NEC

NEAX® 2400 IMX

Message Center Interface (MCI)
Specifications

NEAX2400 IMX
Message Center Interface (MCI) Specifications

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CHAPTER 1   INTRODUCTION

This manual provides the Message Center Interface (MCI) specifications for the NEAX2400 IMX system. When a call terminates to the attendant or a Uniform Call Distribution (UCD) station, the call information is sent via the MCI to the Message Center (MC). Based on the call information from the Private Branch Exchange (PBX), the MC achieves ON/OFF control of the Message Waiting Lamp (MWL) and Message Waiting (MW) indication of the station. Figure 1-1 and Figure 1-2 show the MCI for a UCD incoming call and an attendant incoming call.
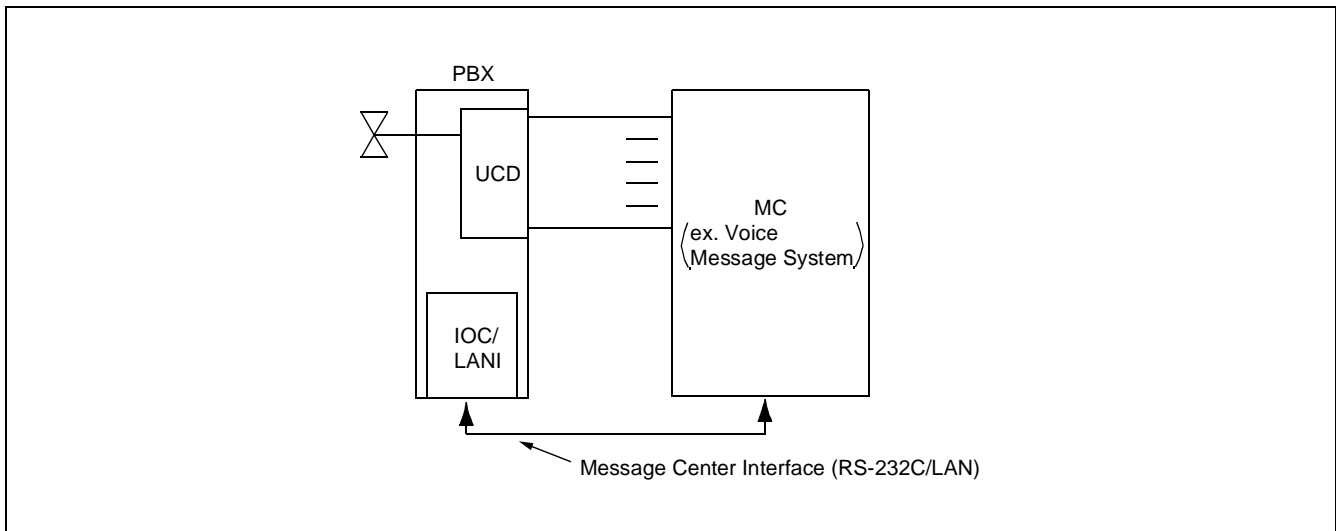
Figure 1-1   MCI for UCD Incoming Call

Figure 1-2   MCI for Attendant Incoming Call
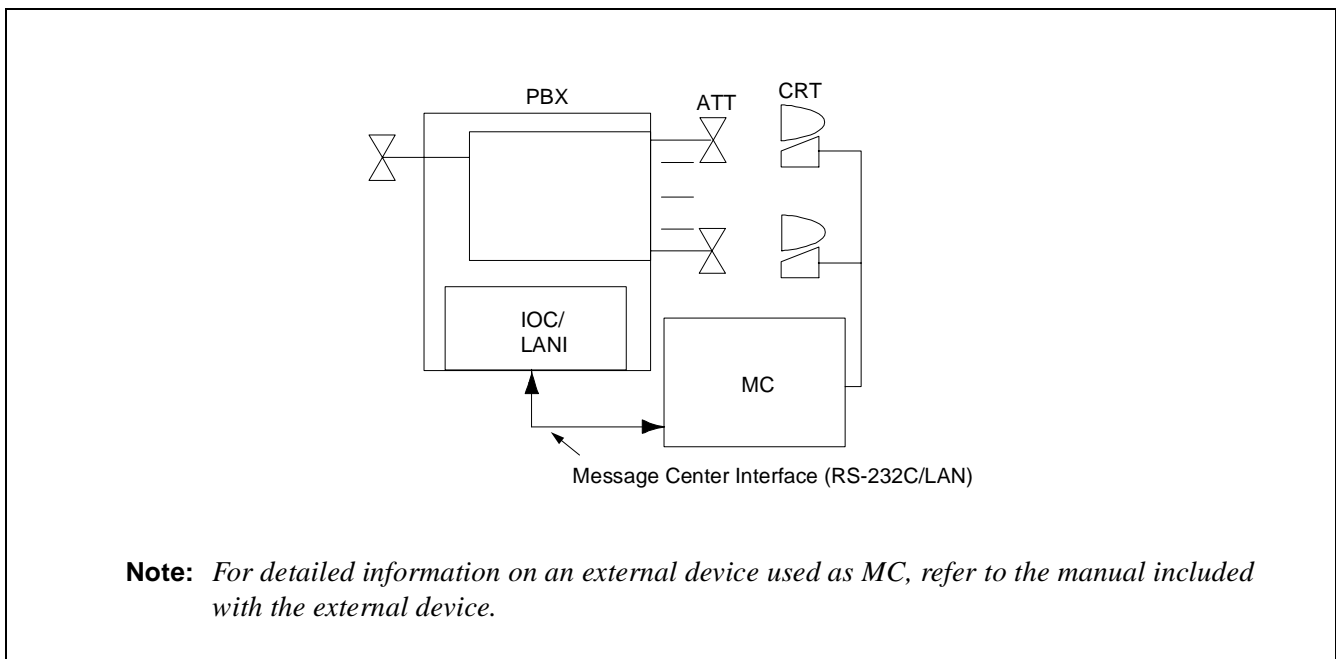
Note: *For detailed information on an external device used as MC, refer to the manual included with the external device.*

This page is for your notes.

CHAPTER 2   MCI FOR IOC

1. SPECIFICATIONS

1.1 Interface

This section has information on the signal interface requirements for the MCI for Input/Output Controller (IOC).

Operating mode	: Full duplex
Electrical interface characteristic	: RS-232C electrical interface standard
Frame code	: US ASCII
Parity	: Non/Odd/Even
Word framing example	: See Figure 2-1.
Data rate	: Up to 9600 bps
Priority sequence	
• Primary station	: PBX
• Secondary station	: MC
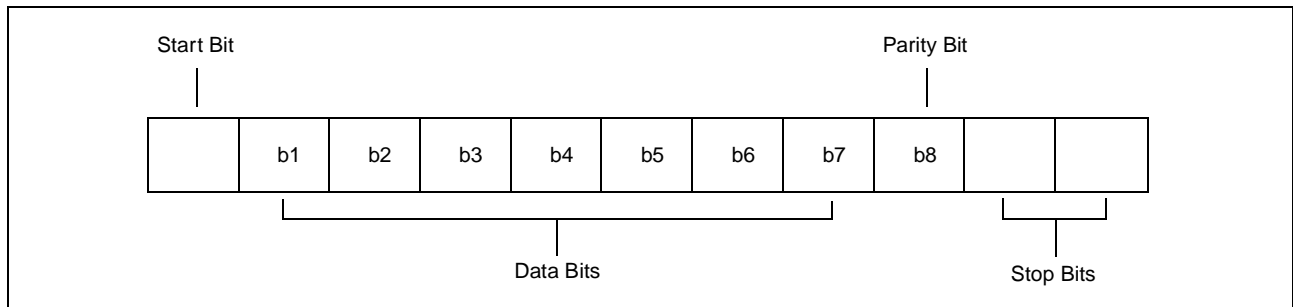
Figure 2-1   Word Framing Example

1.2 Text Format

MCI for IOC uses the following text format.
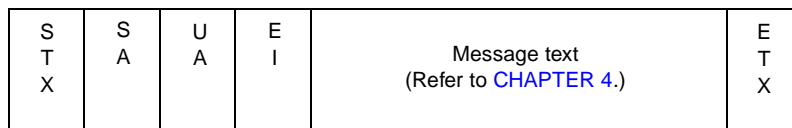
STX   : Start of Text
SA   : System Address
UA   : Unit Address
EI   : Entry Index
ETX   : End of Text

Figure 2-2   Typical Text Format

2. PROTOCOL AND MESSAGE RESPONSES

This section has information on protocol and message responses of MCI for IOC. For detailed information on each message, refer to CHAPTER 4.

2.1 PBX → MC
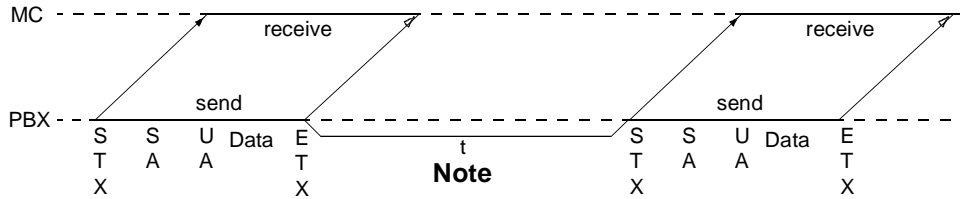
Note: *The interval between communications is the Guard Timing (GT) value programmed in ASYD (SYS1, Index 28, Bits 0-4).*

2.2 MC → PBX

(1) When receiving messages controlling one station, the following text format applies.
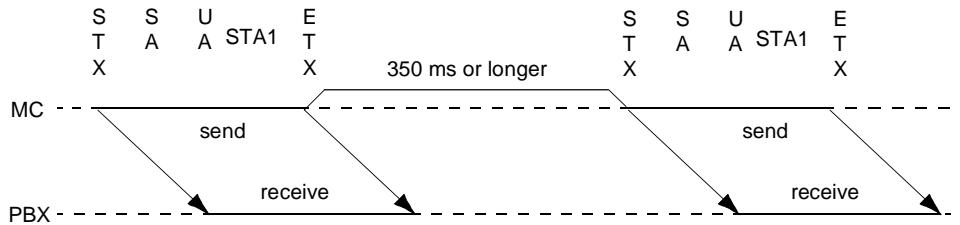
(2) When receiving queue is full, the PBX sends Call Type 39. This requests MC to stop transmission. When the PBX has processed all MWL requests in full queue, the PBX sends Call Type 66. This requests MC to start sending MWL data.
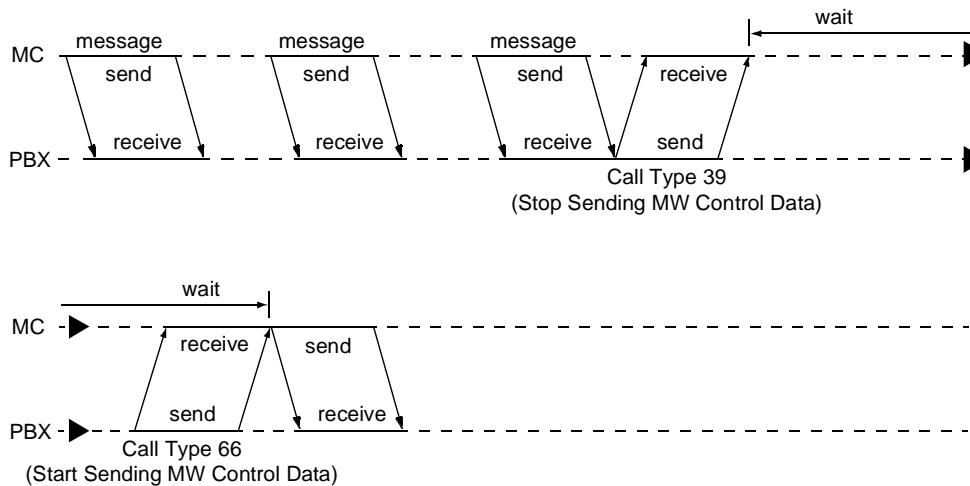
CHAPTER 3   MCI FOR LAN

1. SPECIFICATIONS

1.1 Timing

Timing to Establish a Link	: A link is connected when an MC connect request is received.
Timing to Output Call Information	: When a call terminates to the attendant or a UCD group station, the call information is sent via the MCI to the MC.
Timing to Receive MWL Information	: When Message Waiting Lamp (MWL) information is received, the MWL of the station served by the PBX is caused to be ON/OFF.
Timing to Release the Link	: The MC for Local Area Network (LAN), which is a client of the PBX, discards the socket and performs processing to release the link when it does not receive a "Call Information Text" or "Server Response Text" in a given time interval from the server. When the PBX or the server does not receive a "Lamp Control Text", "Client Response Text", or "Status Monitoring Text" in a given time interval from the client, it performs NG processing + sends a "Connection Disconnect Text" and then discards the socket and performs processing to release the link.

1.2 Interface

This section has information on the interface requirements for the PBX and the external device (MC for LAN). Figure 3-1 shows the PBX and the MCI for LAN interface.

Protocol	: Stream type socket (TCP) protocol
Physical condition	: Ethernet
Software conditions	
• PBX	: Socket interface (capability provided to deal with WinSock)
• External device	: Shall use the WinSock, UNIX socket and other libraries.
Port No.	: 60020 (defined at PBX side)
Codes to be used	
• Transmission code	: ASCII 8 bits without parity
• Control codes	
SYN	: 16H indicates the beginning of a text.
STX	: 02H indicates the beginning of an MCI record.
ETX	: 03H indicates the end of an MCI record.

Figure 3-1   PBX and MCI for LAN Interface

1.3 Basic Configuration of Text

Data is transferred between the server and client in the unit of a text.

A text, as shown in Figure 3-2, consists of SYN (16H), used as the beginning of a text, a text identifier, data length, device No., sequence No., message and parity (horizontal parity check system).

The result of the exclusive logical sum of the parity range is set as the parity.
(If the result of the exclusive logical sum of the range from the text identifier to the parity is even parity, the check bit is set to "0". If it is odd parity, the check bit is set to "1".)

Figure 3-2   Text Basic Configuration

(1)   SYN: Text Data Start Position Information

The SYN defines the position where the text data to be sent or received is to start.

Data type :   Hexadecimal

Data size :   1 byte

Data   :   SYN → 16H

(2) Text Identifier

The text identifier identifies the data to be sent or received.

     Data type :   Decimal (ASCII code)

     Data size :   1 digit

     Data range: 0 to 9

        0 :   Not used

        1 :   Lamp Control Text (MC for LAN → PBX)

              The PBX that received the data sends the result of the received data check as a "Server Response Text (text identifier (3))" to the MC for LAN in a predetermined time interval.

        2 :   Call Information Text (PBX → MC for LAN)

              The MC for LAN that received the data sends the result of the received data check as a "Client Response Text (text identifier (4))" to the PBX in a predetermined time interval.

        3 :   Server Response Text (PBX → MC for LAN)

              When the PBX receives identifiers (1) or (5), it sends the result of the received data check to the MC for LAN.

        4 :   Client Response Text (MC for LAN → PBX)

              When the MC for LAN receives identifier (2), it sends the result of the received data check to the PBX.

        5 :   Status Monitoring Text (MC for LAN → PBX)

              When both the MC for LAN and PBX do not send any of the various types of processing requests, a status monitoring text is sent by the MC for LANs in a predetermined time interval.

              When the PBX receives the text, it monitors the status of the client.

        6 :   Link Release Text (MC for LAN ← → PBX)

              A link release request text sent from the client to the server and from the server to the client.

(3) Data Length

The data length indicates the length of data to be sent and received between the server and client.

The number of bytes ranging from the character following the data length to the character preceding to the parity is set in terms of 3 digits.

     Data type :   Decimal (ASCII code)

     Data size :   3 digits

     Data range: 0 to 999

(4) Device No.

The device No. indicates the device No. for the MC for LAN connected to the server.

The MC for LAN sends its own device No. to the server, and the PBX sends the device No. for the MC for LAN, which is the destination of the text.

The device No. to be used is defined at the PBX side.

Data type : Decimal (ASCII code)

Data size : 2 digits

Data range: 0 to 99

(5) Sequence No.

The sequence No. is a serial number for the data to be sent.

It is a number assigned to assure that the transferred data is cleared.

The PBX and server manage independent numbers respectively.

Data type : Decimal (ASCII code)

Data size : 2 digits

Data range: 0 to 99

(6) Parity

The horizontal parity check method is adopted. The calculation range is from the text identifier to the character preceding to the parity. By default, odd parity is used.

The parity check method can be changed in system data.

Data type : Hexadecimal

Data size : 1 byte

Data range: 00H to FFH

1.4 Text Format

(1) Lamp Control Text (MC for LAN → PBX)

Figure 3-3 shows text to be sent when a request for control from the MC for LAN is presented. The format in a record is the IMX format of MCI message. It complies with the format of MC → PBX message in CHAPTER 4, Section 2, IMX FORMAT.

S Y N (X)	Text identifier (1)	Data length (XXX)	Device No. (XX)	Sequence No. (XX)	New control	Parity (X)

Field of a record
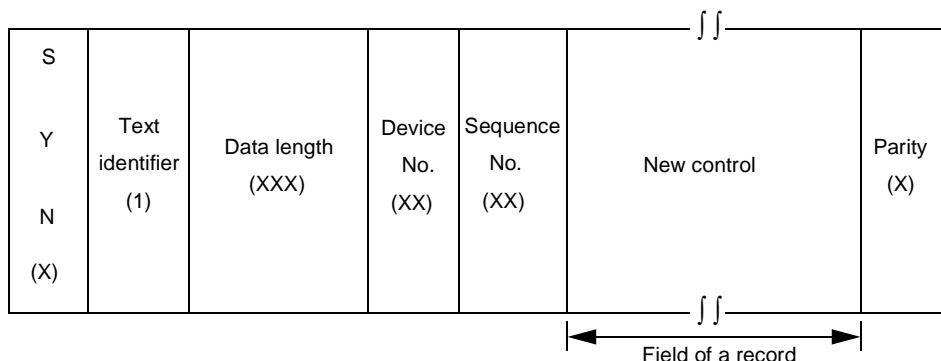
Figure 3-3   Lamp Control Text Configuration

(2) Call Information Text (MC for LAN ← PBX)

Figure 3-4 shows the call information text to be sent from the PBX to the MC for LAN. The format in a record is the IMX format of MCI message. It complies with the format of PBX → MC message in CHAP-TER 4, Section 2, IMX FORMAT.

As for text identifier (2), a piece of call information is created when a call terminates to the attendant or a UCD station and when text is sent to the MC for LAN. Therefore, each text contains one record.

S Y N (X)	Text identifier (2)	Data length (XXX)	Device No. (XX)	Sequence No. (XX)	Call information	Parity (X)

Field of a record
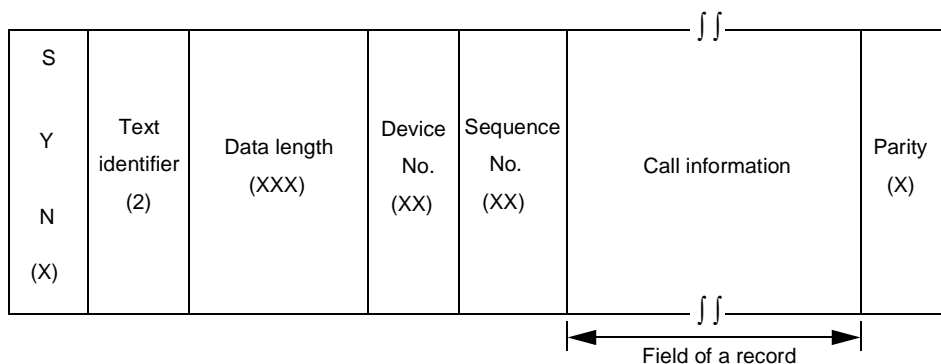
Figure 3-4   Call Information Text Configuration

(3)   Server Response Text (MC for LAN ←PBX)

Figure 3-5 shows the server response text to be sent by the PBX that received text identifiers (1) and (5) to notify the MC whether or not the received text is correct.

Response No. (server information)

    Data type :   Decimal (ASCII code)

    Data size :   1 digit

    Data range: 0 to 9

        0 :   Normal

        1 :   Received text parity error

        2 :   Device No. not defined

        3 :   Received text error (incorrect text received)

    4 to 9 :   Not used

S Y N (X)	Text identifier (3)	Data length (005)	Device No. (XX)	Sequence No. (XX)	Response No. (X)	Parity (X)

Figure 3-5   Server Response Text Configuration

(4)   Client Response Text (MC for LAN →PBX)

Figure 3-6 shows the client response text to be sent by the MC for LAN that received text identifier (2) to notify the PBX whether or not the received text is correct.

Response No. (client side information)

    Data type :   Decimal (ASCII code)

    Data size :   1 digit

    Data range: 0 to 9

        0 :   Normal

        1 :   Received text parity error

        2 :   Not used

        3 :   Received text error (incorrect text received)

    4 to 9 :   Not used

S Y N (X)	Text identifier (4)	Data length (005)	Device No. (XX)	Sequence No. (XX)	Response No. (X)	Parity (X)

Figure 3-6   Client Response Text Configuration

(5)   Status Monitoring Text (MC for LAN → PBX)

The text shown in Figure 3-7 is defined for use in monitoring the server status from the client and the client status from the server. In response to the text, the server sends a "Server Response Text (3)" to the client.

Client device information

      Data type   :   Decimal (ASCII code)

      Data size   :   2 digits

      Data range: 0 to 99

      Data type

          00   :   Normal

    01 to 99   :   To be defined at MC side

S Y N (X)	Text identifier (5)	Data length (006)	Device No. (XX)	Sequence No. (XX)	Client device infor- mation (XX)	Parity (X)

Figure 3-7   Status Monitoring Text Configuration

(6)   Link Release Text (MC for LAN ←→ PBX)

Figure 3-8 shows a link release request to be sent from the client to the server and from the server to the client. Processing is performed to release the link immediately after the text is received.

S Y N (X)	Text identifier (6)	Data length (004)	Device No. (XX)	Sequence No. (XX)	Parity (X)

Figure 3-8   Link Release Text Configuration

2. PROTOCOL AND MESSAGE RESPONSES

2.1 Link Establishment Sequence

Figure 3-9 shows the sequence used when the client requests the server to establish a link.

Note: *The client sends a status monitoring text immediately after a link is established.*

Figure 3-9   Link Establishment Sequence

2.2 Transmission and Reception of Call Information

(1) Normal Processing Sequence for Transmission and Reception of Call Information

Figure 3-10 shows the normal sequence used when the server sends call information to the client.
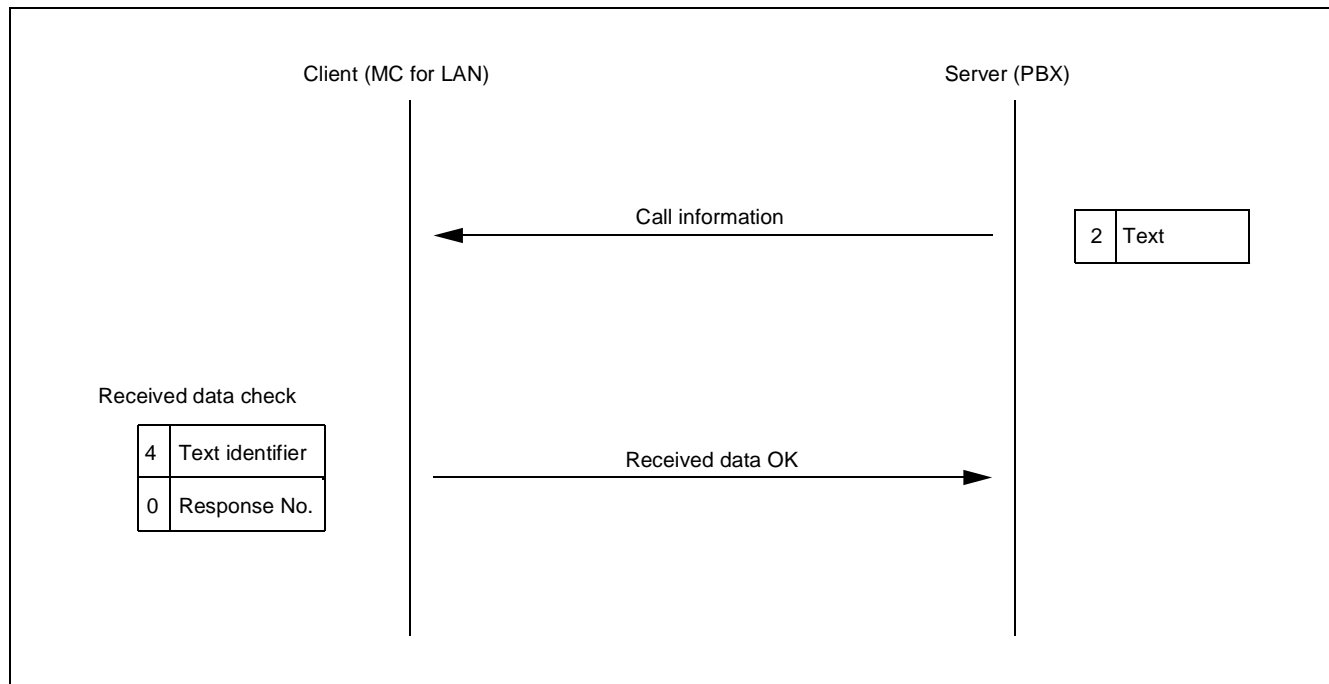
Figure 3-10   Transmission and Reception of Call Information Sequence

(2) Error Processing Sequence (1) for Transmission and Reception of Call Information

Figure 3-11 shows the error processing sequence used when the server sends call information to the client.

Note: *The * value varies with an error in the received data. (Refer to CHAPTER 3, Section 1.4, (4) Client Response Text.)*
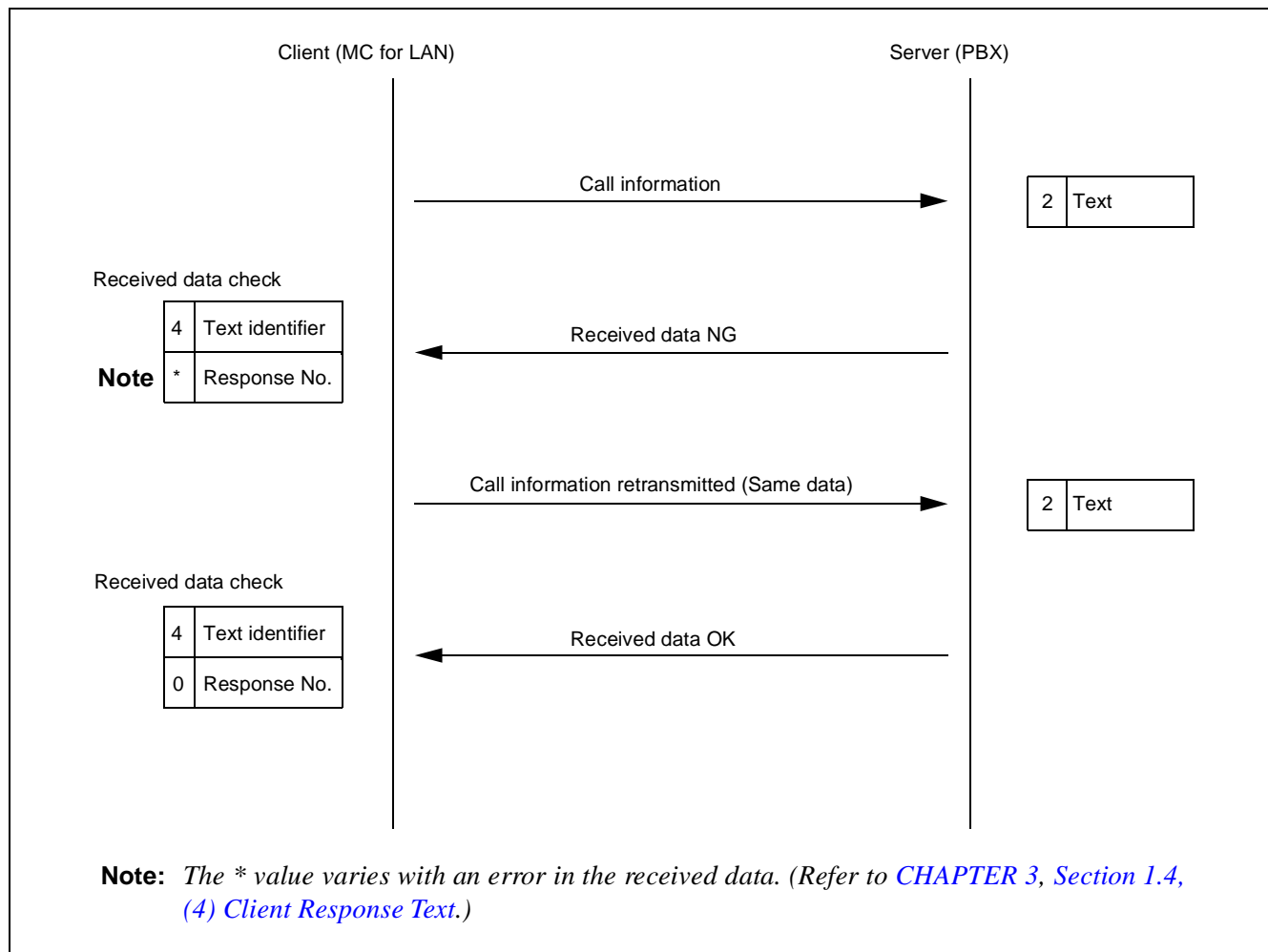
Figure 3-11   Transmission and Reception of Call Information Error Processing Sequence (1)

(3) Error Processing Sequence (2) for Transmission and Reception of Call Information

Figure 3-12 shows the error processing sequence used when the server sends call information to the client.
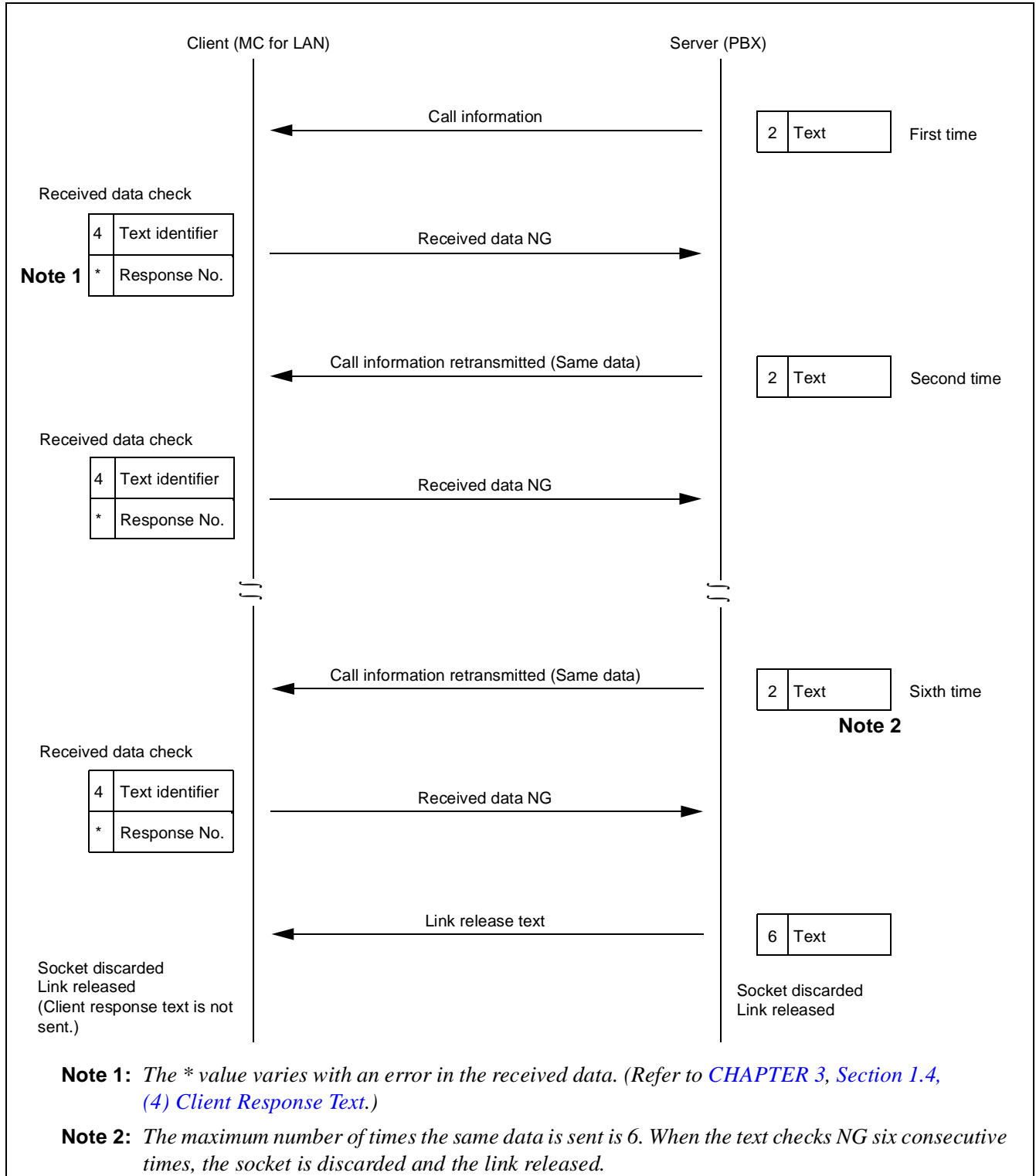
Figure 3-12   Transmission and Reception of Call Information Error Processing Sequence (2)

(4) Error Processing Sequence (3) for Transmission and Reception of Call Information

Figure 3-13 shows the processing sequence used when the server sends call information to the client and does not receive any client response text.

Figure 3-13   Transmission and Reception of Call Information Error Processing Sequence (3)

(5) Error Processing Sequence (4) for Transmission and Reception of Call Information

Figure 3-14 shows the sequence used when the server sends call information to the client and does not receive any client response text or detects an error in the data received by the client; the server then releases the link connected to the smaller numbered MC for LAN and sends call information to the other MC for LAN.
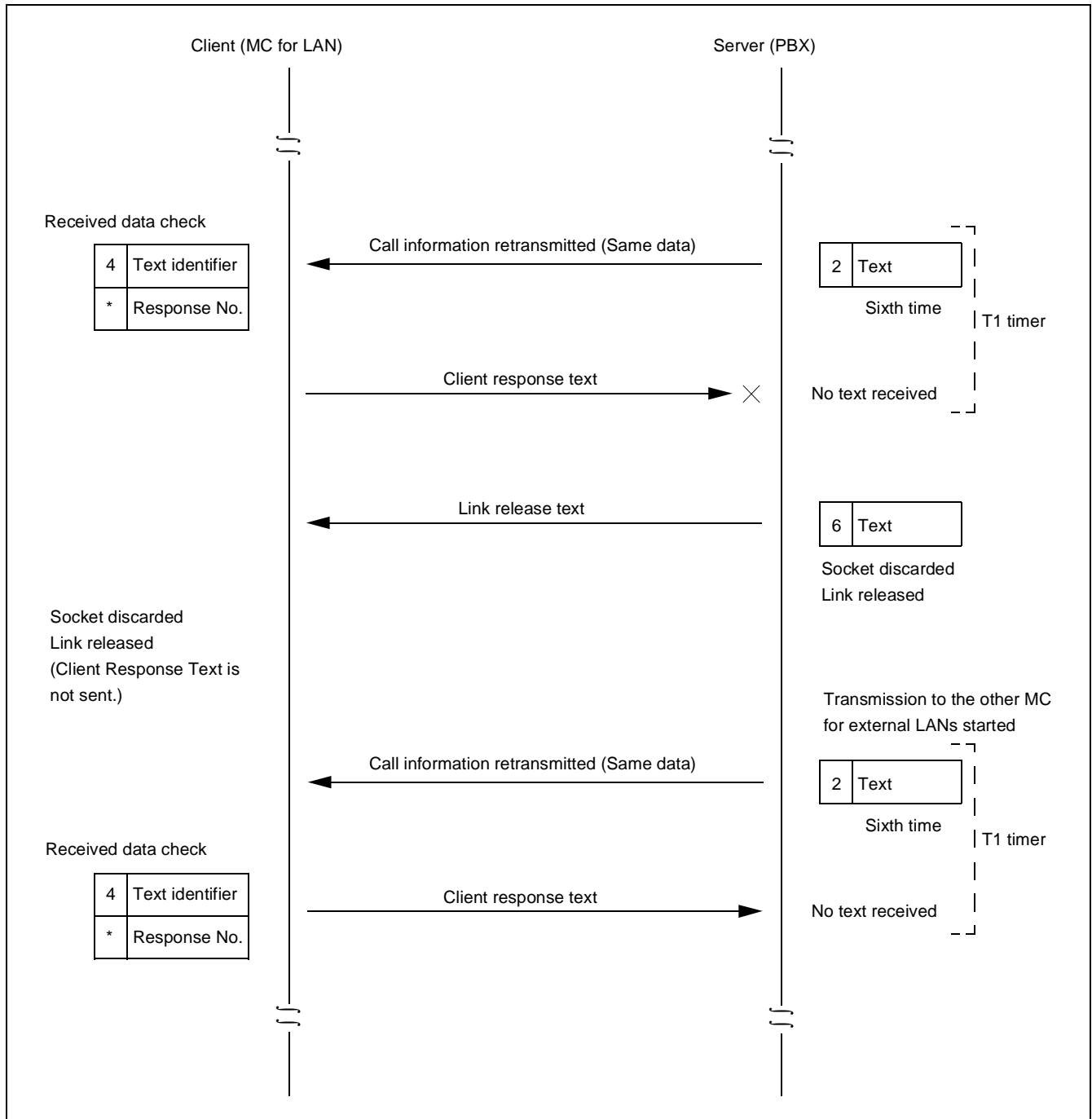
Figure 3-14   Transmission and Reception of Call Information Error Processing Sequence (4)

2.3 MWL Control

(1) Normal Processing Sequence for Control of MWL

Figure 3-15 shows the normal processing sequence used when the client requests the server to control MWL.
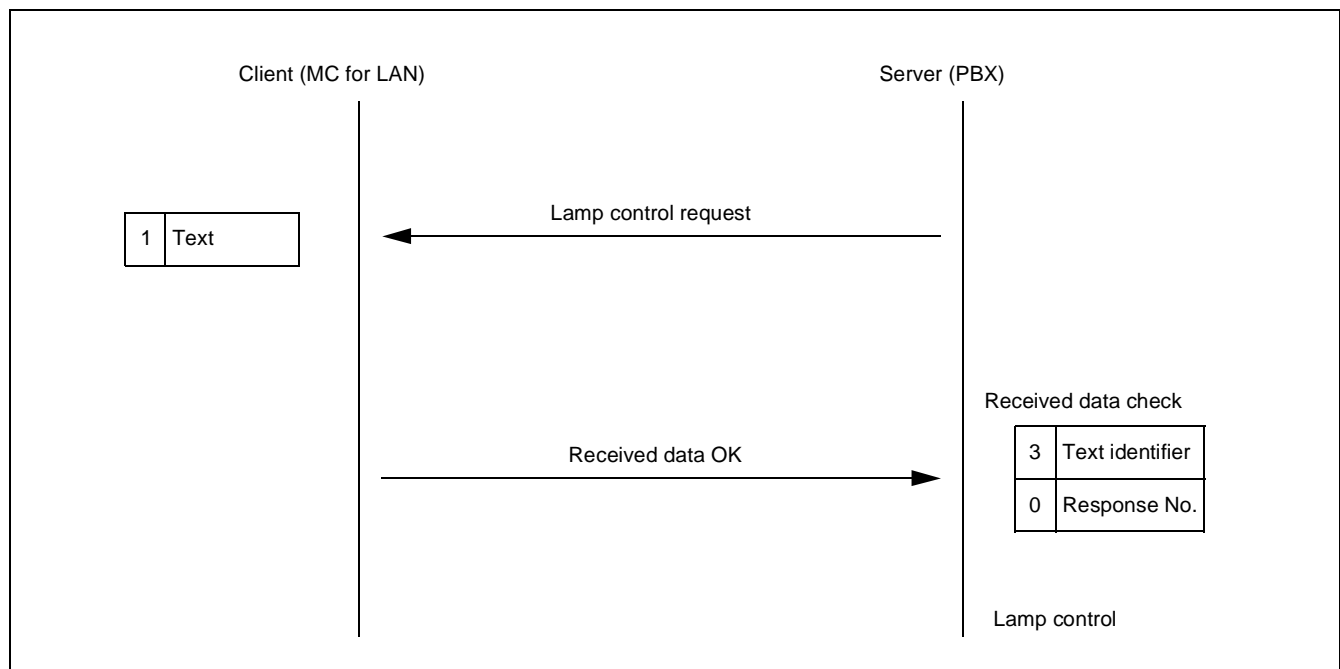
Figure 3-15   MWL Control Processing Sequence

(2) Error Processing Sequence (1) for Control of MWL

Figure 3-16 shows the processing sequence used when the client requests the server to control MWL and detects an error in the received data.
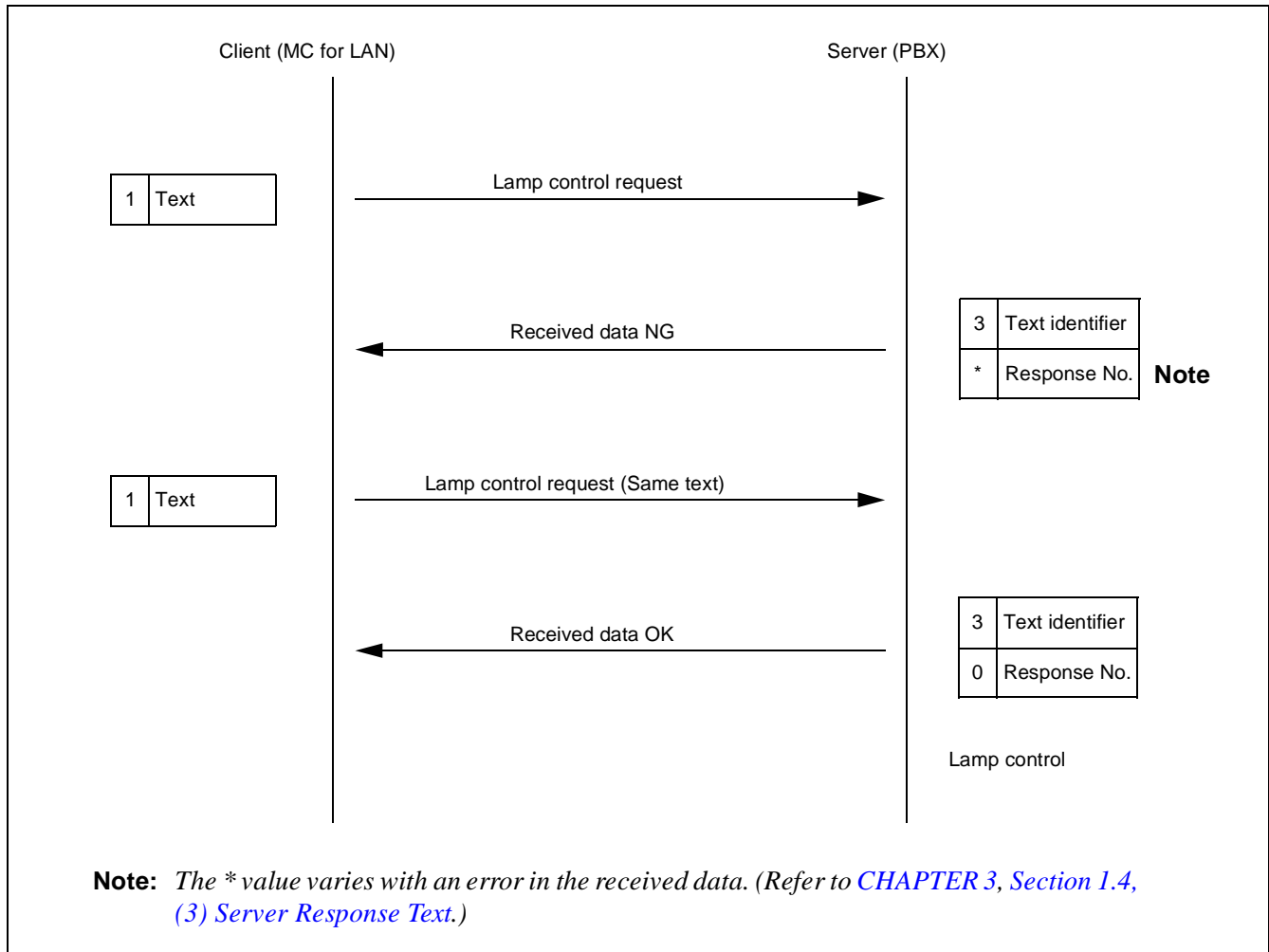
Figure 3-16   MWL Control Error Processing Sequence (1)

(3)   Error Processing Sequence (2) for Control of MWL

Figure 3-17 shows the processing sequence used when the client requests the server to control MWL and detects an error in the received data.

Note 1: *The * value varies with an error in the received data. (Refer to CHAPTER 3, Section 1.4, (3) Server Response Text.)*

Note 2: *The maximum number of times the same data is sent is 6. When the text checks NG six consecutive times, the socket is discarded and the link released.*
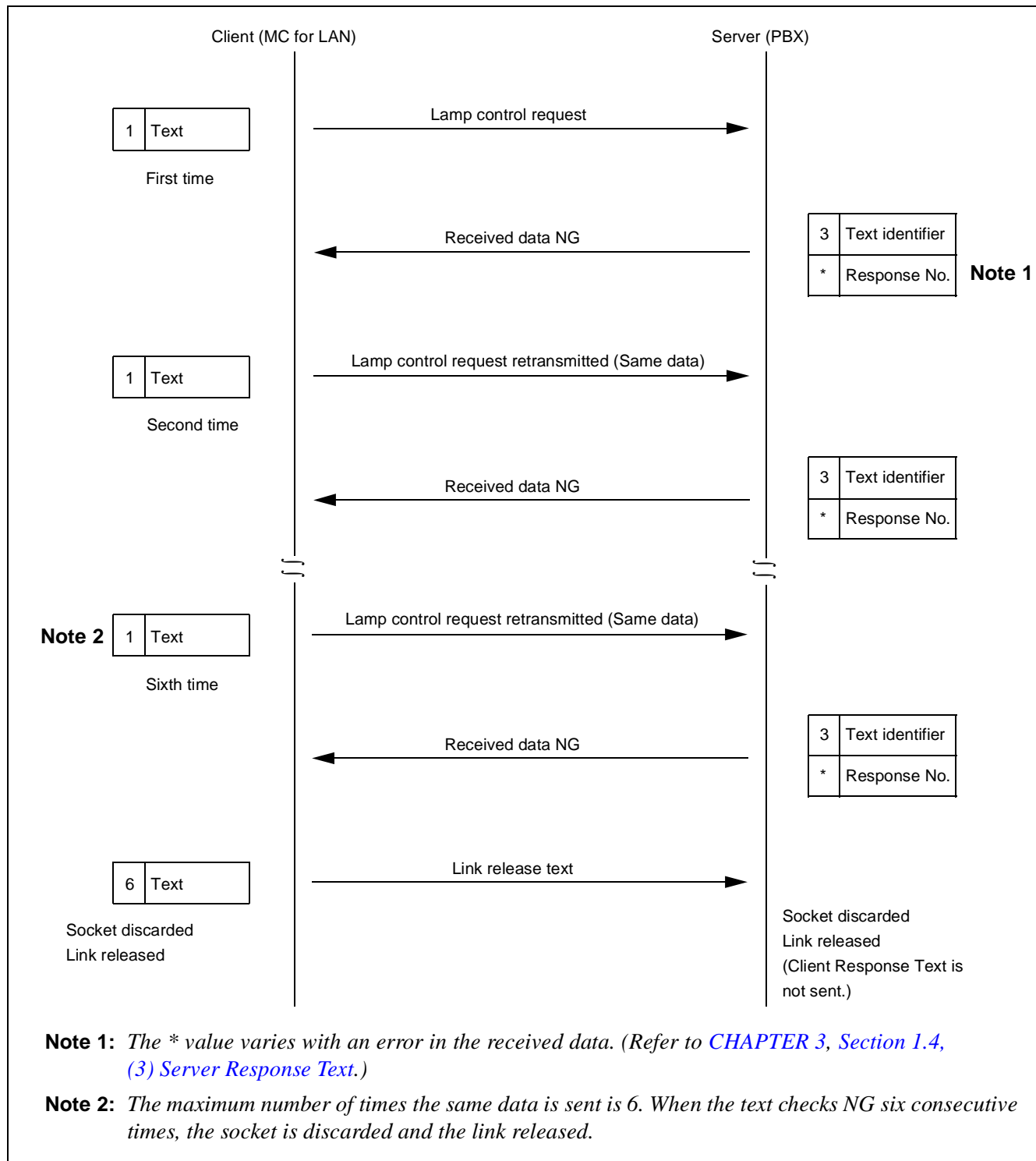
Figure 3-17   MWL Control Error Processing Sequence (2)

(4) Error Processing Sequence (3) for Control of MWL

Error processing sequence to be followed when the client requests the server to control MWL and does not receive any server response text.
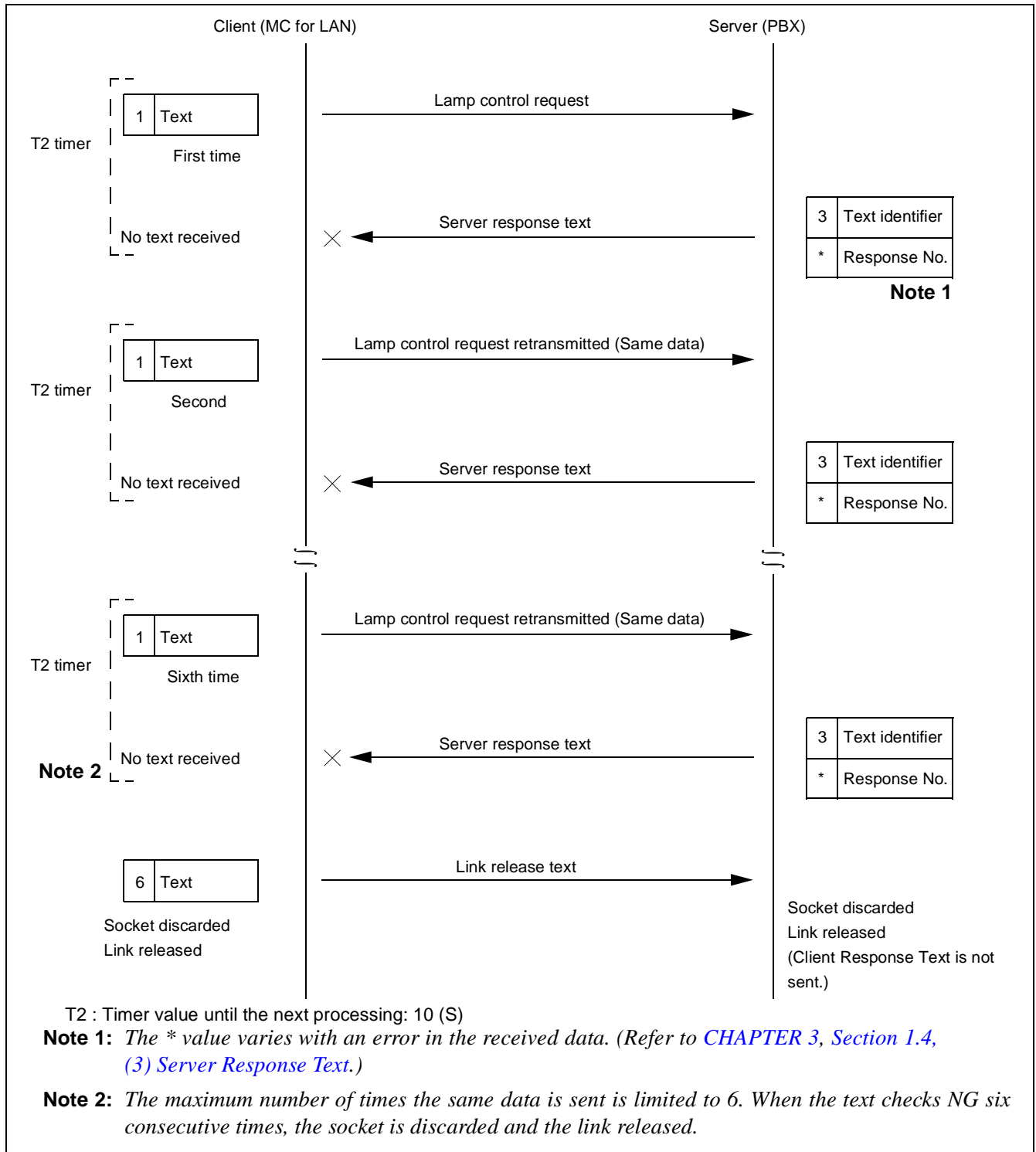
Figure 3-18   MWL Control Error Processing Sequence (3)

2.4 Monitoring Status Between Client and Server

Figure 3-19 shows the processing sequence for monitoring status between client and server.

T3 : Timer value until the next processing: 180 (S)

Note 1: *When six consecutively received texts assigned text identifier (6) check NG, the server sends text identifier (6) and then discards the socket and releases the link.*

Note 2: *The * value varies with an error in the received data. (Refer to CHAPTER 3, Section 1.4, (3) Server Response Text.)*

Note 3: *The time from when a text assigned text identifier (5) is sent to when another assigned the same text identifier is sent depends on the timer value of T3 timer.*

Figure 3-19   Monitoring Status Between Client and Server Processing Sequence

2.5 Link Release Sequence

Figure 3-20 shows the link release sequence used in response to a request from the client.
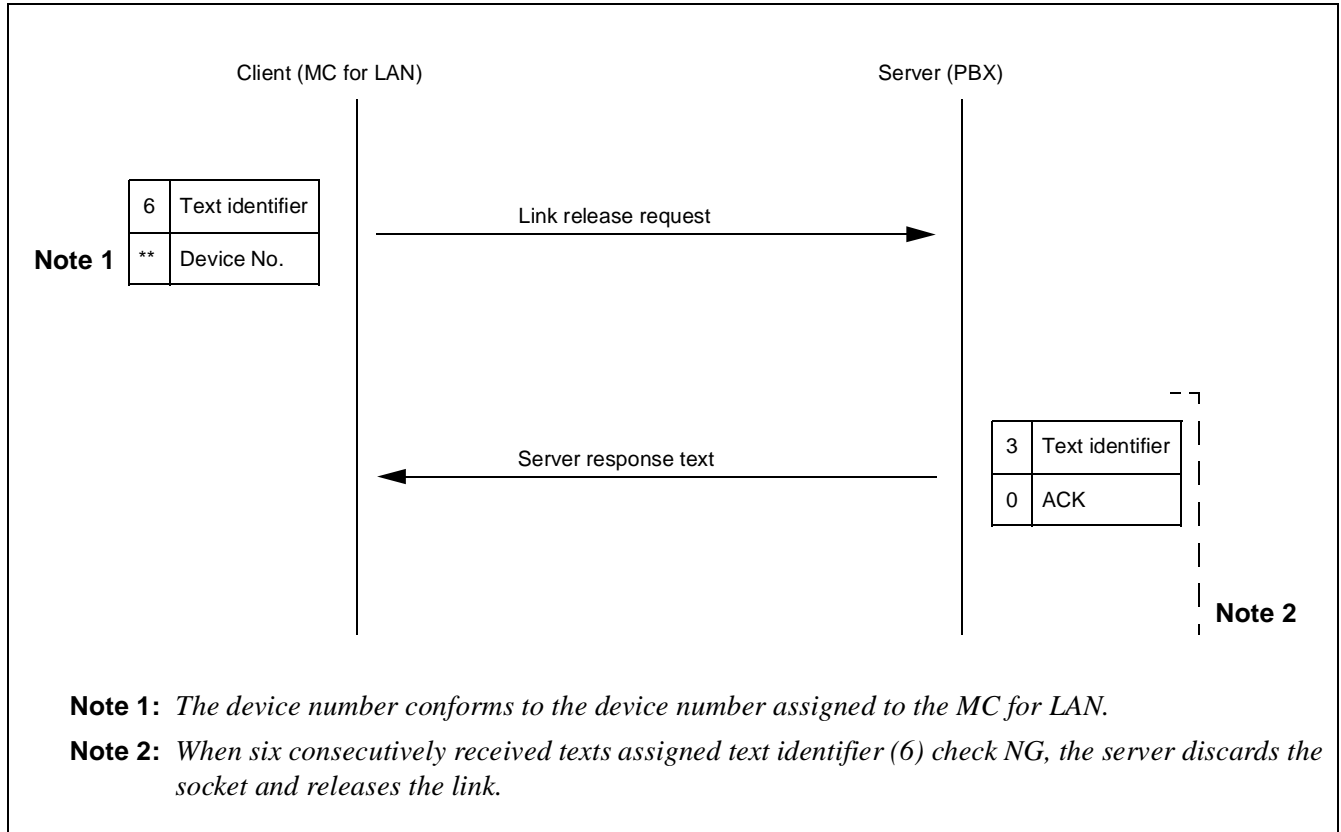
Figure 3-20   Link Release Sequence

Within the figure:

Client (MC for LAN)   Server (PBX)

6	Text identifier
**	Device No.

Note 1

Link release request →

3	Text identifier
0	ACK

← Server response text

Note 2

Note 1: *The device number conforms to the device number assigned to the MC for LAN.*

Note 2: *When six consecutively received texts assigned text identifier (6) check NG, the server discards the socket and releases the link.*

2.6 Connection Sequence for System Changeover

Figure 3-21 shows the link release sequence used in response to a request from the client.

Note 1: *Data from client*

Note 2: *The predetermined number of times is exceeded, or time-out occurs.*
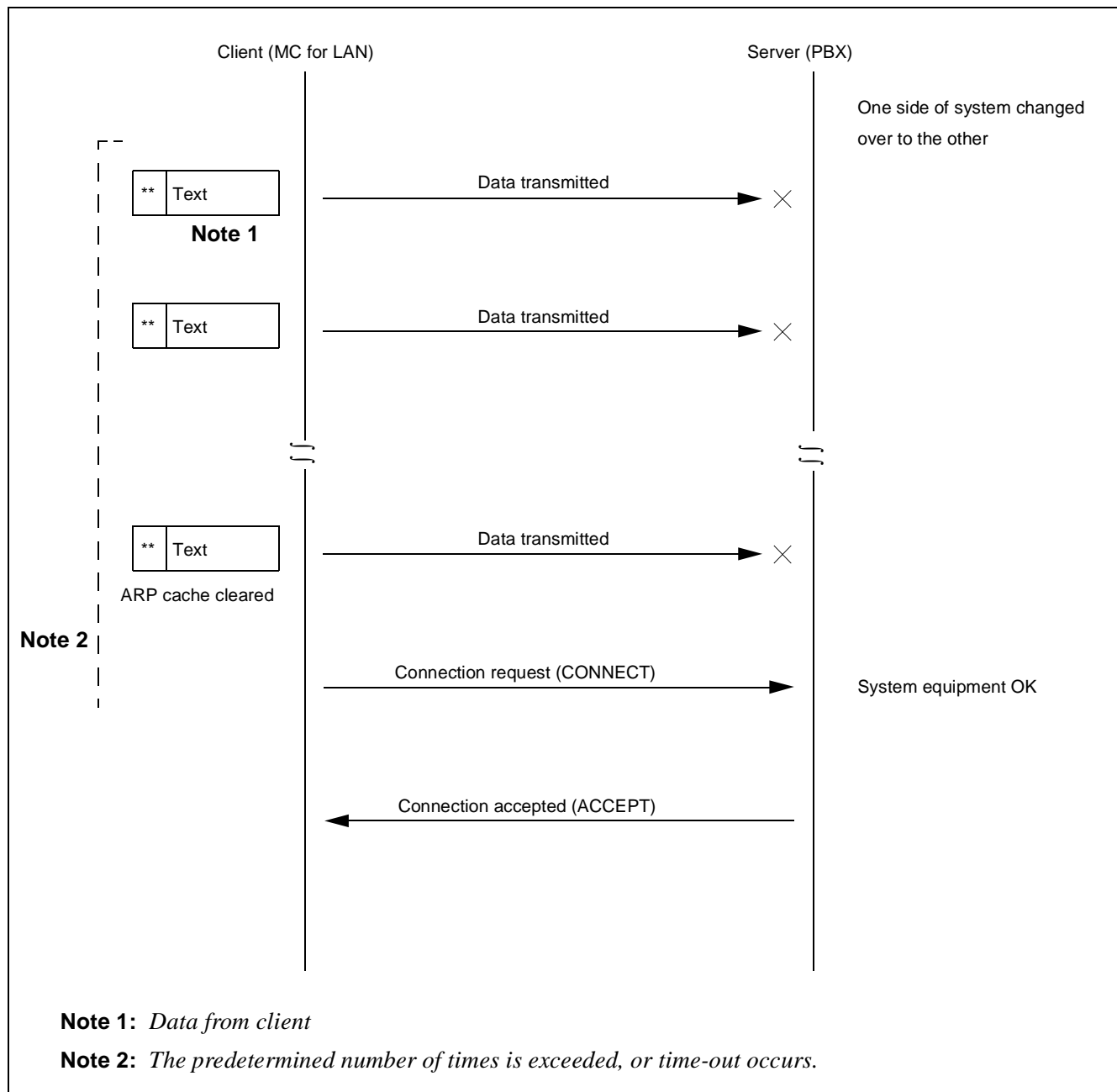
Figure 3-21   System Changeover Connection Sequence

This page is for your notes.

CHAPTER 4   MESSAGE FORMAT

1. ICS FORMAT

(1) PBX → MC Message

• When ASYD, Index 400, bit 2 is 0 (Calling number information is not sent)

Call Type **Note 3**
Loop Number **Note 2**

• When ASYD, Index 400, bit 2 is 1 (Calling number information is sent)

Call Type **Note 3**
Loop Number **Note 2**

Identifier
0 : Calling number not provided
1 : Calling number provided

End of Extended Format

MESSAGE FORMAT

Note 1:

• *When the destination is a station*
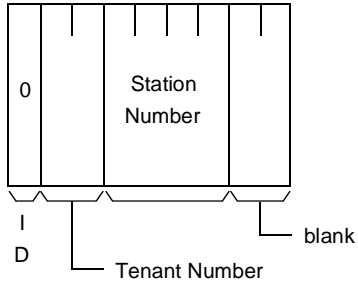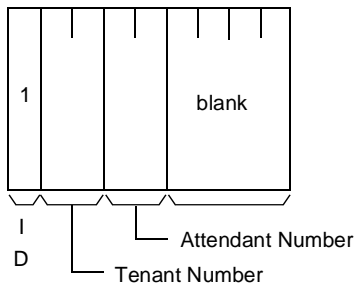
```
┌───┬────────────────────┬────┐
│   │                    │    │
│ 0 │  Station           │    │
│   │  Number            │    │
│   │                    │    │
└───┴────────────────────┴────┘
  │    │                  │
  I    │                  └─── blank
  D    │
       └── Tenant Number
```

• *When the destination is the attendant*

```
┌───┬────┬───────────────┐
│   │    │               │
│ 1 │    │   blank       │
│   │    │               │
│   │    │               │
└───┴────┴───────────────┘
  │    │      │
  I    │      └── Attendant Number
  D    │
       └── Tenant Number
```

• *When the destination is a trunk*

```
┌───┬────┬────────┬───────┐
│   │    │        │       │
│ 2 │    │        │       │
│   │    │        │       │
│   │    │        │       │
└───┴────┴────────┴───────┘
  │    │     │        │
  I    │     │        └── Trunk Number
  D    │     │
       │     └── Route Number
       └── Tenant Number
```

• *When the destination is a trunk (a calling number provided)*

```
┌───┬────┬────────┬───────┐
│   │    │        │       │
│ 3 │    │        │       │
│   │    │        │       │
│   │    │        │       │
└───┴────┴────────┴───────┘
  │    │     │        │
  I    │     │        └── Trunk Number
  D    │     │
       │     └── Route Number
       └── Tenant Number
```
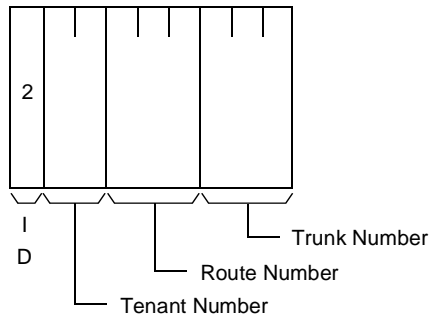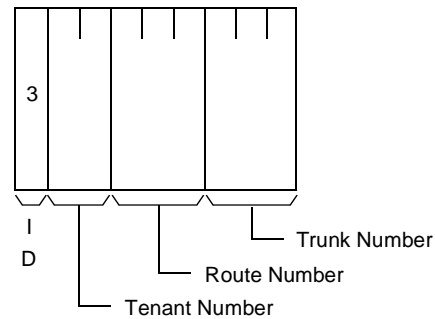
Note 2: *This information is valid when Source of Information is the attendant.*

Note 3: *Table 4-1 and Table 4-2 identify the call types.*

Table 4-1 Call Type Codes for Attendant Incoming Calls

CALL TYPE CODE	CALL TYPE	SOURCE	CALLING PARTY	CALLED PARTY
10	Automatic Recall	ATT	STA/TRK	STA
11	Attendant Camp-On	ATT	TRK	STA
12	Call Forwarding-Don't Answer	ATT	STA/TRK	STA
13	Call Forwarding-Busy Line	ATT	STA/TRK	STA
14	Call Forwarding-All Calls	ATT	STA/TRK	STA
15	Operator Call	ATT	STA	--
16	House Phone	ATT	STA	--
17	Off-Hook Alarm	ATT	STA	--
20	Intercept Call to the Attendant	ATT	STA/TRK	--
21	Call Transfer-Attendant	ATT	STA/TRK	STA/TRK
22	Recall from a Series Call	ATT	TRK	STA
23	Series Call Re-entry	ATT	TRK	STA
24	Tandem Transferring/Hold Entry	ATT	TRK	TRK
26	Inter-Position Transfer	ATT	STA/TRK	ATT
27	CAS Incoming Call	ATT	TRK	--
30	LDN Call	ATT	TRK	--
36	Call Returned from Hold	ATT	STA/TRK	--
39	Stop Sending MW Control Data	--	--	--
66	Start Sending MW Control Data	--	--	--

Table 4-2 Call Type Codes for UCD Incoming Calls

CALL TYPE CODE	CALL TYPE	SOURCE	CALLING PARTY	CALLED PARTY
40	Call Forwarding-Don't Answer	STA	STA/TRK	STA
41	Call Forwarding-Busy Line	STA	STA/TRK	STA
42	Call Forwarding-All Calls	STA	STA/TRK	STA
43	STA/TRK	STA	STA/TRK	UCD-Pilot
44	STA/TRK via ATT	STA	STA/TRK	ATT
45	STA/TRK Transferred to UCD Pilot Station	STA	STA/TRK	STA

MESSAGE FORMAT

(2)   MC→PBX Message
  • When Entry Index is A
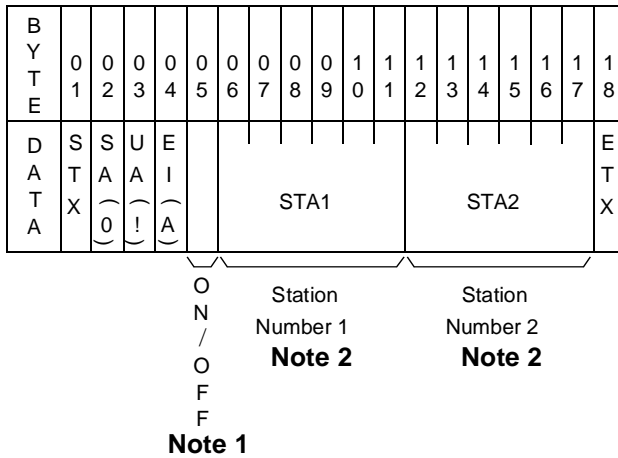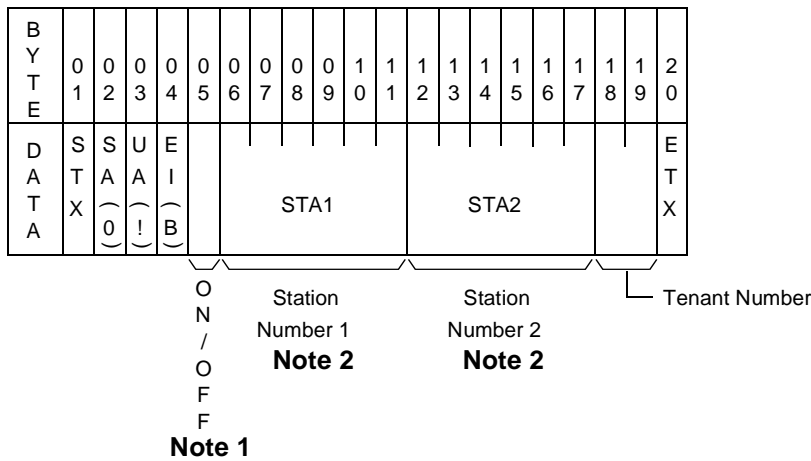
BYTE	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18
DATA	STX	SA (0)	UA (!)	EI (A)		STA1						STA2						ETX

```
        ON/OFF     Station       Station
        Note 1     Number 1      Number 2
                   Note 2        Note 2
```

  • When Entry Index is B

BYTE	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
DATA	STX	SA (0)	UA (!)	EI (B)		STA1						STA2								ETX

```
        ON/OFF     Station       Station
        Note 1     Number 1      Number 2      Tenant Number
                   Note 2        Note 2
```

Note 1: *This information has the following meanings:*
  0:   All MWL Off
  1:   MWL On for MC
  2:   MWL On for VMS
  5:   MWL Off for MC
  6:   MWL Off for VMS

Note 2: *Table 4-3 explains the meaning of STA1 and STA2. The number of digits in the station number and the tenant number of these stations must be the same.*

Table 4-3 Message Text Station Number Explanation
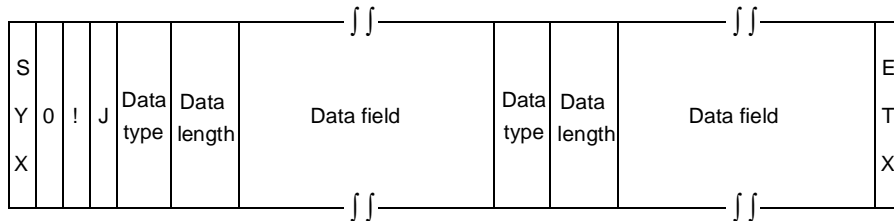
STA1	STA2	MEANING
Station data	blank	Station 1 MWL On/Off
Station data	Station data	MWL is set/cancelled for all stations between Station 1 and Station 2.
blank	blank	MWL is set/cancelled for all stations in system.

Note 3: *If the tenant number in the MWL control data is not used, default value of tenant number is one.*

2. IMX FORMAT

(1) PBX → MC Message

(a) Summary of format

(b) Data type list (see Table 4-4)

Table 4-4 PBX → MC Data Type Explanation

Data Type	Description	Data Length
00	Not used	—
01	Destination information (Source of information)	16 to 34
02	Loop number/Call type	04
03	Calling party information	16 to 34
04	Called party information	16 to 34
05	Extended calling party information	16 to 34
06	Calling number information	01 to 33
07 to 99	Not used	—

(c) Details of format

| STX | 0 | ! | J | 01 | 18 to 34 | Source of Information | 02 | 04 | Loop No. | Call type |

Destination information **Note 1**   **Note 2**

| 03 | 18 to 34 | Calling Party | 04 | 18 to 34 | Called Party |

Calling party information **Note 1**   Called party information **Note 1**

| 05 | 18 to 34 | Extended Calling Party | 06 | 01 to 33 | Identifier | | ETX |

Extended calling party information **Note 1**   Identifier   Calling number information

0 : Calling number not provided
1 : Calling number provided

Note 1:

• *When the destination is a station*

0	FPC (3 digits)	Tenant Number (3 digits)	Station number (8 digits)	User group number (3 digits)	Telephone number (16 digits maximum)

ID

• *When the destination is the attendant*

1	FPC (3 digits)	Tenant Number (3 digits)	blank (6 digits)	User group number (3 digits)

ID

Attendant Number
(2 digits)

• *When the destination is a trunk*

2	FPC (3 digits)	Tenant Number (3 digits)	Physical route (3 digits)	Trunk (3 digits)	blank (2 digits)	User group number (3 digits)	Logical route (3 digits)

ID

• *When the destination is a trunk (a calling number provided)*

3	FPC (3 digits)	Tenant Number (3 digits)	Physical route (3 digits)	Trunk (3 digits)	blank (2 digits)	User group number (3 digits)	Logical route (3 digits)

ID

Note 2: *When the call type is 39 (wait request) or 66 (wait cancel), the information of data type (02) only is transmitted. Table 4-5 and Table 4-6 show the call types.*

Table 4-5 Call Type Codes for Attendant Incoming Calls

CALL TYPE CODE	CALL TYPE	SOURCE	CALLING PARTY	CALLED PARTY
10	Automatic Recall	ATT	STA/TRK	STA
11	Attendant Camp-On	ATT	TRK	STA
12	Call Forwarding-Don't Answer	ATT	STA/TRK	STA
13	Call Forwarding-Busy Line	ATT	STA/TRK	STA
14	Call Forwarding-All Calls	ATT	STA/TRK	STA
15	Operator Call	ATT	STA	--
16	House Phone	ATT	STA	--
17	Off-Hook Alarm	ATT	STA	--
20	Intercept Call to the Attendant	ATT	STA/TRK	--
21	Call Transfer-Attendant	ATT	STA/TRK	STA/TRK
22	Recall from a Series Call	ATT	TRK	STA
23	Series Call Re-entry	ATT	TRK	STA
24	Tandem Transferring/Hold Entry	ATT	TRK	TRK
26	Inter-Position Transfer	ATT	STA/TRK	ATT
27	CAS Incoming Call	ATT	TRK	--
30	LDN Call	ATT	TRK	--
36	Call Returned from Hold	ATT	STA/TRK	--
39	Stop Sending MW Control Data	--	--	--
66	Start Sending MW Control Data	--	--	--

Table 4-6 Call Type Codes for UCD Incoming Calls

CALL TYPE CODE	CALL TYPE	SOURCE OF INFORMATION	CALLING PARTY	CALLED PARTY
40	Call Forwarding-Don't Answer	STA	STA/TRK	STA
41	Call Forwarding-Busy Line	STA	STA/TRK	STA
42	Call Forwarding-All Calls	STA	STA/TRK	STA
43	STA/TRK	STA	STA/TRK	UCD-Pilot
44	STA/TRK via ATT	STA	STA/TRK	ATT
45	STA/TRK Transferred to UCD Pilot Station	STA	STA/TRK	STA

(2) MC → PBX Message

(a) Summary of format
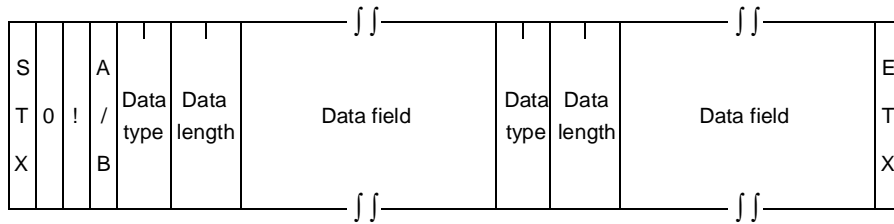
(b) Data type list (see Table 4-7)

Table 4-7 MC → PBX Data Type Explanation

Data Type	Description	Data Length
00	Not used	—
01	ON/OFF	01
02	Station No. (STA1)	01 to 16
03	Station No. (STA2)	01 to 16
04	Tenant number/user group number	06
05 to 99	Not used	—

MESSAGE FORMAT

    (c)   Details of format

• When Entry Index is A
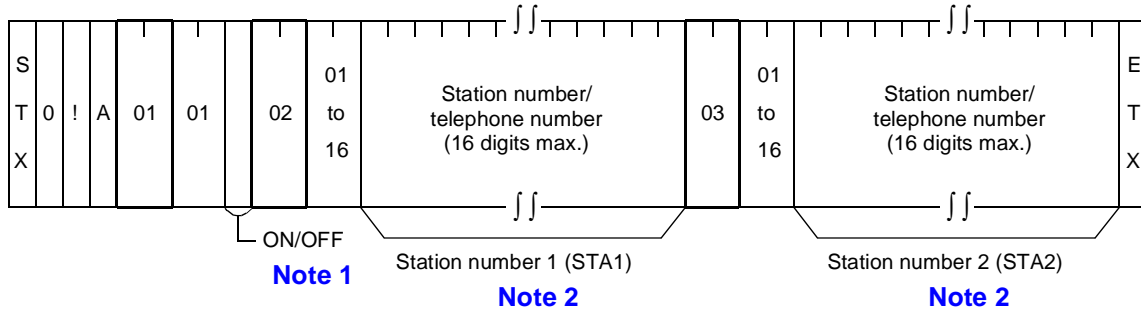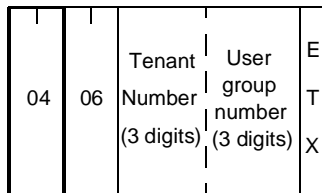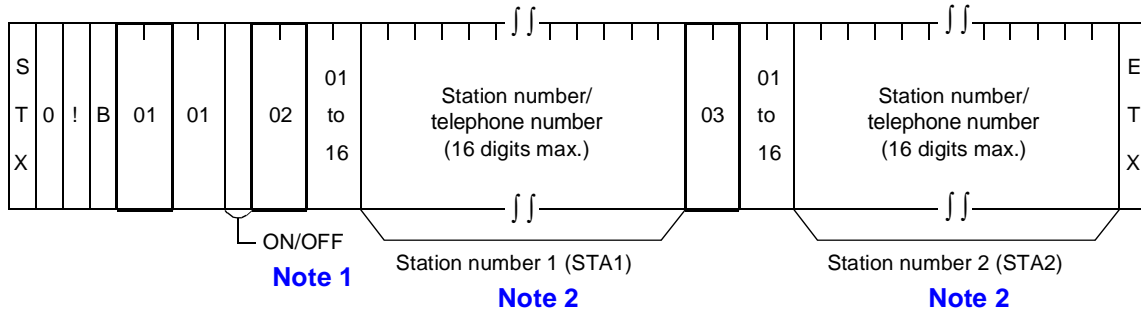
S T X	0	!	A	01	01	02	01 to 16	Station number/ telephone number (16 digits max.)	03	01 to 16	Station number/ telephone number (16 digits max.)	E T X

                              ON/OFF
                       Note 1   Station number 1 (STA1)   Station number 2 (STA2)
                                      Note 2   **Note 2**

• When Entry Index is B

S T X	0	!	B	01	01	02	01 to 16	Station number/ telephone number (16 digits max.)	03	01 to 16	Station number/ telephone number (16 digits max.)	E T X

                              ON/OFF
                       Note 1   Station number 1 (STA1)   Station number 2 (STA2)
                                        Note 2   **Note 2**

04	06	Tenant Number (3 digits)	User group number (3 digits)	E T X

Note 1: *This information has the following meanings:*
> *0:   All MWL Off*
> *1:   MWL On for MC*
> *2:   MWL On for VMS*
> *5:   MWL Off for MC*
> *6:   MWL Off for VMS*

Note 2: *Table 4-8 explains the meaning of STA1 and STA2. The number of digits in the station number and the tenant number of these stations must be the same.*

Table 4-8 MC → PBX Data Type Explanation

STA1	STA2	MEANING
Station data	blank	Station 1 MWL On/Off
Station data	Station data	MWL is set/cancelled for all stations between Station 1 and Station 2.
blank	blank	MWL is set/cancelled for all stations in system.

Note 3: *If the tenant number in the MWL control data is not used, default value of tenant number is one.*

This page is for your notes.

CHAPTER 5   SERVICE CONDITIONS

(1) A maximum of 2 ports can be used for MCI. When 2 ports are used for MCI, note the following conditions.

- When both ports are operating normally

    Transmission: Messages are transmitted from the smaller-numbered port.

    Reception: Messages are received from both ports.

- When one of the ports is faulty

    Transmission: Messages are transmitted from the port operating normally.

    Reception: Messages are received from the port operating normally.

(2) When the communication line between the MCI and the MC is closed, no display appears on the attendant's CRT.

(3) If the data received from the MC contains text errors or parity errors, the PBX disregards all proceeding data until an STX message is transmitted to indicate another MWL request.

(4) The following list provides service conditions for MCI used in a CCIS network. In the explanation, the following words are used:

    MC node: The node to which the MC is connected.

    Remote node: Nodes in a CCIS network except MC node.

- (a) Only one MC can be connected in a CCIS network.

- (b) When a call terminates from a remote node to the attendant or a UCD station in the MC node, the route number and trunk number used in the MC node displays as the Calling Party information.

- (c) The MC node can control MWLs of all the stations in a maximum of 32 nodes.

(5) The formats of messages to be transferred to and from the IOC can be changed by system data.

(6) LAN interface and IOC interface cannot be concurrently used for MCI.

(7) The following list provides service conditions for MCI for LAN:

- (a) The socket interface shall be used for transfer of data to and from the MC connected to LAN.

- (b) After the link is released, it shall always be the client that presents a link establishment request.

- (c) The MCI messages transferred through the LAN interface is IMX format messages only.

This page is for your notes.

CHAPTER 6   DATA ASSIGNMENT

STEP 1: ASYD - System Data 1, Index 28, Bits 0-4   Assign a Miscellaneous Timer Counter (MTC) used to calculate the message-sending Guard Timer for Message Center. If not required, assign data "0" to these bits.

System Data 1, Index 28, Bit 5   Is Message Waiting Lamp setting from the Message Center to be used? 0/1: No/Yes.

System Data 1, Index 29, Bits 1-7   Assign which I/O port will act as the Message Center Interface (a maximum of 2 ports).

System Data 1, Index 60, Bit 3   UCD Queuing. 0/1: Required/Not Required. Assign this data as "0" (Required).

System Data 1, Index 70, Bit 0   Called Number Display on the console for DID and TIE Line calls must be enabled. Assign Bit 0 as data "1" when System Data 2, Index 6, Bit 7 is also enabled.

System Data 1, Index 78, Bit 0   CALLING NUMBER DISPLAY - D^{term} [C-24D] must be enabled. Assign Bit 0 as data "1".

System Data 1, Index 78, Bit 1   CALLING STATION STATUS DISPLAY - D^{term} [C-22D] must be enabled. Assign Bit 1 as data "1".

System Data 1, Index 400, Bit 2   0/1: Calling number information is Not sent/sent to MCI.

System Data 2, Index 6, Bit 0   Is MCI service with UCD groups to be enabled? 0/1:No/Yes.

System Data 2, Index 7, Bit 1   Is MCI service for calls via the Attendant Console to be enabled? 0/1: No/Yes.

STEP 2: AIOC - Assign the function and attribute data of the IOC ports. Note that this data assignment is required for the MCI for IOC. Skip this step when using MCI for LAN.

STEP 3: ASYDL - System Data 1, Index 529, Bits 0 and 1   Parity check method for SMDR/MCI with LAN interface.
b1-b0   00 = No parity
01 = Odd parity
10 = Even parity

System Data 1, Index 641, Bit 1   Designate output numbers for MCI IMX format. 0/1: Station Number/Telephone Number. Assign this data to the node connected to MC.

System Data 1, Index 832   Assign the Fusion Point Code (FPC) of the node connected to MC. Assign this data to all nodes.

System Data 1, Index 833, Bit 0   Interface type for MCI. 0/1: IOC/LAN interface.

System Data 1, Index 833, Bit 1   Text format for MCI. 0/1: ICS/IMX format

System Data 1, Index 834, Bit 0   0/1: MC0 for LAN is Not mounted/Mounted.

System Data 1, Index 834, Bit 1   0/1: MC1 for LAN is Not mounted/Mounted.

STEP 4: AUCD - Whether UCD incoming call information is to be sent to a Message Center Interface or not can
be specified on a UCD group basis using the following parameter:
MCI: 0/1 (Not to be sent/To be sent to MCI)

STEP 5: ARPC - In the case of CCIS network, assign Remote Point Code (RPC) of each remote node.
CSN (Centralized Service Number): 1 (Message Center)
CNT (Remote Point Code Counter): (1-32)
RPC (Remote Point Code): (1-16383)