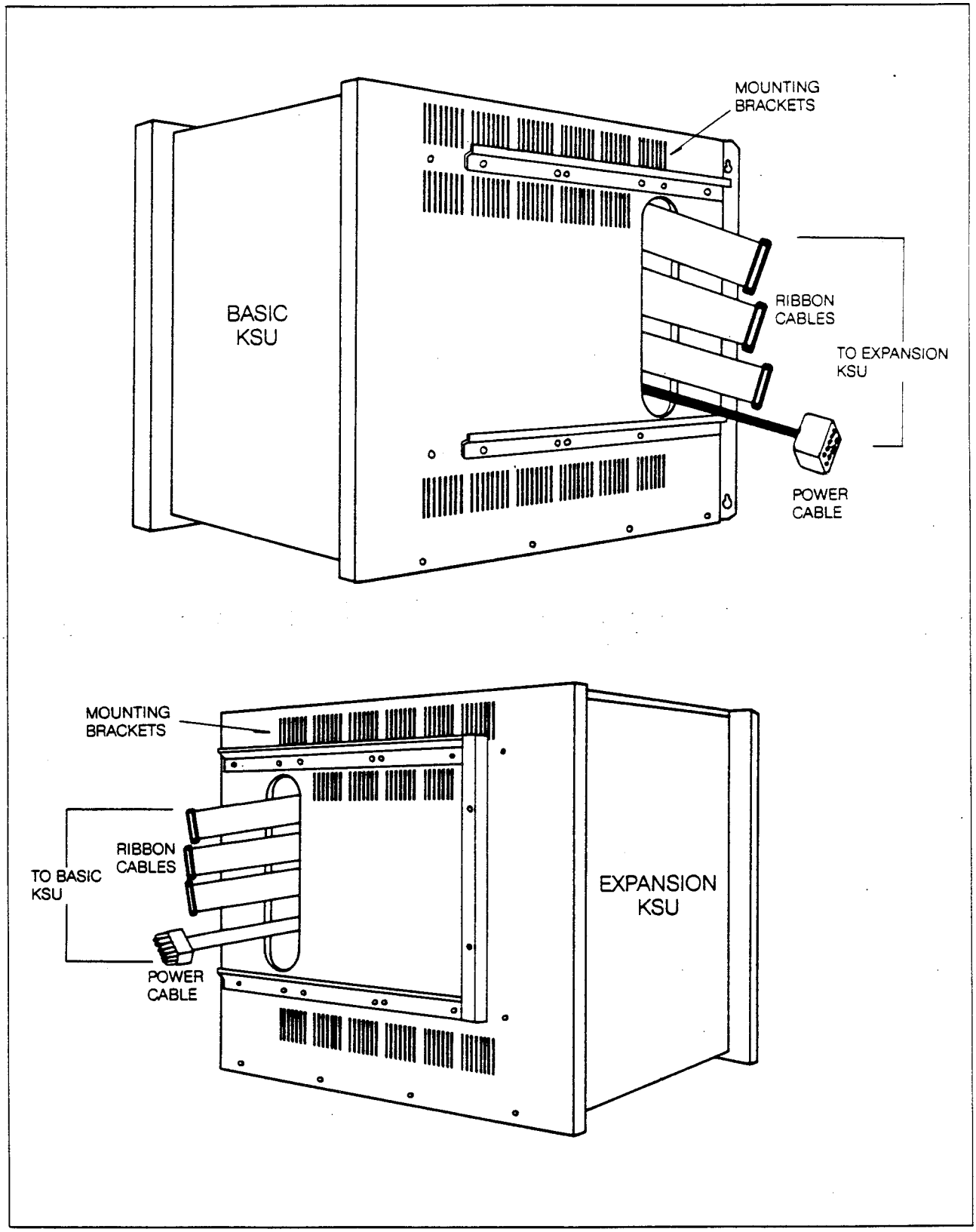


Figure 5-20 Installing the Expansion KSU

SECTION 6 CUSTOMER DATA BASE PROGRAMMING

6.1 Introduction

The Siemens 40/80 Key Telephone System can be programmed to meet each customer's individual needs. All programming is done at station 100 using the Enhanced or Executive model Key Telephone as the programming instrument. The Executive model is suggested since the display is designed to assist in programming.

When the program mode is entered, the Key Telephone being used no longer operates as a telephone but as a programming instrument with all of the buttons redefined. The keys of the dial pad are used to enter data fields (program codes) associated with system, station and CO line features. CO line buttons are used to determine CO line access, assign class of service, determine station features, etc. DSS buttons indicate stations, line group numbers, CO line configuration, system features, toll tables, etc.

At the time the system is installed it must be initialized to load default data into memory. If this pre-programming suits the customer, initialization is all that is needed.

Any time data is to be changed, the program mode must be entered and then the individal data field (program code). A data field can be entered to determine current programming or to change a specific feature within that field.

During programming, the other Key Telephones in the system operate normally. If a data field is entered but nothing is changed, or changed but not entered into memory (FLASH 90), the previous data will remain intact upon leaving that data field. Data fields can be entered at random.

In many of the data fields, programming is performed by toggling LED's on or off, or entering digits on the keypad. If no changes are to be made to the line or station, exit the data field by either leaving the program mode (pressing the ON/OFF button to OFF) or entering another data field (pressing the FLASH button and entering that program code).

When features are being programmed, tones are provided to help the programmer determine if a correct or incorrect entry has been made. A solid one second tone indicates the data was accepted. An interrupted tone means an error was made. When this occurs, re-enter the data field and re-enter the information. Until new data is entered and accepted, the system will continue to operate under default or previously entered values.

When the Hold button is pressed to enter data, that data will be stored in a temporary buffer area. Data is not entered into system memory and has no effect on telephone operation until permanent update procedures are performed. This is done by pressing FLASH 90, and then HOLD. Then the data in the temporary buffer is copied into permanent memory. It is at this point that programming effects telephone operation. Until the permanent update procedures have been performed, the System will operate under default or previously programmed data.

Some features must have more than one data field programmed for that feature to work. Where this is the case, it will be stated in the instructions.

Depending on Feature Package software installed in the System, some program codes (data fields) may not be available, however, all program codes are described in this section.

6.2 Using a Data Terminal to Program

A data terminal connected to the RS-232C port on the CPB can be used for data base programming. When using a data terminal (I/O device) to program the System press return (enter) on the terminal, enter the password [SMOKIE], and press return again. Proceed with programming referring to Table 6-1 for terminal characters that represent the keyset buttons.

The plus (+) character can enable a feature; and the minus (−) character can disable a feature. The specific data key can also be entered again to toggle on and off a feature.

6.3 Program Mode Entry

Programming is performed at station 100 using either the Enhanced or Executive Key Telephone. Programming is always done at this station regardless of the class of service or which station has been assigned the attendant(s).

Before entering the program mode, the programmer must first verify that the Key Telephone is properly connected to station 100. To enter the program mode:

a. Press ON/OFF button (LED lights and intercom dial tone is heard).

b. On the dial pad, press the asterisk [*] twice.

c. On the dial pad, enter the digits [2][3][6][6] (ADMN). Confirmation tone is heard and dial tone is removed.

d. The HOLD button and the ON/OFF button LEDs are lit. The System is ready to program. (Other telephones connected to the system continue to function normally.)

NOTE

Initialize here if necessary.

e. Press the FLASH button.

f. Dial the two-digit program code for the desired data field.

g. Enter customer data.

h. To store the entered data, press the HOLD button. A burst of one second confirmation tone should be heard. If an interrupted (error) tone is heard, re-enter the data starting with step e.

i. Repeat from step e. until all data has been stored.

For all new data to become effective and operational, press FLASH 90, then HOLD. To exit the program mode, press the ON/OFF button (LED will extinguish). All new data now becomes effective and operational.

6.4 Initialization

The system has been pre-programmed with certain features which are called default data (Refer to Table 6-2 and Figure 6-1). These features are loaded into memory when the system is initialized. The system should be initialized when installed or at any time the data base has been corrupted. To initialize the system to default values:

Set switches 1 and 8 on the CPB to ON to initialize upon system power-up. After initialization, switch 8 should be turned to the "OFF" position.

Use the procedures explained below to initialize only parts of the data base:

a. Enter the programming mode.

Table 6-1 Data Terminal Programming Code Cross Reference

When using a data terminal (I/O device) to program the system, the following chart presents the data terminal characters that are equivalent to the keyset button.

Key Button to Keyboard Terminal Key Definitions

Keyset	Terminal
HOLD	RETURN (ENTER)
FLASH	,
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
*	*
#	#
FLEX 1	Q
FLEX 2	W
FLEX 3	E
FLEX 4	R
FLEX 5	A
FLEX 6	S
FLEX 7	D
FLEX 8	F
FLEX 9	Z
FLEX 10	X
FLEX 11	C
FLEX 12	V
SPEED	O
TRANS	T
CALLBACK	K
DND	L
ON/OFF	M
PICK UP	P

In place of keyset button toggling to enable/disable a feature, the associated data terminal key can be toggled (pressed again) to enable/disable a feature.

Table 6-2 Default Values

FEATURE	PROGRAM CODE	VALUE
System Hold Recall Timer	Flash 01	060 sec.
Exclusive Hold Recall Timer	Flash 02	~~180~~ sec. 60
Transfer Recall Timer	Flash 03	045 sec.
Preset Forward Timer	Flash 04	10 sec.
Pause Timer	Flash 05	2 sec.
Call Park Timer	Flash 06	180 sec.
Conference Timer	Flash 07	10 min.
MSG Wait Reminder Tone	Flash 08	000 min.
Paging Timeout Timer	Flash 09	15 sec.
CO Ring Detect Timer	Flash 10	3 (100 msec.)
Hold Preference	Flash 11	System
Automatic Privacy	Flash 12	Yes
External Night Ring – LBC1	Flash 13	No
Attendant Override	Flash 14	No
Attendant Station Assignment	Flash 15	100
Loud Bell Control	Flash 16	None
PBX Dialing Codes	Flash 17	None
Executive/Secretary Transfer	Flash 18 (Buttons 1-4)	None
UCD Groups	Flash 19 (Buttons 1-8)	None
SMDR (ON/OFF)	Flash 20 (Button 1)	Off
Call Type	(Button 2)	Long Dist.
Print Format	(Button 3)	80-Character
Baud Rate	(Button 4)	4800
Forced Account Codes	(Button 5)	No
Admin Password	Flash 21	2366
Dial Pulse Ratio	Flash 22 (Button 1)	60/40 (break/make)
Dial Speed	(Button 2)	10 pps
LCR Enable	Flash 23	Disabled
DISA Access Code	Flash 24	100
Phone Box Timer	Flash 25	20
Dedicated Attendant Intercom Path	Flash 26	Yes
Background Music	Flash 27	Enabled
Setting Time and Date	Flash 28	None
Hook Flash Time	Flash 29	10 (1 sec.)

Table 6-2 Default Values – Cont'd

FEATURE	PROGRAM CODE		VALUE
Page Warning Tone	Flash 30		Yes
Hook Switch Bounce Timer	Flash 31		010 msec.
Attendant Recall Timer	Flash 32		01 min.
UCD Timers	Flash 33		
Ring Timer		(Button 1)	60 sec.
MSG Int.		(Button 2)	60 sec.
Over Flow Timer		(Button 3)	60 sec.
Announcement Table	Flash 34		None
CO Line Attributes	Flash 40		
DTMF/Pulse		(Button 1)	DTMF
CO/PBX		(Button 2)	CO
UNA		(Button 3)	Yes
Loop Supervision		(Button 4)	No
DISA		(Button 5)	No
Flash Timer		(Button 6)	10
CO Line Group		(Button 7)	1
Line COS		(Button 8)	1
Associated UCD Group Number		(Button 9)	None
Station Attributes	Flash 50		
Paging Access	Page 1	(Button 1)	Yes
DND Access		(Button 2)	Yes
System Speed Access		(Button 3)	Yes
Queuing Access		(Button 4)	Yes
Preferred Line Answer		(Button 5)	No
OHVA		(Button 6)	No
Call Forward Access		(Button 7)	Yes
Forced LCR		(Button 8)	No
LCR COS		(Button 9)	None
Station Type	Page 2	(Button 1)	0
Station Class of Service		(Button 2)	1
Speakerphone Operation		(Button 3)	0
Group Pickup Assignment		(Button 4)	1
Paging Zone Assignment		(Button 5)	1
Preset Forward Assignment		(Button 6)	None
CO Line Group Access		(Button 7)	1
CO Line Button Assignment		(Button 8)	See Fig. 6-1
Exception Tables	Flash 60		
Allow Table A		(Button 1)	None
Deny Table A		(Button 2)	None
Allow Table B		(Button 3)	None
Deny Table B		(Button 4)	None
Special Table 1		(Button 5)	All
Special Table 2		(Button 6)	All
Special Table 3		(Button 7)	All
Special Table 4		(Button 8)	All

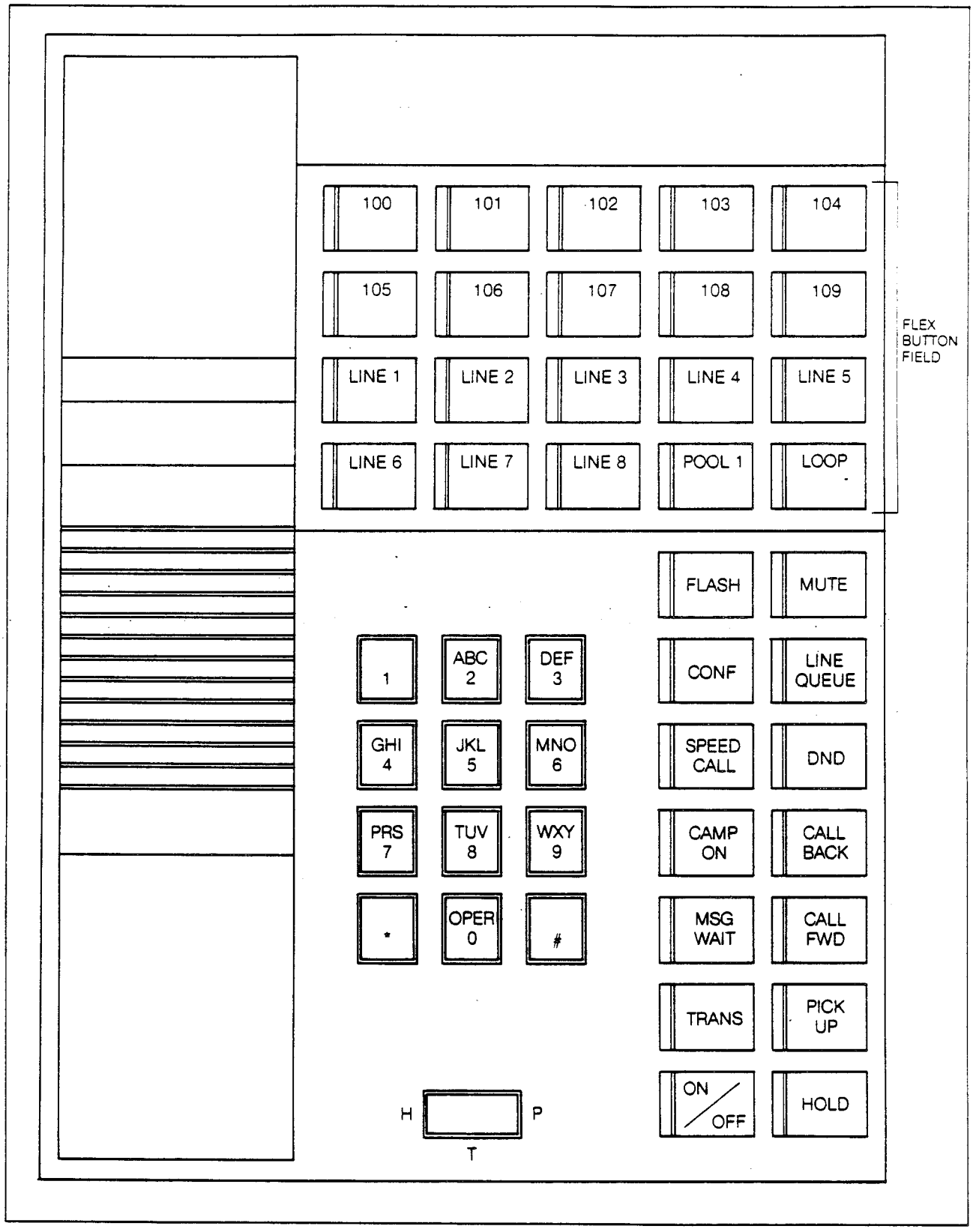


Figure 6-1 40/80 Key Telephone Default Button Assignments

b. Press FLASH button.

c. Dial [70] to initialize system parameters.

d. Press HOLD button.

e. Repeat from step b. for the other areas. In step c. use the following program codes:

70 for system parameters
71 for CO lines
72 for station parameters
73 for exception tables
74 for system speed numbers
75 for Least Cost Routing Tables

6.5 Customer Data Worksheets

Before any attempt at programming is made, it is strongly recommended that customer data worksheets be prepared (See Appendix A). These worksheets should become part of the permanent record of customer programming. Refer to the following sections when preparing the worksheets.

6.6 Data Base Fields

The data fields are used to set system timers, determine central office line features and Key Telephone features. When entering CO line data and station data, be sure to enter the exact number of digits specified. The data fields and features are further described in the following sections.

NOTE

Do a permanent update by pressing FLASH 90 whenever the program mode is exited. The program mode can be exited at any time during programming. However, if FLASH 90 is not done, the newly programmed data will not be saved.

6.7 System Hold Recall Timer (01)

Programming Steps

If this timer is to be changed:

a. Press FLASH and dial [01]. The following message is shown on the display phone:

SYS HOLD RECALL 000-300 060

b. Enter three digits on the dial pad (Refer to worksheet).

c. Press HOLD button. Display will now update.

Description

Determines the amount of time before a call placed on System Hold will recall the station placing the hold. If unanswered by that station, the call will recall the attendant.

Default value is 060 seconds and is variable from 001 to 300 seconds. A 000 entry disables the timer and there will be no recall.

6.8 Exclusive Hold Recall Timer (02)

Programming Steps

If this timer is to be changed:

a. Press FLASH and dial [02]. The following message is shown on the display phone:

EXC HOLD RECALL 000-300 180

b. Enter three digits on the dial pad (Refer to worksheet).

c. Press HOLD button. Display will now update.

Description

Determines amount of time before a call placed on Exclusive Hold recalls the station placing the Hold. If unanswered by that station, the call recalls the attendant.

The default value is 180 seconds and is variable from 001 to 300 seconds. An entry of 000 will disable the timer and there will be no recall.

6.9 Transfer Recall Timer (03)

Programming Steps

If this timer is to be changed:

a. Press FLASH and dial [03]. The following message is shown on the display phone:

TRANSFER RECALL 000-300 045

b. Enter three digits on the dial pad (Refer to worksheet).

c. Press HOLD button. Display will now update.

Description

Determines amount of time a transferred call rings at the station receiving the transfer before it recalls the station making the transfer. If unanswered by that station, the call recalls the attendant.

Default value is 045 seconds and is variable from 001 to 300 seconds. A 000 entry disables the timer and there will be no recall.

6.10 Preset Forward Timer (04)

Programming Steps

If this timer is to be changed:

a. Press FLASH and dial [04]. The following message is shown on the display phone:

PRESET FWD TIMER 00-99 10

b. Enter two digits on the dial pad (Refer to worksheet).

c. Press HOLD button. Display will now update.

Description

Determines the amount of time an outside line will ring before being forwarded to a predetermined station. This entry works with Preset Forward station assignments in Station Programming. More than one station can be forwarded to the same party.

Default time is set at 10 seconds and is variable from 01 to 99 seconds. A 00 entry disables the timer and there will be no forward.

6.11 Pause Timer (05)

Programming Steps

If this timer is to be changed:

a. Press FLASH and dial [05]. The following message is shown on the display phone:

PAUSE TIMER 1-9
2

b. Enter one digit on the dial pad (Refer to worksheet).

c. Press HOLD button. Display will now update.

Description

Determines the length of the pause for use with speed dialing.

Default is 2 seconds and is variable from 1 to 9 seconds. There is no 0 entry.

6.12 Call Park Recall Timer (06)

Programming Steps

If this timer is to be changed:

a. Press FLASH and dial [06]. The following message is shown on the display phone:

CALL PARK TIMER 000-060
180

b. Enter three digits on the dial pad (Refer to worksheet).

c. Press HOLD button. Display will now update.

Description

Determines the amount of time before a call placed in the call park location will recall the station placing the call park. If unanswered by that station, the call will recall the attendant.

Default is 180 seconds and is variable from 001 to 600 seconds. A 000 entry disables the timer and there will be no recall.

6.13 Conference Timer (07)

Programming Steps

If this timer is to be changed:

a. Press FLASH and dial [07]. The following message is shown on the display phone:

CONFERENCE TIMER 00-99
10

b. Enter two digits on the dial pad (Refer to worksheet).

c. Press HOLD button. Display will now update.

Description

Determines the amount of time an unsupervised conference can continue after the initiator of the conference has exited the conference.

Default is 10 minutes and is variable from 01 to 99 minutes. A 00 entry disables the timer and means an automatic disconnect occurs.

6.14 Message Wait Reminder Tone (08)

Programming Steps

If this timer is to be changed:

a. Press FLASH and dial [08]. The following message is shown on the display phone:

M/W TONE TIMER 000-104
000

b. Enter three digits on the dial pad (Refer to worksheet).

c. Press HOLD button. Display will now update.

Description

Determines the amount of time between repeated reminder tones to a telephone with a message waiting.

Default is 000 (disabled) and is variable from 000 to 104 minutes.

6.15 Paging Timeout Timer (09)

Programming Steps

If this timer is to be changed:

a. Press FLASH and dial [09]. The following message is shown on the display phone:

PAGING TIMEOUT 00-60
15

b. Enter two digits on the dial pad (Refer to worksheet).

c. Press HOLD button. Display will now update.

Description

Determines the maximum length of a page. The system will automatically disconnect the page at the end of this time unless the person making the page has already hung up.

Default is 15 seconds and is variable from 01 to 60 seconds. A 00 entry disables the timer and pages will not be limited in length.

6.16 CO Ring Detect Timer (10)

Programming Steps

If this timer is to be changed:

a. Press FLASH and dial [10]. The following message is shown on the display phone:

CO RING DETECT 2-9
3

b. Enter two digits on the dial pad (Refer to worksheet).

c. Press HOLD button. Display will now update.

Description

This timer controls the time necessary to detect an outside line as ringing into the system.

Default is 3 (hundred milliseconds) and is variable from 2 to 9. There is no 0 or 1 entry.

6.17 Hold Preference (11)

Programming Steps

If this feature is to be changed:

a. Press FLASH and dial [11]. The following message is shown on the display phone:

HOLD PREFERENCE SYS-EXC
SYSTEM

b. To make a change, press the top left button in the flexible button field. It will toggle on and off with each depression.

LED off = Exclusive Hold
LED on = System Hold

c. Press HOLD button.

Description

The system may be programmed to have either Exclusive or System Hold preferred. If Exclusive Hold is preferred, the user will press the HOLD button once for Exclusive Hold and twice for System Hold. If System Hold is preferred, the user will press the HOLD button once for System Hold and twice for Exclusive Hold.

Refer to System Timer programming for recall times for both System and Exclusive Hold.

Default is System Hold.

6.18 Automatic Privacy (12)

Programming Steps

If this feature is to be changed:

a. Press FLASH and dial [12]. The following message is shown on the display phone:

AUTO PRIVACY YES-NO
YES

b. To make a change, press the top left button in the flexible button field. It will toggle on and off with each depression.

LED off = no
LED on = yes

c. Press HOLD button.

Description

If desired, the system can be programmed to eliminate CO line privacy, allowing another station to join in on existing outside line conversations. If privacy is disabled and a station joins an existing call, both parties will hear an alert tone.

If privacy is eliminated, only one other station may join in on an existing conversation.

Default makes all calls private.

6.19 External Night Ring (13)

Programming Steps

If this feature is to be changed:

a. Press FLASH and dial [13]. The following message is shown on the display phone:

EXT NIGHT RING YES-NO
NO

b. To make a change, press the top left button in the flexible button field. It will toggle on and off with each depression.

LED off = no
LED on = yes

c. Press HOLD button.

Description

When this feature is set to yes, it activates external night ring through the loud bell 1 contacts. When outside lines are marked UNA, ringing will activate LBC 1 when an incoming call occurs on those lines during night service.

By default this feature is set at no.

6.20 Attendant Override (14)

Programming Steps

If this feature is to be changed:

a. Press FLASH and dial [14]. The following message is shown on the display phone:

ATTN OVERRIDE YES-NO
NO

b. To make a change, press the top left button in the flexible button field. It will toggle on and off with each depression.

LED off = no
LED on = yes

c. Press HOLD button.

Description

When this feature is set for yes, it allows the attendant with DSS Map 1 to override a busy station or a station in DND.

By default this feature is set at no.

6.21 Attendant Station (15)

Programming Steps

If this feature is to be changed:

a. Press FLASH and dial [15]. The following message is shown on the display phone:

ATTN STA ASSIGNMENT 100, ###, ###

b. Enter up to three three-digit station number(s) on the dial pad.

c. Press HOLD button.

Description

The system will identify an attendant station for the purpose of receiving recalls and activating night service. The system can have up to three attendant(s) programmed.

By default station 100 is assigned as attendant. Entering three pounds [###] will remove that attendant assignment or different station numbers can be programmed.

6.22 Loud Bell Control (16)

Programming Steps

If this feature is to be assigned:

a. Press FLASH and dial [16]. The following message is shown on the display phone:

LOUD BELL CONTROL ASSIGN ###, ###

b. Enter a 0 or a 1 to indicate if a station or a CO line is being assigned the contacts.

0 = station (S)
1 = CO line (A)

c. Enter three digit station numbers or two digit CO line numbers.

d. To program another station or CO line, repeat from step c.

e. Press HOLD button.

Description

Two contacts are available to be assigned either as Loud Bell Control or as CO Line Control.

A Loud Bell Control contact can be assigned to any station and will follow the ringing assignments of that station including tone ringing intercom, and transferred CO lines.

Remember to assign ringing to any station programmed for LBC. Also, a station programmed for CO Line Control must be given that CO line appearance and will close that contact when a station accesses that line.

A CO Line Control contact can be assigned to any CO line.

Entering [###] will remove an assignment. By default no stations or CO lines are assigned.

6.23 PBX Dialing Codes (17)

Programming Steps

If Dialing Codes are to be assigned:

a. Press FLASH and dial [17]. The following message is shown on the display phone:

PBX DIAL CODES ##, ##, ##, ##, ##

b. Enter two digit code numbers, one right after the other, on the dial pad up to a maximum of ten digits.

c. Press HOLD button.

Description

Five one- or two-digit PBX access codes can be programmed into memory. When dialed, these codes signal the system so that toll restriction is applied at the next dialed digit. When a single digit code [9] is entered, it must be followed by the pound [#] as the second digit.

To delete an entry, enter two pounds [##] and press the HOLD button.

Lines must be programmed as PBX lines before these codes will apply.

By default no codes are assigned.

6.24 Executive/Secretary Pairs (18)

Programming Steps

If Executive/Secretary pairs are to be assigned:

a. Press FLASH and dial [18]. The following message is shown on the display phone:

EXEC SECY PAIRINGS
###/### PAIR 1

b. The top left button in the flexible button field will be lit indicating the first pair may be programmed.

c. Enter the three digit Executive station number.

d. Enter the three digit Secretary station number.

e. Press HOLD button.

f. To program a second pair, press the second button in the flexible button field and enter station numbers as in steps c., d., and e.

g. To program a third pair, press the third button in the flexible button field and enter station numbers as in steps c., d., and e.

h. To program a fourth pair, press the fourth button in the flexible button field and enter station numbers as in steps c., d., and e.

Description

There are four Executive/Secretary pairs available. When an Executive station is busy or in DND, intercom calls and transfers will be automatically routed to the designated Secretary.

There can be only one pairing of stations, with no duplicates. You cannot pair Executive 100 to Secretary 101 and then pair Secretary 101 to Executive 100. You can have the same Secretary station for more than one Executive station (101 to 105 and 102 to 105).

An entry of six pounds [######] will remove the assignments. Individual pairs may be changed by pressing the associated flexible button.

6.25 Universal Call Distribution (19)

Programming Steps

If this feature is to be assigned:

a. Press FLASH and dial [19]. The following message is shown on the display phone:

```
UCD 890 ### ### ### ###
###, ###, ###, ###, ###
```

b. The top left button in the flexible button field will be lit for programming UCD group 890.

c. To program an alternate group, press ALT button and enter the pilot number (890 to 87) of the desired group. Press HOLD.

d. To program an overflow station, press OVR button and enter the three digit station number (100 to 179). Press HOLD.

e. To program a Recorded Announcement, press RAN button and enter the following digits:

- 1 = RAN port specified in Table 1 will be used.
- 2 = RAN port specified in Table 2 will be used.
- 1, 2 = Port 1 will answer the call; port 2 will provide a subsequent message.
- 2, 1 = Port 2 will answer the call; port 1 will provide a subsequent message.

Description

There can be eight UCD groups of no more than eight stations each. The UCD groups use a pilot hunting technique. If the pilot number is dialed, the assigned stations in that UCD group are searched for the station which has been in an idle condition for the longest period of time.

An alternate UCD group can be programmed so that if no station in one group is available, the alternate group will be checked for an available station.

If a specific station number is dialed, only that station is rung; no hunting will be done if that station is busy.

To erase a station, press the pound key three times [###] and press HOLD.

Refer to Section 8 for Recorded Announcement descriptions.

By default no stations are assigned.

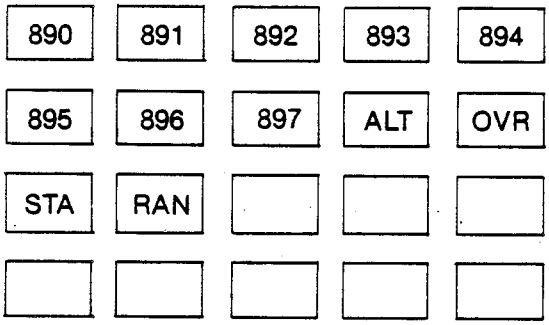
6.25 Universal Call Distribution – Cont'd

Programming Steps

f. Enter the three digit station numbers of the stations in the UCD group in the order in which they will be checked. A maximum of eight stations may be entered.

g. Press HOLD button.

h. To enter further UCD groups (891 to 897), press the appropriate flexible button (see below) and repeat the above procedures.



Description

An optional Recorded Announcement device may be connected to the system to provide an announcement if all stations in a UCD group are busy.

An overflow station may be assigned to route a station from the RAN announcement to the overflow station after a specified time. The overflow station may not be one of the UCD group stations.

6.26 SMDR (20)

Programming Steps

If Station Message Detail Recording is to be used:

a. Press FLASH and dial [20]. The following message is shown on the display phone:

SDR	TPE	PNT	BDR	ACC
NO	LD	80	4800	NO

b. To program SMDR features, use the top row of flexible buttons as follows:

SMDR	TYPE	PRINT	BAUD	ACC

c. The SMDR, TYPE, PRINT, and ACC buttons toggle on and off. (Refer to worksheet).
   - LED on = SMDR enabled, LD only, 80 character, Forced account code entry.
   - LED off = SMDR disabled, All Calls, 29 character, Optional account code entry.

d. To set baud rate, press BAUD flexible button and enter a one digit number to set baud rate.
   - 1 = 300 baud
   - 2 = 1200 baud
   - 3 = 4800 baud

e. Press HOLD button.

Description

A call accounting device can be installed allowing the system to track calls by outside line number, number dialed, time of day, date, station that placed or received the call, and duration of the call.

By default SMDR is not enabled.

The system can be set to record either all outgoing calls or only outgoing long distance calls. Incoming calls are always recorded.

By default the system is set to record long distance (LD) calls only.

The system can be programmed to print in either an 80 character format or a 29 character format.

By default the 80 character format will print.

The system can force the use of account codes on all long distance calls. Once an account code has been used, the station is not subject to Class of Service restrictions.

By default the system does not force the use of account codes.

The baud rate for the printer can be set for 300 baud, 1200 baud, or 4800 baud. Default is 4800 baud.

6.27 Set Admin. Password (21)

Programming Steps

If this feature is to be assigned:

a. Press FLASH and dial [21]. The following message is shown on the display phone:

ADMIN PASSWORD
2366

b. Enter four digits between 0000 and 9999.

c. Press HOLD button.

Description

The password used to enter customer database programming can be individualized by each customer.

By default the numbers 2366 (ADMN) are assigned.

6.28 Dial Pulse Parameters (22)

Programming Steps

If this feature is to be assigned:

a. Press FLASH and dial [22]. The following message is shown on the display phone:

DIAL PULSE RATIO SPEED
6040 10 pps

b. To program dial pulse features, use the flexible buttons one and two as follows:

RAT	SPD

c. The buttons toggle on and off:

- LED on = 60/40 (RAT), 10pps (SPD)
- LED off = 66/33 (RAT), 20pps (SPD)

d. Press HOLD button.

Descripiton

By default all lines are DTMF (tone) signaling. If outpulsing is required, the individual outside line must be programmed for pulse. Refer to CO line programming section. The break/make ratio and the dial speed can be programmed at this time.

By default the break/make ratio (RAT) is set at 60/40 but can be changed to 66/33.

By default the dialing speed (SPD) is 10pps but can be changed to 20pps.

NOTE

This program code is only used when an outside (CO) line has been programmed for dial pulse.

6.29 LCR Enable (23)

Programming Steps

If this feature is to be assigned:

a. Press FLASH and dial [23]. The following message is shown on the display phone:

LCR FEATURE ENABLE NO

b. The top left button of the flexible button field will toggle on and off:

- LED on = yes
- LED off = no

c. Press HOLD button.

Description

If Least Cost Routing is to be used, it must be enabled here. Before enabling LCR, refer to the Least Cost Routing section and programming tables (Appendix A). When the tables have all been programmed, you may then enable LCR for the system.

By default, LCR is not enabled (LED off).

6.30 DISA Access Code (24)

Programming Steps

If this feature is to be assigned:

a. Press FLASH and dial [24]. The following message is shown on the display phone;

DISA ACCESS CODE 100

b. Enter three digits on the dial pad.

c. Press HOLD button.

Description

This allows a three digit access code to be assigned to the system. Anyone calling in on a DISA line must use the access code in order to gain access to system features.

Refer to CO line programming for assignment of DISA lines.

By default the access code is 100.

6.31 Phone Box Timer (25)

Programming Steps

If this timer is to be changed:

a. Press FLASH and dial [25]. The following message is shown on the display phone:

ICM BOX TIMER 20

b. Enter two digits on the dial pad (Refer to worksheet).

c. Press HOLD button.

Description

Determines the amount of time programmed station will ring when a phone box user presses the CALL button.

Default is 20 seconds and is variable from 00 to 60 seconds. A 00 entry will cause programmed stations to ring until the call is answered.

6.32 Attendant Dedicated Intercom (26)

Programming Steps

If this feature is to be assigned:

a. Press FLASH and dial [26]. The following message is shown on the display phone:

DEDICATED INTERCOM YES

b. Press the top left button in the flexible button field. It will toggle on and off with each depression.

- LED on = yes
- LED off = no

c. Prss HOLD button.

Discription

This directs the system to dedicate one intercom path for attendant use only.

Default enables a dedicated intercom path.

6.33 Music Channel (27)

Programming Steps

If this feature is to be changed:

a. Press FLASH and dial [7]. The following message is shown on the display phone:

BACKGROUND MUSIC CHANNEL YES

b. Enter one digit on the dial pad (Refer to worksheet):

- LED on = Background Music
- LED off = No Background Music

c. Press HOLD button.

Description

The system can be programmed to have Background Music in addition to Music-On-Hold.

By default the Background Music channel is enabled.

6.34 Setting System Time and Date (28)

Programming Steps

To set the time and date which appears on display Key Telephones:

a. Press FLASH and dial [28].

b. Choose display format by pressing the appropriate button in the flexible button field:

1	2	3	4

- 1 = month/day; 12 hour
- 2 = day/month; 12 hour
- 3 = month/day; 24 hour
- 4 = day/month; 24 hour

c. Enter time and date as follows (twelve digits):

YYMMDDHHMMSS

d. Press HOLD button.

Description

The date can be displayed in either the month/day format or the day/month format. The time can be displayed in either 12 hour format or 24 hour format.

By default the date is set for month/day format and the time is in the 12 hour format.

When entering the time and date, use the follwing data:

- YY (year) = 00 to 99
- MM (month) = 01 to 12
- DD (day) = 01 to 31
- HH (hour) = 00 to 23
- MM (minute) = 00 to 59
- SS (second) = 00 to 59 (optional)

6.35 Hookswitch Timer (29)

Programming Steps

If this feature is to be assigned:

a. Press FLASH and [29]. The following message is shown on the display phone:

HOOKSWITCH TIMER 05 – 20 '
10

b. Enter a two digit number on the dial pad.

c. Press HOLD button.

Description

This timer determines how long an SLT user should press the hookswitch in order for it to be considered an on hook request.

The timer is variable from 0.5 seconds to 2.0 seconds. The entry should be a two digit number between 05 and 20.

Default is 10 (one second).

6.36 Hookswitch Bounce Timer (30)

Programming Steps

If this feature is to be assigned:

a. Press FLASH and dial [30]. The following message is shown on the display phone:

HOOK SWT BOUNCE 000-100
010

b. Enter a three digit number on the dial pad.

c. Press HOLD button.

Description

This timer determines the length of time that is needed to determine a valid on hook or off hook condition.

The timer is variable from 000 to 100 msec.

Default is 010 msec.

6.3 Page Warning Tone (31)

Programming Steps

If this feature is to be changed:

a. Press FLASH and dial [31]. The following message is shown on the display phone:

PAGE WARNING TONE YES- NO YES

b. Toggle the top left button in the flexible button field on or off:

- LED on = yes
- LED off = no

c. Press HOLD button.

Description

Determines whether a page warning tone will be sounded over the Key Telephone speakers or external paging speakers.

Default is yes.

6.38 Attendant Recall Timer (32)

Programming Steps

If this timer is to be changed:

a. Press FLASH and dial [32]. The following message is shown on the display phone:

ATTN RECALL TIMER 00-60 01

b. Enter two digits on the dial pad.

c. Press HOLD button.

Description

Determines the amount of time before a recall to the attendant will be dropped from the system.

This timer is variable from 00 to 60 minutes and default is 01 minutes.

6.39 UCD Timers (33)

Programming Steps

If these timers are to be changed:

a. Press FLASH and dial [33]. The following message is shown on the display phone:

UCD TIMERS
RING 060 BGM 060 OVR 060

b. Flexible buttons 1, 2, and 3 set the timers for UCD ring timer, UCD message interval timer, and UCD overflow timer. Press the flexible buttons:

1	2	3

c. Enter three digits on the dial pad for each timer.

d. Press HOLD button.

Description

The UCD ring timer determines how long the call will ring before it receives the first recorded announcement. The timer is variable form 000 to 300 seconds.

The UCD message interval timer determines the length of time between the first recorded anouncement and the second recorded announcement (or repeat of the first announcement). The timer is variable from 000 to 600 seconds.

The UCD overflow timer determines the length of time between the beginning of the first recorded announcement and when the call is routed to the overflow station. The timer is variable from 000 to 600 seconds.

Default is 60 seconds for all three timers.

6.40 Announcement Tables (34)

Programming Steps

If this timer is to be changed:

a. Press FLASH and dial [34]. The following message is shown on the display phone:

ANNOUNCEMENT TABLE 1 TYPE # INDX ## TIME ###

b. A string of six, seven, or eight digits is entered on the dial pad The order of data entry will be: Table Number (one digit), Type Number (one digit), Index (port) Number (one to three digits), and Message Time (three digits).

c. Press HOLD button.

d. To enter data for Table 2, enter 2 as the first digit in the string.

Description

Determines the type, index (port) number and message length for the two available Recorded Announcements (RAN). There are two RAN tables that can be programmed. Table 1 can be the answer port for un-answered incoming calls to a UCD group. Table 2 can provide the secondary message or vice versa.

The type can be either the RAN port on the APB, a CO line port, or a SLT port. The index number specifies which circuit for the type of interface.

The message length is used to match the maximum length of the message to the device that is used.

Example:

To program Table 1 for the APB RAN port:

- Dial [1] for Table 1.
- Dial [0] for RAN port on APB.
- Dial [0] for APB in Basic KSU.
- Enter message duration 000 to 300 seconds.

To program Table 1 for CO line port:

- Dial [1] for Table 1.
- Dial [1] for CO port interface.
- Dial [01 to 40] for CO line used.
- Enter message duration 000 to 300 seconds.

To program Table 1 for SLT port:

- Dial [1] for Table 1.
- Dial [2] for SLT port interface.
- Dial [100 to 179] for SLT station used.
- Enter message duration 000 to 300 seconds.

6.41 CO Line Programming (40)

Programming Steps

If the system is in the programming mode, continue using program codes. If starting to program here, enter the programming mode first (See Paragraph 6.3).

If any CO line features are to be changed:

a. Press FLASH and dial [40]. The following message is shown on the display phone:

CO LINE ATTRIBUTES SELECT A CO LINE RANGE

b. Program button 12 (SLCT) will be lit. Enter a four digit number for the range of lines being programmed. If only one line is being programmed, enter that number twice (0101).

c. Press HOLD button. The following message is shown on the display phone to indicate current programming of that line or group of lines.

CO ##-## DT CO UNA FL10 GRP1 COS 1 UCD

d. To program CO line features, use the flexible buttons as follows:

DTMF	CO	UNA	SUPV	DISA
FLASH	GRP	COS	UCD	FWD
BACK	SLCT			

Description

DTMF. Each individual outside line can be programmed to be either DTMF (tone) or dial pulse (When a line is assigned as dial pulse, you can program the break/make ratio and dial speed). Refer also to ring detect timer.

By default all are set for DTMF.

CO. By default all lines are CO. (When programming line type, refer also to CO line group programming, flexible button programming, CO line ringing, flash timer, and recall timers. When a line is marked PBX, a one or two digit dial code may be entered after which toll restriction is applied.)

UNA. If a line is marked UNA, this activates night service answering of incoming calls on this line by stations not normally assigned access to the line(s). The station must have a loop key assigned to do this.

Default is yes.

SUPV. Loop supervision is used primarily with DISA and with unsupervised conferences. It provides the system with the ability to detect when loop current has been broken and an outside line is no longer being used. (To determine timer value for loop supervision, consult your local serving central office for type and duration of loop supervision signal.)

By default there is no loop supervision on any outside line(s).

DISA. By default there are no outside lines assigned as DISA lines. A line can be assigned as a DISA line during night service only or on a 24 hour basis.

6.41 CO Line Programming (Cont'd)

Programming Steps

e. Buttons one through three toggle on and off.
- LED on = DTMF, CO, UNA
- LED off = Pulse, PBX, no UNA

f. Press HOLD button.

g. To set loop supervision for DISA, toggle on button four.

h. Enter a one digit timer value between one and nine (100 to 900 msec).

i. Press HOLD button.

j. To set lines for DISA toggle on button five.

k. Enter one digit to indicate type of DISA desired.
- 1 = 24 hour
- 2 = night only
- 0 = no DISA

l. Press HOLD button.

m. Program buttons six through nine (Flash, Group, COS, UCD) require numeric entries. Press that button and then enter numeric data on the dial pad. Press HOLD after each entry.

n. When all entries have been made for each CO line, press program button twelve (SLCT) and select a new line.

NOTE

Button ten (FWD) will take you to the next higher CO line. Button eleven (BACK) will take you to the next lower CO line.

Description

A maximum of three DISA lines can be programmed into the system. A DISA access code can also be programmed. See system parameters programming.

FLASH. Flash is a programmable opening on a line for signaling. When using an outside line, flash allows a user to obtain new dial tone without losing the line. This is particularly useful behind a PBX. Each individual CO line can be programmed for a flash time. Default is 10 (1.0 seconds) and is variable from 01 to 20 (1 msec. to 2 seconds).

GROUP. Eight line groups are available for CO line assignment. Groups should be assigned according to type (local, FX, WATS, etc.) Line group 0 is used for programming a line as a private line. All lines are placed in line group 1 by default.

COS. All lines are assigned Class of Service 1 by default. (When a CO line is marked PBX, COS restrictions apply to the station only if one of four codes are dialed first.) There are five possible classes of service to which a line may be assigned:

- •COS1 No restrictions.
- •COS2 Table A governs, Station COS 2 and 4 are monitored.
- •COS3 Table B governs, Station COS 3 and 4 are monitored.
- •COS4 Restricts 0,1,*,# as first digit, seven digit limitation.
- •COS5 Overrides station COS 2,3,4, and 5.

Refer to Tables 6-3 and 6-4 for Class of Service dialing privileges.

UCD. Any incoming CO line can ring a UCD group directly by pressing the UCD button and entering the three digit UCD group number.

Table 6-3 Class of Service

CO Line COS →

STACOS ↓

	1	2	3	4	5
1	Unre-stricted	Unre-stricted	Unre-stricted	Canned Restriction	Unre-stricted
2	Table A	Table A	Unre-stricted	Canned Restriction	Unre-stricted
3	Table B	Unre-stricted	Table B	Canned Restriction	Unre-stricted
4	Tables A & B	Table A	Table B	Canned Restriction	Unre-stricted
5	Canned Restriction	Canned Restriction	Canned Restriction	Canned Restriction	Unre-stricted
6	Intercom Only	Intercom Only	Intercom Only	Intercom Only	Intercom Only

Canned Restriction = no #, 0, *, 1 as first dialed digit, 7 digits maximum.

Table 6-4 Allow/Deny Rules

	Entries		Condition & Result	
	Allow Tables	Deny Tables	Allow	Deny
Rule 1	No	No	Allowed	Allowed
Rule 2	Yes	No	Found – Allowed Not Found – Denied	
Rule 3	No	Yes		Found – Denied Not Found – Allowed
Rule 4	Yes	Yes	Found – Allowed Not Found	Found – Denied Not Found – Allowed

6.42 Station Programming (50)

Programming Steps

If the system is in the programming mode, continue using program codes. If starting to program here, enter the programming mode first (See Paragraph 6.3).

If station features are to be changed:

a. Press FLASH and dial [50]. The following message is shown on the display phone:

STATION ATTRIBUTES SELECT A STA RANGE

b. Program button twelve (SLCT) will be lit. Enter a six digit number for station range being programmed. If only one station is being programmed, enter that number twice (100100).

c. Press HOLD button.

d. The display updates to current programming for Page A:

XXX-XXXA PAGE DND. LCOSO SPD QUE PLA OHVA FWD LCR

e. To program Page A features, use the buttons as follows:

PAGE	DND	SPEED	QUE	PLA
OHVA	FWD	FLCR	LCOS	PG A
PG B	SLCT			

Description

The features of Page A are described as follows:

Page. Stations can individually be allowed or denied the ability to make pages. (Do not use COS 6 to deny a station the ability to make a page.) Allowed by default.

DND. Stations can be individually allowed or denied the ability to place their telephone in Do Not Disturb. Allowed by default.

Speed. Stations can be individually allowed or denied the ability to use system speed dial numbers. Since the last forty system speed numbers are not monitored by toll restriction, refer to toll restriction programming. Allowed by default.

QUE. Stations can be allowed or denied the ability to queue for a busy group of lines. Allowed by default.

PLA. Stations can be given the ability to answer incoming outside line calls by going off hook (Preferred Line Answer). Allowed by default.

OHVA. The feature allows an OHVA keyset to secier OHVA calls.

FWD. Stations can be allowed or denied the ability to have calls forwarded to another station. Allowed by default.

FLCR. When a station is programmed for forced least cost routing that station must dial [9] to access an outside line.

LCOS. Stations can be given a class of service assignment for Least Cost Routing. The range is between 0 and 6 with 0 being unrestricted and 6 being the most restricted. By default all stations are given unrestricted access (0).

6.42 Station Programming – Cont'd

Programming Steps	Description
f. The buttons toggle on and off: • LED on = paging access, DND, System Speed, queuing, preferred line answer, call forward. • LED off = paging restricted, no DND, no System Speed, no queuing, no preferred line answer, no call forward.	
g. If LCR Class of Service is to be assigned, press LCOS button and enter a one digit number between 0 and 6 (refer to worksheet).	
h. Press HOLD button. Display will now update.	
The remaining station features are located and programmed on Page B.	
i. Press [PG B] button. The display of current programming for those features will appear as follows: XXX-XXX B IDO COS 1 SPO AAAA BBBB CC DDDDDDDD • XXX = station range • B = page • ID = station identification • COS = class of service • SPK = speakerphone option • A = pickup group • B = paging zone • CC = preset forward station • DD = CO line group access	

6.42 Station Programming – Cont'd

Programming Steps

j. To program Page B features, use the flexible buttons as follows:

ID	COS	SPK	PK UP	PAGE
PREFW	ACC	FLEX	DSP	PG A
PG B	SLCT			

k. These features all require a numeric entry. Press the desired flexible button and then enter the number on the dial pad.

ID. Press flexible button and enter one digit (0 to 6) to identify station. Press HOLD button.

NOTE

When identifying a station as a DSS, you must also enter the station number of the Key Telephone the DSS is attached to.

COS. Press flexible button and enter one digit (1 to 6) to program class of service. Press HOLD button.

ID. Each station must be identified as one of the following:

- 0 = keyset
- 1 = DSS with MAP 1 (Figure 6-2)
- 2 = DSS with MAP 2 (Figure 6-3)
- 3 = DSS with MAP 3 (Figure 6-4)
- 4 = phone box
- 5 = SLT or OPX
- 6 = SLT with M/W

By default all are o (keyset).

COS. Each station must be assigned a class of service which governs that stations toll restriction. The six classes of service are:

- 1 = unrestricted
- 2 = governed by Table A
- 3 = governed by Table B
- 4 = governed by Tables A and B
- 5 = no 0,1,*,# as first digit, seven digits maximum
- 6 = intercom

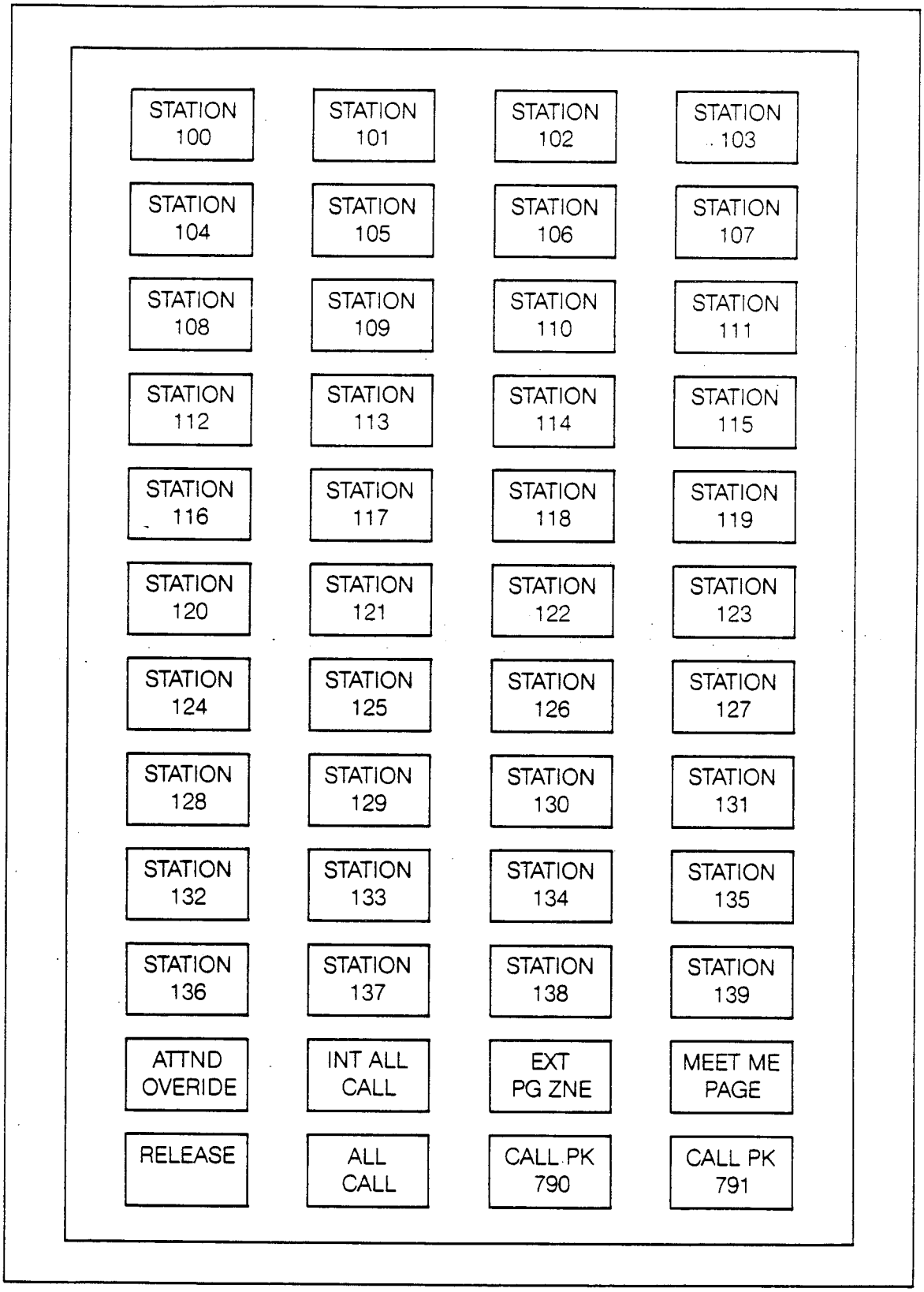


Figure 6-2 DSS/DLS Map 1 Button Assignments

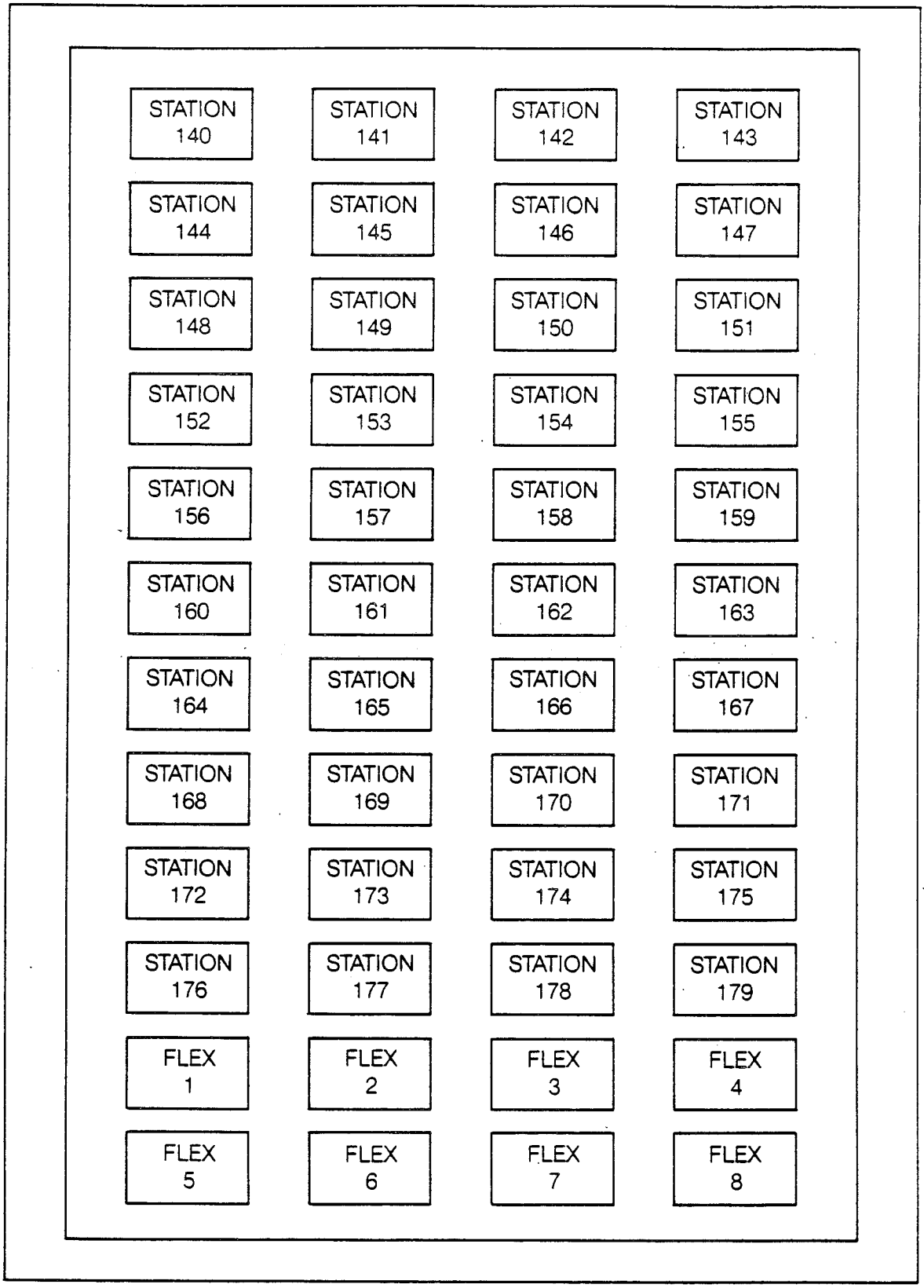


Figure 6-3 DSS/DLS Map 2 Button Assignments

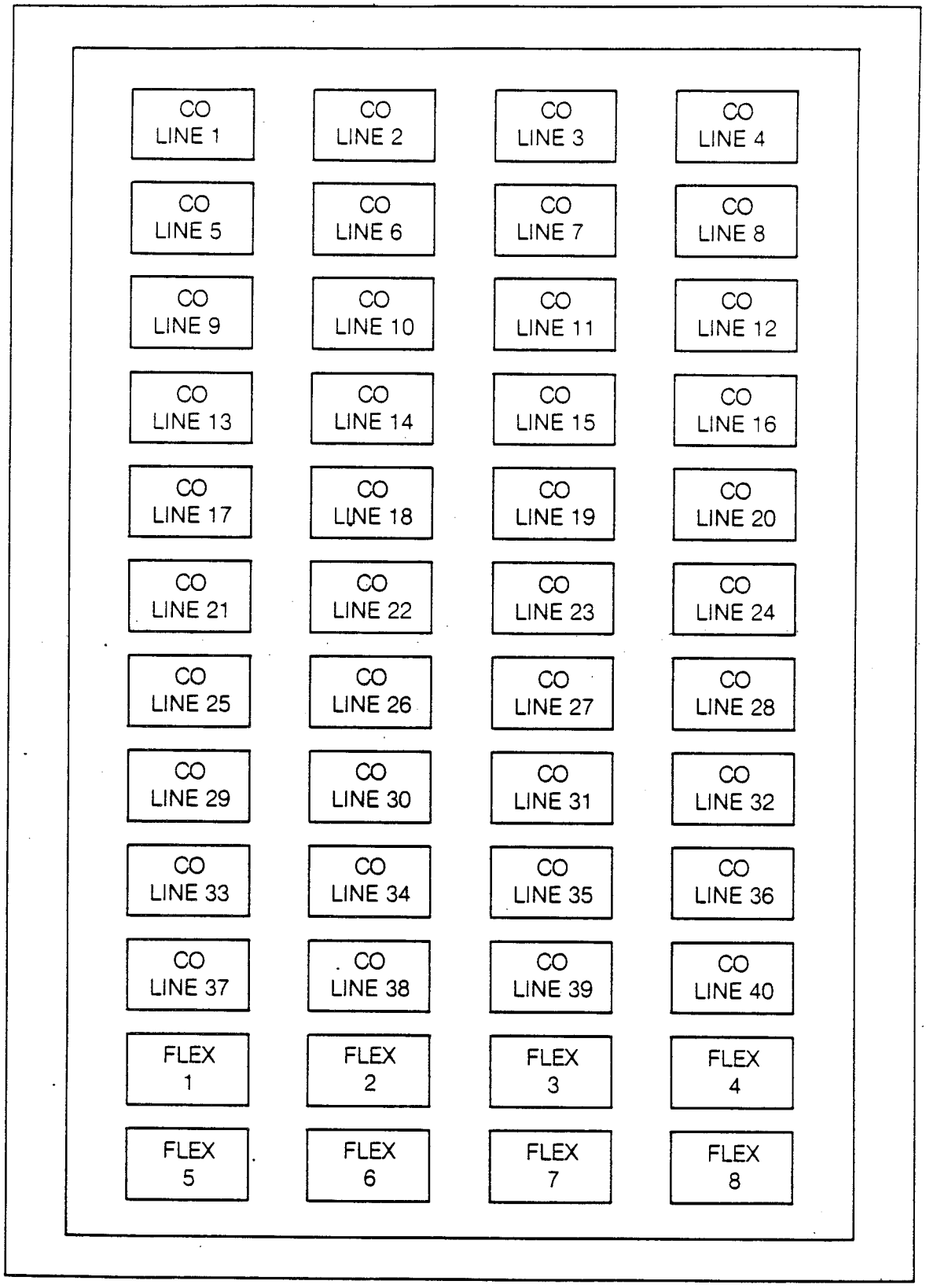


Figure 6-4 DSS/DLS Map 3 Button Assignments

6.42 Station Programming – Cont'd

Programming Steps	Description
SPK. Press flexible button, then enter 0, 1, or 2 to program speakerphone. Press HOLD button.	SPK. Each telephone's speakerphone ability is programmable. • 0 = works as normal speakerphone • 1 = intercom calls enabled. outgoing calls disabled • 2 = disabled, headset operation Default assigns all to 0.
PK. UP. Press flexible button, then enter one to four digits (0, or 1 to 4) to program pick up group. Press HOLD button.	PK. UP. Each station is assigned into pick up groups. Stations can be in any combination of the four groups or in no group at all. • 0 = no group • 1 = group 1 • 2 = group 2 • 3 = group 3 • 4 = group 4 By default all are in group 1.
Page. Press flexible button, then enter one to four digits (0, or 1 to 4) to program page zone. Press HOLD button.	Page. Each station is assigned to internal paging zones. A station can be in any or all zones or in no zone at all. • 0 = no zone (no pages received) • 1 = zone 1 • 2 = zone 2 • 3 = zone 3 • 4 = zone 4 Default assigns all to zone 1. All Call is all page zones combined. If a station is not in any internal zone, it will not receive any all call pages. Stations not assigned to a page group can still make page announcements if allowed in station programming. Stations can be assigned to a page group in order to receive pages but not allowed to make pages.

6.42 Station Programming – Cont'd

Programming Steps	Description
PREFW. Press flexible button, then enter three digit station number (100 to 179) which is to receive the forwarded calls. Press HOLD button.	PREFW. A station can be programmed so the incoming outside lines can be forwarded to a preset station if the first station does not answer after a programmable period of time. No stations are assigned by default. Refer to flexible button programming. If a station has a preset forward to another station, that station must be programmed to have access to the forwarded line. **NOTE** No more than five preset call forwards can be in sequence.
ACC. Press flexible button, then enter up to seven digits (0, or 1 to 7) for the outside line groups the station will have access to. Press HOLD button.	ACC. A station is allowed access to any combination of outside line groups. Or a station may not be allowed any access to outside lines. The following are the line group numbers and their access codes. • Group 0 = no access (private lines) • Group 1 = code 9 or 81 • Group 2 = code 82 • Group 3 = code 83 • Group 4 = code 84 • Group 5 = code 85 • Group 6 = code 86 • Group 7 = code 87 CO line groups are used primarily by single line telephones or for flexible buttons assigned as pooled group buttons on a Key Telephone. By default all stations are allowed access to all groups.

6.42 Station Programming – Cont'd

Programming Steps

1. To program flexible button assignment, press FLEX button (button 8) in the flexible button field. The following message is shown on the display phone:

FLEX BUTTON PROG ENTER BUTTON DATA

FLEX. When programming flexible buttons, first enter the two digit button number to be programmed (01 to 20). Then enter one digit to indicate button function:

- 0 = multi function
- 1 = CO line
- 2 = Loop
- 3 = Pooled Group

If a 0 or 2 (multi function or Loop) is entered, no further entries are required.

If a button is programmed as a CO line button, enter the two digit CO line number and one digit to indicate ring status:

- 0 = no ring
- 1 = day ring
- 2 = night ring
- 3 = both

If a button is programmed as a Pooled Group button, enter one digit to indicate which CO line group will be accessed by that button.

Press HOLD button after making these entries.

Description

Any time a display of button programming (default or changed) is needed, press the DSP button (button 9) on Page B and it will display four buttons programming assignments (starting with the lowest button number). With each subsequent depression of the DSP button the next four buttons will be displayed. The following message is shown on the display:

BUTTONS XXX-XXX BB123 BB123 BB123 B123

Where: BB is button number
XXX is station number(s)
123 is button function

Button function can be any one of the following:

- MUL. Multi function button; a button which has not been given a function by the user.
- D###. Station button and station number; if the number is between 890 and 897, it is a UCD group button.
- S##. Speed bin and bin number.
- LP. Loop button.
- PL#. Pooled group and CO line group number.
- MUS. Music button.
- LNR. Last number redial button.
- SNR. Save number redial button.
- M##. Personalized message and message number.

6.42 Station Programming – Cont'd

Programming Steps	Description
	• ACC. Account code enter. • CP#. Call park and parking location. • ACP. All call page button. • IP#. Internal page and zone number. • IAC. Internal all call page button. • EPG. External page button. • MMP. Meet me page answer button.
	If a single line telephone is being programmed, enter 00 for button number. To erase a single line telephone assignment, enter 00# and press HOLD button.
	To erase a flexible button assignment, enter the button number (01 to 20), #, and press HOLD button. This will render the button inoperable.
	When programming a button as a CO line button, refer to CO line ringing. By default station 100 will ring on a line. However, if station 100 is not given button access to a line, another station must be programmed to ring on that line.
	When programming a button as a pooled group button, refer to CO line group programming. Pooled group numbers match CO line group numbers.
	All stations should be given a loop button so they can receive a transferred call on a line for which they have no button access.

6.43 Exception Tables Programming (60)

Programming Steps

If the system is in the programming mode, continue using program codes. If starting to program here, enter the programming mode first (See Paragraph 6.3).

a. Press FLASH and dial [60]. The following message is shown on the display phone:

EXCEPTION TABLES SELECT A TABLE

b. To program exception tables, use the program buttons as follows:

ALL-A	DEN-A	ALL-B	DEN-B	SY-1
ST-2	ST-3	ST-4	AREA1	AREA2
AREA3	DISP			

c. Press a button to program a table. The following message is shown on the display phone:

ALLOW TABLE A 01 E 02 E

The first two bin locations are displayed.

d. Enter data on the dial pad (refer to worksheet).

Description

The Allow/Deny tables are organized into two sets of tables to support two different toll plans at one installed site.

Each table may contain up to twenty numbers and each deny table up to ten numbers. Each number may be up to eight digits in length including [don't care], [stop], and [search special table] entries.

The following rules should be remembered when setting up the Allow/Deny tables:

- If the tables have no entries, no restriction is applied.
- If entries are made in the allow table and only there, then only those numbers are allowed.
- If entries are made in the deny table and only there, then only those numbers are denied.
- If there are entries in both tables, the allow table is searched first and if a number is found, it is allowed. If no number is found, the deny table is searched and if the number is found there, it is denied. If a number is not found in either table, it is allowed.

The entries in the Allow tables that tell the system to search the special tables, as well as the entry of the home area code should be the last entries made. The entries should be as follows:

- 1 XXXDDDS (X = area code)
- 1 DDS (home area code)

6.43 Exception Tables Programming – Cont'd

Programming Steps	Description

- Digits 0 to 9, *, # = numbers.
- DND button = don't care.
- TRANS button = search special table.
- HOLD button = end/enter data.

The command to search the special tables can only be entered in the Allow tables.

The entry format is BBXXXXXXXX

- BB = bin number
- XX = exception number

e. Press HOLD button after each entry.

f. When all entries for one table are complete, press the program button for the next table to be programmed and follow the same steps.

6.44 Special Tables Programming

There are four special tables to expand the allow tables. These tables are composed of 800 three-digit office code bins. Three of these tables must be assigned an area code by which they are referenced. One table is reserved for the home area and requires no area code entry.

The following steps explain in more detail how to use the special tables:

a. Determine what types of dialing privileges you want your employees to have. You may group them into four basic groups:

   1. employees who are allowed to make any calls they want, unrestricted.
   2. employees who are allowed to make only local calls.
   3. employees who are to be restricted in a similar manner.
   4. employees who are to be restricted in a similar manner but different from group 3.

b. Assign these groups to a station class of service:

   - Group 1 = COS 1
   - Group 2 = COS 5
   - Group 3 = COS 2
   - Group 4 = COS 3

c. Fill out your Allow/Deny Tables. Group 3 will be restricted by Allow/Deny Table A. Group 4 will be restricted by Allow/Deny Table B. Remember the four basic rules for toll tables:

   1. The allow tables override the deny tables; if there are no entries in either table, all calls are allowed.
   2. If there are entries only in the allow tables, only those numbers are allowed; all others denied.
   3. If there are entries only in the deny tables, only those numbers are denied; all others allowed.
   4. If there are entries in both tables, the allow table is checked first; if the number is found there, it is allowed; if it is not found, the deny table is checked; if the number is found there, it is denied; if the number is not found in either table, it is allowed.

Within the Allow tables, four area codes can be referred to special tables for further definition. One of these area codes is reserved for the home area code. When an area code is referred to a special table, entries must be made in the special table specifying what office codes will be allowed. Everything is denied by default.

References to special tables should be made in the last four bins of the Allow tables. The home area code entry MUST be entry twenty regardless of how many other entries are in the table.

d. Determine the Class of Service of each line. Refer to Appendix A (matrix chart) to determine the interaction of CO line COS and station COS. Determine the costs of the various long distance trunks to decide the appropriate COS. Local lines can be divided into groups and given different COS for different levels of access.

6.44 Special Tables Programming – Cont'd

NOTE

Refer to Class of Service programming for CO line Class of Service before assigning CO line button access to an individual station.

When a number is dialed, the system first checks CO line access for that station, then the COS of that line, then the station COS, and last it checks any appropriate toll tables before sending the call.

e. Press the button labeled [AREA 1] for programming the first special table. The following message is shown on the display phone:

SPECIAL TABLE 1 AC

f. Enter the three digit area code.

g. Press HOLD button.

h. Press the associated [SPEC] (special table) button. Area Code 1 goes with Special Table 1, etc. To program the home area code, go directly to [SPEC 4] and enter office codes.

i. Enter the three digit office code followed by a [1] which means to allow this code.

j. Press HOLD button to enter.

6.45 LCR Programming (61)

A. Introduction

Least Cost Routing (LCR) selects the most economical programmed route for an outgoing call. When a station user dials an outside number, the LCR feature analyzes the number and then automatically chooses an outside line from the group that has been programmed as least costly. The LCR feature puts the responsibility of choosing the least expensive route for each area code and exchange code on the system, not on the station user. In order to make a routing decision, the LCR feature is programmed in the system database. The successful operation of this feature is completely dependent on the accuracy of the programming.

B. Description

There are eight different tables which are set up to monitor the dialing of digits and to select the best route for the call depending on time of day. These tables are:

1. Route List Table. Up to sixteen different routes can be programmed. Each route contains four routing lists, one for each of the four time periods. Within each list are programmed up to seven CO (outside) line groups and their corresponding Insert/Delete Tables. Tables are programmed in sequence so that the first line group entry is the least costly (and first selected) and the last line group is the most costly (and last selected).

2. Daily Start Time Table. The least costly route for a particular area code may be different at different times of the day. To accommodate this situation, this table and the Weekly Schedule Table work together, dividing the day into four possible time periods. By default these tables are set at the standard divisions of 8AM, 5PM and 11PM. However, these times can be changed. These tables are then used in the Route List Table to program different CO (outside) line group priorities at different times of day. The times are entered in the 24 hour format.

3. Weekly Schedule Table. See Daily Start Time Table (above).

4. Insert/Delete Table. Digits can be either added or deleted when dialing a number. For instance, if a user dials a long distance call that should be placed on a home area code foreign exchange (FX) line, the digit [1] dialed by the user must be deleted before the call is placed on that line. An Insert/Delete Table can be programmed to do this. Digits can also be added to a number that has been dialed by the user. For instance, OCC access codes can be automatically inserted by the system.

   There are twenty Insert/Delete Tables. Up to twenty digits (including pauses) can be inserted and up to sixteen digits can be deleted. Digits can be inserted before or after the number dialed but can be deleted only after the start of the number dialed.

5. Exception Table. This table is used for operator calls and any other calls which would use a one- or two-digit entry rather than a three-digit area code.

6. 3 Digit Table. This table is divided into two sections – Leading 1 (a [1] is dialed before the number) and Non-Leading 1 (no [1] is dialed before the number). This gives the system the ability to handle call routing in areas that require a [1] before a long distance number, as well as in areas that do not require the [1].

   This table includes area codes, office codes, and such numbers as 911, 411, etc. It also includes the route to be used, the number of digits likely to be dialed and if the 6 Digit Table is to be checked.

   All local office codes must be entered in this table even if they do not require long distance calling.

7. 6 Digit Office Code Table. This table is used to determine route by individual office codes. Certain office codes within an area code can therefore be given a separate routing. If the office code dialed is not found in the 6 Digit Office Code Table, the call is then routed according to the route listed in the 3 Digit Table.

8. Class of Service Table. A station should be assigned a class of service for LCR. The COS can be between 0 and 6, with 0 being unrestricted and 6 the most restrictive. Within the Route List Table, line groups are given a priority assignment between 0 and 6. A station using LCR will be able to use only those CO (outside) line groups with a priority assignment of equal or higher value than the station's LCR Class of Service (i.e. a station with LCOS 3 can use line groups with a priority of 3-6.) Station LCR class of Service is assigned in station programming.

C. Operation

To access the LCR feature:

1. Lift handset.
2. Dial [9] (dial tone).
3. Dial [1] if required.
4. Dial area code, if required.
5. Dial seven-digit telephone number.

The system first checks to see if the number dialed is more than two digits. If it is two digits or less, the call is processed according to instructions in the Exception Table. If the number is not found in the Exception Table, the call is denied.

If the number is more than two digits, it goes to the 3 Digit Table. The first three digits of the number (either office code or area code) are checked ot see if they are in the 3 Digit Table. If they are not found there, the call is denied. If the digits are found in the 3 Digit Table, the system then checks this table to see if the 6 Digit Table must be referenced. If the 6 Digit column is marked [yes], the number is then checked in the 6 Digit Table.

The 6 Digit Table contains codes. If the office code of the number dialed is found in the 6 Digit Table, the number is then checked against the toll restriction tables. When LCR is enabled, only station Class of Service is referenced. CO line of Service is no longer applicable. All CO lines are considered Class of Service 1.

If the call is not allowed through the toll restriction tables, the call is denied. If it is allowed, the call then goes to the Route List Table to sent by the route indicated in the 6 Digit Table.

After a call is sent to the Route List Table, LCR Class of Service becomes applicable. A station can use only those line groups with a priority number equal to or higher than the station's LCR Class of Service. If a line is not available in the first choice line group, the system advances to the next coice line group and searches for a free line. This process continues until an available line is found or the last available line group is searched or until a line group is reached with a priority assignment lower than the station's LCR Class of Service assignment.

If no lines are available in any of the CO line groups programmed for that route and allowed to that station, the call can be queued on to the first choice (least costly) line group. If the user waits three seconds after dialing the number, they will hear confirmation tone which indicates they are queued on the first choice line group.

If the office code is not found in the 6 Digit Table, the call is referred back to the 3 Digit Table. It then goes through the same procedures as described above.

NOTE

It is extremely important that the worksheets be completed before programming the LCR tables.

D. LCR Programming

If you are in the program mode, continue using the program codes. If you are starting to program here, enter the program mode first.

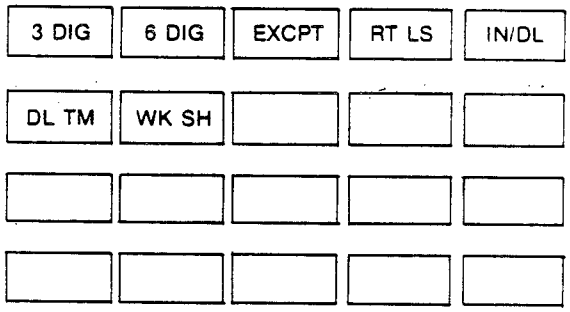
NOTE

LCR does not require FLASH 90 for permanent update. LCR should be disabled during programming.

To program the system for Least Cost Routing, press FLASH and dial [61]. The following message is shown on the display phone:

```
LCR TABLES
SELECT A TABLE
```

There are seven tables which can be programmed here for LCR (you must also program LCR Class of Service in Station Programming). Use the program buttons as follows to program these tables:



Press the button for the table to be programmed.

- Button 1 (3 DIG)

  Press button 1 and the following message is shown on the display phone:

```
3 DIGIT ROUTING TABLE
ENTER L NNN RR6 PP HOLD
```

- Button 1 (3 DIG) – Cont'd

  L = 0 for non leading 1
  ("1" not dialed)
  1 for leading 1
  ("1" is dialed)
  NNN = area/office code
  RR = route number 00-15
  6 = 0 do not go to 6 digit table
  1 go to 6 digit table
  PP = number of digits expected to be dialed.

Press HOLD. Display will now update.

- Button 2 (6 DIG)

  Press Button 2 and the following message is shown on the display phone:

6 DIGIT ROUTING TABLE ENTER S AAA RR NNN HOLD

  S = 0 to remove codes
  1 to add codes
  AAA = area code
  RR = route number 00-15
  NNN = office code

Press HOLD after each office code entry. Display will now update.

Press program button 2 again for further entries.

To delete any entry, enter 0 AAA RR ###.

- Button 3 (EXCPT)

  Press button 3 and the following message is shown on the display phone:

EXCEPTION CODE TABLE ENTER S XX RR HOLD

  S = 0 to remove code from table
  1 to add code to table
  XX = exception codes (for single digit codes, use # as 2nd digit)
  RR = route number, 00-15

HOLD must be pressed after each entry. Display will now update.

Press program button 3 again for further entries. Up to 20 Exception codes may be programmed in this table.

- Button 4 (RT LS)

  Press button 4 and the following message is shown on the display phone:

ROUTE LIST TABLE ENTER RR T G DD L HOLD

  RR = route list number 00-15
  T = time period Route List 1-4
  G = CO Line Group 1-7
  DD = Insert/Delete Table 00-19
  L = Trunk Group Priority Level 0-6

Press HOLD. Display will now update.

To enter additional CO line groups in the SAME TIME PERIOD LIST for the same route list number:

Press G DD HOLD

To enter data for a different list within a route, press program button 4 and enter all data (RR T G DD).

Repeat above to program a new Route Number 00 to 15.

- Button 5 (IN/DL)

  Press button 5 and the following message is shown on the display phone:

DIGIT INSERT/DELETE TT X DDD HOLD

  TT = Table Number 00-19
  X = 0 Delete numbers in front of number dialed.
  1 Insert numbers in front of number dialed.
  2 Insert numbers behind number dialed.
  DDD = digits
  (up to 20 digits can be inserted and up to 16 deleted)
  Press PICK UP for a pause.

Press HOLD after programming each table. Display will now update.

To add and delete numbers in the same table, enter the different insertions/ deletion as separate entries using the same table number.

- Button 6 (DL TM)

  Press button 6 and the following message is shown on the display phone:

DAILY START TIME TABLE HHMM HHMM HHMM HHMM HOLD

Enter times in military form (2400 Hours). Default times are 0800, 1700, and 2300 (8 AM, 5 PM, and 11 PM).

will display if nothing is entered. HOLD must be pressed after the last entry. Display will now update.

- Button (WK SH)

  Press button 6 and the following message is shown on the display phone:

WEEKLY SCHEDULE TABLE ENTER D TTTT HOLD

  D = 0-6 day of week
  Mon = 0, Sun = 6

T = Time Period Route List (1-4) for All Routes (00-15) for that day (0-6).

TTTT
1st T = list in the Route for the FIRST Daily Start Time (All Routes).

2nd T = List in the Route for the SECOND Daily Start Time (All Routes), etc.

Press HOLD button after each complete daily entry. Display will now update.

DAILY START TIME TABLE

	0	1	2	#
	8	6	3	#
	0	0	0	#
	0	0	0	#

WEEKLY SCHEDULE TABLE

	D	T	T	T	T	
Mon.	0	1	2	3	#	Route
Tues.	1	1	2	3	#	List
Wed.	2	1	2	3	#	Numbers
Thur.	3	1	2	3	#	
Fri.	4	1	2	3	#	
Sat.	5	3	3	3	#	
Sun.	6	3	2	3	#	

Enable LCR at this point. Refer to system programming.

6.46 Data Base Printout Routine (80)

With a printer connected to the RS-232C port the currently stored customer data base can be printed.

If a complete printout of the database is desired, press FLASH and dial [80]. When the HOLD button is pressed, the following message is displayed and the data will print in either 29 or 80 character format.

PRINT SYSTEM DATA PRESS HOLD

The printer speed (baud rate) and character format is programmable within the system.

Individual data fields can be printed by dialing one of the following numbers and pressing HOLD:

FLASH 80	Complete System Printout
FLASH 81	System Parameters
FLASH 82	CO Line Attributes
FLASH 83	Station Attributes
FLASH 84	Exception Tables
FLASH 85	System Speed Dial Numbers
FLASH 86	LCR Tables

FLASH 81:

SYSTEM PARAMETERS

ENG. VER. XX X

SHR	EHR	XFR	PFT	PT	CPT
60	180	45	10	2	180

CPT	MWT	PTO	COT	ART	ICM
10	0	15	3	1	20

HFT	HFD	DAC	HPR	PRI	ENR
10	10	100	Y	Y	N

AOR	INT	BGM	LCR	PWT
Y	Y	Y	N	Y

ATTENDANT STATIONS
100 ### ###

LOUD BELL ASSIGNMENTS
####

PBX DIALING CODES
##

EXECUTIVE/SECRETARY PAIRINGS
1 = ### ###
2 = ### ###
3 = ### ###
4 = ### ###

UCE	ALT	OVR	ANO	STN#		
890	892	115	1 2	112	114	125
				163	115	132
				141	145	

891

892

893

894

895

896

897

UCD TIMERS

RING	BGM	OVER
60	60	60

ANNOUNCEMENT TABLE

TYPE	INDEX	TIME
1	40	60
#	###	###

SMDR	TYPE	PRNT	BAUD	ACCT
N	LD	80	4800	N

DIAL PULSE

RATIO	SPEED
6040	10PPS

FLASH 82:

The CO Line Attributes print program will allow the printing of individual CO line data, a range of CO lines, or all CO lines (by pressing HOLD).

CO LINE ATTRIBUTES

CO 01

SIGNAL	TYPE	UNA	SUPV
DTMF	CO	Y	N

DISA	FLTM	GRP	COS	UCD
Y	10	1	1	###

COS 02

SIGNAL	TYPE	UNA	SUPV
DTMF	CO	Y	N

DISA	FLTM	GRP	COS	UCD
Y	20	1	2	890

FLASH 83:

The Station Attributes print program will allow the printing of individual stations, a range of stations, or all stations (by pressing HOLD).

STATION ATTRIBUTES

STA 100

PAGE	DND	SPD	QUE	PLA	OHVA
Y	Y	Y	Y	N	N

LCOS	LCR	FWD	SID	AID	COS	SPK
O	N	Y	O		1	O

PICKUP 1 PAGE 1234

PREFWD CO ACCESS 12345678

BUTTONS

01D100	02D101	03D102
04D103	05D104	06D105
07D106	08D107	09D108
10D109	11010	12020
13030	14040	15050
16060	17070	18080
19PL1	20LP	

STA 101

PAGE	DND	SPD	QUE	PLA	OHVA
Y	Y	Y	Y	N	N

LCOS	LCR	FWD	SID	AID	COS	SPK
0	N	Y	5		1	0

PICK UP 1 PAGE 1

PREFWD COS ACCESS 1

SLT RING

FLASH 84:

The Exception Tables can be printed by table or by individual bin assignment. To print an individual table press the associated button (1 to 8 of the flexible field) and press the HOLD button. The bin entries in the allow/deny tables can be printed by dialing the bin number and pressing the HOLD button.

Button Number	Exception Display
1	PRINT ALLOW TABLE A ENTER BIN NO, PRESS HOLD
2	PRINT DENY TABLE A ENTER BIN NO, PRESS HOLD
3	PRINT ALLOW TABLE B ENTER BIN NO, PRESS HOLD
4	PRINT DENY TABLE B ENTER BIN NO, PRESS HOLD
5	PRINT SPECIAL TABLE 1 PRESS HOLD
6	PRINT SPECIAL TABLE 2 PRESS HOLD
6	PRINT SPECIAL TABLE 3 PRESS HOLD
8	PRINT SPECIAL TABLE 4 PRESS HOLD

Allow Table A

01	11
02	12
03	13
04	14
05	15
06	16
07	17
08	18
09	19
10	20

Deny Table A

01	06
02	07
03	08
04	09
05	10

Allow Table B

01	11
02	12
03	13
04	14
05	15
06	16
07	17
08	18
09	19
10	20

Deny Table B

01	06
02	07
03	08
04	09
05	10

Special Tables Parameters:

SPECIAL TABLE 1 AREA CODE 305

ALLOWED OFFICE CODES
200 201 202 203 204 205 206
207 208 209 210

SPECIAL TABLE 2 AREA CODE 904

Allowed Office Codes

SPECIAL TABLE 3 AREA CODE 814

Allowed Office Codes

SPECIAL TABLE 4 HOME AREA CODE

Allowed Office Codes

FLASH 85:

The System Speed Dial Numbers print program will allow the printing of individual System Speed numbers, a range of System Speed numbers, or all System Speed numbers (by pressing HOLD).

SYSTEM SPEED NUMBERS

20
21
22
23
24
25
26
etc.....

FLASH 86:

Individual tables may be printed by pressing the button that is associated with the table, entering a range if desired, and pressing the HOLD button. The following table shows the various options for printing LCR tables:

Button Number	LCR Display
1	PRINT 3 DIGIT TABLE ENTER RANGE, PRESS HOLD
2	PRINT 6 DIGIT TABLE ENTER RANGE, PRESS HOLD
3	PRINT EXCEPTION TABLE ENTER RANGE, PRESS HOLD
4	PRINT ROUTE LIST TABLE ENTER RANGE, PRESS HOLD
5	PRINT DIGIT INSERT/DEL ENTER RANGE, PRESS HOLD
6	PRINT DAILY START TIME PRESS HOLD
7	PRINT WEEKLY SCHEDULE PRESS HOLD

Following are examples of the printouts for LCR tables:

3 DIGIT TABLE

CODE	LEADING 1			NON-LEADING 1		
	RR	PP	6	RR	PP	6
213	01	11	Y	##	##	N
253	08	08	N	##	##	N
303	05	11	N	##	##	N
411	##	##	N	00	03	N
602	03	11	N	##	##	N
818	14	11	Y	##	##	N
911	##	##	N	00	03	N

6 DIGIT TABLE

AREA CODE	ROUTE NO	OFFICE CODES			
213	00	224	225	245	246
		249	333	456	561
818	13	255	318	458	459

EXCEPTION CODE TABLE

CODE	ROUTE NO
0#	00
09	15
20	13

ROUTE LIST TABLE

RT	TIME	CO GRP	INS/DEL	GRP PR
0	1	5	01	5
		3	19	5
		2	16	3
		6	03	1
	2	1	06	3
		4	12	3
	3	5	02	4
	4	6	07	5
		3	18	5

DIGIT INS/DEL TABLE

TABLE	DIGITS	
01	DEL	1602
	PRE	345
02	DEL	12144921792
	PRE	1214306
	POST	8545

DAILY START TIME TABLE

TABLE	TIME
1	800
2	1700
3	2300
4	####

WEEKLY SCHEDULE TABLE

START TIME	M	T	W	T	F	S	S
800	1	1	1	1	1	3	3
1700	2	2	2	2	2	3	2
2300	3	3	3	3	3	3	3
####	3	3	3	3	3	3	3

SECTION 7 SYSTEM CHECKOUT

7.1 Introduction

Prior to actual power up and initialization, the Key System should be checked over to avoid start up delays or improper loading. A step-by-step checklist is provided for this purpose.

7.2 Preliminary Procedures

- Verify that the DC output power cord from the EPS housing is plugged into the DC connector on the KSU.
- Make sure that the KSU is properly grounded.
- The DC/DC Converter must be installed in the KSU and firmly seated in its card connector position.
- The ON/OFF switches of the EPS housing and the KSU should be OFF. The breaker switch of the EPS should be ON.
- Verify that all PCB's are firmly plugged into their correct color coded card. slot positions. This can be done by comparing the color of the PCB ejector tabs with the colored labels on the KSU shelves.
- The service switches on the PCB's should be in the NORMAL (up) position.
- Inspect the MDF for shorted wiring and improper polarity that would affect the Key Telephone or DSS console.
- All switches on the CPB should be ON so that default data can be loaded into memory when the system is powered up. Make certain that the lithium battery is connected to the battery (+) terminal.
- Make sure that plug-ended MDF cables connected to the KSU are secure and are plugged into the correct position.

7.3 Power Up Sequence

The power up sequence involves the proper application of AC power to the System. monitoring DC/DC Converter and CPB LED s. A successful power up is assured if the installation checklist has been followed. When System power is turned on, default data is loaded into memory.

a. The eight white DIP switches on the front of the CPB should all be in the ON position.

b. Plug the AC power cord of the EPS housing into the dedicated 117V ac outlet. Turn the power switch on the EPS to on. The input and output LEDs on the power supply should light. The AC, DC, and ring LED's on the front of the EPS should light.

c. Turn the power switch of the KSU to ON. The EPS ring LED will now flicker (If RG unit is installed).

d. The two red LEDs on the DC/DC Converter should light immediately.

e. The CPB has eight red LED s located on the front of the card. If the power up is successful, LED s one. two, and three will light steady and then go off. LED eight will light and remain lit. LED five will flicker. LED s two and three will flicker faintly.

f. Press the reset button on the CPB. The above CPB LED indications will repeat.

g. Check for +5V and +14V operation on the DC/DC Converter and adjust the +5V. if necessary. A digital volt meter is required to adjust the 5 volts.

h. Turn switch eight on the CPB to off to prevent accidental loading of default data in case of power outage.

i. The system is ready for programming. If any problems have occurred, see the Troubleshooting Section (8).

40/80 Power Supply Tests

DC/DC CONVERTER			
Voltage Designation	Voltage Reading	Test Point Location	Remarks
+5 VDC	+5V ± 1%	Front of DC/DC Converter	Adjustable on front cover of DC/DC Converter
+14 VDC	+14V ± 4%	Front of DC/DC Converter	—
POWER SUPPLY			
117 VAC	117V ± 10%	Commercial power source	—
+24 VDC	+24V ± 5%	DC output terminals	If 24V is below 22V or above 29V, check AC power for 117V ± 10% No adjustments.

The DC/DC Converter is pre-set at the time of manufacturing, but should be checked at system initialization with a digital volt meter having an accuracy of ± 1%.

SECTION 8 MAINTENANCE AND TROUBLE SHOOTING

1. Central Processor Board (CPB)

KTU	FUNCTION	CONTROL	OPTIONS	FAULT CONDITIONS
CPB Color Code: Yellow	1. Central Processor Unit (CPB) to control system operation. 2. Read Only Memory (ROM) with factory set instructions. 3. Random Access Memory (RAM) protected by a lithium battery. 4. Hard Restart switch for manual system restart. 5. Provides RS232 port for SMDR.	Contains 8 process running indicators (LEDs) which indicate various conditions of the system. LED 1 – Dependability/ Recovery, flickers on/off in normal operation. LED 2 – Ringing, will flash steady when ring scan is functioning. LED 3 – Timers, will flicker timers are operating. LED 4 – Monitor LED 5 – LCD LED 6 – Call processing. LED 7 – Administration LED 8 – Idle If the system stops processing and LED 1 only is on, this indicates a ROM failure. If system halts and LED 1 and 2 are on, this indicates RAM failure.	Switch 1 – Write Memory OFF – Protects contents of data base. ON – Allows update of the data base from station 100. Switch 2 – Clear to Send Disable. OFF – For terminal equipped to send CTS signal. ON – Is normal terminal operation. Switch 3 – ON – Allows trace output. OFF – No trace output. Switch 4 – Soft restart. OFF – No soft restart. ON – Allows soft restart. Switch 5 – SMDR OFF – Disabled. ON – Enabled. Switch 6 – Printer Type. OFF – Normal type 29-character. ON – Wide type 80-character.	1. Complete system failure. 2. Erroneous call processing. 3. Inoperative features in system operation. 4. Partial failures in system operation. 5. Continual system restarts. 6. Failure of SMDR. 7. Loss of Unique customer data base programming.

1. Central Processor Board (CPB) (Cont'd)

KTU	FUNCTION	CONTROL	OPTIONS	FAULT CONDITIONS
CPB (Cont'd) Color Code: Yellow			Switch 7 – SMDR. OFF – SMDR goes to CPB port. ON – SMDR goes to APB port. Switch 8 – Init Protect. OFF – Database will not initialize. ON – Database will be initialized.	

2. DC/DC Converter

DC/DC Converter	Provides 5-14V logic voltages from PS. Provides LED indications if voltages are present. Provides BGM 1 and BGM 2 connections.	1. Receives 24 VDC from PS. 2. BGM volume. 3. Has ON/OFF switch.		1. Total system failure – no LEDs or voice. 2. Loss of music-on-hold and BGM.
Battery Charging Board (BC). (Located in the EPS).	Same as above.	Charges external battery package.	Battery Charging Board is used if the system is to be equipped for stand-by power operation.	1. Battery Backup failure.

3. Key Station Interface Board (KSB)

KTU	FUNCTION	CONTROL	OPTIONS	FAULT CONDITIONS
KSB Color Code: Green	Provides interface for 8 key phones.	Busy state LED that monitors circuits for busy condition. Service switch with normal/service mode.	None	1. Unable to receive intercom dial tone. 2. Poor transmission characteristics. 3. Key telephone set inoperative. 4. Key telephone unable to invoke features. 5. No LED indications.

4. Off-Hook Voice Announce Board (KSB/OHV)

KSB/OHV	Provides interface for 8 key telephones and provides the off-hook voice feature for those telephones.	Busy state LED that monitors circuits for busy condition. Normal/Service switch.	None	1. Key telephone set inoperative. 2. Poor transmission characteristics. 3. Loss of Off-hook voice announce.

5. Central Office Interface Board (COI)

COI Color Code: White	Provides interface for 8 CO/PBX lines.	Busy state LED that monitors each CO/PBX line for ringing, busy and idle conditions. Service switch with normal/service mode.	None	1. Unable to receive CO dial tone. 2. Unable to break CO dial tone. 3. CO line(s) not ringing. 4. Crosstalk/noise.

6. Single Line Interface Board (SLT)

SLT W/MW Color Code: Green	Provides interface for 8 SLTs. Contains the matrix for CO and intercom paths. Also provides for SLTs with MW lights.	1. Provides busy/idle state LED. 2. Normal/service switch.	None	1. SLT can't receive dial tone. 2. Poor transmission characteristics.

7. Single Line Ring Generator and M/W Power Supply (RG)

KTU	FUNCTION	CONTROL	OPTIONS	FAULT CONDITIONS
RG Single Line Ring Generator and M/W Power Supply.	Externally mounted unit that provides 90 VAC 20 Hz ring supply to support SLTs. Also provides voltage to light M/W lights when SLT M/W cards are used.			1. SLTs won't ring. 2. M/W light will not function properly on all SLTs.

8. Application Board (APB)

APB Application Board Color Code: Red	Provides 2 DTMF receivers and 2 DTMF senders for SLTs and DISA. Matrix and control circuitry for DISA, unsupervised conference, 2 external page zones and supports SLU module and additional RS232C module (RSM).		RSM Module. RS232C Module.	1. DISA circuit does not work. 2. Loss of external page. 3. SLT cannot receive intercom dial tone.

9. Single Line Receiver/Sender Unit (SLU)

RSM – Single Line. DTMF Module Added to APB Board.	Used to expand the DTMF receivers and senders in system to support SLTs.			

10. RS232C Module (RSM)

RS232C Module Added to APB Board.	Provides 2nd RS232C port to system.			1. Loss of SMDR data.

11. Power Failure Transfer Unit (PFT)

KTU	FUNCTION	CONTROL	OPTIONS	FAULT CONDITIONS
PFT Power Failure Transfer Unit	Provides relay transter circuits for up to 6 CO lines in the event of a power or processor failure. Facilitates loud bell ringing.		Manual switch used for activating the PFT for testing purposes.	1. Power failure transfer does not function. 2. Loud bells do not ring.

System Parameters

PROG CODE	FLEX BTN	FUNCTION	FORMAT	DEFAULT	CUSTOMER DATA
FLASH 01		System Hold Recall	000-300 s	060	
FLASH 02		Exclusive Hold Recall	000-300 s	180	
FLASH 03		Transfer Recall	000-300 s	045	
FLASH 04		Preset Forward Timer	00-99 s	10	
FLASH 05		Pause Timer	1-9 s	2	
FLASH 06		Call Park Timer	000-600 s	180	
FLASH 07		Conference Timer	00-99 m	10	
FLASH 08		MSG Wait Reminder Tone	000-104 m	000	
FLASH 09		Paging Timeout Timer	00-60 s	15	
FLASH 10		CO Ring Detect Timer	200-900 msec	3	
FLASH 11	1	Hold Preference	Sys/Exc 1	System	
FLASH 12	1	Automatic Privacy	Yes/NO	Yes	
FLASH 13	1	External Night Ring	Yes/No	No	
FLASH 14	1	Attendant Override	Yes/No	Yes	
FLASH 15		Attendant Assignment	100-179	100	
FLASH 16		Loud Bell Control	Sta #, Sta #	None	
FLASH 17		PBX Dial Codes	Five 2 digit	None	
FLASH 18	1	Exec/Sec Pair 1	Sta #, Sta #	None	
FLASH 18	2	Exec/Sec Pair 2	Sta #, Sta #	None	
FLASH 18	3	Exec/Sec Pair 3	Sta #, Sta #	None	
FLASH 18	4	Exec/Sec Pair 4	Sta #, Sta#	None	
FLASH 19	1	UCD Group 0 (890)	Up to 8 Sta	None	
FLASH 19	2	UCD Group 1 (891)	Up to 8 Sta	None	
FLASH 19	3	UCD Group 2 (892)	Up to 8 Sta	None	
FLASH 19	4	UCD Group 3 (893)	Up to 8 Sta	None	

System Parameters (Cont'd)

PROG CODE	FLEX BTN	FUNCTION	FORMAT	DEFAULT	CUSTOMER DATA
FLASH 19	5	UCD Group 4 (894)	Up to 8 sta	None	
FLASH 19	6	UCD Group 5 (895)	Up to 8 sta	None	
FLASH 19	7	UCD Group 6 (896)	Up to 8 sta	None	
FLASH 19	8	UCD Group 7 (897)	Up to 8 sta	None	
FLASH 20	1	SMDR	Yes/No	No	
FLASH 20	2	Call Type	All/LD only	LD only	
FLASH 20	3	Print columns	80/29	80	
FLASH 20	4	Baud Rate	300/1200/4800	4800	
FLASH 20	5	Account Codes	Yes/No	No	
FALSH 21		Admin. Password	One 4 digit	2366	
FLASH 22	1	Dial Pulse	60/40, 66/33	60/40	
FLASH 22	2	Dialing speed	10/20	10 pps	
FLASH 23	1	LCR Enable	Yes/No	No	
FLASH 24		DISA Access Code	100-999	100	
FLASH 25		Phone Box Timer	00-60 s	20 s	
FLASH 26	1	Attendant Intercom	Yes/No	Yes	
FLASH 27	1	Background Music	Yes/No	Yes	
FLASH 28		Time/Date Format	12/24 HR:M/D	12 hr:M/D	
FLASH 29		Hookswitch Timer	05-20	10	
FLASH 30		Hookswitch Bounce	000-100	010	
FLASH 31	1	Page Warning Tone	Yes/No	Yes	
FLASH 32		Attendant Recall Timer	00-60	01	
FLASH 33	1	UCD Ring Timer	000-300	60 s	
FLASH 33	2	UCD Message Timer	000-600	60 s	
FLASH 33	3	UCD Overflow Timer	000-600	60 s	
FLASH 34		Announcement Table	NYXXXMMM	None	

CO Line Programming (FLASH 40)

LINE NO.	TONE/ PULSE	CO/ PBX	UNA	LOOP SUP	DISA	FLASH TIME	LINE GRP	LINE COS	UCD RING	REMARKS
01										
02										
03										
04										
05										
06										
07										
08										
09										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
	Tone	CO	Yes	No	No	10	1	1		

CO Line Programming (FLASH 40) (Cont'd)

LINE NO.	TONE/ PULSE	CO/ PBX	UNA	LOOP SUP	DISA	FLASH TIME	LINE GRP	LINE COS	UCD RING	REMARKS
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
31										
32										
33										
34										
35										
36										
37										
38										
39										
40										
DEFAULT	Tone	CO	Yes	No	No	10	1	1	None	

Station Programming (FLASH 50)

DATA FLELD	Page/ BTN	STATION NUMBER	DEFAULT
PAGE ACC	A/1		Yes
DND	A/2		Yes
SYS SPEED	A/3		Yes
QUEUING	A/4		Yes
PREF LINE ANSWER	A/5		No
OHVA	A/6		No
CALL FWD	A/7		Yes
FORCED LCR	A/8		
LCR COS (0-6)	A/9		0
STAID (0-6)	B/1		0
COS (1-6)	B/2		1
SPEAKERPHONE (0-1)	B/3		0
PICKUP GRP (0-4)	B/4		1
PAGING ZONE (0-4)	B/5		1
PRE FWD	B/6		None
CO LINE GRP (0-8)	B/7		1
BTN ASSIGN	B/8		

Page A is selected by pressing Button 10 of the flexible buttons.
Page B is selected by pressing Button 11 of the flexible buttons.

Button Assignment Chart (FLASH 50)

	STATION NUMBER																
	100																
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20																	

Button Assignment Chart (FLASH 50) (Cont'd)

This chart is to be used to assign each each flexible button a function. By default, buttons 1 through 10 are assigned as stations 100 through 109, button 11 through 18 are assigned as CO lines 01 through 08, button 19 is a pooled group button for line group 1, and button 20 is a loop button.

WHERE:

BB = Button Number (01 through 20)
LL = CO Line Number (01 through 40)
R = Ringing (See Ringing Codes)
G = Ling Group (1 through 7)

Ringing codes are:
0 = no ringing
1 = day ringing
2 = night ringing
3 = day and night ringing

1. To assign a button as a multi-function button (user programmable) enter:

BB [0] HOLD

2. To assign a button as a CO line button enter:

BB [1] LLR HOLD

3. To assign a button as a loop button enter:

BB [2] HOLD

4. To enter a button as a pooled group button (refer to Section 6 for CO line group numbers) enter:

BB [3]G HOLD

5. To unassign a button, rendering it inoperable enter:

6. When an SLT is being assigned to ring on an outside line, enter:

00 [1] LLR HOLD

System Speed Numbers

Programmed from the first attendant station.

20	45	70	95
21	46	71	96
22	47	72	97
23	48	73	98
24	49	74	99
25	50	75	
26	51	76	
27	42	77	
28	53	78	
29	54	79	
30	55	80	
31	56	81	
32	57	82	
33	58	83	
34	59	84	
35	60	85	
36	61	86	
37	62	87	
38	63	88	
39	64	89	
40	65	90	
41	66	91	
42	67	92	
43	68	93	
44	69	94	

Exception Tables (FLASH 60)

Allow Table A

01
02
03
04
05
06
07
08
09
10
11
12
13
14
15
16
17
18
19
20

Allow Table B

01
02
03
04
05
06
07
08
09
10
11
12
13
14
15
16
17
18
19
20

Exception Tables (FLASH 60) (Cont'd)

Demu Table A

01
02
03
04
05
06
07
08
09
10

Deny Table B

01
02
03
04
05
06
07
08
09
10

Special Table 1

AREA CODE.....
OFFICE CODES:

Special Table 2

AREA CODE.....
OFFICE CODES:

Special Table 3

AREA CODE .....
OFFICE CODES:

Special Table 4

HOME AREA CODE .....
OFFICE CODES:

LEAST COST ROUTING (FLASH)

CO LINE GROUPS (FLASH)

1	2	3	4	5	6	7

Enter what type lines are programmed in each group.

DAILY START TIME TABLE

TABLE	DEFAULT TIME	CHANGED TIME
1		
2		
3		
4		

WEEKLY SCHEDULE TABLE

START TIME	M T W T F S S

ROUTE LIST TABLE

RTE	TIME	CO GRP 1	INS/ DEL PRIO	CO GRP 2	INS/ DEL PRIO	CO GRP 3	INS/ DEL PRIO	CO GRP 4	INS/ DEL PRIO	CO GRP 5	INS/ DEL PRIO	CO GRP 6	INS/ DEL PRIO	CO GRP 7	INS/ DEL PRIO
00	1														
	2														
	3														
	4														
01	1														
	2														
	3														
	4														
02	1														
	2														
	3														
	4														
03	1														
	2														
	3														
	4														
04	1														
	2														
	3														
	4														
05	1														
	2														
	3														
	4														

ROUTE LIST TABLE (CONT.)

RTE	TIME	CO GRP 1	INS/ DEL PRIO	CO GRP 2	INS/ DEL PRIO	CO GRP 3	INS/ DEL PRIO	CO GRP 4	INS/ DEL PRIO	CO GRP 5	INS/ DEL PRIO	CO GRP 6	INS/ DEL PRIO	CO GRP 7	INS/ DEL PRIO
06	1														
	2														
	3														
	4														
07	1														
	2														
	3														
	4														
08	1														
	2														
	3														
	4														
09	1														
	2														
	3														
	4														
10	1														
	2														
	3														
	4														
11	1														
	2														
	3														
	4														

ROUTE LIST TABLE (CONT.)

RTE	TIME	CO GRP 1	INS/ DEL PRIO	CO GRP 2	INS/ DEL PRIO	CO GRP 3	INS/ DEL PRIO	CO GRP 4	INS/ DEL PRIO	CO GRP 5	INS/ DEL PRIO	CO GRP 6	INS/ DEL PRIO	CO GRP 7	INS/ DEL PRIO
12	1														
	2														
	3														
	4														
13	1														
	2														
	3														
	4														
14	1														
	2														
	3														
	4														
15	1														
	2														
	3														
	4														

INSERT/DELETE TABLES

TABLE	DIGITS DIALED
00	INSERT PRE / PORT
	DELETE (PRE)
01	INSERT PRE / PORT
	DELETE (PRE)
02	INSERT PRE / PORT
	DELETE (PRE)
03	INSERT PRE / PORT
	DELETE (PRE)
04	INSERT PRE / POST
	DELETE (PRE)
05	INSERT PRE / POST
	DELETE (PRE)
06	INSERT PRE / POST
	DELETE (PRE)
07	INSERT PRE / POST
	DELETE (PRE)

INSERT/DELETE TABLES (CONT.)

TABLE	DIGITS DIALED
08	INSERT PRE
	INSERT POST
	DELETE (PRE)
09	INSERT PRE
	INSERT POST
	DELETE (PRE)
10	INSERT PRE
	INSERT POST
	DELETE (PRE)
11	INSERT PRE
	INSERT POST
	DELETE (PRE)
12	INSERT PRE
	INSERT POST
	DELETE (PRE)
13	INSERT PRE
	INSERT POST
	DELETE (PRE)
14	INSERT PRE
	INSERT POST
	DELETE (PRE)
15	INSERT PRE
	INSERT POST
	DELETE (PRE)

INSERT/DELETE TABLES (CONT.)

TABLE	DIGITS DIALED
16	INSERT PRE
	INSERT POST
	DELETE (PRE)
17	INSERT PRE
	INSERT POST
	DELETE (PRE)
18	INSERT PRE
	INSERT POST
	DELETE (PRE)
19	INSERT PRE
	INSERT POST
	DELETE (PRE)

	LEADING 1 ("1" is dialed)			NON LEADING 1 ("1" is not dialed)		
CODE	RR	PP	6	RR	PP	6

RR = refers to route in the route list table

PP = maximum number of digits likely to be dialed

6 = refers to 6-digit table (Y/N)

6 DIGIT OFFICE CODE TABLE

AREA	RTE	AREA	RTE	ATEA	RTE	AREA	RTE	AREA	RTE	AREA	RTE
OFFICE CODE		OFFICE CODE		OFFICE CODE		OFFICE CODE		OFFICE CODE		OFFICE CODE	
OFFICE CODE		OFFICE CODE		OFFICE CODE		OFFICE CODE		OFFICE CODE		OFFICE CODE	

UPDATES TO 40/80 MANUAL, ISSUE 1

In an effort to provide you, the installer, with precise and up-to-date information, on SIEMENS products, the following list of clarifications, corrections and additions to the Siemens 40/80 Description Installation and Maintenance Manual have been compiled and are now being presented to the field.

Following the instructions, detailed in each step, listed below please take a moment and update your copy of the Siemens 40/80 Manual, Issue 1 (part # 00SMN202).

STEP	PAGE	PARAGRAPH	DESCRIPTION OF CHANGE
1.	2-3	C.	**CLARIFICATION:** The initial offering of 40/80 included five (5) sperate software Feature Packages (FP I through FP V). To help reduce confusion and potential Inventory problems this offering was reduced to three (3) software Feature Packages (FP I, FP IV, FP V). Thus the references defined for Feature Package II and III should be eliminated from the manual. (also delete the references to FP II and III in Table 3-1 on pg 3-2.)
2.	2-4	E, F	**CLARIFICATION** of the statements regarding the ability to *Insert and/or Remove* PCB's under power. The station (KSB, SLT), CO line (COI, COA) and application (APB) boards were designed so that they could be removed and reinserted into the KSU "under power". However the "Normal/Service" switch on these boards should be in the "Service" mode before removing or inserting the board into the system. It should be noted that PCB's critical and necessary for System Operation such as the Central Processor Board (CPB), DC/DC Converter (DCU), and Power Supplies (PS), Ring Generators (RG), and the Battery Charging boards must not be removed or installed "under power" as total system failure would be the result. Also see the Note under Installing PCB's on page 5-9.
3.	2-7	Q	**CLARIFICATION** of the words *input/output*. The RS-232C port of the RS-232C Module (RSM) is for out-putting SMDR information only. This port cannot be used for programming locally or remotely via a terminal.
4.	2-7	2.3	**CLARIFICATION** of the context in which *Digital Technology* is used. The Siemens 40/80 Hybrid Key Telephone system uses state of the art Digital Technology for switching control, command processing and also utilizes a CMOS based microprocessor controlled cross point voice switching matrix. Although the 40/80 system is a "analog voice switch" in fact the 40/80 system incorporates *Digital Technology* in much of its design.

STEP	PAGE	PARAGRAPH	DESCRIPTION OF CHANGE
5.	3.2	Feature Index	**CLARIFICATION** the *RAN* feature is not individually listed on the Feature Index as *RAN* is a "sub-feature" to and described within the system feature of "UCD".
6.	4.7	4.27, Item B	**CORRECTION:** The correct Station Speed Bins should read *00 - 19*. **REPLACE TEXT:** *00 - 10* **WITH:** *00 - 19*
7.	5-30	Table 5-7	**CORRECTION:** The 80 Character SMDR format example shows the MM/DD/YY (Date Of Call) in the wrong sequence and the 29 Character Formats is missing the MM/DD/YY in the example. The correct formats are shown in the following table.

80 Character format selected

```
AAA BB HH:MM HH:MM MM/DD/YY HCCCCCCCCCCCCCCCCCCCCCCCC GGGGGGGGGGGG (CR) (LF)
```

29 Character format selected

```
AAA BB HH:MM HH:MM MM/DD/YY (CR) (LF)
"CCCCCCCCCCCCCCCCCCCCCCCC (CR) (LF)
  GGGGGGGGGG (CR) (LF)
```

8.	6-2	6.3, Item D	**CORRECTION:** The Manual incorrectly states that the "HOLD" LED is lit when in programming mode. **REPLACE TEXT:** *The HOLD button and the ON/OFF button LED's are lit.* **WITH:** *The ON/OFF button LED is lit.*
9.	6-3	Table 6-1	**ADDED COMMAND:** A Help menu has been added to the system to aid in terminal programming. The additional command is "**?**", entering this command will produce, on the screen, a help menu similar to Table 6-1 of the Manual. **ADD TO MANUAL:** Under the Terminal heading "? = *HELP*".

STEP	PAGE	PARAGRAPH	DESCRIPTION OF CHANGE
10.	6-5	Table 6-2	**CORRECTION:** The Program Codes shown for "Page Warning Tone" and Hook Switch Bounce Timer" are reversed in the table. **REPLACE:** In the Table under Program Code "Flash *30*" with "Flash **31**", for Page Warning Tone. And "Flash *31*" with "Flash **30**" for Hook Switch Bounce Timer.
11.	6-5	Table 6-2	**CORRECTION:** The Page numbering for Station Programing (Program Code Flash 50) shows Page 1 and Page 2 but should be Page A and Page B. **REPLACE:** In the Table under Program Code Flash 50, "Page *1*" with "Page **A**" and "Page *2*" with "Page **B**".
12.	6-10	6.12, a	**CORRECTION:** The Call Park Recall Timer is correctly stated in the text but the Display Example shows an incorrect range. **REPLACE TEXT:** Display text CALL PARK TIMER *000-060* 180 **WITH:** Display text CALL PARK TIMER *000-600* 180
13.	6-11	Description	**MISSING NOTE:** A note should be added under the Description column to further define the functions of the Conference Timer. **ADD NOTE:** *The Conference Timer also allows the system administrator to control the length of time a DISA caller is allowed after establishing a "Trunk-to-Trunk" call. At the expiration of the Conference Timer a tone will be presented to both DISA parties, then one minute later the system will automatically release both trunks. The Conference timer does not affect or control a DISA-to-Station call.*
14.	6-12	6.16, b	**CORRECTION:** The CO Ring Detect Timer is a one digit entry in programing, not a two digit entry. **REPLACE TEXT:** *Enter two digits* **WITH:** *Enter one digit*
15.	6-18	Item c	**CORRECTION:** A typo was made in paragraph c while referencing the pilot UCD numbers. **REPLACE TEXT:** *(890 - 87)* **WITH:** *(890 - 897)*

STEP	PAGE	PARAGRAPH	DESCRIPTION OF CHANGE
16.	6-19	Item f	**ADDED STEP:** When programming stations into UCD groups the programmer must first press the "STA" button (button 11) before entering the station numbers. **REPLACE TEXT:** *Enter the three digit station numbers .....* ***With:*** *To program stations into a UCD group, first press the STA button (button 11), then enter the three digit station numbers .....*
17.	6-24	Item a	**CORRECTION:** The programming code for programming the Background Music Channel is 27 not 7 as stated in the manual. **REPLACE TEXT:** *Press FLASH and dial [7].* **WITH:** *Press FLASH and dial [27].*
18.	6-32	PLA.	**CORRECTION:** The default for Preferred Line Answer (PLA) is stated incorrectly in the Manual. PLA is disabled by default. **REPLACE TEXT:** *Allowed by default.* **WITH:** *Disabled by default.*
19.	6-34	Description	**MISSING NOTE:** A note was missing from the Station ID, programming description, pertaining to Phone Box programming. An optional parameter enables the Phone Box to receive Back Ground Music (BGM) through its speaker. **ADD NOTE:** *When assigning a station as a phone box enter a [4], then enter a [1] to enable BGM or a [0] to disable BGM.*
20.	6-35	DSS Map 1	**ENHANCEMENT:** DSS/DLS Map 1 actually has 6 buttons that can be flexibly assigned by the user. The Map on page 6-35 shows the default designations for DSS Map 1. However the following buttons can be flexibly changed by the user; INT ALL CALL, EXT PG ZNE, MEET ME PAGE, ALL CALL, CALL PK 790, and CALL PK 791. Note: ATTND OVERRIDE and RELEASE are fixed feature keys and can not be changed by the user. **ADD TO FIGURE:** Indicate **FLEX**, for flexible user programming, on the following keys of DSS Map 1; INT ALL CALL = FLEX EXT PG ZNE = FLEX MEET ME PAGE = FLEX ALL CALL = FLEX CALL PK 790 = FLEX CALL PK 791 = FLEX

STEP	PAGE	PARAGRAPH	DESCRIPTION OF CHANGE
21.	6-42	Item b	**CORRECTION:** The correct designation to button #5 (last button in the first row) is "ST-1" for Special Table #1, not "SY-1". **REPLACE TEXT:** SY-1 **WITH:** ST-1
22.	6-42	Description	**CORRECTION:** In the description for entries into the Allow and Deny tables to search the special tables the entry given for searching the Home Area code is incorrect. The correct entry for a search into the Home Area code table is "*1DDDS*" not "*1DDS*". **REPLACE TEXT:** - *1 DDS (home area code)* **WITH:** - *1DDDS (home area code)*
23.	6-49	Button 4 (RT LS)	**MISSING DATA FIELD:** The operation for entry of an LCR rout list table is missing the operand "L" (Trunk group priority level) in the command sequence for entering groups in the same time period list for the same rout list number. **REPLACE TEXT:** *Press G DD HOLD* **WITH:** *Press G DD L HOLD*
24.	6-50	first paragraph	**MISSING DATA FIELD:** The operation for entry of an LCR rout list table when entering data for a different list within a rout is also missing the "L" data field (Trunk group priority level). **REPLACE TEXT:** ..... *press button 4 and enter all data (RR T G DD).* **WITH:** ..... *press button 4 and enter all data (RR T G DD L).*
25.	6-50	2nd column	**CORRECTION:** The button # (7) is missing from the lead-in to Weekly Schedule Table (WK SH) programming. **REPLACE TEXT:** *Button (WK SH)* **WITH:** *Button 7 (WK SH)*
26.	6-50	2nd column	**CORRECTION:** The correct button number for programming the Weekly Schedule Table (WK SH) is button "7" not button "6". **REPLACE TEXT:** *Press button 6 and the following .....* **WITH:** *Press button 7 and the following .....*

STEP	PAGE	PARAGRAPH	DESCRIPTION OF CHANGE
27.	8-1	CPB Function	**CLARIFICATION:** An additional function should be listed for the use of the RS232 port located on the CPB. In addition to providing SMDR the RS232 port also provides for Terminal Programming (Remote Programming). **ADD TEXT:** To function 5. *.... and Terminal/Remote programming.*
28.	8-4	APB Function	**CORRECTION:** The APB provides connection and control to ONE external page port, not TWO as stated in the "function" paragraph. **REPLACE TEXT:** *.... 2 external page zones .....* **WITH:** *.... 1 external page port .....*
29.	8-4	APB Function	**MISSING FUNCTION:** The RAN port with control should be added to the function of the APB PCB. **ADD TEXT:** To the APB Function column. *Provides 1 RAN port with E&M type controls for external recorded announcement devices.*
30.	A-7	Item 5	**MISSING OPERATION:** The operation to "un-assign a button" was inadvertently left out from item 5. **ADD OPERATION:** To Item 5; "To un-assign a button, rendering it inoperable enter: *BB [#] HOLD*"

SIEMENS
TECHNICAL FACT NOTICE

No. SIS0105
November 15, 1989

SIEMENS 40/80 OPX AND COA PCB'S

Siemens is pleased to provide to you documentation for the addition of the OPX (Off-Premise Extension) and the COA (Amplified Central Office) interface board to the 40/80 product line. These PCB's were not able to be included into the Siemens 40/80 Description, Installation, and Operations Manual. Please add the two Addendums to your copy of the 40/80 Manual.

COA (Amplified - Central Office Board)

The COA PCB (Part # 23SMN011) provides an option for enhancing audio levels on CO lines engaged in Conference or Trunk to Trunk DISA calls. The COA installs in place of any standard COI board and allows each CO line to be strapped with either a +3 db (gain) or 0 db (no gain). The gain/no gain affects all Conference and Trunk to Trunk DISA operation.

OPX (Off-Premise Extension)

The OPX PCB (Part # 21SMN004) provides four (4) registered OPS circuits for direct connection of OPS interfaces. This allows a 40/80 single line extension to be located "off-premise" from the 4080 KSU.

Note: The OPX interface board installs into a KSB card slot of the 4080 and reduces the maximum station capacity of the system by four (4) stations. The OPX interface board provides a "Precise" dial tone and ring back plan to stations connected to the OPX board. This differs from the dial tone and ring back plan used for stations connected to the standard KSB (Key Station Interface Board) and the SLT (Single Line Telephone Board) used for on-premise stations.

Documentation

See the attached two Addendums to Issue 1 (A-101, A-102), for further information on Installing and Programming the Siemens 40/80, OPX and COA PCB's.

Attachments: 3

File a copy of this Technical Facts in your Master Technical Facts File and in your Siemens 40/80 Description, Installation, and Operations Manual, TEC#00SMN202.

SIEMENS 40/80 ISSUE CONTROL

ISSUE	DATE	CHANGE
1	1 SEP 88	First Draft
	7 NOV 89	TFN# SIS0104: Page V, Added Issue Control Sheet to Table of Contents Section Page 5-16, Changed Table 5-4 to show correct wiring designations for Power Fail Transfer circuits Page 5-19, Changed Figure 5-11 to show correct wiring designations for Power Fail Transfer circuits
	15 NOV 89	TFN# SIS0105: Page V, Updated Issue Control Sheet Added: Amplified Central Office (COA) Interface Board, Addendum, A-SIS0101 Added: Off-Premise Extension (OPX) Interface Board, Addendum, A-SIS0102

SECTION 2 GENERAL DESCRIPTION

2.2 System Components

G. Amplified Central Office Interface Board

The Amplified Central Office Interface Board (COA) is an optional card that installs in place of any standard COI board. The COA enhances audio levels and contains all other attributes of the COI. The COA is recommended for DISA and multi-line conference applications and should not be used in the System behind a PBX because of possible feedback.

SECTION 5 INSTALLATION

5.11 Amplified Central Office Interface Board

There are eight CO line circuits per card. Each card has a jumper strap (one for each of the eight CO circuits) which is set by the installer during installation for either 0 db (no gain) or +3 db (gain). Gain/no gain affects multi-line conferences and trunk to trunk DISA calls. All other installation requirements are the same as for the standard COI. Refer to Section 5 of the Siemens 40/80 Installation and Maintenance Manual.

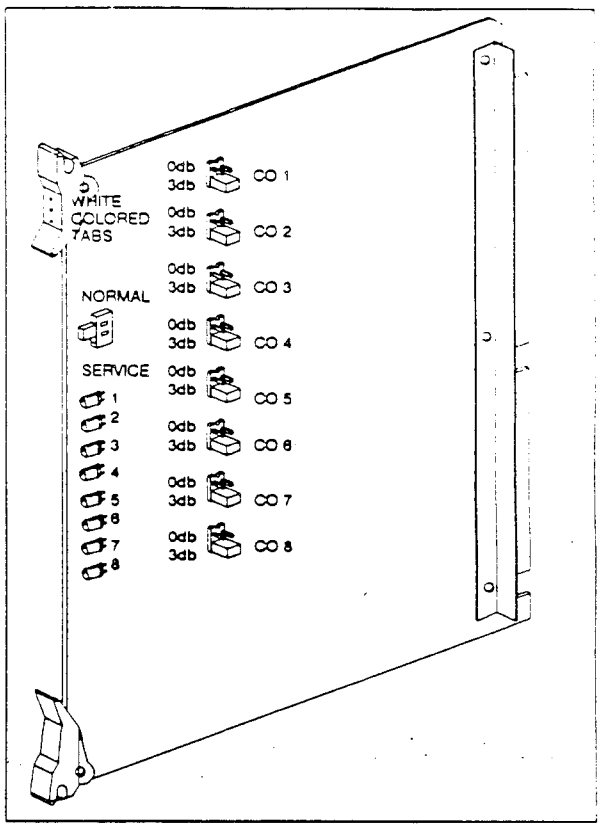


Figure 5-9 Amplified Central Office Interface Board (COA)

File a copy of this Addendum in your Siemens 40/80 Description, Installation, and Operations Manual, Part # TEC 00SMN 202.

SECTION 2 GENERAL DESCRIPTION

2.2 System Components

S. Single Line OPX Board

The Single Line OPX Board provides four FCC registered 2500-type single line interface ports. When an OPX is installed, the maximum number of stations in the System is reduced by four.

OPX station features are the same as SLT station features. The only exception is "Receiving Message Waiting Indication", which is not allowed. Thus, OPX stations cannot answer a message waiting indication since they are incapable of receiving such an indication. All other feature operation is identical to that of on-premise SLT stations.

Each OPX port requires an OL13C network circuit. An FCC registered interface, such as RJ21X, is required to connect to the public network. Only SLT devices capable of sending true DTMF can be used on an OPX circuit provided by the System. When an OPX board is installed, four station ports are rendered unusable, reducing the maximum number of stations in the System by four. For example, with an OPX board inserted into the second KSB card slot extensions 108 through 111 support four OPX circuits (extensions 112 through 115 are not usable).

Loop Resistance:	Each circuit operates with a Loop resistance up to 1400 ohms (including station resistance)
Maximum Current:	100 mA (terminals shorted)
Minimum Current:	20 mA (@1400 ohms)

Table 1 OPX Specifications

File a copy of this Addendum in your Siemens 40/80 Description, Installation, and Operations Manual, Part # TEC 00SMN 202.

SECTION 5 INSTALLATION

5.16 Off-Premise Extension (OPX) Installation

The OPX board can be installed in all but the first KSB card slot of the System. It can be inserted and removed with power on using the "Normal/Service" switch on its top front edge. It also has an adjustable control directly above the "Normal/Service" switch. This control is set at the factory for proper operation; **DO NOT** make adjustment to this control.

One Single Line Ring Generator and M/W Power Supply Unit (RG) and one Application Board (APB) are necessary to support the OPX card. An additional Single Line DTMFRS Unit (SLU) may also be needed if the combined traffic of OPX, SLT, and DISA calls affects the availability of receiver circuits.

A 50-pin amphenol type female connector is provided on the front edge of the OPX. This allows the OPX System extensions to be cabled to the Main Distribution Frame (MDF). Twenty-five pair cabling must be prepared with a male connector to extend the OPX extension to the MDF. The cable should be routed through the bottom cable access area of the KSU or Expansion cabinet. The cable(s) then should be terminated on industry standard 66M1-50 punch-down connector block(s). After the amphenol type cable connector has been attached, the cable should be secured to a cable clamp at the bottom of the KSU or Expansion cabinet.

Connection from the OPX punch-down block to an FCC approved RJ21X connector can be done by cross-connect wiring. See Figure 1 for pair identification for each of the OPX circuits.

Table 2 Station Connecting Block (OPX)

PAIR	PIN	COLOR	DESIGNATION
1	26 01	WH/BL BL/WH	T 1 R 1
2	27 02	WH/0R OR/WH	UNUSED
3	28 03	WH/GN GN/WH	UNUSED
4	29 04	WH/BN BN/WH	T 2 R 2
5	30 05	WH/SL SL/WH	UNUSED
6	31 06	RD/BL BL/RD	UNUSED
7	32 07	RD/OR OR/RD	T 3 R 3
8	33 08	RD/GN GN/RD	UNUSED
9	34 09	RD/BN BN/RD	UNUSED
10	35 10	RD/SL SL/RD	T 4 R 4

NOTE: PAIRS 11 THROUGH 25 UNUSED

SECTION 6 Programming

In customer data base entries, all OPX station extensions must be programmed with a station ID code of "5". This is done in "Station Attributes" (FLASH 50).

SIEMENS
TECHNICAL FACT NOTICE

No. SIS0104
November 7, 1989

CORRECTIONS TO THE SIEMENS 40/80 INSTALLATION AND MAINTENANCE MANUAL

Please replace the following pages of the Siemens 40/80 Description, Installation, and Operation manual, Issue 1, September 1988, with the attached pages.

In Issue 1, September 1988:

Add:	Page V, Issue Control Sheet to end of Table of Contents,
Replace:	Page 5-16, Table 5-4, and
Replace:	Page 5-19, Figure 5-11

In Table 5-4, and Figure 5-11, the SLT STATION OUT (W/GN pairs) and SLT STATION IN (W/BN pairs) were shown reversed. The attached pages show the correct wiring designations for the power fail transfer connections.

Attachments: 3

File a copy of this Technical Facts in your Master Technical Facts File and in your Siemens 40/80 Description, Installation, and Operations Manual, TEC#00SMN202.

SIEMENS 40/80 ISSUE CONTROL

ISSUE	DATE	CHANGE
1	1 SEP 88	First Draft
	7 NOV 89	TFN# SIS0104: Page V, Added Issue Control Sheet to Table of Contents Section Page 5-16, Changed Table 5-4 to show correct wiring designations for Power Fail Transfer circuits Page 5-19, Changed Figure 5-11 to show correct wiring designations for Power Fail Transfer circuits

Table 5-1 Station Connecting Block (KSB)

PAIR	PIN	COLOR	DESIG	DESCRP
1	26	WH/BL	VT 100	
	1	BL/WH	VR 100	
2	27	WH/OR	DT 100	
	2	OR/WH	DR 100	
3	28	WH/GN	—-	
	3	GN/WH	—-	
4	29	WH/BN	VT 101	
	4	BN/WH	VR 101	
5	30	WH/SL	DT 101	
	5	SL/WH	DR 101	
6	31	RD/BL	—-	
	6	BL/RD	—-	
7	32	RD/OR	VT 102	
	7	OR/RD	VR 102	
8	33	RD/GN	DT 102	
	8	GN/RD	DR 102	
9	34	RD/BN	—-	
	9	BN/RD	—-	
10	35	RD/SL	VT 103	
	10	SL/RD	VR 103	
11	36	BK/BL	DT 103	
	11	BL/BK	DR 103	K
12	37	BK/OR	—-	
	12	OR/BK	—-	S
13	38	BK/GN	VT 104	
	13	GN/BK	VR 104	
14	39	BK/BN	DT 104	B
	14	BN/BK	DR 104	
15	40	BK/SL	—-	
	15	SL/BK	—-	
16	41	YL/BL	VT 105	
	16	BL/YL	VR 105	
17	42	YL/OR	DT 105	
	17	OR/YL	DR 105	
18	43	YL/GN	—-	
	18	GN/YL	—-	
19	44	YL/BN	VT 106	
	19	BN/YL	VR 106	
20	45	YL/SL	DT 106	
	20	SL/YL	DR 106	
21	46	VI/BL	—-	
	21	BL/VI	—-	
22	47	VI/OR	VT 107	
	22	OR/VI	VR 107	
23	48	VI/GN	DT 107	
	23	GN/VI	DR 107	
24	49	VI/BN	—-	
	24	BN/VI	—-	
25	50	VI/SL	SPARE	
	25	SL/VI	SPARE	

Table 5-2 Station Connecting Block (KSB/OHVA)

PAIR	PIN	COLOR	DESIG	DESCRP
1	26	WH/BL	VT 100	
	1	BL/WH	VR 100	
2	27	WH/OR	DT 100	
	2	OR/WH	DR 100	
3	28	WH/GN	OVT 100	
	3	GN/WH	OVR 100	
4	29	WH/BN	VT 101	
	4	BN/WH	VR 101	
5	30	WH/SL	DT 101	
	5	SL/WH	DR 101	
6	31	RD/BL	OVT 101	
	6	BL/RD	OVR 101	
7	32	RD/OR	VT 102	K
	7	OR/RD	VR 102	
8	33	RD/GN	DT 102	
	8	GN/RD	DR 102	S
9	34	RD/BN	OVT 102	
	9	BN/RD	OVR 102	
10	35	RD/SL	VT 103	B
	10	SL/RD	VR 103	
11	36	BK/BL	DT 103	
	11	BL/BK	DR 103	/
12	37	BK/OR	OVT 103	
	12	OR/BK	OVR 103	
13	38	BK/GN	VT 104	O
	13	GN/BK	VR 104	
14	39	BK/BN	DT 104	
	14	BN/BK	DR 104	H
15	40	BK/SL	OVT 104	
	15	SL/BK	OVR 104	
16	41	YL/BL	VT 105	V
	16	BL/YL	VR 105	
17	42	YL/OR	DT 105	
	17	OR/YL	DR 105	A
18	43	YL/GN	OVT 105	
	18	GN/YL	OVR 105	
19	44	YL/BN	VT 106	
	19	BN/YL	VR 106	
20	45	YL/SL	DT 106	
	20	SL/YL	DR 106	
21	46	VI/BL	OVT 106	
	21	BL/VI	OVR 106	
22	47	VI/OR	VT 107	
	22	OR/VI	VR 107	
23	48	VI/GN	DT 107	
	23	GN/VI	DR 107	
24	49	VI/BN	OVT 107	
	24	BN/VI	OVR 107	
25	50	VI/SL	SPARE	
	25	SL/VI	SPARE	

Table 5-3 Station Connecting Block (SLT)

PAIR	PIN	COLOR	DESIG	DESCRP
1	26	WH/BL	VT 100	
	1	BL/WH	VR 100	
2	27	WH/OR	—-	
	2	OR/WH	—-	
3	28	WH/GN	—-	
	3	GN/WH	—-	
4	29	WH/BN	VT 101	
	4	BN/WH	VR 101	
5	30	WH/SL	—-	
	5	SL/WH	—-	
6	31	RD/BL	—-	
	6	BL/RD	—-	
7	32	RD/OR	VT 102	
	7	OR/RD	VR 102	
8	33	RD/GN	—-	
	8	GN/RD	—-	
9	34	RD/BN	—-	
	9	BN/RD	—-	
10	35	RD/SL	VT 103	
	10	SL/RD	VR 103	
11	36	BK/BL	—-	
	11	BL/BK	—-	
12	37	BK/OR	—-	S
	12	OR/BK	—-	
13	38	BK/GN	VT 104	L
	13	GN/BK	VR 104	
14	39	BK/BN	—-	T
	14	BN/BK	—-	
15	40	BK/SL	—-	
	15	SL/BK	—-	
16	41	YL/BL	VT 105	
	16	BL/YL	VR 105	
17	42	YL/OR	—-	
	17	OR/YL	—-	
18	43	YL/GN	—-	
	18	GN/YL	—-	
19	44	YL/BN	VT 106	
	19	BN/YL	VR 106	
20	45	YL/SL	—-	
	20	SL/YL	—-	
21	46	VI/BL	—-	
	21	BL/VI	—-	
22	47	VI/OR	VT 107	
	22	OR/VI	VR 107	
23	48	VI/GN	—-	
	23	GN/VI	—-	
24	49	VI/BN	—-	
	24	BN/VI	—-	
25	50	VI/SL	—-	
	25	SL/VI	—-	

Table 5-4 Power Failure Transfer Unit Connections (PFT)

PAIR	PIN	COLOR	DESIG	DESCRP
1	26	WH/BL	CO1T-IN	
	1	BL/WH	CO1R-IN	
2	27	WH/OR	SPARE	
	2	OR/WH	SPARE	
3	28	WH/GN	ST1T-OUT	
	3	GN/WH	ST1R-OUT	
4	29	WH/BN	ST1T-IN	
	4	BN/WH	ST1R-IN	
5	30	WH/SL	CO2T-IN	
	5	SL/WH	CO2R-IN	
6	31	RD/BL	SPARE	
	6	BL/RD	SPARE	
7	32	RD/OR	ST2T-OUT	
	7	OR/RD	ST2R-OUT	
8	33	RD/GN	ST2T-IN	
	8	GN/RD	ST2R-IN	
9	34	RD/BN	CO3T-IN	
	9	BN/RD	CO3R-IN	
10	35	RD/SL	SPARE	
	10	SL/RD	SPARE	
11	36	BK/BL	ST3T-OUT	
	11	BL/BK	ST3R-OUT	
12	37	BK/OR	ST3T-IN	P
	12	OR/BK	ST3R-IN	
13	38	BK/GN	CO4T-IN	F
	13	GN/BK	CO4R-IN	
14	39	BK/BN	SPARE	T
	14	BN/BK	SPARE	
15	40	BK/SL	ST4T-OUT	
	15	SL/BK	ST4R-OUT	
16	41	YL/BL	ST4T-IN	
	16	BL/YL	ST4R-IN	
17	42	YL/OR	CO5T-IN	
	17	OR/YL	CO5R-IN	
18	43	YL/GN	SPARE	
	18	GN/YL	SPARE	
19	44	YL/BN	ST5T-OUT	
	19	BN/YL	ST5R-OUT	
20	45	YL/SL	ST5T-IN	
	20	SL/YL	ST5R-IN	
21	46	VI/BL	CO6T-IN	
	21	BL/VI	CO6R-IN	
22	47	VI/OR	SPARE	
	22	OR/VI	SPARE	
23	48	VI/GN	ST6T-OUT	
	23	GN/VI	ST6R-OUT	
24	49	VI/BN	ST6T-IN	
	24	BN/VI	ST6R-IN	
25	50	VI/SL	—-	
	25	SL/VI	—-	

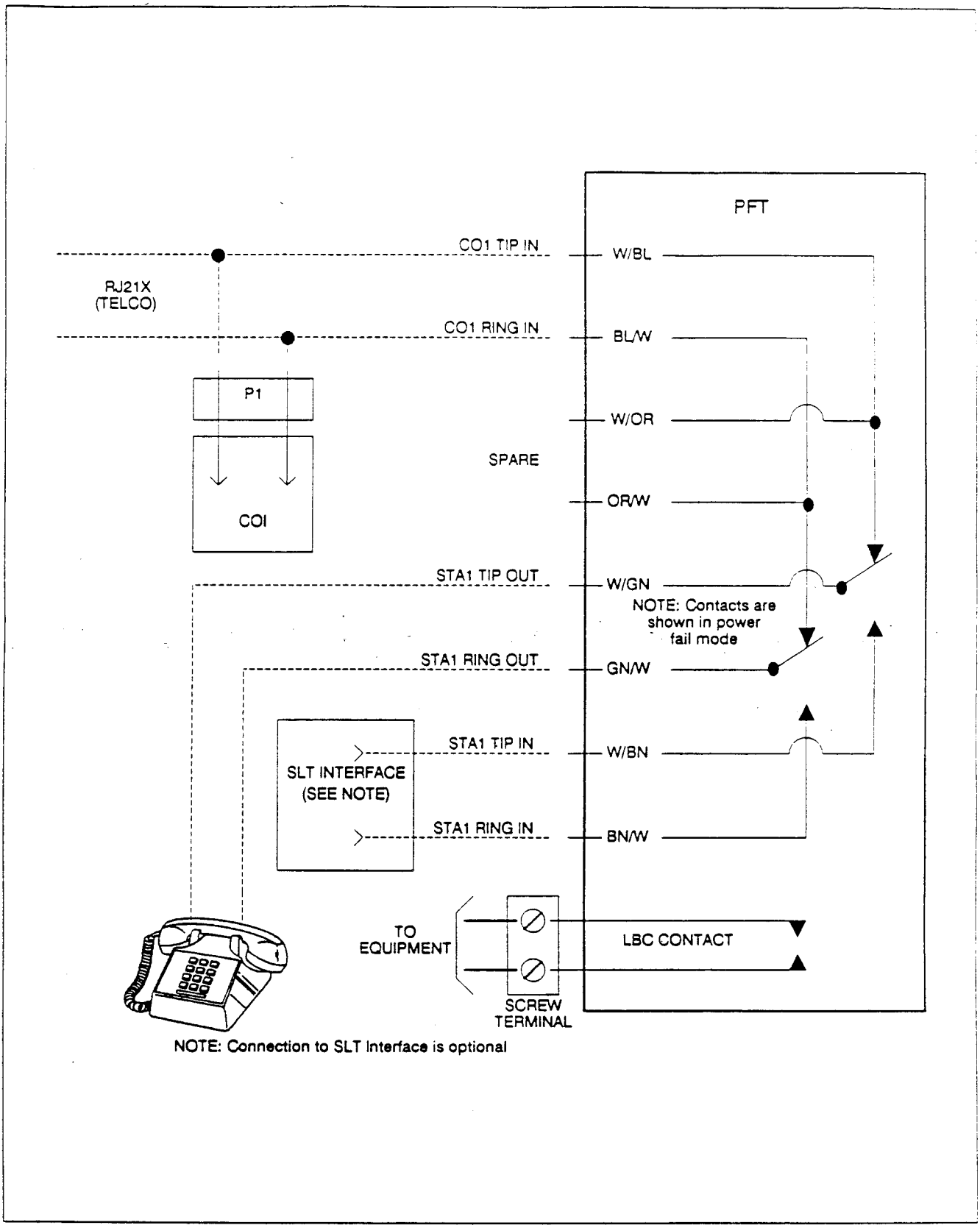


Figure 5-11 Power Failure Transfer Circuit

SIEMENS
TECHNICAL FACT NOTICE

No. SIS0106
November 28, 1989

NEW SIEMENS 40/80 SOFTWARE RELEASE

Siemens and TelPlus announces the release of Feature Package IV and V, Version 1.1F, software for the Siemens 40/80 Key Telephone System.

The new software, Version 1.1F, will be shipped as standard for Feature Package IV (23SMN005) and Feature Package V (23SMN006) beginning in December, 1989. The Following is a list of Enhancements provided in Version 1.1F.

FEATURE ENHANCEMENTS

1. **Voice Mail Integration**

   The Voice Mail Integration is accomplished through "In Band" Signaling on analog SLT ports. Feature Package IV and V will offer the ability to configure up to eight (8) groups in the system. Each group can contain up to eight (8) voice mail stations each of which interfaces with a port on a SLT or OPX card.

   Note: In addition to SLT or OPX PCB's, the VM feature also requires a Ring Generator (RG) and an APB (REV A) for proper operation.

2. **Voice Mail Message Wait Indication**

   The Voice Mail Integration package also offers a unique Voice Mail Message Waiting whereby the voice mail can leave and cancel a message waiting signal to stations connected to the 40/80 system.

3. **Call Forward - Busy, No Answer, and Busy/No Answer**

   In addition to the existing Station Forwarding three (3) new types of Station Forward have been added. Now Stations will have the ability to have calls forwarded when Busy, or when they don't Answer, or a combination Busy/No Answer to a designated station.

4. **Call Forward - To Pilot UCD or Voice Mail Groups**

   Stations have been given the capability to forward Intercom or Transferred CO calls to Pilot UCD and Voice Mail Groups. The Station can utilize all forms of call forward when forwarding to Pilot numbers.

5. **Directed Call Pick-Up of Ringing UCD Stations**

   Stations have been given the ability to perform a Directed Call Pick-Up to members of a UCD group. Stations attempting the pick-up do not have to be in the same pick-up group or be a member of the UCD group.

File a copy of this Technical Facts in your Master Technical Facts File and in your Siemens 40/80 Description, Installation, and Operations Manual, TEC#00SMN202.

SOFTWARE ENHANCEMENTS

1. **Camp-On Tone**

   In previous versions of Siemens 40/80 software the Camp-On tone presented to a busy station was heard by both the busy station and their outside party. This condition existed when the new 4080 OHVA keysets (non-display and display) were used. In version 1.1F, only the busy station will receive the Camp-On tone.

2. **Auto-Attendant (SLT) CO Conference**

   In previous 4080 software versions, when Auto-Attendants were installed on SLT ports, CO lines were inadvertently locked out. If the Auto-Attendant attempted to transferred a CO line to an idle station in the H or P (Intercom mode) and then retrieved the CO line by performing a hook-flash, this could cause the CO line to be locked out from further activity. The system software version 1.1F has been enhanced to prevent this occurrence.

HOW TO OBTAIN ENHANCED SOFTWARE VERSION 1.1F

Version 1.1F will ship as the standard software in both Feature Package IV (TEC # 23SMN005) and Feature Package V (TEC # 23SMN006) Beginning In December, 1989.

INSTALLATION AND PROGRAMMING PROCEDURES

Refer to the software installation instructions shipped with each Feature Package for installation of the Feature Package onto the CPB board. Also see the attached Addendum to Issue 1 to the 40/80 Description Installation and Operation manual for more information and programming instructions.

Attachments: 2

File a copy of this Technical Facts in your Master Technical Facts File and in your Siemens 40/80 Description, Installation, and Operations Manual, TEC#00SMN202.

SIEMENS 40/80 ISSUE CONTROL

ISSUE	DATE	CHANGE
1	1 SEP 88	First Draft
	7 NOV 89	TFN# SIS0104: Page V, Added Issue Control Sheet to Table of Contents Section Page 5-16, Changed Table 5-4 to show correct wiring designations for Power Fail Transfer circuits Page 5-19, Changed Figure 5-11 to show correct wiring designations for Power Fail Transfer circuits
	15 NOV 89	TFN# SIS0105: Page V, Updated Issue Control Sheet Added: Amplified Central Office (COA) Interface Board, Addendum, A-SIS0101 Added: Off-Premise Extension (OPX) Interface Board, Addendum, A-SIS0102
	28 NOV 89	TFN# SIS0106: Page V, Updated Issue Control Sheet Added: Voice Mail Integration, Voice Mail Message Waiting Indication, Call Forward - Busy No Answer, Call Forward - to Pilot UCD or Voice Mail Groups Directed Call Pickup, Addendum A-SIS0103.

40/80 SOFTWARE FEATURE PACKAGES

- FEATURE PACKAGE I
- FEATURE PACKAGE IV
- FEATURE PACKAGE V
- FEATURE PACKAGE VI
  (AVAILABLE IN JUNE, 1990)

3/90CZ

40/80 SYSTEM FEATURES
FEATURE PACKAGE I

- 40/80 Basic System Features

- Enhanced Call Forwarding
  (Busy-No Answer - Busy/No Answer)

    - Limitations

    - Voice Mail
    - Automated Attendant
    - 32 Outside Lines
    - 64 Stations

40/80 SYSTEM FEATURES
FEATURE PACKAGE IV

- 40/80 Basic System Features
- Enhanced Call Forwarding
  (Busy-No Answer - Busy/No Answer)
- Least Cost Routing (LCR)
- Uniform Call Distribution (UCD)
- Remote Administration
- Direct Inward System Access (DISA)
- 32 Outside Lines
- 64 Stations

40/80 SYSTEM FEATURES
FEATURE PACKAGE V

- 40/80 Basic System Features
- Enhanced Call Forwarding
  (Busy-No Answer - Busy/No Answer)
- Least Cost Routing (LCR)
- Uniform Call Distribution (UCD)
- Remote Administration
- Direct Inward System Access (DISA)
- 40 Outside Lines
- 80 Stations

3/90CZ

40/80 FEATURE PACKAGE VI ENHANCEMENTS

- Basic Enhanced Flexibility
- Remote Maintenance
- Least Cost Routing
- Single Line Telephone Features
- Uniform Call Distribution
- Enhanced Voice Mail Integration

(Available in June, 1990)

4/90CZ

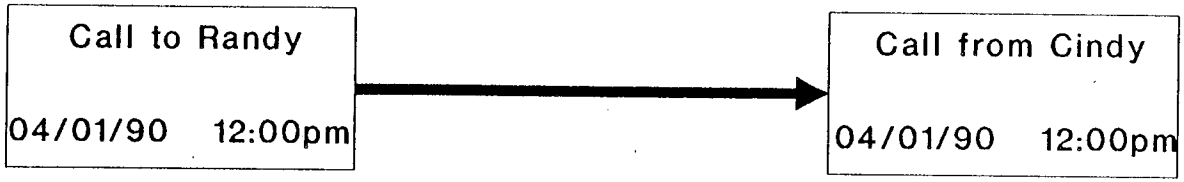
ENHANCED FLEXIBILITY

- Conference Enable/Disable Per Station
- Privacy Release Per Station, Per CO Line
- Personal Message Key (Code 78) On A Flex Button
- One Time DND

ENHANCED FLEXIBILITY
(Continued)

- Flash Key On Intercom
- Preset Call Forward To VM, Hunt Group Or UCD Groups
- Day & Night Class Of Service
- Automatic Night Mode

NAME IN DISPLAY



Call Back from Kandi
04/01/90 12:00pm

Do Not Disturb Doug
04/01/90 12:00pm

Camp-On by Attendant
04/01/90 12:00pm

Page From Terri
04/01/90 12:00pm

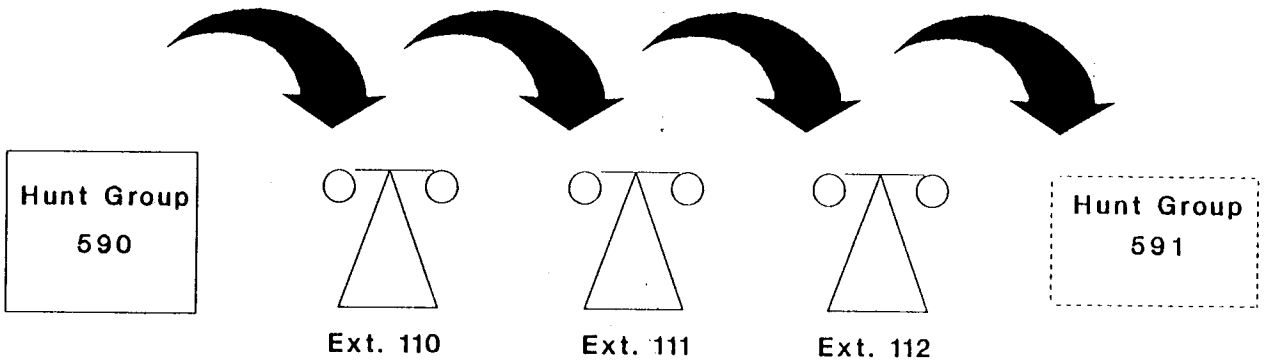
4/90CZ

HUNT GROUPS

- PILOT
- STATION

* 8 Groups Total
* 8 Members Per Group
* Software Programmable

PILOT



- Terminal Hunt
- Calls Directly To A Station In A Group Will Not Hunt

4/90CZ

station to override a called stations H (handsfree) or P (call announce) intercom switch setting. A dial code has been added that is dialed in front of the extension number to force the tone ringing.

2.6 CO Line Ringing Assignment

Each CO line may be programmed (in data base admin) so that incoming ringing on the specified CO line(s) may be assigned initial ringing to one of the following destinations:

- one or more stations (Keyset or SLT)
- to a UCD, Voice Mail or Hunt Group
- Off-Net (via Speed Dial)

The ring-in will follow day Ring assignments unless Night Service mode is active, in which case all incoming CO calls will follow Night Ring assignments.

When ringing is assigned to a keyset, a direct line appearance or an idle Loop button must be available to receive the call. Station call forwarding of initial ringing CO call is possible and can be directed to other keysets with an available Loop button or direct appearance. If the initially ringing CO call cannot ring at the destination assigned, it will ring at the first Attendant station.

Note: You cannot Station Call Forward an initially ringing CO call to UCD, Voice Mail, or Hunt groups if the line is assigned to ring at more than one station.

2.7 Conference Enable/Disable

- Programmable Per station
  This feature will allow the system to be administered on a per station basis for the ability of a station to initiate a conference.

- Programmable Per CO Line
  CO lines can be individually programmed to allow Conference capabilities.

2.8 Day / Night COS of Service (COS)

This feature allows stations that are a certain COS during the day, to be assigned a different COS when the system is put in the night mode. The night COS goes into affect when the system is placed into the night mode, manually or automatically. This prevents the misuse of phones after hours.

2.9 One-Time Do Not Disturb

Allows you to turn off muted ringing that occurs while you are off hook (handset or ON/OFF) on another call. Useful when you're having an important conversation and do not wish to be disturbed by ringing. The station while off hook (ON/OFF or handset) depress the DND button which eliminates muted ringing. When the station goes on-hook the DND button is extinguished and DND is canceled. This feature is not available to intercom Phone Box users.

2.10 Executive Override

This feature allows certain stations to be designated as executive stations with the ability to override and "Barge in" on other keysets engaged in conversation. In addition to the station programmable option a system programmable option will enable or disable a warning tone when the station marked as an executive is cut into the conversation.

2.11 Executive Speed Dial

2.12 Expanded station Speed Dial

Feature Package VI software expands the total number of pooled station Speed bins available in the 40/80 system from 640 to 1280. A station still will be able to store and access a maximum of 20 station speed dial numbers.

2.13 Flash On Intercom

This feature enables station users to utilize the Flash Key to terminate pages and intercom calls. While connected to a page zone or another internal station pressing the Flash key will terminate the call and return intercom dial tone.

2.14 Hunt Groups

The system can be arranged for up to eight hunt groups. Each hunt group can contain up to eight station each. Each hunt groups can be independently arranged to utilize either a pilot hunting technique or station hunting technique.

- Pilot Hunting
  Incoming CO, transferred CO, and intercom calls can be directed to a pilot extension number of a hunt group. The system will search sequentially (in the order the extensions were entered in the data base programming) for an idle station in the group and will ring that station. Calls directed directly to stations (by calling the extension number) within the hunt group will not hunt but receive call progress tones from the extension.

- Station Hunting
  Incoming CO, transferred CO, and intercom calls that are presented to a busy, or DND station, that is a member of a Station Hunt group, will search sequentially (in the order the extensions were entered in data base programming) for an idle station in the group and will ring that station. Calls will still be allowed to be directed to the groups pilot number for hunting.

- Hunt Group Chaining
  Hunt Groups can be chained or joined together forming larger Hunt Groups. This is accomplished by assigning a pilot hunt group number as the last member of a group.

2.15 Least Cost Routing Enhancements

- Default LCR Database
  In an effort to decrease installation and set up time usually associated with LCR a default LCR data base has been incorporated into Feature Package VI. The default LCR data base will provide basic routing for local and long distance dialing.

- LCR Routing for Toll Information Calls
  This feature adds provisions to the LCR call processing which will allow common call routing for all toll information calls. 1-(XXX)555-1212, (XXX)555-1212, 1-555-1212 and 555-1212 calls will all be intercepted and sent to a selected route in the Route List Table. Numbers dialed will be integrated and if it is determined to be a toll information call, either preceded with an area code with or without or with a leading digit 1 or not, the call will be sent to the route designated in programming.

- "*" & "#" Entries in Insert Table

To provide for LCR compatibility with Centrex applications the digits "*" and "#" will be allowed as entries into the LCR Insert table.

2.16 Name in LCD Display

FP VI allows every extension (Key or SLT) the capability to program the users name, for that station, so that people using display telephones will see the name instead of the station number on their display. The name is programmed at each station by the user into station speed dial bin 00. When a name is programmed, the bin (00) is no longer used for station speed dial.

2.17 Night Service

- Automatic Night Mode Operation
  The 40/80 system can be programmed so that the system is automatically placed into night mode. A programmable weekly time schedule allows the system administrator to preset the time the system is put into night mode and the time to remove night mode on a daily basis including weekend operation.

- Night Class of Service (COS)
  The system allows each station to be assigned a different COS for night operation. The night COS goes into effect when the system is put into night mode manually or via the automatic schedule. Prevents the misuse of phones after hours.

2.18 Personalized Message Code on a Flex Key

This feature allows a station user to program the pre-selected message code (78) under a Flex key. This speeds access of the preselected messages.

In earlier versions you could only program a specific message on a flex key. Now you can program the [78] code on a flex key and then dial the code for any desired personalized message.

2.19 Privacy Release

- Enabled Per station
  This feature allows each CO line to be individually programmed to enable or disable privacy release rather than on a system wide bases.

  Privacy is insured on all communications in the system. If desired, the customer may elect to disable the Automatic Privacy feature on a per CO line basis. Thus allowing another station to join in on existing CO Line conversations.

- Enabled Per CO Line

2.20 Remote System Monitor

The Remote **Monitor** feature provides capabilities which will benefit both the Field Service Technicians supporting the end user from Technical Assistance Center (TAC). Different levels of access, via password, allows authorized personnel to trace, monitor and "up-load" critical information directly from the 40/80 system remotely. This provides a much more accurate means of acquiring system information that leads to a quick resolution of problems that may occur. This is all done without interfering with ongoing call processing or normal system operation and in many cases without a site visit. An external modem connected to the CPB RS232-C is required for remote access.

Capabilities allowed and reserved for this "High level troubleshooting" in addition to the "Customer Technical Support features" are:

- Monitor Mode
- Enable & Disable Event "Trace"
- Dump "Trace Buffer" (up-load)

2.21 Remote Maintenance

The Remote **Maintenance** feature allows the Distributors' technical staff to review the systems configuration data and individual card slot configuration data. This can be done "on site" using a data terminal or remotely using modem to modem access to a remote data terminal. In both cases connection to the RS232C connection on the CPB is required.

2.22 96 station Capability

Feature Package VI allows the two option slots in the Expansion KSU to be used for station PCB's. This will bring the total number of stations, key and SLT that the 40/80 system will support to 96 station. Both KSB's and SLT's can be installed into the two option slots in the expansion KSU.

Note: The Expansion KSU must be a Series 1 E-KSU for proper SLT operation. Contact your regional field service office for modification instructions to upgrade older E-KSU's.

2.23 UCD Enhancements

- UCD Auto Wrap-Up /with Timer
  After completion of a UCD call (on-hook) the agent will not be subjected to another UCD call for the duration of the Auto Wrap-Up timer allowing the agent to finish call related work or access other facilities. This will allow agents to remove themselves from the group (ie. DND, Call Forward or originate another call. The auto wrap-up timer is programmed as part of the UCD data base.

- Number of Calls In Queue Display
  There are two methods of viewing UCD Group call queue status.
  1. In-service UCD agents can see the quantity of calls in queue on the LCD of their station for the UCD group of which they are a member. If every member of a UCD group is busy and calls are in queue, the "XX CALLS IN QUEUE" display will be seen at all UCD members of that group.
  Note: If a UCD member is taken out of the group (ie. DND, Call Forward, etc.) they will not receive calls in queue information.

  2. The group overflow station, or any station not assigned in a UCD group can by dialing the Display UCD Calls code (or a programmed FLEX button with this code) then the UCD group number can view the number of calls in queue for that UCD Group.

- Two Recorded Announcements for Transferred Calls
  FP VI will allow a CO call transferred into a UCD group to be routed to two recorded announcement if two are in operation. Currently in FP IV this is a limitation where transferred calls are only routed to the second RAN device.

2.24 Voice Mail Integration Enhancements

- VM CO Disconnect Signal - Pass Thru
  To avoid Voice Mail ports from being tied up, as a result of callers abandoning the call or not exiting the VM system properly, a disconnect signal has been added to notify the VM system that a CO caller has abandon.

- VM Tone Mode Calling Option
  Voice mail systems and/or Automated Attendants can utilize the Calling Station Tone Mode option. This is useful when using supervised transfer or call screening options on voice mail or auto attendant(s) requiring ringback tone for proper call handling.

3 SINGLE LINE TELEPHONE FEATURE ENHANCEMENTS

Single line Telephones have access to most of the system and station features listed in the previous section, however, additional features, listed below, are unique to Single Line Telephones.

3.1 SLT Account Code

SLT stations may enter an account code, up to 12 digits in length, to identify calls for billing/tracking purposes. The account code may be entered either before the call or during the call (the outside caller is placed on hold while the account code is entered if during the call.). The account code will be recorded on the SMDR printout.

3.2 Personal Park

Single line telephones can be connected to two calls (Intercom or CO lines) at the same time and flip/flop between the two calls. This can be performed with originated or received calls. This feature is also used with SLT multi-line conference feature.

3.3 Conference /with Personal Park

Single Line Telephones (SLT) can initiate a conference between two outside (CO) calls. The Personal Park feature is used in conjunction with the SLT conference code to make this possible. A combination of features are derived from these new dial codes (Personal Park, Flip/Flop, and Multi-line Conference).

4 ATTENDANT FEATURE ENHANCEMENTS

4.1 Attendant Disable Outgoing Access

The first attendant can disable CO lines, preventing outgoing access to those lines. This is useful for removing a faulty line from service, or for reserving CO lines for important use. All stations that can normally make calls on the lines are affected, but incoming calls are not affected. A CO line may be disabled while it is being used; when the trunk becomes idle, further outgoing access will be prevented.

4.2 Incoming CO Line Off-Net Forward

Allows the first attendant to forward incoming CO calls to an Off-Net location. The attendant must have a direct appearance of the CO line to be forwarded. Forwarding can be established on a per CO line basis, on a per CO line group basis, or all CO lines may be simultaneously forwarded to an off-net location.

4.3 Automatic Night Mode

In addition to the attendants capability to place the system into and out of night mode manually, by pressing the Night key, an automatic night mode schedule has been added to the system. The automatic schedule is set in data base programming on a week day bases, including saturday and sunday. The Attendant can override the automatic schedule by pressing the night key.

5 PROGRAMMING

5.1 Executive Override Warning Tone

(This replaces the Automatic Privacy Option)

If this timer is to be changed:

a. Press FLASH and dial [12].

If you have a display telephone, you will see this display:

```
EXECUTIVE OVERRIDE YES/NO
YES
```

b. To make a change, press the top left button in the flexible button field. It will toggle on and off with each depression.

- LED off = Executive Override Tone disallowed
- LED on = Executive Override Tone allowed

c. Press HOLD button. Display will now update.

This feature allows certain stations to be designated as "Executive" stations with the ability to override and "barge-in" on other keysets engaged in conversation.

An optional warning tone is programmed on a system wide basis to either enable it or disable the tone. This tone will be presented to all parties prior to actual cut thru of the third party.

5.2 UCD New Call Timer

If this timer is to be changed:

a. Press FLASH and dial [33].

If you have a display telephone, you will see this display:

```
UCD TIMERS RING XXX
BGM XXX OVR XXX WRP XXX
```

b. To make a change to the wrap-up timer, press Button #4 in the flexible button field.

c. Enter 3 digits on the dial pad (000-999 sec.)

d. Press HOLD button. Display will now update.

The currently fixed duration of the UCD Agent New Call Timer can now be flexibly assigned in programming. At the end of each UCD call, the UCD agent will be idle for the duration of the New Call timer allowing the agent to access other facilities before being subjected to UCD calls again. This will allow agents to remove themselves from the group (ie DND, UCD agent In/Out) or originate another call.

This timer is variable from 000-999 seconds.

Default is 04 seconds.

5.3 Voice Mail CO Disconnect Signal

If this timer is to be changed:

a. Press FLASH and dial [37].

If you have a display telephone, you will see this display:

```
VOICE  PRE E
 MAIL 0 SUF E
```

b. Dial [8] for Table 8. Then dial [0] for prefix.

c. Enter 12 digit stream, including '*' and '#', which will be used as the disconnect signal.

d. Press HOLD button. Display will now update.

```
VOICE  DISXXXXXXXXXXXXE
 MAIL
```

To avoid Voice Mail ports from being tied up as a result of callers abandoning the call or not exiting the VM system properly, a disconnect signal can be added to the system to notify it that a call has been abandoned.

The 40/80 system will provide Loop Supervision monitoring while a CO call is connected to a port designated as Voice Mail.

If a disconnect signal is detected, the 40/80 will send a series of DTMF digits programmed in Database Administration to the Voice Mail port. This can be any digit stream up to 12 digits including "*" and "#".

5.4 Hunt Groups

If these are to be assigned:

a. Press FLASH and dial [38].

If you have a display telephone, you will see this display:

```
HUNT GROUP 590 ###,###,
###,###,###,###,###,###
```

b. The top left button in the flexible button field will be lit for programming Hunt Group 590. Press a different flexible button 1-8 (590-597) to determine which Hunt Group is to be programmed.

c. Enter the 3-digit station numbers up to a maximum of 24 digits (8 stations).

d. Press HOLD button. Confirmation tone is heard.

e. Press Button #9 (LED on) to indicate Station Hunting or (LED off) to indicate Pilot Hunting.

If a station is in DND or is forwarded to another station, it is considered busy.
Hunt groups can be joined together by programming another hunt group number as the last entry instead of a station number. This is not allowed if the group is specified as "station" hunting.

To remove stations from a hunt group, enter three ### (pounds) on the keypad and press HOLD button. This will remove all previous station in that group.

5.5 Weekly Night Mode Schedule

If these are to be assigned:

a. Press FLASH and dial [39].

If you have a display telephone, you will see this display:

```
NIGHT MODE SCHEDULE
```

b. Press Button #1 (LED on) for automatic night mode or (LED off) for manual operation.

c. Press Button #2. Dial a digit (0-6) for the day of the week followed by four digits to indicate the hour and minutes to end night mode.

```
DAY   END   START
0     0800  1700
```

d. Then dial four digits to indicate the hour and minutes for the system to go into the night mode for that particular day.

e. Button #3 will display the programmed times for each day one at a time.

This feature allows stations that are a certain COS during the day to have a different COS when the system is put in the night mode.

Night mode can be activated by one of two programmable methods: 1) Method 1 uses the current way of activating night mode manually by the attendant depressing the DND button. 2) Method 2 is via a programmed schedule. The schedule allows for programming the system on a daily basis to allow for weekend operation.

The default times for automatic night mode is as follows:

Monday thru Friday 08:00 17:00
Saturday and Sunday ##:## ##:##
(night mode operation)

An entry of "00:00 23:59" would indicate 24 hours of day mode.

5.6 CO Line Ringing Assignment

Each CO line in the system may be assigned initial incoming ringing to one of the following destinations:

- one or more stations (keyset or SLT)
- to a UCD, Voice Mail or Hunt Group
- Off-Net (via speed dial)

a. Press FLASH and dial [40]

If you have a display telephone, you will see this display:

```
CO LINE ATTRIBUTES
SELECT A CO LINE RANGE
```

b. Program Button 12 (SLCT) will be lit. Enter the 4-digit CO line range to be programmed (01-40). If only one line is being programmed, enter that number twice (0101).

c. Press HOLD button. The following message will be displayed:

```
CO XX-XX DT CO UNA
SUP DSA FL20 GRP1 COS5
```

d. Press Button 9 to toggle to the Ringing Assignment display. The display will show the following information:

```
CO XX-XX B RING DISP
```

Incoming calls directed Off-Net will be connected to an outgoing system speed bin. Stations that are assigned for initial ring-in can use a LOOP button(s) to answer the call(s).

CO lines assigned to ring multiple stations will not follow any stations' forward to a UCD, Voice Mail, Hunt Group or Off-Net. Forwarding to another station will be allowed.

Multiple station assignments are allowed for a particular CO line in a mixture of Day, Night, or Day & Night ring types. An incoming CO line may be programmed to any number of stations but it cannot be programmed to ring a mixture of stations and groups (ie. a Hunt Group and 4 stations, or more than one Hunt Group).

5.6 CO Line Ringing Assignment (Cont'd)

BUTTON	ATTRIBUTE
1	CO Ringing Assignments
2	Display CO Ringing Assignments

e. Press Button #1 to program ring assignments. The following information will be shown:

```
CO RING ASSIGNMENT
ENTER DDDR
```

f. Enter the 3-digit designation (DDD) and the single digit ring type (R) followed by the HOLD button.

g. Press Button #2 to display ring assignments. Assignments will be displayed in sets of 8 up to the number programmed. Press Button #2 additional times to cycle to the next group of 8 ring assignments.

The following LCD format will be used to display the assignments:

```
DDDR DDDR DDDR DDDR
DDDR DDDR DDDR DDDR
```

DDD= Destination, R=D for Day, N=Night or B=Both Day & Night.

Ring assignments will be continuous and will be displayed in order of the destination number from 001 to 987.

Valid 3 digit destinations are:

020-099	System Speed Bins 20-99
100-195	Station Numbers
590-597	Hunt Groups 1-8
690-697	Voice Mail Groups 1-8
890-897	UCD Groups 1-8

Valid Ring types are:
0 = unassigned (to delete a station)
1 = Day Ringing
2 = Night Ringing
3 = Day & Night Ringing

Multiple station assignments are accomplished by assigning another destination with ring status, DDDR, and pressing the HOLD button. This can be done for up to the maximum number of stations on the system.

5.7 Conference Enable/Disable (Per CO Line)

If any CO Line features are to be changed:

a. Press FLASH and dial [40]

If you have a display telephone, you will see this display:

```
CO LINE ATTRIBUTES
SELECT A CO LINE RANGE
```

b. Program Button 12 (SLCT) will be lit. Enter the 4-digit CO line range to be programmed (01-40). If only one line is being programmed, enter that number twice (0101).

c. Press HOLD button. The following message will be displayed:

```
CO XX-XX DT CO UNA
SUP DSA FL20 GRP1 COS5
```

d. To program CO Line(s) for Conference Enable/Disable, use Button #13.

- LED on = Conference is enabled on CO Line
- LED off = Conference is disabled on CO Line

e. Press HOLD button. Display will update.

```
CO XX-XX DT CO UNA
SUP DSA FL20 GRP1 COS1 C
```

This feature allows the system to be programmed on a per CO line basis for the ability to initiate a conference.

Only stations that have Conference enabled will be able to initiate a conference.

A station that is denied conferencing capabilities in programming can be a party to another stations conference provided that station does have conferencing privileges.

Conference is enabled for all CO lines in default.

5.8 Automatic Privacy

If any CO Line features are to be changed:

a. Press FLASH and dial [40]

If you have a display telephone, you will see this display:

```
CO LINE ATTRIBUTES
SELECT A CO LINE RANGE
```

b. Program Button 12 (SLCT) will be lit. Enter the 4-digit CO line range to be programmed (01-40). If only one line is being programmed, enter that number twice (0101).

c. Press HOLD button. The following message will be displayed:

```
CO XX-XX DT CO UNA
SUP DSA FL20 GRP1 COS5
```

d. To program CO Line(s) for Automatic Privacy, use Button #14.

- LED on = Automatic Privacy is enabled on CO Line
- LED off = Automatic Privacy is disabled on CO Line

e. Press HOLD button. Display will now update.

```
CO XX-XX DT CO UNA
SUP DSA FL20 GRP1 COS5 C P
```

If desired, the system can be programmed to eliminate CO Line privacy, allowing another station to join in on existing outside line conversations.

If privacy is disabled and a station joins an existing call, both parties will hear an alert tone. (if programmed)

If privacy is enabled, only one other station may join in on an existing conversation.

Automatic Privacy is enabled for all CO Lines in default.

5.9 Conference Enable/Disable (Per Station)

If any Station features are to be changed:

a. Press FLASH and dial [50]

If you have a display telephone, you will see this display:

```
STATION ATTRIBUTES
SELECT A STATION RANGE
```

b. Program Button 12 (SLCT) will be lit. Enter the 6-digit Station range to be programmed (100-195). If only one station is being programmed, enter that number twice (100-100).

c. Press HOLD button. The display updates to current programming for Page A:

```
XXX-XXX A PAGE DND LCOS0
SPD QUE      FWD
```

d. To program Station(s) for Conference Enable/Disable, use Button #13.

- LED on = Conference is enabled on Station(s)
- LED off = Conference is disabled on Station(s)

e. Press HOLD button. Display will now update.

NOTE: There is NO verification on the LCD display when Conference is enabled in Station Attributes.

This feature allows the system to be programmed on a per Station basis for the ability to initiate a conference.

Only stations that have Conference enabled will be able to initiate a conference.

A station that is denied conferencing capabilities in programming can be a party to another stations conference provided that station does have conferencing privileges.

Conference is enabled for all stations in default.

5.10 Executive Override

If any Station features are to be changed:

a. Press FLASH and dial [50]

If you have a display telephone, you will see this display:

```
STATION ATTRIBUTES
SELECT A STATION RANGE
```

b. Program Button 12 (SLCT) will be lit. Enter the 6-digit Station range to be programmed (100-195). If only one station is being programmed, enter that number twice (100100).

c. Press HOLD button. The display updates to current programming for Page A:

```
XXX-XXX A PAGE DND LCOS0
SPD QUE      FWD
```

d. To program Station(s) for Executive Override, use Button #14.

- LED on = Executive Override is enabled on Station(s)
- LED off = Executive Override is disabled on Station(s)

e. Press HOLD button. Display will now update.

NOTE: There is NO verification on the LCD display when Executive Override is enabled in Station Attributes.

This feature allows certain stations to be designated as "Executive" stations with the ability to override and "barge-in" on other keysets engaged in conversation.

An optional warning tone is programmed on a system wide basis to either enable it or disable the tone. This tone will be presented to all parties prior to actual cut thru of the third party.

Executive Override is disabled for all station in default.

5.11 Preset Forward

The remaining Station features are located and programmed on Page B.

a. Press Page B Button (Button #11 LED is lit).

If you have a display telephone, you will see this display:

```
XXX-XXX B ID0 COS1 1 SP0
AAAA BBBB CCC DDDDDDDD
```

b. Press PREFW Button (Button #6 LED is lit) to program stations for preset forward to:

- another station in the system
- to a UCD, VM or Hunt Group
- Off-Net (via speed dial)

c. Enter a 3-digit number to determine the destination where calls are to be routed when the preset forward timer expires.

Valid 3 digit destinations are:

020-099	System Speed Bins 20-99
100-195	Station Numbers
590-597	Hunt Groups 1-8
690-697	Voice Mail Groups 1-8
890-897	UCD Groups 1-8

d. Press HOLD button. Display now updates.

This feature allows the system database to be configured so that incoming CO Lines, which are programmed to ring at a particular station, can be forwarded elsewhere in the system predetermined by programming. This feature is active if the station ringing is not answered in a specified time. This is particularly useful in "overflow" applications where a Voice Mail or Auto Attendant may be in use.

A station may have one designated preset forward location defined in the database.

Preset Call Forward is chainable only to other predetermined preset forward stations specified in the database up to a chain of 5 stations. If a CO Line forwarded by Preset Call Forward encounters a manually forwarded station (Call Forward - Station), or a station in DND, then the incoming CO Line will bypass that station and forward to the next in the chain. If that station is the last in the chain, then the call will not forward any further and will continue to ring at that station until answered or terminated.

Chainable Preset Call Forwarding will force the incoming CO Line to ring at each station preassigned in the database for the Preset Forward Ring Timer specified in the database before forwarding.

CO Lines can be forwarded to ring into a UCD, Voice Mail, Hunt Group or Off-Net from an attendant station. When the forward occurs to a group, the system will take control of the CO Line and any stations that were ringing will stop.

5.12 Flexible Button Assignments

a. To program flexible button assignment, press FLEX Button (Button #8 LED is lit) in the flexible button field.

If you have a display telephone, you will see this display:

```
FLEX BUTTON PROG
ENTER BUTTON DATA
```

b. When programming flexible buttons, first enter the 2-digit button number to be programmed (01-20). Then enter 1-digit to indicate button function:

- 0 = Multi function
- 1 = CO Line
- 2 = Loop
- 3 = Pooled Group

If a 0 or 2 (multi function or Loop) is entered, no further entries are required.

If a button is programmed as a CO Line button, enter the 2-digit CO Line number. NOTE: The ring status is not required in Feature Package VI since now the ring assignments are done in CO Line Attributes, Program Code 40.

If a button is programmed as a Pooled Group button, enter 1-digit to indicate which CO Line group will be accessed by that button.

Press HOLD button after making these entries.

Any time a display of button programming (default or changed) is needed, press the DSP button (Button #9 LED is lit) on Page B and it will display four button programming assignments (starting with the lowest button number). With each subsequent depression of the DSP button, the next four buttons will be displayed. The following message is shown on the display:

```
BUTTONS XXX-XXX  BB123
BB123 BB123 BB123 BB123
```

Where: BB = Button Number, XXX = Station Number, 123 = Button function.

Refer to programming section of 40/80 manual for button functions.

5.13 Automatic Privacy

a. Press the Station SLCT Button (Button #12).

```
STATION ATTRIBUTES
SELECT A STATION RANGE
```

b. Enter the 6-digit Station range to be programmed (100-195). If only one station is being programmed, enter that number twice (100100).

c. Press HOLD button. The following message will be displayed:

```
XXX-XXX A PAGE DND LCOS1
SPD QUE        FWD
```

d. Press Page B Button (Button #11 LED is lit). The following message is displayed:

```
XXX-XXX B ID0 COS1 1 SP0
AAAA BBBB  CCC  DDDDDDDD
```

e. To program Station(s) for Automatic Privacy, use Button #13.

- LED on = Automatic Privacy is enabled on Stations(s)
- LED off = Automatic Privacy is disabled on Station(s)

e. Press HOLD button. Display now updates.

NOTE: There is NO verification on the LCD display when Automatic Privacy is enabled in Station Attributes.

If desired, the system can be programmed to eliminate CO Line privacy, allowing another station to join in on existing outside line conversations.

If privacy is disabled and a station joins an existing call, both parties will hear an alert tone. (if programmed)

If privacy is enabled, only one other station may join in on an existing conversation.

Automatic Privacy is enabled for all stations in default.

5.14 LCR "*" and "#" Enhancement

If you are in the program mode, continue using the program codes. If you are starting to program here, enter the program mode first.
NOTE: LCR does not require FLASH 90 for permanent update. LCR should be disabled during programming.

a. To program the system for Least Cost Routing, press FLASH and dial [61]. The following message is shown on the display phone:

```
LCR TABLES
SELECT A TABLE
```

b. To program the Insert/Delete Table, Press the IN/DL Button (Button #5). The following message is shown on the display phone:

```
DIGIT INSERT/DELETE
ENTER TT X DDD HOLD
```

Where: TT = Table Number 00-19
X = 0 (Delete numbers in front of number dialed) or "1" to insert numbers in front of number dialed, or "2" to insert numbers behind number dialed.
DDD = digits (up to 20 digits can be inserted and up to 16 deleted. "*" and "#" are now valid entries in the Insert Table. Press PICKUP Button for pause.

"*" and "#" can not be used as delete characters in the Insert/Delete Tables

c. Press HOLD after programming each table. Display will now update.

In the Insert/Delete tables for LCR programming, both the "*" and "#" will be allowed as valid digits for inserting digits dialed over the network. The "*" and "#" are valid entries for adding digits in front of or behind the number dialed.

The "*" and "#" can not be used as delete characters in the Insert/Delete Table.

5.15 Least Cost Routing for Toll Information Calls

If you are in the program mode, continue using the program codes. If you are starting to program here, enter the program mode first.

NOTE: LCR does not require FLASH 90 for permanent update. LCR should be disabled during programming.

a. To program the system for Least Cost Routing, press FLASH and dial [61]. The following message is shown on the display phone:

```
LCR TABLES
ENTER BUTTON NUMBER
```

b. To program LCR for Toll Information Calls, press the TOLL Button (Button #8). The following message is shown on the display phone:

```
LCR ROUTE FOR 555-1212
ENTER ROUTE
```

c. Enter 2-digit Route List number (00-15) for the Route to be referenced in the Route List Table.

d. Press HOLD after programming the Route number. Display will now update.

This feature adds provisions to the LCR call processing which will allow common call routing for all toll information calls. Both 1-(XXX)555-1212 and (XXX)-555-1212 calls will be intercepted and sent to a selected "Route List" of the "Route List Table". The number dialed will be "looked at" before reaching the "Three Digit Table" and if it is determined to be a toll information call, preceded with an area code with or without a leading digit 1, the call will be sent to the "Route List" assigned in programmed for the LCR feature.

Default programming for Toll Information Calls will be to Route List table zero (0) which will allow toll information calls to be placed on the system at default.

The database route assignment for Toll Information will be printed using the system Print Routine (80).

A Toll Information route will be chosen over a 3-digit or 6-digit route assignment if both are assigned.

40/80 System Numbering Plan

100-195	Station Intercom Numbers
3	Executive Override
296	Incoming CO Line Off-Net Call Forward - 1st Designated Attendant
297	UCD Display Status
298	Attendant CO Line Disable/Enable
5#xxx	Tone Mode Ring Option
590-597	Hunt Group Pilot Numbers
60	Voice Mail enable MSG Wait
61	Voice Mail cancel MSG Wait
690-697	Voice Mail Group Pilot Numbers
74	LCR Queue Cancel
75	Night Answer SLT and Keyset
76	Time and Date Programming- Attendant
77	Background Music
78	Personalized Messages (Key and SLT)
790-795	Call Park
80	Account Code Enter
81	CO Group 1 (if LCR enabled
82	CO Group 2
83	CO Group 3
84	CO Group 4
85	CO Group 5
86	CO Group 6
87	CO Group 7
890-897	UCD Group Pilot Numbers
9	CO Group 1 or LCR if enabled
0	Attendant
*1	Internal Zone 1
*2	Internal Zone 2
*3	Internal Zone 3
*4	Internal Zone 4
*5	Internal All Call
*6	External Page
*9	Meet Me Page Answer
*0	All Call
**	Database Admin. Access
#1	SLT DND
#2	SLT Call Forward
#3	SLT Speed Dial Program
#4	SLT Message Wait/Callback Enable
#5	SLT Message Wait/Callback Return
#6	SLT Group Call Pickup
#7100-7179	SLT Directed Call Pickup
#790-795	Call Park Pickup
#8	SLT Clear Call Forward, Personalized Messages and DND
#9	SLT Speed Dial Access
#0	SLT Flash Command on CO
##	SLT CO Line Queue
#*	SLT Camp-on
391	SLT Conference w/Personal Park
392	SLT Personal Park
SPD + *	Save Number Redial
SPD + #	Last Number Redial

PRODUCT LINE:	Siemens 40/80 Hybrid Key Telephone System
SUBJECT:	APB Modification **DATE:** April 13, 1990
ISSUED TO:	Recipients of Service Guidelines for the Siemens 40/80 Hybrid Key Telephone System

SERVICE BULLETIN

PRODUCT: 40/80 APB board TEC # 23SMN012
APPLIES TO ISSUE: 1 (manufactured before November 1989)

MODIFICATION DESCRIPTION: This modification increases the DTMF signal level on the intercom path to enhance the "In-Band" signaling for connection to voice mail devices. This modification is only required when installing a voice mail onto the 40/80 system that has an Issue 1 APB (manufactured before November, 1989).

MATERIALS NEEDED:

- Solder Iron
- Lead Cutter
- Desolder Tool
- Small Long Nose Pliers
- 6 - 1K ohm 10% 1/4 watt Resistors
- Revision Label (adhesive) i.e. Rev A

INSTRUCTIONS:

NOTE: All work to be done in an ESD safe area with a wrist strap connected to the work station ground !

1. Place the APB board on the ESD safe work station.

2. Locate Resistors R40 - R45 (47K ohms).

   NOTE: R40, R41, R43, R44 are located by the 8 pin IC labelled G32 on the PCB. R42 and R45 are located by the 14 pin IC labelled G13 on the PCB (see attached figure 1).

3. Carefully desolder and remove the resistors (R40 - R45) from the PCB.

4. Insert the 1K ohm resistors in R40-R45 and solder. Trim the excess leads.

5. Adhere the revision label (or mark with a permanent marker) on the PCB near the white silkscreened PCB identifier (see figure 1) "Rev A". Note, also mark the label of the unit box if applicable.

Attachment: 1

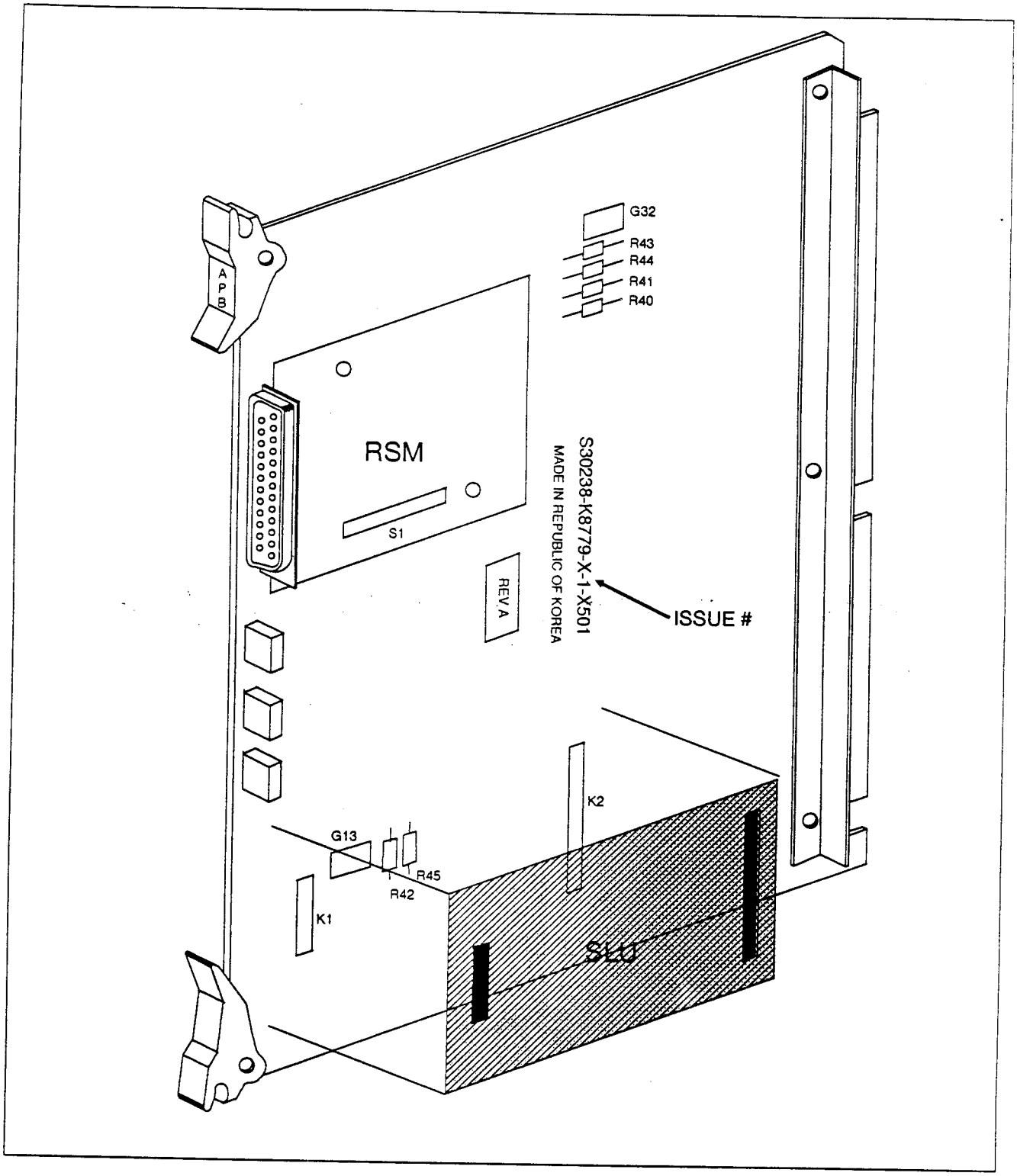


Figure 1 Application Board (APB)

PRODUCT LINE:	Siemens 40/80 Hybrid Key Telephone System	
SUBJECT:	Expansion KSU Modification	**DATE:** April 13, 1990
ISSUED TO:	Recipients of Service Guidelines for the Siemens 40/80 Hybrid Key Telephone System	

SERVICE BULLETIN

PRODUCT: Expansion KSU, TEC # 20SMN004
APPLIES TO ISSUE: 1 (with a date code 908 or earlier)

MODIFICATION DESCRIPTION: On Expansion KSU's manufactured before August 1989, this modification must be preformed for proper operation of Single Line Telephone Interface boards (SLT's) in the two Option slots. This modification increases the maximum number of station ports supported by the Siemens 40/80 Key Telephone System, from 80 to 96. Expansion KSU's manufactured after August 1989 will not require this modification, and many can be identified by a Series 1 mark located on the E-KSU serial number label.

MATERIALS NEEDED:

- Solder Iron
- Solder
- 30 AWG insulated - jumper wire (minimum 6")
- # 2 Phillips screwdriver
- Wire Cutter
- Small Long Nose Pliers
- 1 Revision label i.e. [Rev A]
- 2 Series labels (adhesive) or S1 stamp. i.e. [S1]

INSTRUCTIONS:

NOTE: All work to be done in an ESD safe area with a wrist strap connected to the work station ground !

1. Place the KSU with the front cover on the ESD safe work surface.

2. Remove the six (6) screws that secure the back plate (cover) to the KSU.

3. The Motherboard of the Expansion KSU (MBII) should now be exposed. Locate the silkscreen that identifies the edge connector(s) as:
KSI 10, APL, APL (two APL connectors)
The jumpers will be connected between these locations (see figure 1).

4. a) Connect from **A22** (IDT T) of edge-connector **KSI 10** to **A22** of card edge-connector **APL** (Option 1) and **APL** (Option 2) with jumper wire.

b) Connect from **B22** (IDT R) of edge-connector **KSI 10** to **B22** of card edge-connector **APL** (Option 1) and **APL** (Option 2) with jumper wire.

NOTE: This modification "bridges" the "**A22**" and "**B22**" solder traces to the two Option (APL) slots to allow KSI, KSI-OHV, SLT, and OPX pcb's to function.

5. Replace the back plate (cover) and install the screws. Tighten the screws, do not over-tighten.

6. Place the E-KSU upright and remove the front cover. Adhere the Revision "A" sticker near the top right portion of the mother board II.

7. Mark the unit serial number label located inside the KSU (on the lower card edge rail) with the "S1" label. Also mark the unit box label with "S1" if applicable. The "S1" mark may be applied using a label, or a permanent marker may be used.

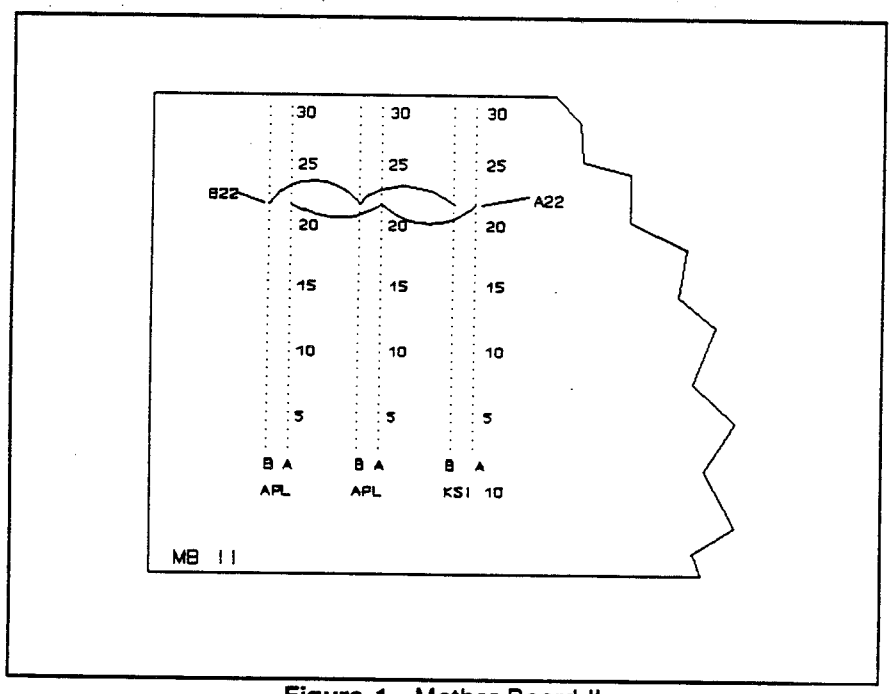


Figure 1 - Mother Board II
(viewed with the back cover removed)