# PRO STAR

# 56ex / 120mx
# TECHNICAL MANUAL

## INCLUDES:

GENERAL DESCRIPTION SECTION

INSTALLATION SECTION

PROGRAMMING SECTION

REMOTE ACCESS SECTION

FAULT FINDING SECTION

TECHNICAL BULLETIN SECTION

# PROSTAR TELECOM, INC.

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# T A B L E    O F    C O N T E N T S

# GENERAL DESCRIPTION . SECTION

## PART   DESCRIPTION                                               PAGE

# 56ex/120mx GENERAL SYSTEM DIAGRAM



FACSIMILE

SMDR

PRINTER OR CALL ACCOUNTING
SYSTEM

STANDARD TELEPHONE
TONE/PULSE

CORDLESS
PHONE

VOICE MAIL/AUTO ATTENDANT
SYSTEMS

816 KEYSET

D-824 KEYSET

AOM

MODEM

COMPUTER

ANSWERING
MACHING

EXTERNAL MUSIC
SOURCES (2)

DOOR PHONES (2)

EXTERNAL PAGING
4 ZONES

48 VDC
BATTERY BACKUP

TELEPHONE LINES
★ LOCAL SERVICE
★ WATS LINE
★ CENTREX
★ TIE LINES
★ DISA
★ DID

OPX

LOUD BELL (2)

110/220V
AC

# PART 1.  SYSTEM OVERVIEW

## 1.1  SIZE AND CONFIGURATION

The PROSTAR 56ex/120mx is an expandable hybrid-key telephone system that begins with 56 ports and expands to its maximum size of 120 ports (see Figure 1-3).

Two types of stations can be connected to the system: proprietary electronic stations called "keysets" and standard telephone sets, generally called "single line sets."

Four types of telephone company lines (trunks) can be connected to the system: LOOP START LINES, GROUND START LINES, E & M TIE LINES and DID trunks.

### BASIC KSU

The 56ex is a single cabinet key service unit (KSU) containing a POWER SUPPLY, CPU/MEMORY card, MISCELLANEOUS card and seven universal card slots (see Figure 1-1).



NOTE: MINIMUM OF 6" CLEARNCE IS RECOMMENDED ON LEFT SIDE OF KSU FOR POWER CORD & BATTERY CONNECTOR AND RIGHT SIDE FOR MDF CABLING

21 3/4"

13 1/8"

16 1/2"

ADD 1/2" TO 1/4" IF FEET ARE INSTALLED
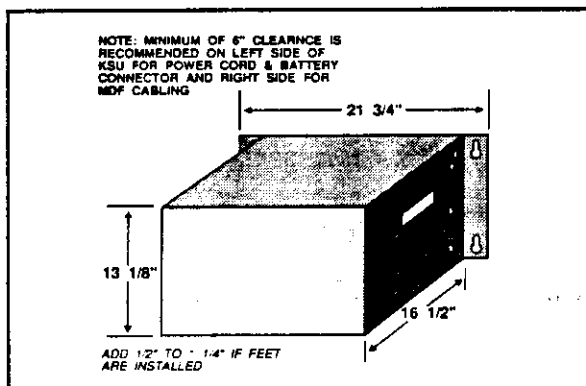
**FIGURE 1-1**

Each of the seven universal card slots provides access to eight system ports, giving a capacity of 56 usable ports.

Station or trunk cards can be installed in any universal slot. The maximum number of stations can be 56, with no lines. The maximum number of lines is 56, with no stations. See Figure 1-4 and Table 1-A for possible line and station combinations.

The cabinet is designed for wall mounting or can be free standing. Adjustable brass feet and wall mounting brackets are supplied with each 56ex system.

### EXPANSION CABINET

The 64 port expansion cabinet sits directly on top of the basic 56ex cabinet. Both can be wall mounted or free standing (see Figure 1-2). The expansion cabinet contains its own power supply and eight universal card slots.



NOTE: MINIMUM OF 6" CLEARNCE IS RECOMMENDED ON LEFT SIDE OF KSU FOR POWER CORD & BATTERY CONNECTOR AND RIGHT SIDE FOR MDF CABLING

19"

26 1/4"

16 1/2"

ADD 1/2" TO 1 1/4" IF FEET ARE INSTALLED

**FIGURE 1-2**

Each slot provides access to eight system ports making a total of 64 additional ports. These universal slots use the same station and trunk cards as the 56ex. See Figure 1-4 and Table 1-A for possible line and station combinations.

## 56ex/120mx SYSTEM CONFIGURATION CHART
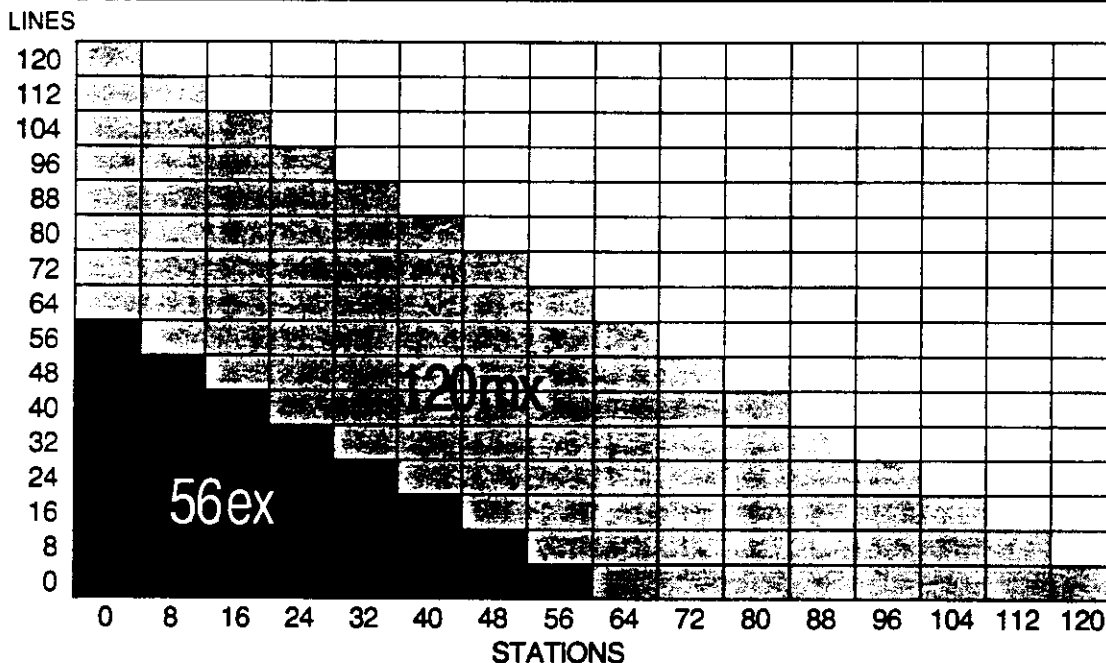


## INTERFACE CARDS

TRK 1   8 CIRCUITS FOR LOOP START LINES

TRK 2   UNIVERSAL TRUNK CARD FOR USE WITH UP TO 4 DAUGHTER BOARDS
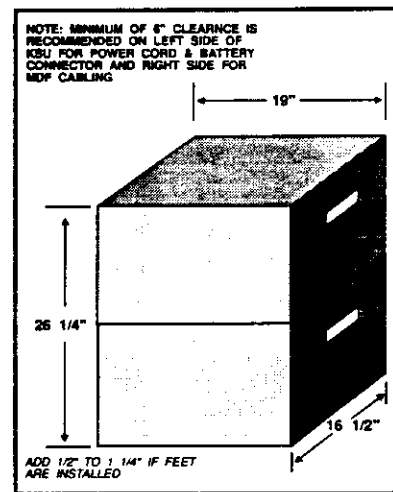
MSLC1   8 CIRCUITS FOR 824 KEYSETS OR ADD ON MODULES (ANY COMBINATION)

MSLC2   8 CIRCUITS FOR 816 KEYSETS, THE LAST 4 ARE INDIVIDUALLY SWITCHABLE FOR EITHER 816 KEYSETS, OR SINGLE LINE PHONES. THIS CARD IS REQUIRED FOR VOICE MAIL INTERFACE.

SLC   8 CIRCUITS FOR SINGLE LINE TELEPHONES

## DAUGHTER BOARDS

E & M   2 CIRCUITS FOR E & M TIE LINES (2 WIRE TYPE)

L/G   2 CIRCUITS INDIVIDUALLY SWITCHABLE FOR EITHER LOOP START OR GROUND START LINES

DID   2 CIRCUITS FOR DID TRUNKS

## CONFIGURATION NOTES

THE COMBINED NUMBER OF 824 KEYSETS + 816 KEYSETS + ADD ON MODULES CANNOT EXCEED 80 IN A FULLY EXPANDED SYSTEM. DO NOT INSTALL MORE THAN 48 IN ANY ONE CABINET

UP TO 120 SINGLE LINE TELEPHONES CAN BE INSTALLED

EACH TRK2 CARD MAY BE CONFIGURED WITH UP TO 4 DAUGHTER BOARDS, EACH DAUGHTER BOARD HAS 2 CIRCUITS

GROUND START TRUNKS CAN ONLY BE INSTALLED ON THE TRK2 CARD USING THE LOOP/ GROUND DAUGHTER BOARD

THE DID AND E&M TIE LINE ARE INSTALLED USING 2 CIRCUIT DAUGHTER BOARDS ON THE TRK2 CARD

## FIGURE 1-3

## 56ex/120mx SYSTEM CONFIGURATION CHART
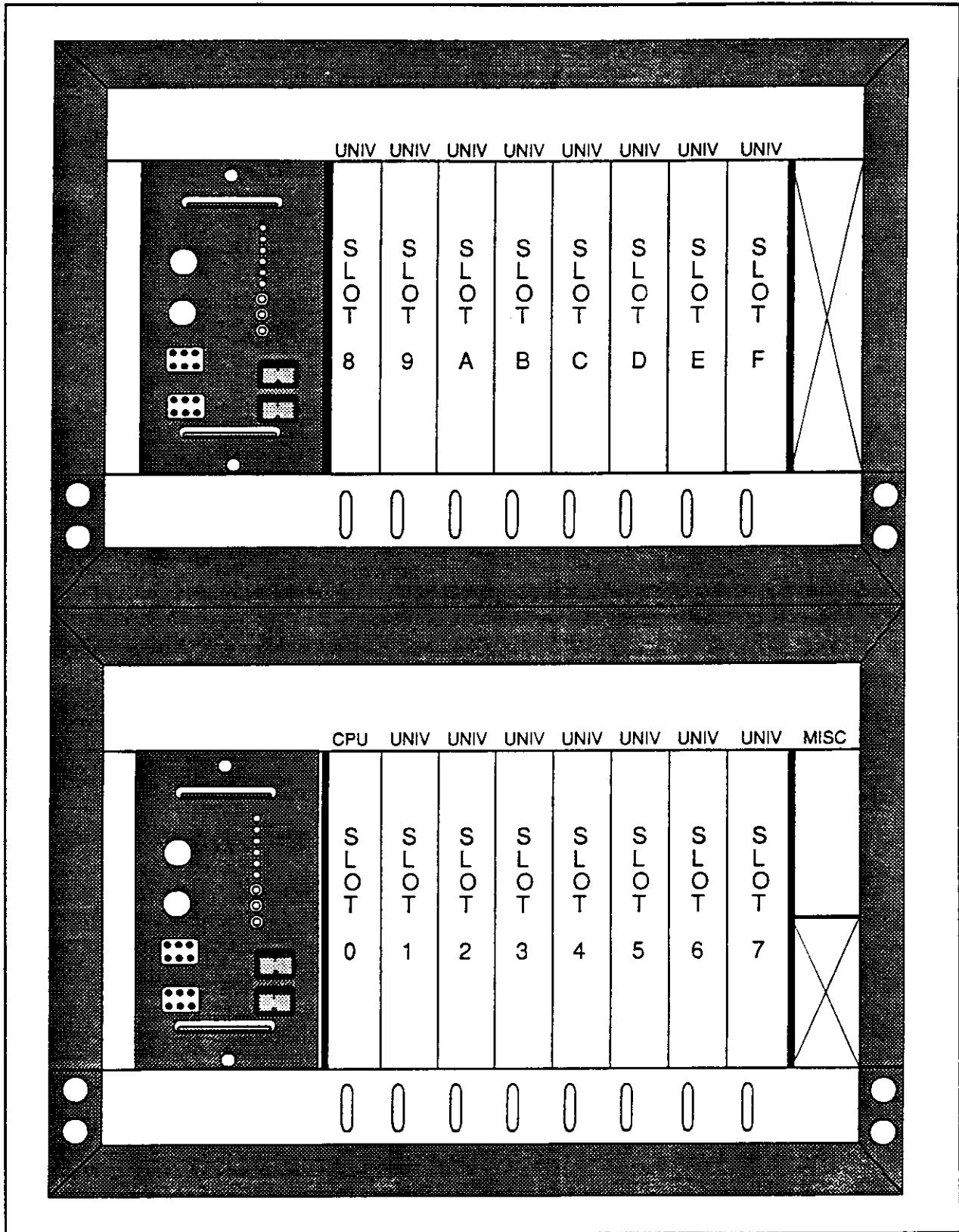
## SYSTEM LAYOUT
## KSU AND EXPANSION CABINET

**FIGURE 1-4**

## TABLE 1-A

| MAXIMUM SYSTEM CAPACITY FOR EACH TYPE OF CIRCUIT | | |
|---|---|---|
| CIRCUIT TYPE | 56ex<br>56 UNIVERSAL<br>PORTS | 120mx<br>120 UNIVERSAL<br>PORTS |
| KEYSETS AND ADD ON MODULES | 48 | 80 |
| SINGLE LINE TELEPHONES | 56 | 120 |
| C.O. LINES - LOOP OR GROUND | 56 | 120 |
| CENTREX OR PBX LINES | 56 | 120 |
| E & M TIE LINES | 56 | 120 |
| DID LINES | 56 | 120 |
| EXTERNAL PAGE ZONES | 4 | 4 |
| DOORPHONE | 2 | 2 |
| MUSIC ON HOLD SOURCE | A/B | A/B |
| BACKGROUND | A/B | A/B |

# 1.2  TECHNOLOGY

### SWITCHING

PROSTAR 56ex/120mx accomplishes speech switching by means of a digitally controlled analog speech bus. The bus is comprised of 48 speech paths. Six are dedicated to system tones, music sources, DTMF senders and DTMF receivers. The remaining 42 speech paths are shared by lines and stations. The 56ex is non-blocking and the 120mx is non-blocking up to 84 ports in use.

### MEMORY

The system operates using stored program control. This program is stored in six EPROM chips (ROM) totalling 384K bytes of memory. All specific customer data is stored in 128K bytes of non-volatile random access memory (NVRAM). It is protected by a rechargeable 3.6 VDC NICAD battery for approximately 25 days. An additional 64K bytes of RAM are provided for I/O processing, better known as work in progress.

## MICROPROCESSORS

PROSTAR 56ex/120mx uses distributed processing. The system's main processor is a 16 bit Intel 80186 operating at a clock speed of 16 MHz. The second level of processing is on the interface cards, and is controlled by an Intel 8051 single chip microcomputer operating at 11 MHz. The last level of processing is done in the keysets. The 824 keyset uses the same Intel 8051 microcomputer as the interface cards. The 816 keyset uses an Intel 8049 microcomputer with masked ROM operating at 6 MHz.

# 1.3 PROGRAMMING

The PROSTAR 56ex/120mx comes with default data. This provides for operation within seconds after applying power. All trunks and stations are assigned according to the default numbering plan. This numbering plan is flexible and can be changed. The technician customizes this default data to meet the end user's requirements.

The system can be programmed from any 824 display keyset without interrupting normal system operation. There are three levels of programming: TECHNICIAN, CUSTOMER and STATION. The technician level has access to all programs and can allow the customer access to system programs as needed. Technician and Customer access are controlled by different security passcodes.

# PART 2.  HARDWARE

## 2.1  KEY SERVICE UNIT

The 56ex Key Service Unit is a single metal cabinet containing the following:

- A power supply with a ring generator for single line telephones and 48 VDC battery backup connections with recharging circuit
- MISCELLANEOUS Interface Card that provides circuitry for:
  1. 2 Music Source inputs for Music on Hold and background music
  2. 2 Door Phones with door lock release contacts
  3. 4 External Page Outputs with Four Zone Page Relays
  4. 2 sets of Common Bell control contacts
- 56 ports configured as seven universal card slots with eight ports each
- Wall mount brackets

## 2.2  EXPANSION CABINET

The 64 port expansion cabinet is a single metal cabinet that mounts on top of the 56ex cabinet and contains the following:

- Its own power supply identical to the one in the 56ex KSU
- 64 ports configured as eight universal card slots with eight ports each
- A PCB assembly for protective buffering of the expansion bus and two flat ribbon cables to connect to lower and upper cabinets
- A power extension cable to connect AC and battery output to the upper cabinet

## 2.3  CPU/MEMORY CARD

- Contains processing, switching and memory for all 120 ports
- System operating program available in two software packages
  1. Feature Package A - basic features
  2. Feature Package B - basic plus enhanced features, scheduled for future release
- RS-232-C connector for SMDR and TRAFFIC REPORT PRINTOUT
- Rechargeable 3.6V NICAD battery for memory protection

## 2.4  INTERFACE CARDS

- **TRK1** Card for eight loop start lines only
- **TRK2** Card for eight universal trunk circuits; plug in a maximum of four daughterboards with two circuits each

Available daughterboard types:
   2 E & M Tie Lines (2 Wire Type)
   2 DID Trunks
   2 Loop Lines or Ground Start Trunks (Selectable)

- **MSLC1** Card for 824 keyset and add-on module, eight circuits
- **MSLC2** (Combination Card) for eight keysets (816 model only), last four circuits selectable for keyset or SLT station, also used for voice mail/auto attendant ports
- **SLC** Card for eight single line stations (the first four have power failure transfer)

# 2.5 STATION EQUIPMENT

**824 Model Keyset:** (see Figures 2-1 and 2-2)

- Built-in Speakerphone
- 38 Programmable Soft Keys (24 with dual colored LEDs)
- 9 Fixed Function Keys
- Optional 32 Character Display (2x16) with intensity control
- UP/DOWN buttons for digital control of speaker, handset and ringer volumes
- Four selectable ring tones per keyset
- Desk or wall mounted
- Available in Almond or Matte Black
- Loud ringing tone provided on WH & BL wires of modular connector (requires 6 conductor cord)

**816 Model Keyset:** (see Figures 2-3 and 2-4)

- Built-in Speakerphone
- 28 Programmable Soft Keys
- 8 Fixed Function Keys
- Optional 16 Character Display
- Slide volume controls for speaker, handset and ringer
- Desk or wall mounted
- Available in Almond or Matte Black



FIGURE 2-1



FIGURE 2-2



FIGURE 2-3



FIGURE 2-4

# 2.5 STATION EQUIPMENT (Continued)

**36 Button Add-on Module:** (see Figure 2-5)

- 32 Programmable Soft Keys
- 4 Fixed Function Keys
- Connects to any port on MSLC1 Card
- Available in Almond or Matte Black
- Can be connected to 816 or 824 keysets and standard telephone sets as an add-on module and provides off-hook voice announce feature
- Can operate as a stand-alone handsfree telephone unit

**FIGURE 2-5**

# PART 3.  SPECIFICATIONS

The following tables provide technical information about the PROSTAR 56ex/120mx hybrid/key telephone system.

| 3.1 | ELECTRICAL SPECIFICATIONS | |
|---|---|---|
| AC INPUT | AUTOMATICALLY | 110 (88 – 132) VAC 48 – 63 Hz |
| | SWITCHED | 220 (176 – 264) VAC 48 – 63 Hz |
| BATTERY BACK UP INPUT | 48 VDC (6 AH to 40AH) | |
| POWER CONSUMPTION (MAX) | 321 WATTS MAXIMUM PER CABINET | |
| BTU RATING (MAX) | 18.26 BTU / MINUTE | |
| RING GENERATOR OUTPUT | 80 VRMS AT 20 Hz 66 mA (5.3W) | |
| BATTERY CHARGING CIRCUIT | CURRENT CONTROLLED CHARGER:<br><br>NOMINAL FLOAT VOLTAGE:    – 48 VDC<br><br>CHARGE CURRENT:   MIN. 0.0A   MAX 0.5A<br><br>DISCHARGE CUT-OFF VOLTAGE:   – 42VDC, ± 1VDC | |

| 3.2 | DIMENSIONS AND WEIGHTS | | | | |
|---|---|---|---|---|---|
| | | HEIGHT | WIDTH | DEPTH | WEIGHT |
| 56ex SYSTEM-w/WALL MOUNT SINGLE CABINET | | 13.2" | 21.75" | 16.25" | 64 lbs. |
| 120mx SYSTEM-NO WALL MOUNT TWO CABINETS | | 27.5" | 19.0" | 16.25" | 122 lbs. |
| 824 KEYSET (ALL MODELS) | | 3.5" | 8.75" | 9.0" | 2 lbs. 8 oz. |
| 816 KEYSET (ALL MODELS) | | 3.5" | 7.75" | 9.0" | 2 lbs. 2 oz. |
| ADD ON MODULE | | 3.5" | 5.0" | 9.0" | 1 lb. 3 oz. |
| DOOR PHONE | | 5.0" | 3.8" | 1.25" | 6.8 oz. |

| 3.3 | ENVIRONMENTAL LIMITS |
|-----|----------------------|
| OPERATING TEMPERATURE | 32° – 104° F / 0° -40°C |
| STORAGE TEMPERATURE | -13° – 158° F / -10.5° - 70° C |

| 3.4 | CABLE REQUIREMENTS | | | | |
|-----|--------------------|---|---|---|---|
| **EQUIPMENT** | **CABLE** | **AWG** | **MAX FEET** | **MAX METERS** |
| 816 & 824 KEYSETS | 2 PR. TWISTED | 24 | 1000 | 300 |
| ADD ON MODULES | 2 PR. TWISTED | 24 | 1000 | 300 |
| SINGLE LINE STATION | 1 PR. TWISTED | 24 | 3000 | 1 KM |
| DOOR PHONE | 2 PR. TWISTED | 24 | 330 | 100 |
| SMDR PORT | 4 WIRE STRANDED | 24 | 300 | 90 |

| 3.5 | SYSTEM TONES | |
|-----|--------------|---|
| **TONE** | **FREQUENCIES** | **CADENCE** |
| DIAL TONE | 350 + 440 Hz | CONTINUOUS |
| RINGBACK TONE | 350 + 440 Hz | 1000 ms ON / 2000 ms OFF |
| BUSY TONE | 350 + 440 Hz | 500 ms ON / 500 ms OFF |
| DND / NO MORE CALLS | 350 + 440 Hz | BUSY TONE + ERROR TONE |
| ERROR TONE | 350 + 440 Hz | 50 ms ON / 50 ms OFF |
| CONFIRMATION TONE | 350 + 440 Hz | 50 ms ON/50 ms OFF for 1 sec. |
| TRANSFER / CONF | 350 + 440 Hz | 150 ms ON / 150 ms OFF |

## SYSTEM TONES (CONTINUED)

DIAL TONE

RINGBACK TONE - 1000 ms ON / 2000 ms OFF

BUSY TONE - 500 ms ON / 500 ms OFF

DND / NO MORE CALLS TONE - 50 ms PULSES - 500 ms ON / 500 ms OFF

ERROR TONE - 50 ms ON / 50 ms OFF

CONFIRMATION TONE - 50 ms ON / 50 ms OFF for 1 SECOND

TRANSFER / CONF. TONE - 150 ms ON / 150 ms OFF
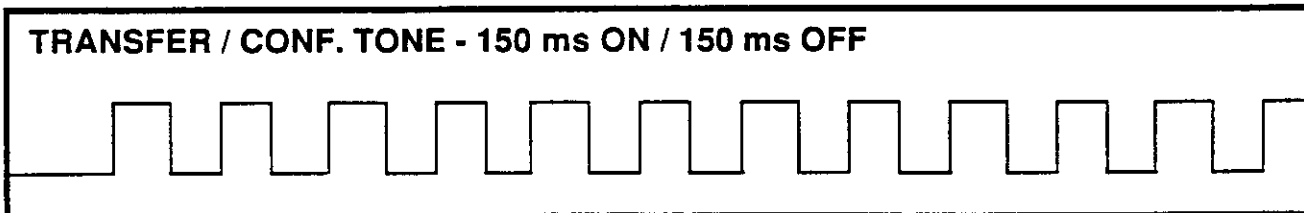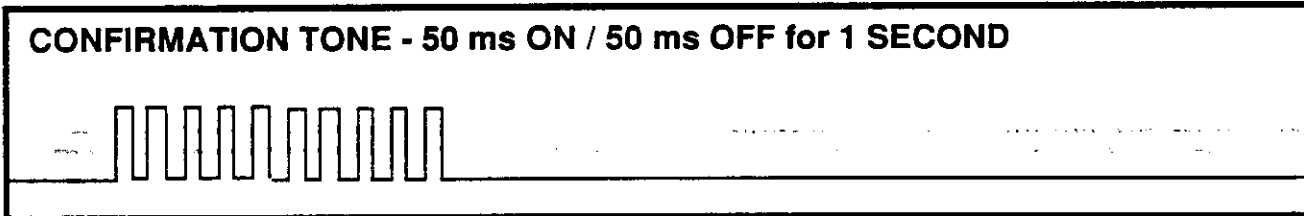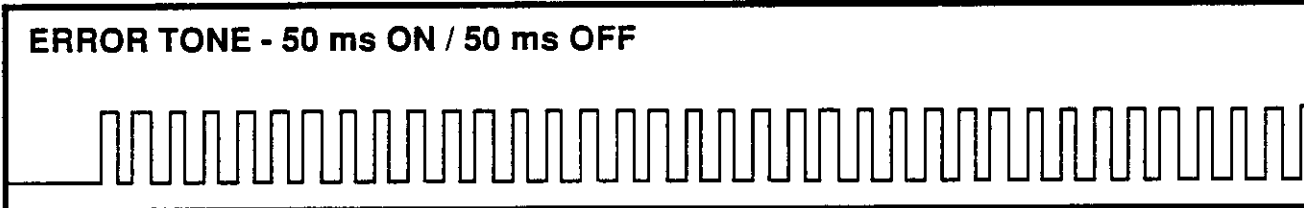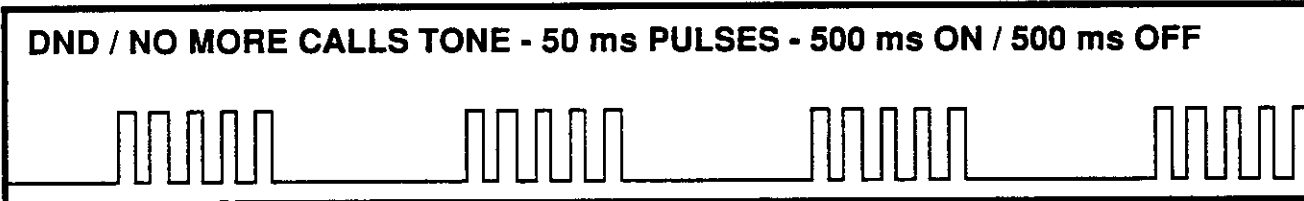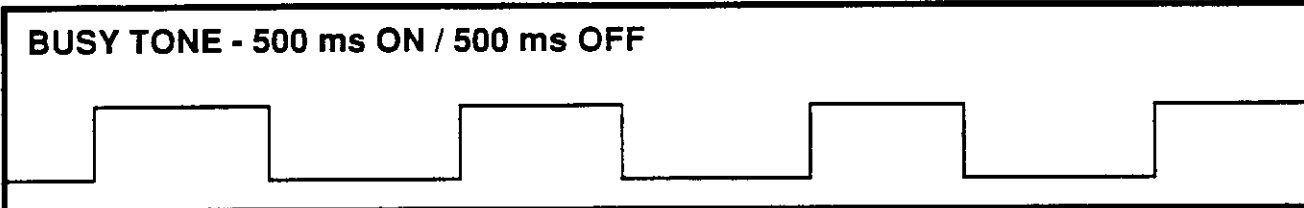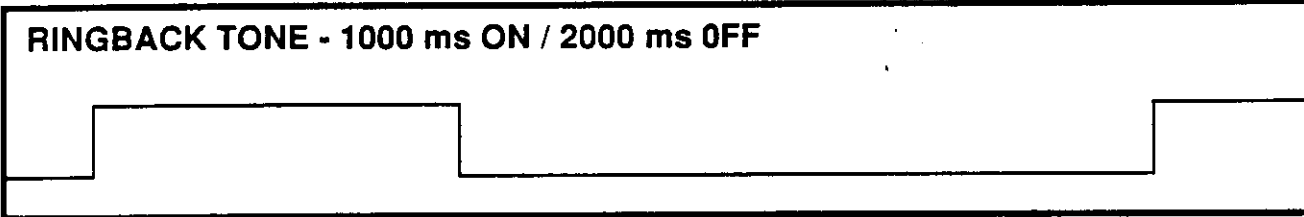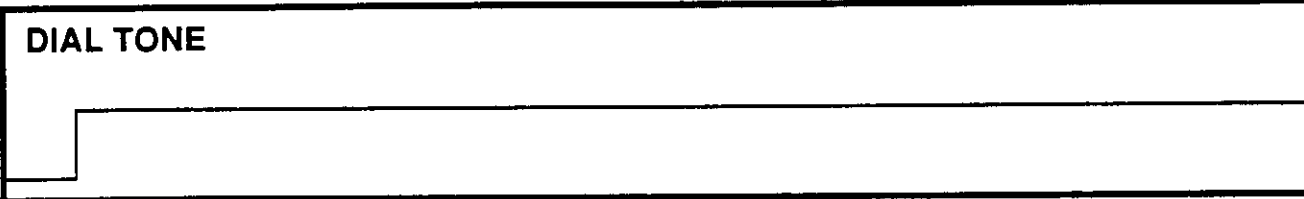
| 3.6 | KEYSET LED INDICATIONS | | |
|---|---|---|---|
| **CONDITION** | **LED COLOR** | **LED ON** | **LED OFF** |
| LINE IDLE | OFF | – | OFF |
| LINE IN USE | RED/GREEN | STEADY | – |
| RECALL | AMBER | 500 ms | 500 ms |
| CALL ON HOLD | RED/GREEN | 500 ms | 500 ms |
| RINGING C.O. CALL | RED/GREEN | 100 ms | 100 ms |
| RINGING INTERNAL CALL | GREEN | 100 ms | 100 ms |

| 3.7 | RESERVE POWER DURATION ESTIMATES | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TOTAL # OF TRK & STN CARDS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| ESTIMATED HOLD UP TIME IN HOURS | 26 | 17 | 13 | 10 | 9 | 7.5 | 6.5 | 5.5 | 4.7 | 4.5 | 4 | 3.7 | 3.5 | 3.2 | 3 |
| APPROXIMATE CURRENT DRAIN | 0.9 | 1.4 | 1.9 | 2.4 | 2.8 | 3.3 | 3.8 | 4.7 | 5.1 | 5.6 | 6.1 | 6.5 | 7.0 | 7.5 | 8.0 |

NOTE: USE FOUR 12V OR EIGHT 6V. FULLY CHARGED BATTERIES CONNECTED IN SERIES

THE ESTIMATED TIMES ARE BASED ON THE FOLLOWING CONDITIONS:

1. FULLY CHARGED 40AH BATTERIES ARE USED.

2. BATTERIES ARE INSTALLED WITHIN 3 FT. OF THE KSU USING FACTORY PROVIDED BATTERY CABLE ASSEMBLY.

3. ALL STATIONS ARE IN USE.

| 3.8 | TELEPHONE COMPANY INTERFACES | |
|---|---|---|
| **CIRCUIT TYPE** | **FIC** | **NETWORK JACK** |
| C.O. LINE – LOOP START | O2LS2 | RJ21X<br>RJ11C<br>RJ14C |
| C.O. LINE – GROUND START<br>SEE NOTE 1 | O2GS2 | RJ21X<br>RJ11C<br>RJ14C |
| C.O. LINE – DID<br>SEE NOTE 2 | O2RV2-T | RJ21X<br>RJ11C<br>RJ14C |
| E & M TIE LINE | TL11M | RJ2EX |
| OFF PREMISES EXTENSION | OL13C | RJ21X<br>RJ11C<br>RJ13C |

NOTE 1:   WHEN THE SYSTEM IS CONFIGURED USING GROUND START TRUNKS ONLY THE FCC NUMBER WITH THE MF-E SUFFIX IS APPLICABLE.

NOTE 2.   ALLOWING THIS EQUIPMENT TO BE OPERATED IN SUCH A MANNER AS TO NOT PROVIDE FOR PROPER ANSWER SUPERVISION IS A VIOLATION OF PART 68 OF THE FCC'S RULES.

# PART 4   FEATURES
## PART 4.1 SYSTEM FEATURES

ACCOUNT CODE ENTRY
ALL CALL VOICE PAGE
ATTENTION TONE
AUTOMATIC HOLD
BACKGROUND MUSIC
BATTERY BACKUP - SYSTEM
BATTERY BACKUP - MEMORY
CALL ACTIVITY DISPLAY
CALL DURATION ALERT
ALL FORWARDING
    ALL CALLS
    NO ANSWER
    ON BUSY
    EXTERNAL
    TO VOICE MAIL
CALL HOLD
CALL PICKUP
    DIRECTED
    GROUPS (30)
CALL WAITING
CENTREX/PBX USE
CHAIN DIALING
COMMON BELL CONTROL (2)
CONFERENCE
    ADD ON 5 PARTY
    TRUNK-TO-TRUNK
DATA SECURITY
DIRECT IN LINES
DIRECT INWARD DIALING (DID)
DIRECT INWARD SYSTEM ACCESS (DISA)
DISTINCTIVE RINGING
DOOR LOCK RELEASE (PROGRAMMABLE)
DOOR PHONES
E&M TIE LINES
EXECUTIVE BARGE-IN (OVERRIDE)
    WITH WARNING TONE
    WITHOUT WARNING TONE
EXTERNAL MUSIC INTERFACES (2)
EXTERNAL PAGE INTERFACES (4)
FLASH KEY OPERATION
FLEXIBLE NUMBERING
FLEXIBLE RINGING
    DAY RING ASSIGNMENTS
    NIGHT RING ASSIGNMENTS
    COMMON BELLS
    RING OVER PAGE
HOT LINE
    IMMEDIATE
    WITH DELAY
IN GROUP/OUT OF GROUP
INCOMING CALL DISTRIBUTION
INCOMING/OUTGOING SERVICE
INDIVIDUAL LINE ACCESS
INDIVIDUAL LINE CONTROL
LIVE SYSTEM PROGRAMMING
    TECHNICIAN LEVEL

    CUSTOMER LEVEL
    ANY 824 DISPLAY KEYSET
MEET ME ANSWER
MESSAGE WAITING INDICATIONS
MUSIC ON HOLD - FLEXIBLE
OFF HOOK VOICE ANNOUNCE
OFF PREMISES EXTENSIONS (OPX)
OPERATOR GROUP
OVERFLOW
    OPERATOR
    STATION GROUP
POWER FAILURE TRANSFER
PRIVATE LINES
PAGING
    INTERNAL ZONES (4)
    EXTERNAL ZONES (4)
    ALL INTERNAL
    ALL EXTERNAL
    PAGE ALL
PROGRAMMABLE LINE PRIVACY
PROGRAMMABLE TIMERS
RECALLS
    HOLD
    TRANSFER
    CAMP-ON
    OPERATOR
RING OVER PAGE
SINGLE LINE CONNECTIONS
SPEED DIAL NUMBERS (1200 MAX)
    SYSTEM LIST (500 MAX)
    MAX 50 PER STATION
STATION HUNT GROUPS (30)
    SEQUENTIAL
    DISTRIBUTED
    COLLECTIVE
    UNCONDITIONAL
STATION MESSAGE DETAIL RECORDING
SYSTEM DIRECTORY
TOLL RESTRICTION
    BY LINE OR STATION
    BY DAY AND NIGHT
    SIX DIALING CLASSES
    1000 DENY ENTRIES
    1000 ALLOW ENTRIES
TOLL RESTRICTION OVERRIDE
TONE OR PULSE DIALING
TRAFFIC REPORT PRINTOUT
TRANSFER
    SCREENED
    UNSCREENED
    WITH CAMP-ON
TRUNK GROUPS (11)
UNIVERSAL NIGHT ANSER
VOICE MAIL INTEGRATION

# SYSTEM FEATURE DESCRIPTIONS

## ACCOUNT CODE ENTRY

Station users may enter an account code (maximum 7 digits) before hanging up from a call. This account code will appear in the last column of the SMDR printout for that call record. Keyset users may enter this code using an account key without interrupting a conversation. Single line users must temporarily interrupt the call by hookflashing and dialing the feature access code.

## ALL CALL VOICE PAGE

Users can page all keysets and all the external paging zones at the same time. Keysets may be restricted from receiving pages.

## ATTENTION TONE

To get your attention, a brief tone precedes all page announcements or intercom voice calls. The duration of this tone is programmable.

## AUTOMATIC HOLD

Station users can enable or disable automatic hold at their individual keysets. While engaged on an outside call, pressing another trunk key, route key or CALL button automatically puts the call on hold.

Pressing the TRANSFER, CONFERENCE, PAGE or DSS key will always automatically put calls on hold. This is not a user-selectable option.

## BACKGROUND MUSIC

Users may listen to a choice of music through their keyset speakers when optional sources are supplied. Each person may select "No Music," "Music A" or "Music B" and adjust the volume at each keyset.

## BATTERY BACKUP - SYSTEM

If a customer provided 48 VDC battery source is connected, the system remains fully operational when AC power is interrupted. After AC power is restored, the system recharges the batteries. Calls in progress are not interrupted when the system switches over.

## BATTERY BACKUP - MEMORY

In the event that power is lost to the system, all customer data contained in memory is backed up by a 3.6V NICAD battery for approximately 25 days. When power is restored, the system will recharge the NICAD battery.

## CALL ACTIVITY DISPLAY

At an 824 display keyset, the customer may view a bar graph which indicates the number of stations, number of lines and total number of ports currently in use. The customer can also view a display showing the all time high number of stations, trunks and ports ever used. All these values can be reset to 0 without affecting calls in progress.

# CALL DURATION ALERT

A system-wide programmable timer can be set to alert station users when they have been on an outside call longer than the set period of time. This alert can be disabled.

# CALL FORWARDING

Station users can forward internal and outside calls to other destinations immediately (FWD ALL), when busy (FWD BUSY) or if not answered in a programmable number of seconds (FWD NO ANSWER). These forward destinations can all be different. Once a destination is programmed, it can be turned on and off with a soft key. Forward all calls takes priority over busy and no answer conditions. Users can forward calls to an optional customer provided voice mail system. Keyset users can be given an external call forward button to forward their calls to an external phone number. Each outside line may be programmed to either follow or ignore station call forwarding. A system-wide option allows internal calls to either forward or not forward to voice mail.

# CALL HOLD

Both outside and internal calls can be put on hold at any station. Users may dial the access code or press the hold button.

# CALL PICKUP

With directed call pickup, you can answer calls ringing at any station by dialing a code plus that station's extension number.

The group pickup feature allows you to answer any call ringing within your assigned pickup group. There are 30 groups available and a station may be in more than one pickup group. Users either dial the access code or press the assigned feature button to use this feature.

# CALL WAITING

Busy stations are notified that a call is waiting (camped on) by receiving a tone. Keysets receive an off-hook ring signal through the speaker and single line stations receive a tone in the handset. The call waiting signal can be repeated at a programmable interval.

# CENTREX/PBX USE

Centrex and PBX lines can be used with this system. Feature codes and the hookflash command can be stored under one touch buttons. Toll restriction programming ignores PBX or Centrex access codes so toll calls can be controlled when using these services.

# CHAIN DIALING

Users may manually dial additional digits following a speed dial call or chain together as many speed dial numbers as required.

# COMMON BELL CONTROL (2)

The system hardware provides two dry contact pairs to control customer provided common audible devices. These contacts can be programmed for steady or interrupted closure.

# CONFERENCE

Any combination of up to five parties (stations or outside lines) can be joined together in a non-amplified add-on conference. A station user may set up a conference with two or more outside lines, and then exit the conference leaving the outside lines connected in an unsupervised (trunk to trunk) conference.

# DATA SECURITY

Single line extensions used with modems and fax machines can be programmed so that they will not receive any system generated tones that would disrupt data transmissions.

# DIRECT IN LINES

Outside lines may be programmed to bypass the operator(s) and ring directly at any station, group of stations, common bell or paging system.

# DIRECT INWARD DIALING (DID)

PROSTAR can use local telephone company provided DID service. When programmed, anyone dialing your personal number will ring directly to your office.

# DIRECT INWARD SYSTEM ACCESS (DISA)

Users can call in on specific DISA lines at any time, input a security code and receive system dial tone. At this point, internal or outside calls can be made. User must have a tone phone and know the DISA security code. Some loss of volume may be experienced when connecting two outside lines together. DISA lines can be used as bothway lines or incoming only. DISA lines are not affected by day or night operation.

# DISTINCTIVE RINGING

You will know that kind of call you are receiving by the type of ring you hear. Outside lines have a single ring repeated, while internal calls have a double ring repeated.

# DOOR LOCK RELEASE (PROGRAMMABLE)

After answering a call from the door phone, users can dial a code to activate a contact closure. This can be used to operate a customer provided electric door lock release mechanism. The contact closure timer is programmable from 1 to 250 seconds.

# DOOR PHONES

The system provides for connection of two door phones. Pressing the button on the doorphone will give a distinctive ring (repeated series of short ring burst) at the assigned stations. If not answered within 30 seconds, the system will release the doorphone and stop ringing. Stations may call the doorphone directly and monitor the surrounding areas.

# E & M TIE LINES

E & M tie lines can be installed to provide station to station dialing between your system and another system that accepts E & M tie lines. Parties from the other system can call in

on your tie line and make outgoing calls using your outside lines. Each tie line can be toll restricted to control outgoing calls. PROSTAR 56ex/120mx uses 2 wire type TL11M tie lines.

# EXECUTIVE BARGE-IN (OVERRIDE)

The feature allows specially programmed stations to override the automatic privacy of another station. Programming provides 3 options: No-Barge-in, Barge-in w/ Tone, or Barge-in w/o Tone. When programmed without a tone, 824 handset and microphones are muted. Stations may be programmed as "secure" so that they cannot be barged-in on.

# EXTERNAL MUSIC INTERFACES (2)

The system provides two interfaces for connecting customer provided external music sources. These sources are used for MOH and BGM.

# EXTERNAL PAGE INTERFACES (4)

Four separate voice pairs with individual contact closures are provided. This allows one common amplifier to be used for four zones or four amplifiers for paging systems. If the contact closures are not used to control speaker zones, they may be used to mute music during page announcements.

# FLASH KEY OPERATION

While on an outside line, pressing the flash key will flash the central office or

PBX. This is used for custom calling features on C.O. lines or in conjunction with centrex/PBX operation. System programming allows individual flash times for C.O. and PBX lines. When C.O. or PBX flash is not required, setting the timers for two seconds will release the existing call and return dial tone to make a new call (recall).

# FLEXIBLE NUMBERING

System programming allows stations to have two, three or four digit numbers. Default extension numbers begin with 201 and can continue to 399. If extension numbers beginning with any digit other than 2 or 3 are needed the entire system numbering scheme can be changed.

# FLEXIBLE RINGING

Outside lines can be programmed to ring at any station, station group, over the paging system, common bell 1 or common bell 2. Each line can be assigned to a day ring destination and a night ring destination.

# HOT LINE

Stations can be programmed to call a predefined station or station group as soon as the handset is lifted. A programmable hot line delay timer (0 to 250 seconds) can be programmed.

# IN GROUP/ OUT OF GROUP

Individuals assigned to a station hunt group may temporarily remove their telephones from the group by pressing the In/Out of Group button. Stations out

of a group will not receive calls to that group, but will continue to receive calls to their individual extension numbers. When desired, the user may put him/herself back into the group by pressing the button again. Users who do not have this button may dial the access code.

# INCOMING CALL DISTRIBUTION

Incoming calls can be assigned to ring a distributed station hunt group. This will allow all members of the group to share the call load.

# INCOMING/OUTGOING SERVICE

Outside lines are available for incoming or outgoing service. Programming allows any outside line to be used for incoming calls only, outgoing calls only or both way service.

# INDIVIDUAL LINE ACCESS

Each line in the system is available by dialing the individual line access code. Additionally, any line in the system may appear on an individual button on any keyset.

# INDIVIDUAL LINE CONTROL

Each station in the system can be individually programmed to allow or deny dialing out as well as allow or deny answering for each outside line.

# LIVE SYSTEM PROGRAMMING

The system can be programmed from any 824 display keyset without interrupting normal system operation. There are three levels of programming: TECHNICIAN, CUSTOMER and STATION. The technician level has access to all programs and can allow the customer access to system programs as needed. Technician and Customer access are controlled by different security passcodes.

# MEET ME ANSWER

After making an all page, remain off-hook and to allow the paged party to meet you for a private conversation.

# MESSAGE WAITING INDICATIONS

When calling a station and receiving a busy signal or no answer condition, the caller can leave an indication that a message is waiting. The message button will light red at the messaged keyset. A single line phone will receive a few seconds of interrupted dial tone. Five message waiting indications can be left at any station.

# MUSIC ON HOLD - FLEXIBLE

Each outside line may be programmed to receive "Music A," "Music B" or "No Music" when it is put on hold. Music A and B are customer provided sources. When music source A is not connected, the system will provide the internal chime melody "Fur Elise."

# OFF-HOOK VOICE ANNOUNCE

A station equipped with an add-on module (AOM) may receive a voice announcement while on another call. The called station may reply handsfree without interrupting the call in progress. Only stations with an off-hook voice announce button (OHVA) can off-hook voice announce to stations with AOMs. This feature may be programmed without automatic answer. In this mode, the SPK/RLS key on the AOM must be pressed to reply.

# OFF PREMISES EXTENSIONS (OPX)

A single line (Tip and Ring) extension may be connected to telephone company provided OPX circuits to remote locations. Must use circuits 5, 6, 7 or 8 on the SLC card.

# OPERATOR GROUP

Any number of stations can be assigned to the operator group to answer incoming calls. Calls to this group can be set for distributed, sequential or collective ringing. Operators can use the In/Out of Group feature to meet flexible operator requirements.

# OVERFLOW

When calls ringing a station group go unanswered, they can overflow to another destination after a preprogrammed period of time. Each station group has its own overflow timer. The overflow destination can be a station, a station group, ring over page or a common bell.

# POWER FAILURE TRANSFER

In the event of power loss to the system, outside lines can be automatically connected to the first four stations on each SLC card. When power is restored to the system, the lines and stations return to normal operation. Calls in progress will be disconnected.

# PRIVATE LINES

For private line use, stations can be prevented from dialing and/or answering any line.

# PAGING

Four internal and four external paging zones are available. Stations can page any individual zone, all internal zones, all external zones or all zones simultaneously. Each station may be allowed or denied from making or receiving page announcements.

# PROGRAMMABLE LINE PRIVACY

Each outside line can be programmed to ignore the automatic line privacy. This allows up to four other parties to join your conversation by simply pressing the line button. This is similar to 1A2 key telephone operation.

# PROGRAMMABLE TIMERS

There are over 25 programmable system timers to allow each installation to be customized to best fit the end user's application.

# RECALLS

Calls put on hold, parked, transferred or camped-on to any station will recall to the originating station if not answered within a programmable period of time. A recall that goes unanswered can recall to the system operator group. Hold, park, transfer and camp-on recalls have their own individual programmable recall timer.

# RING OVER PAGE

Any outside line can be programmed to ring over a customer provided paging system. Outside lines, door phones and station groups may ring over page in the day or night mode.

# SINGLE LINE CONNECTIONS

Single line ports allow for connection of a variety of single line telephones plus fax machines, answering machines, loud bells, computer modems, cordless phones and credit card machines. When connecting customer provided equipment to these extensions, compatibility should be checked out before purchase to ensure correct operation.

# SPEED DIAL NUMBERS (1200)

A library of 1200 numbers may be allocated as needed. The system list can have up to 500 numbers and each station can have up to 50 numbers. They are assigned in blocks of ten. Each speed number may contain up to 32 digits.

# STATION HUNT GROUPS (30)

System programming allows for up to 30 station hunt groups. Each group may contain a maximum of 120 stations, but a station may only be in one group. The default directory numbers to call these groups are 501 to 529. Group 500 is reserved for the operator group, and is called by dialing "0." One of four ring patterns are available for each group: SEQUENTIAL, DISTRIBUTED, COLLECTIVE and UNCONDITIONAL.

# STATION MESSAGE DETAIL RECORDING (SMDR)

The system includes an RS 232 output that provides records of calls made, received and transferred. Connecting a printer or call accounting system will allow for collection of these records. Each call record provides details of station number, outside line number, start date, start time, duration of call, digits dialed (maximum 18) and an account code if one is entered. The system may print a header followed by 50 call records per page or send continuous records with no header to a call accounting machine. See sample printout at the end of this section.

# SYSTEM DIRECTORY

Each station and outside line can have an eleven character directory name. This name will appear on keyset displays to provide additional information about lines and stations.

# TOLL RESTRICTION

There are 250 allow and 250 deny entries of 11 digits each. Each of these

entries can apply to dialing classes B, C, D and E. Expensive 976, 1-900, 411, operator assisted calls, as well as specific area and office codes can be allowed or denied on a per class basis. Class A stations have no dialing restrictions and class F stations cannot make outside calls.

Any outside line may be programmed to follow or ignore toll restrictions. Each station can have a day dialing class and a night dialing class.

## TOLL RESTRICTION OVERRIDE

Program options allow for system speed dial numbers to follow or bypass a station's toll restriction class. In addition, users may make calls from a toll restricted station by using the toll restriction override code.

## TONE OR PULSE DIALING

Outside lines can be programmed for either tone or pulse dialing to meet local telephone company requirements.

## TRAFFIC REPORT PRINTOUT

The traffic report prints system-wide totals for incoming calls, outgoing calls, intercom calls, page announcements and the number of times that a trunk was not available for outgoing calls.

This report also shows the number of outside calls made and answered, as well as the number of intercom calls made and answered for each station.

This report can be set for automatic printout at the end of each day or at the end of every week. The report can also be printed upon demand. A customer provided printer must be connected to print this report. See sample report at the end of this section.

## TRANSFER

System operation permits station users to transfer calls to other stations in the system. Transfers can be screened, unscreened or camped on to a busy station.

## TRUNK GROUPS (11)

Outside lines can be grouped for easy access by dialing a code or pressing a button. There are 11 trunk groups available. Access codes are 9 and 80 through 89.

## UNIVERSAL NIGHT ANSWER

Stations may dial the Universal Night Answer (UNA) code to answer any outside lines programmed to ring the UNA device. This audible device can be ring over page, common bell 1 or common bell 2.

## VOICE MAIL INTEGRATION

This feature uses DTMF tones (in band signalling) to communicate with any compatible voice mail system. Stations can call forward to a voice mail system. When answered, PROSTAR will send DTMF tones routing the caller directly to the called station users mailbox.

Keyset users can press one button to retrieve messages from the voice mail system.

# PART 4.2 STATION FEATURES

ADD-ON MODULE
APPOINTMENT REMINDER
AUTOMATIC HOLD
AUTOMATIC PRIVACY
BACKGROUND MUSIC CHOICES (2)
BUSY STATION CALLBACK
BUSY STATION INDICATIONS (BLF)
CALL FORWARDING
CALL PICKUP
DIRECT STATION SELECTION
DO NOT DISTURB (PROGRAMMABLE)
DOOR LOCK RELEASE
DUAL COLORED LIGHTS
EXCLUSIVE HOLD
EXECUTIVE-SECRETARY HOTLINES
GROUP LISTENING
HEADSET OPERATION
HEARING AID COMPATIBLE
LINE QUEUING WITH CALL BACK
LOUD RINGING INTERFACE'
LINE SKIPPING
MESSAGE WAITING LIGHT
MUTE MICROPHONE/HANDSET
ON HOOK DIALING
ONE TOUCH DIALING KEYS'

OFF HOOK RINGING
OFF HOOK VOICE ANNOUNCE
PROGRAMMABLE SOFT KEYS
PROTECTION FROM BARGE-IN
PULL OUT DIRECTORY TRAY
PULSE TO TONE SWITCHOVER
REDIALING
    LAST NUMBER
    SAVE NUMBER
    AUTO RETRY
RING MODES
    RING - 4 TONE CHOICES
    VOICE ANNOUNCE
    AUTO ANSWER
RINGING PREFERENCE
SPEAKER PHONE
STATION LOCK
STRAIN RELIEF CHANNELS
VACANT STATION MESSAGES
VOLUME C ONTROL
    RINGER
    SPEAKER
    HANDSET
WALL MOUNTABLE KEYSETS

# STATION FEATURE DESCRIPTIONS

## ADD-ON MODULE

PROSTAR's unique add-on module (AOM) adds to the capability of any station or can be used by itself whenever a handset and dial pad are not desired. The 32 programmable buttons can be used for feature keys, DSS/BLF keys, or one touch speed dial buttons.

## APPOINTMENT REMINDER

Keysets with an alarm key can be used like an alarm clock. Program in a specific time and the keyset will give a distinctive ring to remind you of meetings or appointments. Alarms can be set for "today only" or everyday at the same time. Up to three alarms may be set at each keyset.

## AUTOMATIC HOLD

Station users can enable or disable automatic hold at their individual keysets. While engaged on an outside call, pressing another trunk key, route key or CALL button automatically puts the call on hold. Station Program #18. Pressing the TRANSFER, CONFERENCE, PAGE or DSS key will always put calls on hold. This type of automatic hold is not a user selectable option.

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# DOORLOCK RELEASE

Stations programmed to receive calls from a door phone can dial a code to activate a contact closure for control of a customer provided electronic door lock.

# DUAL COLORED LIGHTS

Buttons 1 through 24 on 824 keysets and buttons 17 through 24 on 816 keysets have dual colored light emitting diodes (LEDs). Outside calls in use at a keyset light green at that station and red at all others. Recalls to these keys will have an amber light (red & green together).

# EXCLUSIVE HOLD

Pressing the hold button twice will hold a call exclusively at that station. No other station can pick up the call.

# EXECUTIVE/SECRETARY HOTLINES

An immediate handsfree communication link is established when this button is pressed. When the EXECUTIVE station is in DND mode, all calls are forwarded to the SECRETARY station and only the SECRETARY can call the EXECUTIVE. This feature is available between any two stations but is intended for keysets only.

# GROUP LISTENING

Keysets assigned this feature button may turn on their speaker while using the handset. This allows a group of people to listen to the distant party over the speaker without turning on the microphone.

# HEADSET OPERATION

Every keyset can be programmed to allow for the use of a headset. In the headset mode, the hookswitch is disabled and the speaker SPK/RLS button acts as a release key.

# HEARING AID COMPATIBLE

All PROSTAR keysets are hearing aid compatible as required by Part 68 of FCC requirements.

# LINE QUEUING WITH CALL BACK

When the outside line you want to use is busy, press the call back key or dial the access code to place your station in a queue. You will be called back when the line is available (maximum 80 call backs allowed at one time including busy line and busy station).

# LOUD RINGING INTERFACE

Each 824 keyset has a loud ringing interface built in. When it is enabled in programming, the keyset ring tone is sent out over the white and blue wires of a six conductor line cord. This tone can be connected to a customer provided amplifying device.

# LINE SKIPPING

When talking on an outside line with the automatic hold feature turned off, you may directly press another line key without causing the previous call to go on hold.

## MESSAGE WAITING LIGHT/INDICATION

When a message indication is left at a keyset, the message button will light red. Single line telephones will receive a few seconds of interrupted dial tone to notify them that a message is waiting. Message waiting indications can be left for any station or group of stations.

## MUTE MICROPHONE OR HANDSET

On 824 keysets, pressing the MUTE key will cut off the microphone or the handset transmitter depending on which is in use. 816 keyset users can only mute the microphone.

## ON-HOOK DIALING

Any keyset can originate calls without lifting the handset. When the called party answers, speak into the microphone or lift the handset for more privacy.

## ONE TOUCH DIALING KEYS

Frequently used speed numbers can be assigned to one touch dialing keys for fast accurate dialing.

## OFF-HOOK RINGING

When a keyset is in use, the system will provide an off-hook ring signal to indicate that another call is waiting. The ring signal is a single repeated ring. The interval is controlled by a system-wide timer. Single line stations will receive a tone burst through the handset instead of a ring.

## OFF-HOOK VOICE ANNOUNCE

A station equipped with an add-on module (AOM) may receive a voice announcement while on another call. The called station may replay handsfree without interrupting the call in progress. Only keysets with an off-hook voice announce button (OHVA) can off-hook voice announce to stations with AOMs. This feature may be programmed without automatic answer. In this mode, the SPK/RLS key on the AOM must be pressed to reply.

## PROGRAMMABLE SOFT KEYS

The 824 keyset has 38 programmable soft keys and the 816 keyset has 28. Each soft key can be programmed for over 25 different uses to personalize each phone. Examples of soft keys include: individual outside line, individual station, group of lines, group of stations and one touch speed dial buttons. Using these soft keys eliminate dialing access codes.

The following softkeys have extenders that identify what station, group or number that feature key applies to: SPEED DIAL KEY, PAGE, DIRECTED PICKUP, GROUP PICKUP, DOOR PHONE, AND VACANT MESSAGE. Station Program #14

## PROTECTION FROM BARGE-IN

Each station can be programmed as secure or not secure. Secure stations cannot be barged-in on. A non-secure station talking to a secure station cannot be barged-in on.

# PULL OUT DIRECTORY TRAY

A pull out directory tray is conveniently located beneath all keysets. Use this to record station directory names and speed dial numbers.

# PULSE TO TONE SWITCHOVER

Use this feature when the local telephone company only provides rotary dial (dial pulse) service and you need to send tones. After the call is connected, press "#" and all other digits dialed will be sent as tones. When the station hangs up, outside line dialing reverts to pulse.

# REDIALING

There are three types of external redial available to all station users.

• LAST NUMBER REDIAL. The most recent number dialed is saved and may be redialed by pressing the redial key or dialing an access code.
• AUTO RETRY. When dialing a number and receiving a busy signal, use the auto retry feature to reserve the outside line and automatically redial the number for a programmable number of attempts.
• SAVE NUMBER. Any dialed number may be saved for redialing at a later time.

# RING MODES

Each keyset user can select one of three distinct ways to receive intercom calls. The phone can automatically answer on the speakerphone, voice announce through the speaker or receive ringing. Station Program #12

When the ring mode is selected, 824 keyset users can choose one of four distinct ring tones. Station Program #16

# RINGING PREFERENCE

Lifting the handset or pressing the speaker button will automatically answer a call ringing at your keyset. By using this method, you will be assured of answering the oldest call first. When ringing preference is turned off, the user must press the flashing button to answer. You may answer ringing lines in any order by pressing the flashing button. Station Program #19

# SPEAKERPHONE

Every keyset has a built-in speakerphone. This enables calls to be made and received without using the handset.

# STATION LOCK

By using a programmable personal station passcode, any keyset can be locked and unlocked. A locked keyset cannot be used to make or receive calls. Station Program #10 & 11

# STRAIN RELIEF CHANNELS

Line cords are routed through channels beneath the keysets to minimize damage to the connector if the cord is stretched.

# VACANT STATION MESSAGES

Any station may select one of 19

messages to be displayed at a calling party's keyset.  The following nine messages are factory programmed and the remaining ten can be created by the customer (16 characters maximum).

01  IN A MEETING
02  OUT ON A CALL
03  OUT TO LUNCH
04  LEAVE A MESSAGE
05  PAGE ME
06  OUT OF TOWN
07  IN TOMORROW
08  RETURN AFTERNOON
09  ON VACATION

NOTE:  The calling party must have a display keyset to view these messages.

# VOLUME CONTROLS

Each keyset may separately adjust the volume of the ringer, speaker and handset receiver.  824 keysets use UP and DOWN keys to adjust volume levels.  816 keysets have three separate slide switches.

# WALL MOUNTABLE KEYSETS

Every keyset and add-on module comes equipped with a reversible base wedge that can be used for wall mounting.

# PART 4.3  DISPLAY FEATURES

| | |
|---|---|
| ACCOUNT CODE DISPLAY | DIALED NUMBER |
| CALL DURATION TIMER | ENHANCED STATION PROGRAMMING |
| CALL FOR GROUP IDENTIFICATION | IDENTIFICATION OF RECALLS |
| CALL PROCESSING INFORMATION | IDENTIFICATION OF TRANSFERS |
| CALLING PARTY NAME | MESSAGE WAITING CALLER NUMBER |
| CALLING PARTY NUMBER | OUTSIDE LINE IDENTIFICATION |
| CONFERENCE INFORMATION | OVERRIDE IDENTIFICATION |
| CONTRAST ADJUSTMENT | STOP WATCH TIMER |
| DATE & TIME DISPLAY - 4 CHOICES | VACANT STATION MESSAGE DISPLAY |

# DISPLAY FEATURE DESCRIPTIONS

## ACCOUNT CODE DISPLAY

Account codes are conveniently displayed for easy confirmation. If entered incorrectly, press account key again and reenter the account code.

## CALL DURATION TIMER

The system can automatically time outgoing calls and show the duration in hours, minutes and seconds. Stations may manually time calls by pressing the timer button.

## CALL FOR GROUP IDENTIFICATION

When a call is made to a station group, the display will show CALL FOR GROUP and your group number. These calls can be answered with a different greeting than calls to your extension number.

## CALL PROCESSING INFORMATION

During everyday call handling, your keyset display will provide information that is helpful and in some cases invaluable. Displays like [CALL FROM 201], [TRANSFER TO 202], [701 RINGING], [CALL IS WAITING], [TRSF FROM 225], [208 BUSY], [CAMP ON 236], [RECALL FROM 204], [CALL FOR 501], [MESSAGE 201], [FORWARD TO 260] and [705 ON HOLD] keep you informed of what is happening and where you are. In some conditions, you are prompted to take action and in other cases you receive directory information.

## CALLING PARTY NAME

For intercom calls, 824 display keysets show the calling party's name before answering. 816 keysets show the name immediately after answering. The names must be stored in the system directory list and can be up to 11 characters long.

## CALLING PARTY NUMBER

When receiving an intercom call, all display stations show the calling party's extension number before the call is answered.

## CONFERENCE INFORMATION

When setting up a conference, each extension and outside line number is displayed at the controlling station when it is added. When a station is added to a conference, its display will show "CONFERENCE XXX" alerting the user that other parties are on the line.

## CONTRAST ADJUSTMENT

824 keysets have an LCD control to adjust contrast for optimum viewing.

## DATE & TIME DISPLAY - 4 CHOICES

In the idle condition, the current date and time are conveniently displayed. 824 keysets can have 12 or 24 hour clock in either EASTERN or WESTERN display format. 816 keysets can only choose EASTERN 12 or 24 hour format. Station Program #15

## DIALED NUMBER

When making outside calls, the digits dialed are displayed as you dial them. If the display indicates an incorrect number was dialed, you can quickly hang up before billing begins.

## ENHANCED STATION PROGRAMMING

Personal programming options are easier to select and confirm with the help of the display.

## IDENTIFICATION OF RECALLS

Hold recalls and transfer recalls are identified differently. Hold recalls show [HOLD RECALL 7XX] and transfer recalls show [RECALL FROM 2XX].

## IDENTIFICATION OF TRANSFERS

The display will identify who transferred a call to you, [TRSF FROM XXX], and also shows when a call is camped on to your station [CALL IS WAITING].

## MESSAGE WAITING CALLER NUMBER

When the message indication is on, pressing the MSG button will display the station number of the person who has messages for you. 824 keysets users can scroll up and down to view message indications. 816 keysets users can only view one message indication at a time.

## OUTSIDE LINE IDENTIFICATION

Each line can be identified with a name or ID. Incoming calls ringing at your station will display this ID before the call is answered. This is helpful when lines need to be answered with different greetings.

## OVERRIDE IDENTIFICATION

If another station barges-in on your conversation, the display will alert you

with an [XXX BARGED -IN] display.

# STOP WATCH TIMER

Display keyset users with a TIMER key will find this feature very convenient to time meetings, calls and other functions. Just press to start timer and press again to stop the timer.

# VACANT STATION MESSAGE DISPLAY

Vacant station messages set by other stations can be viewed at your station when you call them.

# 4.4 SMDR SAMPLE PRINTOUT (Simulated)

| EXT | TRK | MM:DD | STT.TIME | DURATION | NUMBER DIALED | ACC.CODE |
|-----|-----|-------|----------|----------|---------------|----------|
| 209 | 721 | 06:01 | 08:31:37 | 00:00:24 | 17189628408 | |
| 223 | 704 | 06:01 | 08:36:43 | 00:00:11 | 5615600 | |
| *201 | 701 | 06:01 | 08:40:19 | 00:00:48 | INCOMING 9 | DISA |
| *701 | 703 | 06:01 | 08:37:14 | 00:06:18 | 5614811 | |
| 201 | 704 | 06:01 | 08:43:53 | 00:00:15 | INCOMING | |
| 201 | 701 | 06:01 | 08:45:38 | 00:01:48 | xINCOMING | |
| 223 | 702 | 06:01 | 08:43:54 | 00:03:18 | 4852819 | |
| 202 | 701 | 06:01 | 08:47:26 | 00:00:59 | HOLD | |
| 211 | 727 | 06:01 | 08:48:13 | 00:00:09 | 7766272 | |
| 201 | 702 | 06:01 | 08:48:08 | 00:02:02 | x990555P7186922232 | |
| 201 | 702 | 06:01 | 08:50:09 | 00:00:21 | HOLD | |
| 221 | 710 | 06:01 | 08:45:43 | 00:09:34 | TRANSFER | |
| 212 | 719 | 06:01 | 08:56:38 | 00:00:33 | 12019090170 | 11560 |
| 201 | 701 | 06:01 | 08:59:01 | 00:00:10 | xINCOMING | |
| 226 | 701 | 06:01 | 08:59:11 | 00:02:55 | TRANSFER | |
| 226 | 725 | 06:01 | 09:02:18 | 00:00:13 | 3416591 | |
| 211 | 711 | 06:01 | 09:02:25 | 00:00:32 | INCOMING | 2250069 |
| 201 | 709 | 06:01 | 09:03:33 | 00:00:17 | 0 | |
| 202 | 717 | 06:01 | 09:01:44 | 00:02:43 | 12019090170 | |
| 201 | 714 | 06:01 | 09:09:57 | 00:00:20 | 411 | |
| 230 | 709 | 06)01 | 09:03:50 | 00:07:07 | TRANSFER | 335000 |
| 201 | 712 | 06:01 | 09:12:07 | 00:00:24 | INCOMING | |
| 201 | 712 | 06:01 | 09:36:11 | 00:00:18 | INCOMING | |
| 201 | 702 | 06:01 | 09:38:03 | 00:00:19 | INCOMING | |
| 207 | 712 | 06:01 | 09:36:29 | 00:01:57 | TRANSFER | |
| 224 | 701 | 06:01 | 09:35:44 | 00:02:54 | TRANSFER | |
| 201 | 701 | 06:01 | 09:38:38 | 00:00:04 | HOLD | |
| 201 | 710 | 06:01 | 09:38:51 | 00:00:26 | INCOMING | |
| 201 | 701 | 06:01 | 09:39:18 | 00:00:12 | INCOMING | |
| 224 | 702 | 06:01 | 09:38:22 | 00:01:38 | TRANSFER | |
| 201 | 702 | 06:01 | 09:40:59 | 00:00:07 | INCOMING | |
| 224 | 702 | 06:01 | 09:41:07 | 00:00:19 | TRANSFER | |
| 213 | 701 | 06:01 | 09:39:31 | 00:02:18 | TRANSFER | |
| 201 | 703 | 06:01 | 09:39:29 | 00:03:27 | INCOMING | |
| 231 | 728 | 06:01 | 09:42:53 | 00:00:09 | 18008367328 | |
| 214 | 703 | 06:01 | 09:42:56 | 00:01:26 | HOLD | |
| 231 | 720 | 06:01 | 09:44:16 | 00:00:37 | 7162637000 | |
| 201 | 701 | 06:01 | 09:48:09 | 00:00:09 | INCOMING | |
| 217 | 727 | 06:01 | 09:42:57 | 00:05:34 | 7715700 | |
| 201 | 702 | 06:01 | 09:48:18 | 00:00:46 | INCOMING | |

| EXT | TRK | MM:DD | STT.TIME | DURATION | NUMBER DIALED | ACC.CODE |
|-----|-----|-------|----------|----------|---------------|----------|

Account Code
1-7 Digits

Telephone # dialed 1-18 Digits
or method of
receiving call
x = Call is
continued

Call duration in
Hrs.:Mins.:Secs.
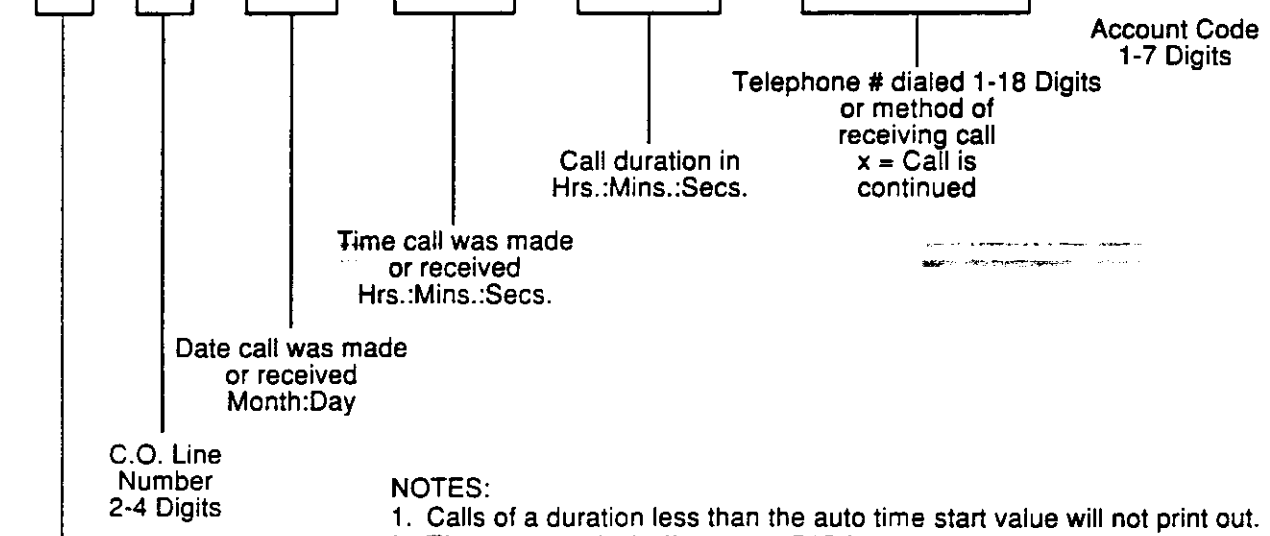
Time call was made
or received
Hrs.:Mins.:Secs.

Date call was made
or received
Month:Day

C.O. Line
Number
2-4 Digits

Ext. No.
2-4 Digits

NOTES:
1. Calls of a duration less than the auto time start value will not print out.
* These records indicates a DISA call in and the corresponding outgoing call.

# 4.5 SAMPLE TRAFFIC REPORT (Simulated)

```
*********************** SYSTEM STATISTICS ***********************
```

BEGINNING: 07/04/92  23:59                           ENDING: 07/05/92  16:43

| ACTIVITY | SYSTEM TOTAL |
|---|---|
| POWER FAIL OR SYSTEM RESET | 0 |
| INCOMING TRUNK CALLS - ANSWERED | 201 |
| INCOMING TRUNK CALLS - NOT ANSWERED | 7 |
| OUTGOING TRUNK CALLS | 185 |
| A SELECTED TRUNK WAS BUSY | 0 |
| INTERCOM CALLS - COMPLETED | 100 |
| INTERCOM CALLS - NOT ANSWERED | 38 |
| TRUNK RECALLS TO STATIONS | 11 |
| TRUNK RECALLS TO OPERATOR GROUP | 21 |
| INTERNAL PAGE USED | 0 |
| EXTERNAL PAGE USED | 18 |
| ALL PAGE USED | 2 |

```
*********************** TRUNK GROUPS ***********************
```

BEGINNING: 07/04/92  23:59                           ENDING: 07/05/92  16:43

| GROUP | ANSWERED | UNANSWERED | OUTGOING | BUSY |
|---|---|---|---|---|
| 9 | 79 | 4 | 116 | 0 |
| 80 | 4 | 0 | 0 | 0 |
| 81 | 0 | 0 | 69 | 0 |
| 83 | 118 | 3 | 0 | 0 |

```
*********************** INDIVIDUAL TRUNKS ***********************
```

BEGINNING: 07/04/92  23:59                           ENDING: 07/05/92  16:43

| TRUNK | DIRECTORY NAME | ANSWERED | UNANSWERED | OUTGOING | BUSY |
|---|---|---|---|---|---|
| 701 | LOCAL LINE | 53 | 2 | 0 | 0 |
| 702 | LOCAL LINE | 17 | 2 | 0 | 0 |
| 703 | LOCAL LINE | 5 | 0 | 0 | 0 |
| 705 | LOCAL LINE | 2 | 0 | 0 | 0 |
| 709 | IN WATTS | 18 | 1 | 0 | 0 |
| 710 | IN WATTS | 20 | 0 | 0 | 0 |
| 711 | IN WATTS | 19 | 0 | 0 | 0 |
| 712 | IN WATTS | 20 | 1 | 0 | 0 |
| 713 | IN WATTS | 21 | 0 | 0 | 0 |
| 714 | IN WATTS | 20 | 1 | 0 | 0 |
| 719 | OUT WATTS | 0 | 0 | 1 | 0 |
| 720 | OUT WATTS | 0 | 0 | 5 | 0 |
| 721 | OUT WATTS | 0 | 0 | 18 | 0 |
| 722 | OUT WATTS | 0 | 0 | 45 | 0 |
| 725 | LOCAL LINE | 0 | 0 | 1 | 0 |
| 726 | LOCAL LINE | 1 | 0 | 7 | 0 |
| 727 | LOCAL LINE | 0 | 0 | 26 | 0 |
| 728 | LOCAL LINE | 1 | 0 | 82 | 0 |
| 731 | DID LINE | 2 | 0 | 0 | 0 |
| 732 | DID LINE | 2 | 0 | 0 | 0 |

# 4.5 SAMPLE TRAFFIC REPORT (Simulated) *Continued*

************************* STATION HUNT GROUPS *************************

BEGINNING: 07/04/92  23:59                                    ENDING: 07/05/92  16:43

| | ← OUTSIDE CALL → | | | ← INTERCOM CALL → | |
| GROUP | ANSWERED | DIALED | TRANSFER | PICKED-UP | ANSWERED | DIALED |
|---|---|---|---|---|---|---|
| 500 | 197 | 22 | 46 | 4 | 24 | 18 |
| 501 | 0 | 29 | 43 | 0 | 8 | 25 |
| 502 | 0 | 39 | 69 | 5 | 6 | 10 |
| 503 | 0 | 0 | 0 | 0 | 5 | 2 |
| 529 | 0 | 0 | 0 | 0 | 26 | 1 |

************************* INDIVIDUAL STATIONS *************************

BEGINNING: 07/04/92  23:59                                    ENDING: 07/05/92  16:43

| | | ← OUTSIDE CALL → | | | | ← INTERCOM CALL → | |
| STATION | DIRECTORY NAME | ANSWERED | DIALED | TRANSFER | PICKED-UP | ANSWERED | DIALED |
|---|---|---|---|---|---|---|---|
| 201 | SONDRA | 191 | 7 | 5 | 3 | 15 | 14 |
| 202 | JANET | 5 | 8 | 12 | 1 | 5 | 3 |
| 230 | SAUL | 0 | 2 | 4 | 3 | 4 | 2 |
| 223 | DENIS | 0 | 1 | 10 | 0 | 0 | 0 |
| 228 | NANCY | 1 | 4 | 2 | 0 | 3 | 0 |
| 207 | LINDA | 0 | 18 | 20 | 0 | 6 | 16 |
| 208 | JILL | 0 | 11 | 23 | 0 | 2 | 9 |
| 210 | ROCKY | 0 | 10 | 11 | 0 | 3 | 3 |
| 211 | KATHY | 0 | 3 | 27 | 0 | 1 | 1 |
| 212 | GAVIN | 0 | 9 | 1 | 0 | 3 | 2 |
| 213 | JANE | 0 | 10 | 2 | 1 | 1 | 4 |
| 214 | MIKE | 0 | 2 | 0 | 0 | 0 | 0 |
| 215 | STEVE R | 0 | 3 | 0 | 0 | 4 | 1 |
| 217 | STEVE D | 0 | 16 | 2 | 1 | 1 | 1 |
| 232 | BOB | 0 | 1 | 3 | 0 | 12 | 1 |
| 219 | ROB | 0 | 0 | 2 | 0 | 3 | 0 |
| 218 | ANDREW | 0 | 3 | 1 | 0 | 0 | 0 |
| 203 | **PROSTAR** | 0 | 2 | 0 | 0 | 0 | 0 |
| 204 | **PROSTAR** | 0 | 4 | 0 | 0 | 2 | 30 |
| 236 | PAULINE | 0 | 6 | 0 | 0 | 0 | 1 |
| 237 | PRO/XL/SDX | 0 | 1 | 0 | 0 | 0 | 0 |
| 396 | VOICE MAIL | 0 | 0 | 0 | 0 | 13 | 1 |
| 397 | VOICE MAIL | 0 | 0 | 0 | 0 | 2 | 0 |
| 398 | VOICE MAIL | 0 | 0 | 0 | 0 | 2 | 0 |
| 399 | VOICE MAIL | 0 | 0 | 0 | 0 | 14 | 2 |
| 248 | ANSWER MACH | 4 | 0 | 0 | 0 | 0 | 0 |
| 226 | CAGE | 0 | 14 | 4 | 0 | 1 | 0 |
| 247 | **PROSTAR** | 0 | 2 | 0 | 0 | 0 | 0 |
| 205 | COMPUTER | 0 | 0 | 0 | 0 | 1 | 1 |
| 240 | TRAINING | 0 | 0 | 3 | 0 | 0 | 0 |
| 222 | TECH #4 | 0 | 0 | 1 | 1 | 0 | 3 |
| 220 | BILL | 0 | 9 | 18 | 0 | 2 | 2 |
| 221 | * NATHAN * | 0 | 27 | 36 | 1 | 0 | 3 |
| 209 | SID | 0 | 12 | 4 | 0 | 0 | 0 |

# 5. USER INFORMATION

## 5.1 RADIO FREQUENCY INTERFERENCE

WARNING: This equipment generates, uses and can radiate radio frequency energy. If not installed and used in accordance with the instruction manual, it may cause interference with radio communications. The rules with which it must comply afford reasonable protection against such interference when it is used in a commercial environment. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference, the user will be required to correct the interference at his own expense. The following measures can be tried:

1. Reorient the receiving antenna.
2. Relocate the telephone with respect to the receiver.
3. Move the telephone equipment away from the receiver.
4. Plug the Key Service Unit into a different AC outlet so that the KSU and receiver are on different circuits.

If it is necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems."

This booklet is available from U.S. Government Printing Office, Washington, D.C. 20402, Stock Number 004-000-00345-4.

### UNAUTHORIZED MODIFICATIONS

Any changes or modifications performed on this equipment that are not expressly approved by PROSTAR TELECOM, INC. could cause noncompliance with the FCC rules and void the user's authority to operate the equipment.

## 5.2 FCC REQUIREMENTS

The PROSTAR 56ex/120mx electronics telephone system complies with Part 68 of the FCC Rules. On the left side of the KSU cabinets is a label that contains the FCC registration numbers and ringer equivalence number (REN) for this equipment.

### NOTIFICATION TO TELEPHONE COMPANY

The customer must notify the telephone company of the particular line to which the connection will be made and provide them with the FCC registration number and the Ringer Equivalence Number (REN) of the protective circuit.

FCC Registration Numbers: C8CKOR-73381-MF-E or C8CKOR-73382-KF-E Ringer Equivalence Number: 1.4B

### TELEPHONE CONNECTION REQUIREMENTS

The Federal Communications Commission (FCC) has established

rules which permit PROSTAR 56ex/120mx to be connected directly to the telephone network using telephone company network access jacks.

## RINGER EQUIVALENCE (REN)

The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most but not all areas, the sum of the RENs should not exceed five (5.0). To be

certain of the number of devices that may be connected to the line, as determined by the number of RENs, contact the telephone company to determine the maximum REN for the calling area.

## INCIDENCE OF HARM

If the terminal equipment, PROSTAR 56ex/120mx, causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice

| TELEPHONE COMPANY INTERFACES | | |
|---|---|---|
| **CIRCUIT TYPE** | **FIC** | **NETWORK JACK** |
| C.O. LINE – LOOP START | O2LS2 | RJ21X RJ11C RJ14C |
| C.O. LINE – GROUND START SEE NOTE 1 | O2GS2 | RJ21X RJ11C RJ14C |
| C.O. LINE – DID SEE NOTE 2 | O2RV2-T | RJ21X RJ11C RJ14C |
| E & M TIE LINE | TL11M | RJ2EX |
| OFF PREMISES EXTENSION | OL13C | RJ21X RJ11C RJ14C |
| NOTE 1:   WHEN THE SYSTEM IS CONFIGURED USING GROUND START TRUNKS ONLY THE FCC NUMBER WITH THE MF-E SUFFIX IS APPLICABLE. | | |
| NOTE 2.   ALLOWING THIS EQUIPMENT TO BE OPERATED IN SUCH A MANNER AS TO NOT PROVIDE FOR PROPER ANSWER SUPERVISION IS A VIOLATION OF PART 68 OF THE FCC'S RULES. | | |

is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

## CHANGES TO TELEPHONE COMPANY EQUIPMENT OR FACILITIES

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications so that you may maintain uninterrupted service.

## SERVICE CENTER

If trouble is experienced with PROSTAR 56ex/120mx, please contact PROSTAR TELECOM, INC. at (305) 426-4100 for repair or warranty information. If the trouble is causing harm to the telephone network, the telephone company may request that you remove the equipment from the network until the problem is resolved.

## FIELD REPAIRS

Only technicians certified on PROSTAR 56ex/120mx are authorized by PROSTAR TELECOM, INC. to perform system repairs. Certified technicians may replace modular parts of a system to repair or diagnose trouble. Defective modular parts can be returned to PROSTAR TELECOM, INC. for repair.

## GENERAL

The equipment should not be used on coin telephone lines. Connection to Party Line Service is subject to state tariffs.

## HEARING AID COMPATIBILITY

All models of PROSTAR 56ex/120mx are hearing aid compatible as specified in Part 68 of the FCC Rules.

# 5.3 DOC REQUIREMENTS

NOTICE: The Canadian Department of Communications label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. The Department does not guarantee that the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment or equipment malfunctions may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility,

telephone lines and internal metallic water pipe system, if present, are connected together.  This precaution may be particularly important in rural areas.

---

### CAUTION:
Users should not attempt to make such connections themselves but should contact the appropriate electric inspection authority or electrician.

---

The Load Number assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by a device to prevent overloading.  The terminationof a loop may consist of any combination of devices subject only to the requirement that the total of the Load Numbers does not exceed 100.

# 5.4  SAFETY TESTS

The PROSTAR 56ex/120mx system has been tested to comply with the safety standards in the United States and Canada as listed below.

This system is listed with Underwriters Laboratories.
File Number E126480

This system is listed by the Canadian Standards Association as certified.
LF. 89239

# 5.5  MUSIC ON HOLD - WARNING

IMPORTANT NOTICE:  In accordance with U.S. Copyright Laws, a license may be required from the American Society of Composers Authors and Publishers (ASCAP) or other similar organizations if copyrighted music is transmitted through the Music on Hold feature.  PROSTAR TELECOM, INC. hereby disclaims any liability arising out of failure to obtain such a license.

# T A B L E   O F   C O N T E N T S

# INSTALLATION SECTION

## PART   DESCRIPTION                                                          PAGE

# PART 1.  SITE REQUIREMENTS

When planning the installation of the PROSTAR 56ex/120mx system, choose a site that meets the following requirements:

- Select a location for the KSU that has enough space for easy installation and has adequate lighting (see Figure 1-1 and 1-2).

- Select a location that will minimize cable lengths.  See Cable Requirements Table this section.

- The equipment should not be exposed to direct sunlight, corrosive fumes, dust, constant vibration or strong magnetic fields such as those generated by motors and copy machines.

- A direct commercial AC power outlet is required.  Do not use extension cords.  Preferably, a dedicated circuit should be used to minimize the risk of other electrical equipment being connected that could adversely affect system operation.

- Ensure that all wires and cable going to and coming from the KSU are properly routed.  Do not cross fluorescent lights or run parallel with AC wires.

- The equipment must be located in an environment that will maintain a temperature range of 32° -104°F (0°-40°C) and a humidity range of 10%-90% non-condensing.

- Allow at least 6" clearance on both sides and 12" clearance on top of the KSU to ensure proper ventilation.

- Do not install in close proximity to a fire sprinkler head or other sources of water.

Meeting these requirements will help to ensure proper performance and greater life expectancy of the system.



NOTE: MINIMUM OF 6" CLEARNCE IS RECOMMENDED ON LEFT SIDE OF KSU FOR POWER CORD & BATTERY CONNECTOR AND RIGHT SIDE FOR MDF CABLING

21 3/4"

13 1/8"

16 1/2"

ADD 1/2" TO 1 1/4" IF FEET ARE INSTALLED

**56ex CABINET DIMENSIONS** — **FIGURE 1-1**



NOTE: MINIMUM OF 6" CLEARNCE IS RECOMMENDED ON LEFT SIDE OF KSU FOR POWER CORD & BATTERY CONNECTOR AND RIGHT SIDE FOR MDF CABLING

19"

26 1/4"

16 1/2"

ADD 1/2" TO 1 1/4" IF FEET ARE INSTALLED
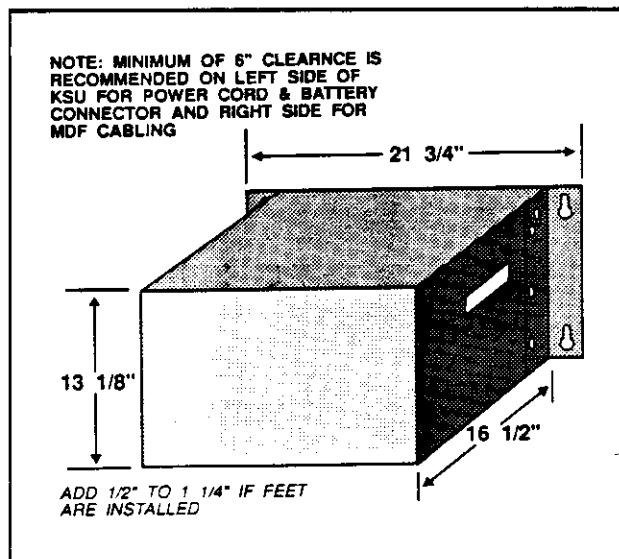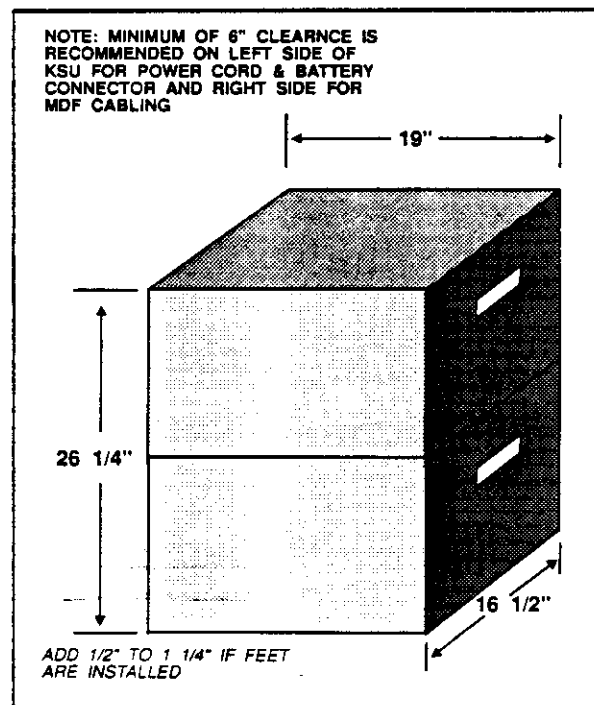
**120mx CABINET DIMENSIONS** — **FIGURE 1-2**

# PART 2.  INSTALLATION OF BASIC KSU AND EXPANSION CABINET

## 2.1  UNPACKING AND INSPECTION

After unpacking the KSU and EXPANSION CABINET, inspect for signs of physical damage. If any damage is detected, do not attempt to install. Contact PROSTAR TELECOM, INC., Technical Support Department.

Check to see that the KSU carton includes the following:
- Key Service Unit
- Power Supply (installed)
- Two wall mount brackets and screws
- Miscellaneous card
- Wall mounting template

Check to see that the EXPANSION CABINET carton includes the following:
- Expansion Cabinet
- Power Supply (installed)
- Power Supply extension harness
- Two ribbon cables installed on backplane daughterboard

## 2.2  SINGLE CABINET INSTALLATION - 56ex SYSTEM

The basic KSU (lower cabinet) can be wall mounted or free standing depending on the site location. If it is to be wall mounted, use the eight metric machine screws supplied and attach both wall mount brakcets as shown in Figure 2-1.

The KSU should be mounted on a plywood backboard at least 5/8" thick. Use the mounting template or Figure 2-2 to mark the locations for four mounting screws. Install four #10 screws 5/8" long at these marks. Lift the KSU and position on the four mounting

screws. Tighten all four screws to secure the KSU in place.
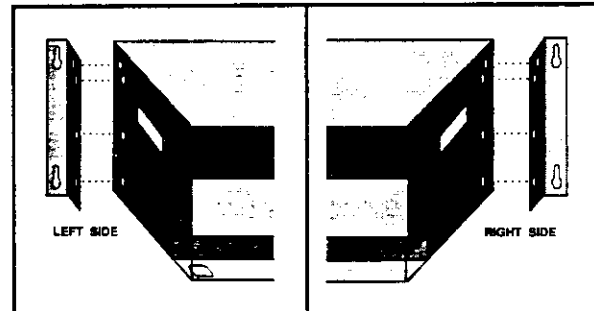


**ATTACH WALL MOUNT BRACKETS**  **FIGURE 2-1**
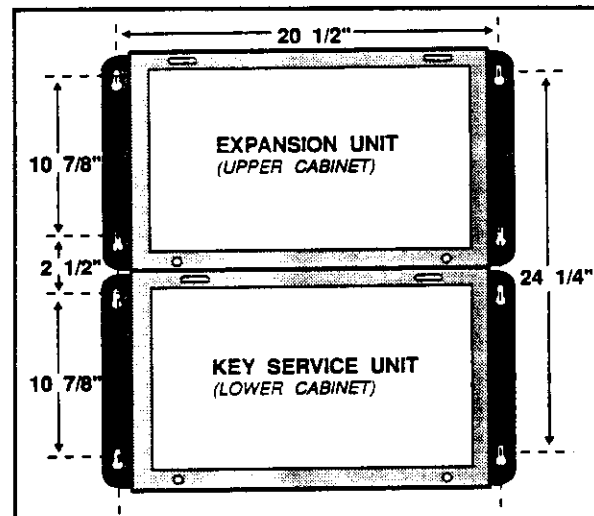


**WALL MOUNTING DIMENSIONS**  **FIGURE 2-2**

## 2.3  TWO CABINET INSTALLATION - 120mx SYSTEM

The fully expanded 120mx system (two cabinets) is intended to be installed as a free standing system sitting on the floor. If the site requires wall mounting, careful consideration must be given to the mounting surface. The plywood backboard must be securely attached to

the wall to support the maximum weight of 122 pounds (fully loaded system). If the expansion cabinet is to be wall mounted, you will require the optional wall mount kit as wall brackets are not included.

Assemble the upper and lower cabinets as follows:

a. Remove the front covers from both the KSU and expansion cabinet by loosening front screws and slide cover to the left and pull forward.
b. Remove the four metal disks covering the foot holes in the top of the KSU (see Figure 2-3) with a flat tip screwdriver.
c. Remove the rectangular metal plate on the front left corner on top of the KSU and front left corner on the bottom of the expansion cabinet (see Figure 2-3). Bend tabs on inside to remove.
d. Remove the back covers from both the KSU and expansion cabinet (see Figure 2-4).
e. Remove the metal shield that covers the backplane board on the KSU and expansion unit (see Figure 2-4).
f. Align the feet of the expansion cabinet to match the openings in the top of the KSU (see Figure 2-3). Set the expansion cabinet on top of the KSU. Finger tighten the feet to secure the cabinet in place.
g. Connect the two ribbon cables on the back of the expansion cabinet to the backplane board of the KSU (Figure 2-4).
h. Replace the metal shields on both backplane boards.
i. Break the metal tabs off of the back covers where the ribbon cables are located. Place the rubber strip over the sharp edges. Replace the back panels on both cabinets. Tighten all screws.
j. Route the power supply extension harness through the opening in both

cabinets and plug both ends into connectors on the front of the power supply. See Figure 2-5. The ferrite core should be located in the upper cabinet.

If the system is to be wall mounted, install eight #10 screws 5/8" long using mounting template or Figure 2-2. Attached wall mount brackets to both the upper and lower cabinets as shown in Figure 2-1.

Place the fully assembled system (both cabinets) on the eight mounting screws. Tighten all eight screws to secure the system in place.

## 2.4  ADDING AN EXPANSION CABINET TO AN EXISTING BASIC KSU

> **WARNING:** Unplug all sources of AC and DC electricity from the KSU before attempting this procedure.

a. Unplug the KSU and reserve power batteries if connected.
b. Disconnect all cables and wires from the KSU.
c. Remove all cards from the KSU.
d. If wall mounted, remove the KSU from the wall.
e. Now proceed as instructed in Part 2.3 of this section (TWO CABINET INSTALLATION - 120mx SYSTEM).

## 2.5  GROUNDING

The 56ex/120mx system requires a solid earth ground to the KSU frame. Failure to provide an adequate ground may cause confusing trouble symptoms or even circuit card failure. In most cases in the U.S., the third wire ground of the AC outlet will be satisfactory for systems using loop start lines. If you are

EXPANSION CABINET

KNOCK OUTS FOR POWER CABLE

ATTACH LEFT & RIGHT WALL MOUNT BRACKETS TO UPPER & LOWER CABINETS ( IF REQUIRED )

KNOCK OUTS FOR FEET

KSU

REMOVE LEFT OR RIGHT UPPER & LOWER ACCESS PANELS TO PERMIT CABLE ENTRY
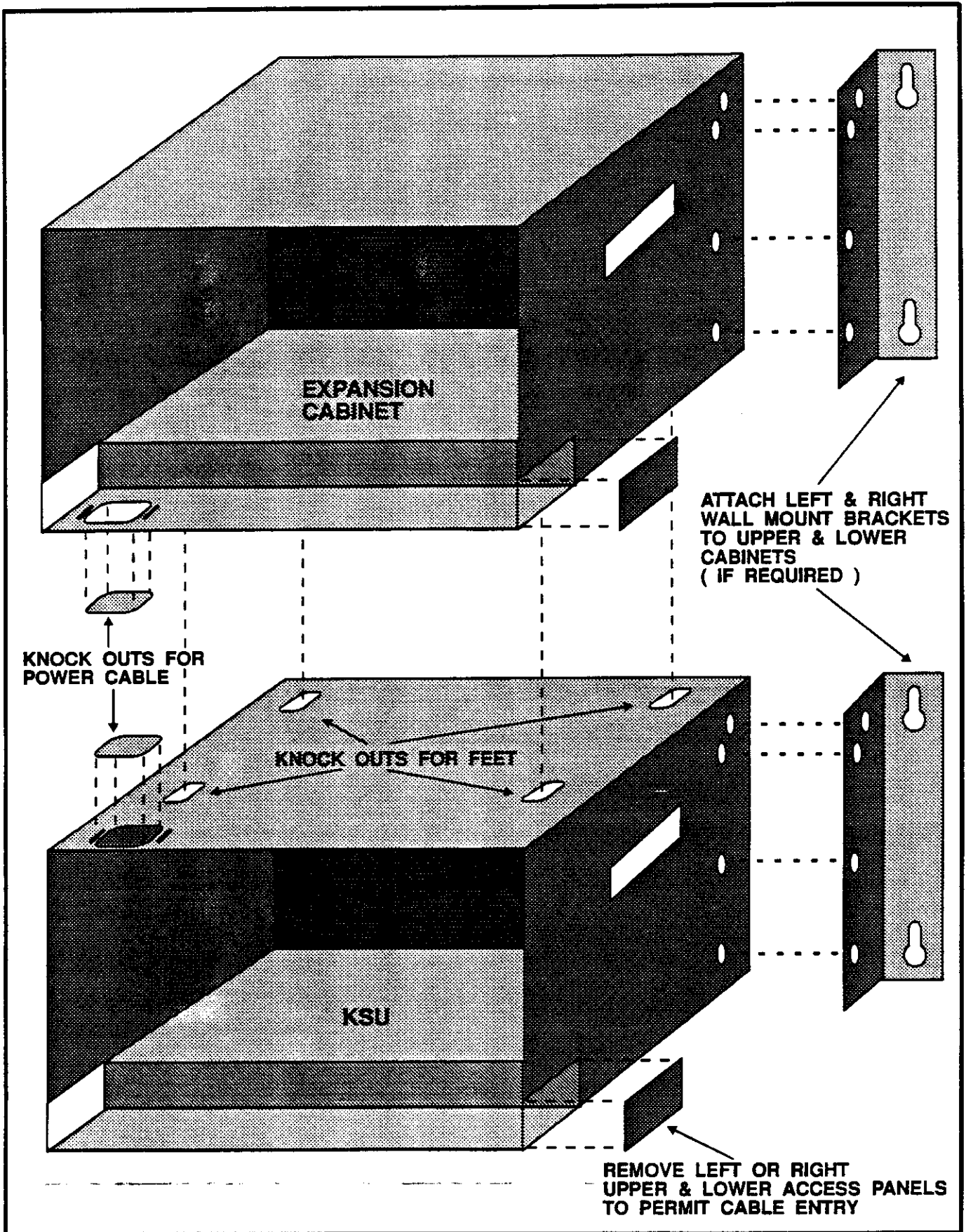
# ASSEMBLY OF KSU & EXPANSION CABINETS

# FIGURE 2-3

EXPANSION CABINET

KSU
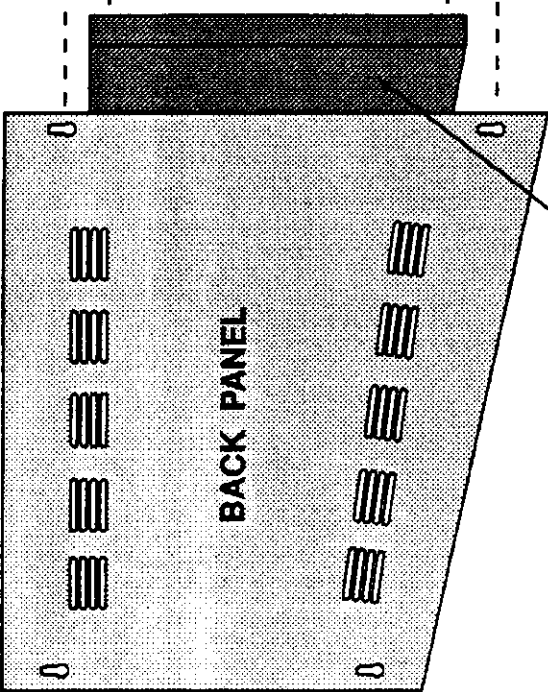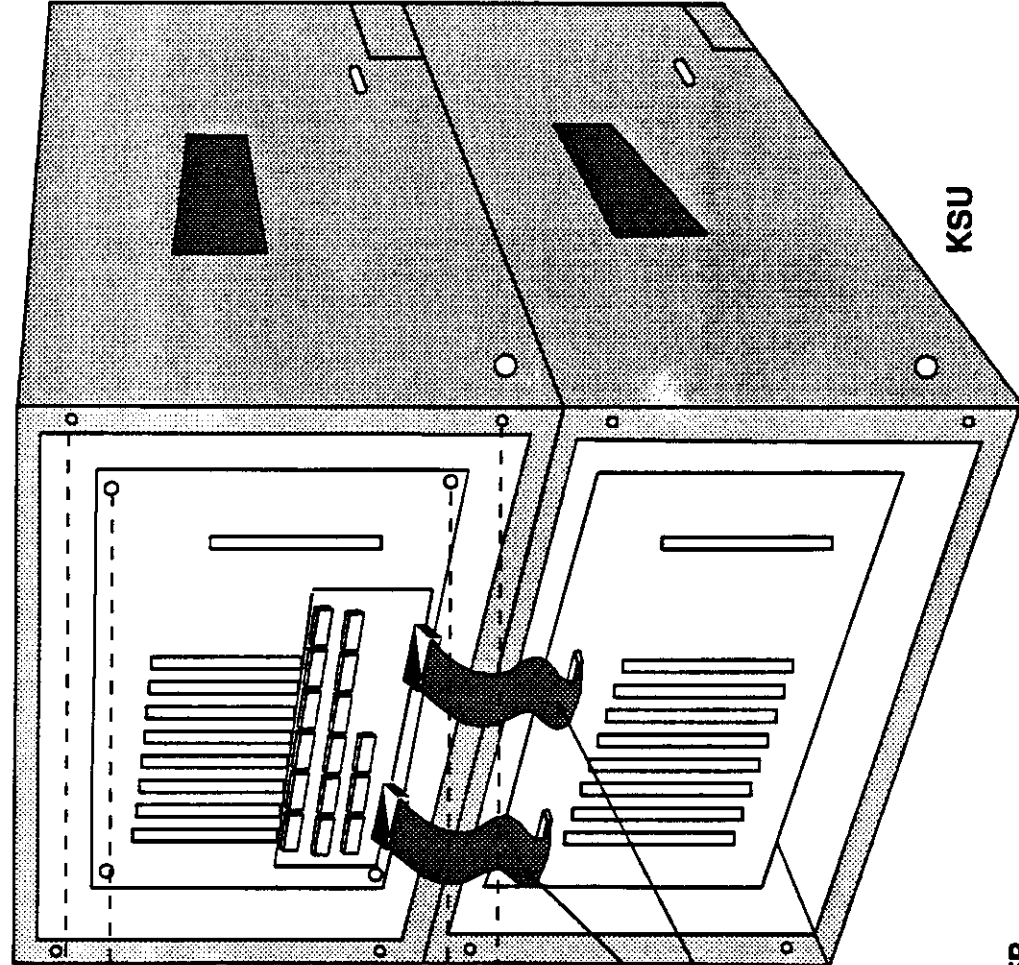
BACK PANEL

BACK PLANE SHIELD

50 PIN RIBBON CABLES

SECURE IN PLACE THE BACK PLANE SHIELDS
AND THE BACK PANELS TO UPPER AND LOWER
CABINETS AFTER CONNECTING RIBBON CABLES

**FIGURE 2-4**

## BACK PLANE CONNECTIONS

FERRITE
CORE

ROUTE POWER
EXTENSION CABLE
THROUGH
KNOCK-OUTS IN
UPPER & LOWER
CABINETS

POWER
CORD

THIRD WIRE GROUND
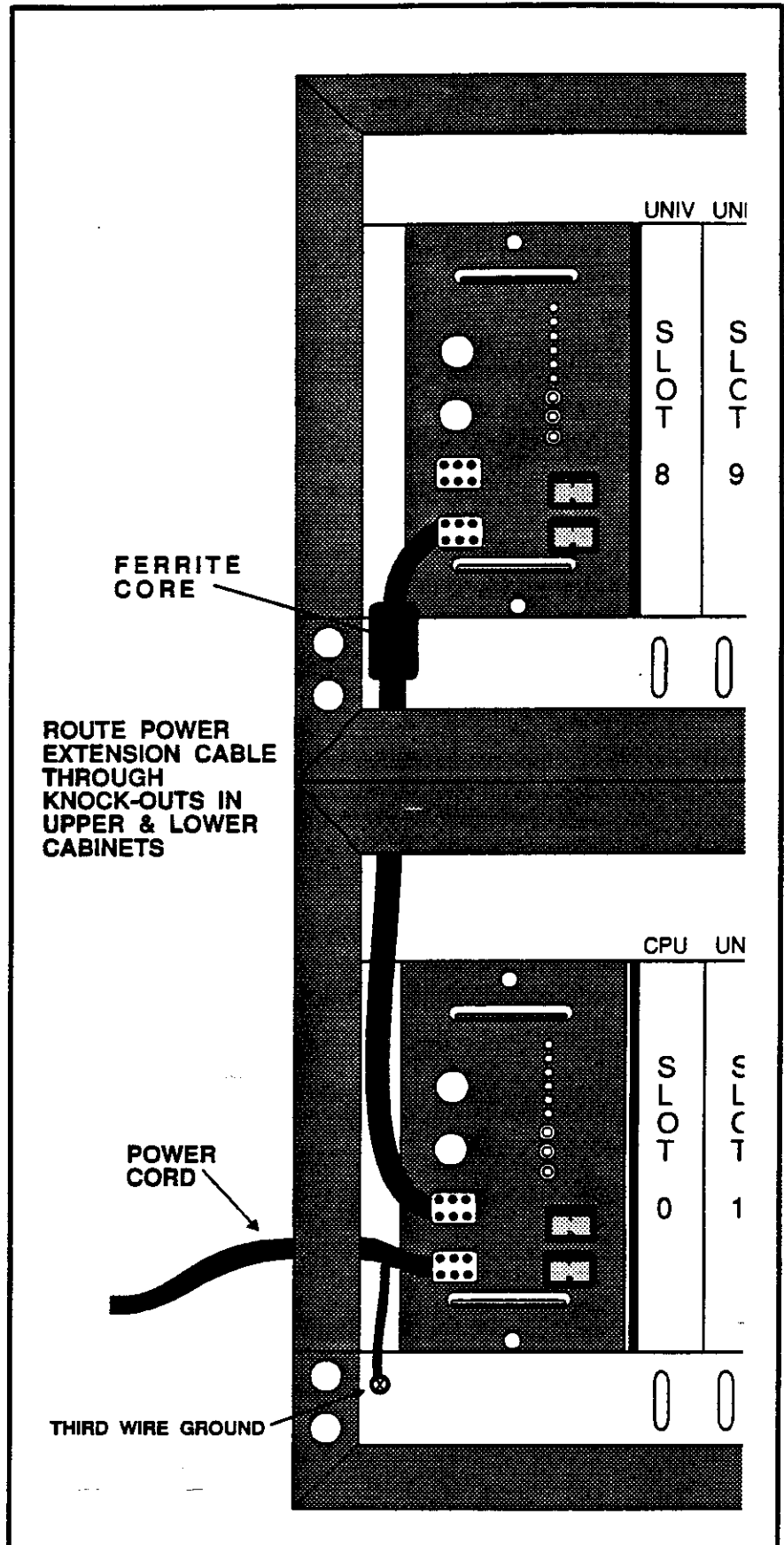
**POWER
CABLES**

**FIGURE 2-5**

not sure of a adequate ground on the third prong of the outlet, then connect the grounding lug on the left side of the KSU (see Figure 2-6) to a ground rod or metal cold water pipe using #10 AWG solid copper wire.

**DO NOT USE BOTH METHODS OF GROUNDING.** The National Electrical Code calls for only one path to ground. If a ground rod or cold water pipe is used, disconnect the third wire ground of power cord from the KSU and tape and store (see Figure 2-5).

Systems using ground start trunks, DID service or E & M tie lines will require a ground rod or cold water pipe ground for proper operation.

> **WARNING:** Unplug the power cord from the AC outlet before attempting to disconnect the third wire ground. Hazardous voltage may cause death or injury. Observe extreme caution when working with AC power.

## 2.6 MDF CABLING

All connections to the 56ex/120mx system are made by way of a customer-provided main distribution frame. Each interface card is connected to the MDF using a 25 pair female amphenol-type cable. These cables can be routed into the KSU and expansion cabinet from the right or left side. Remove the cable access panels from the lower front right or left corners of the cabinets as needed (see Figure 2-3). Secure the cables in place by tie-wrapping to the channel tabs located beneath each card slot.

Label each cable to correspond with the slot numbers 1 through F (see Figure 3-1). The amphenol-type cable for the miscellaneous card can be labelled "MISC."

Label each 66 terminating block with the same slot number that the cable is labelled. Then label each block with circuits 1 though 8. This makes identifying the location of each port easy. Port S24 is in slot 2 and is the fourth circuit. You will see this numbering scheme in several programs.

Use two pair twisted jumper wire to cross-connect stations or lines to their associated port.



CONNECT TO A
COLD WATER PIPE
OR GROUND ROD

RESERVE POWER
BATTERY CONNECTOR
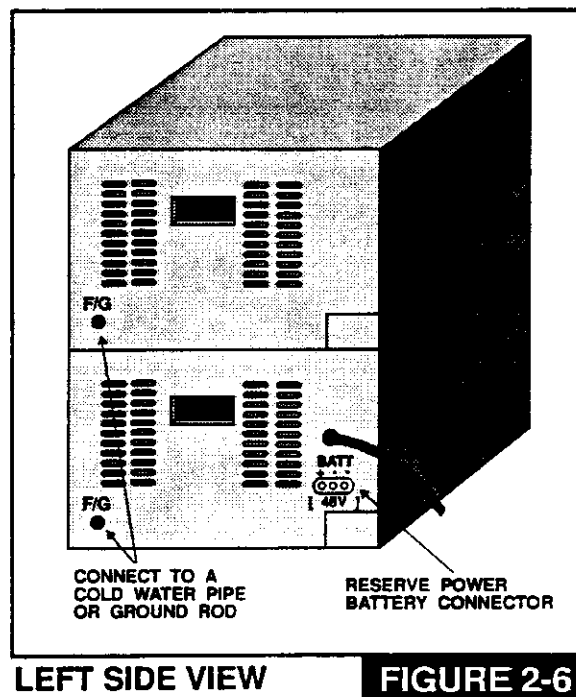
**LEFT SIDE VIEW**   **FIGURE 2-6**

# PART 3.  INSTALLING PRINTED CIRCUIT CARDS

Unpack and inspect each card before installing. Check for signs of physical damage. If any damage is detected, do not attempt to install. Contact PROSTAR Technical Support immediately.

## 3.1  CPU/MEMORY CARD
(Figure 3-2)

Verify that the EPROM chips U101 to U106 are properly installed and fully inserted in their sockets. Inspect the NICAD battery to check that it has not broken loose during shipping and handling.

There are no options to select on this card. Insert this card in the KSU slot labelled CPU (see Figure 3-1). Push firmly in the middle of both card ejectors to ensure that it is fully inserted into the backplane connector.

To prevent accidental damage to the CPU/MEMORY card, the CPU connector on the backplane is positioned to mate only with the CPU/MEMORY card. Other interface cards will not mate with this connector and the CPU/MEMORY card will not mate with any other connector.

NOTE: For long term storage of the CPU/MEMORY card, turn battery switch "OFF" to prevent excessive discharge of the NICAD battery.

When temporarily storing a CPU/MEMORY card with customer data, leave battery switch "ON". Store in a PCB carton, but do not put in an antistatic bag. This can cause the battery to discharge.

## 3.2  MISCELLANEOUS CARD  (Figure 3-3)

Insert the "MISC" card in the KSU slot labelled "MISC." It is a half-size card slot located to the far right side (see Figure 3-1).

There are no options to select on this card. Push firmly in the middle of the card ejector to ensure that it is fully inserted into the backplane connector.

NOTE: Ensure that MISCELLANEOUS card is "equipped" in MMC #92.

## 3.3  TRUNK 1 CARD
(Figure 3-4)

This card has no selectable options. Insert as many TRK1 cards as are needed into universal slots 1 though F (see Figure 3-1). Push firmly in the middle of both card ejectors on each card to ensure that it is fully inserted into the backplane connector.

## 3.4  TRUNK 2 CARD
(Figure 3-5)

This universal type trunk card has provisions to install four daughterboards. There are three types: LOOP/GROUND, E & M TIE LINE and DID.

Select the type and number of each daughterboard as required and insert into the sockets. See Figure 3-6. Only the LOOP/GROUND daughterboard has selectable options. Position the

jumper pin as required for loop start or ground start operation (see Figure 3-6).

The E & M tie line daughterboard contains field replaceable pico fuses. These over current protection devices are in series with the E lead and the M lead of each circuit.

Verify that all daughterboards are properly fitted into their sockets. Insert as many TRK2 cards as are needed into universal slots 1 through F (see Figure 3-1). Push firmly in the middle of both card ejectors on each card to ensure that it is fully inserted into the backplane connector.

## 3.5  MSLC1 CARD (Figure 3-7)

There are no options to select on this card. Insert as many MSLC1 cards as are needed into universal slots 1 through F (see Figure 3-1). Push firmly in the middle of both card ejectors on each card to ensure that it is fully inserted into the backplane connector.

## 3.6  MSLC2 CARD (Figure 3-8)

This universal type station card can be configured for use with 816 keysets or standard single line telephone sets.

Circuits 1, 2, 3 and 4 are for 816 keysets only. Circuits 5, 6, 7 and 8 are selectable and can be used for 816 keysets or single line telephones.

This card will automatically detect DTMF or dial pulse signals from the single line telephone set. There are no software or hardware options required.

There are four jumper pins for each selectable circuit as indicated below and in Figure 3-8.

| CIRCUIT 5 | CIRCUIT 6 |
|-----------|-----------|
| J1 | J2 |
| J501 | J601 |
| J502 | J602 |
| J503 | J603 |

| CIRCUIT 7 | CIRCUIT 8 |
|-----------|-----------|
| J3 | J4 |
| J701 | J801 |
| J702 | J803 |
| J703 | J803 |

Set all four pins for each circuit in the "K" position for keyset operation or "S" position for single line operation as the configuration requires.

Verify that jumper pins are properly positioned. Insert as many MSLC2 cards as are needed into universal slots 1 through F (see Figure 3-1). Push firmly in the middle of both card ejectors on each card to ensure that it is fully inserted into the backplane connector.

## 3.7  SLC CARD  (Figure 3-9)

There are no options to select on this card. Insert as many SLC cards as are needed into universal slots 1 through F (see Figure 3-1). Push firmly in the middle of both card ejectors on each card to ensure that it is fully inserted into the backplane connector.

This card will automatically detect DTMF or dial pulse signals from the single line telephone set. There are no software or hardware options required.
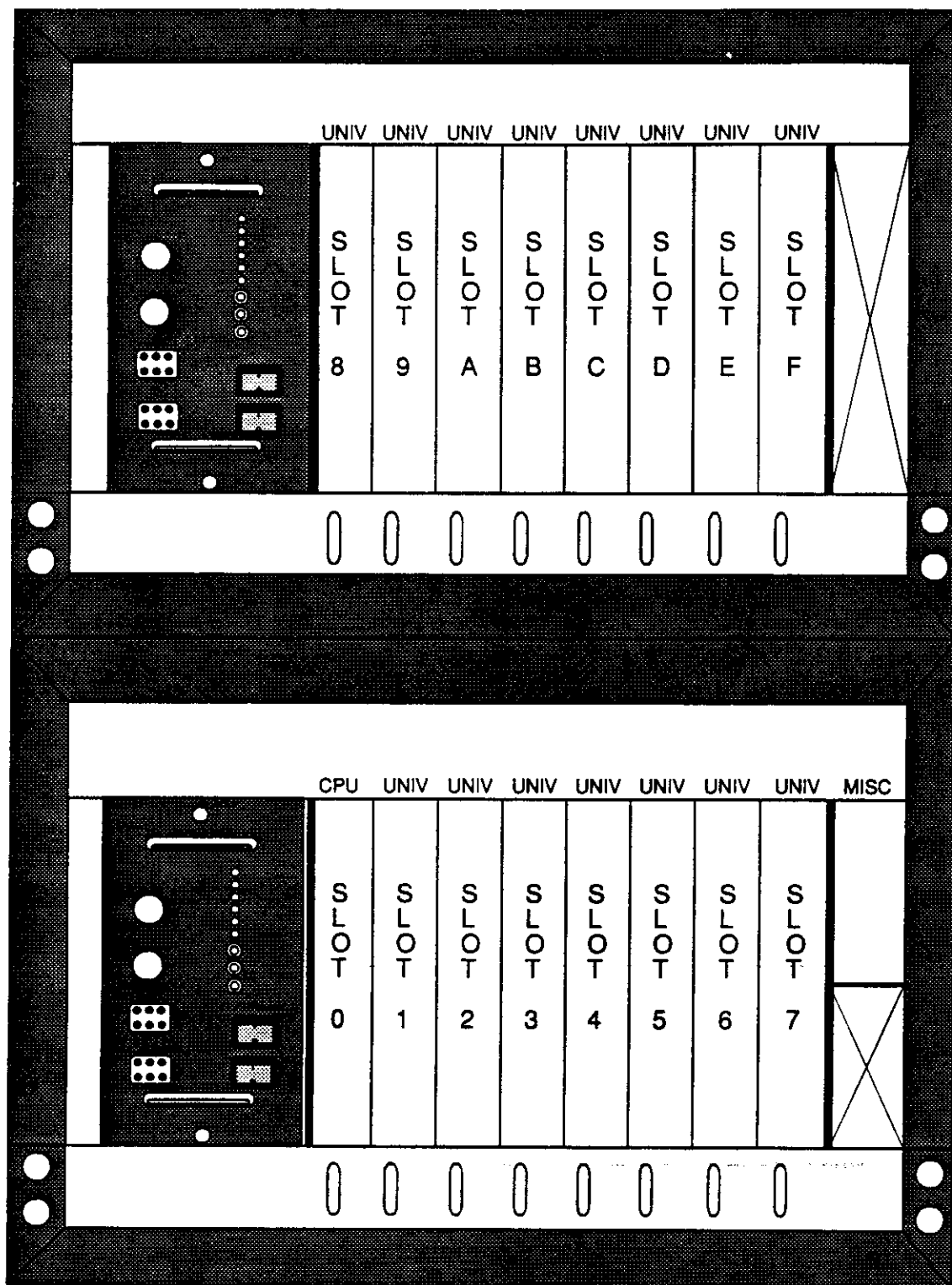
**SYSTEM LAYOUT**
**KSU AND EXPANSION CABINET**

**FIGURE 3-1**
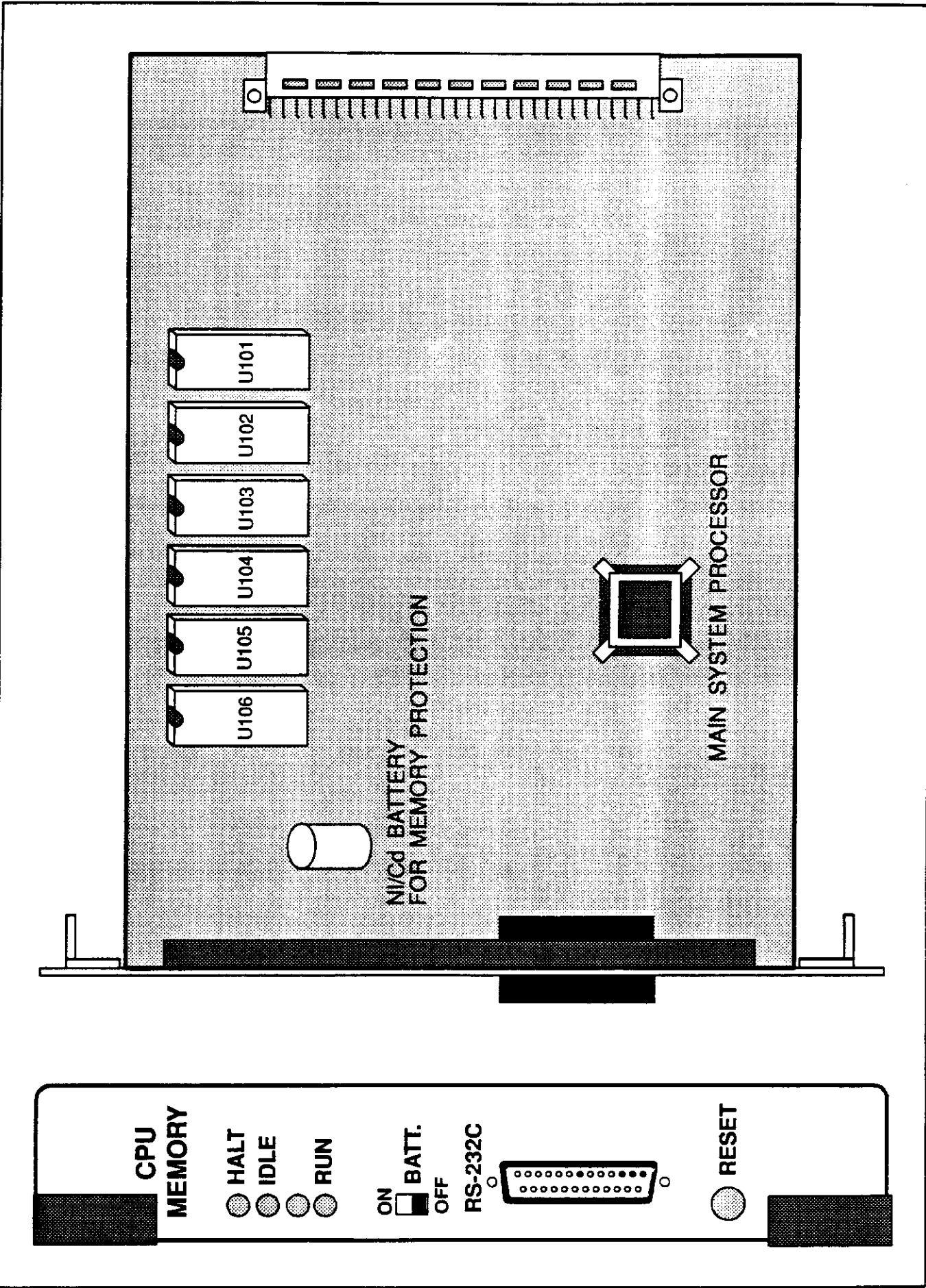
FIGURE 3-2

CPU / MEMORY CARD

U101 U102 U103 U104 U105 U106

NI/Cd BATTERY
FOR MEMORY PROTECTION

MAIN SYSTEM PROCESSOR

CPU
MEMORY

HALT
IDLE
RUN

ON
BATT.
OFF

RS-232C

RESET

PROVIDES CIRCUITRY FOR:

4 EXTERNAL PAGE OUTPUTS WITH CONTROL CONTACTS

2 DOOR PHONES WITH DOOR LOCK RELEASE CONTACTS

2 SETS OF COMMON BELL CONTROL CONTACTS

2 MUSIC SOURCE INPUTS

NO SELECTABLE OPTIONS

NOTE: MUST SET MMC #92 FOR "MISC EQUIPED"

ADJUSTMENTS FOR EXTERNAL MUSIC INPUTS

MSC 1

MSC 2

**FIGURE 3-3**

**MISCELLANEOUS CARD**

8 TRUNK CIRCUITS

LOOP START LINES ONLY

NO SELECTABLE OPTIONS

TRK 1
○ CKT 1
○ CKT 2
○ CKT 3
○ CKT 4
○ CKT 5
○ CKT 6
○ CKT 7
○ CKT 8
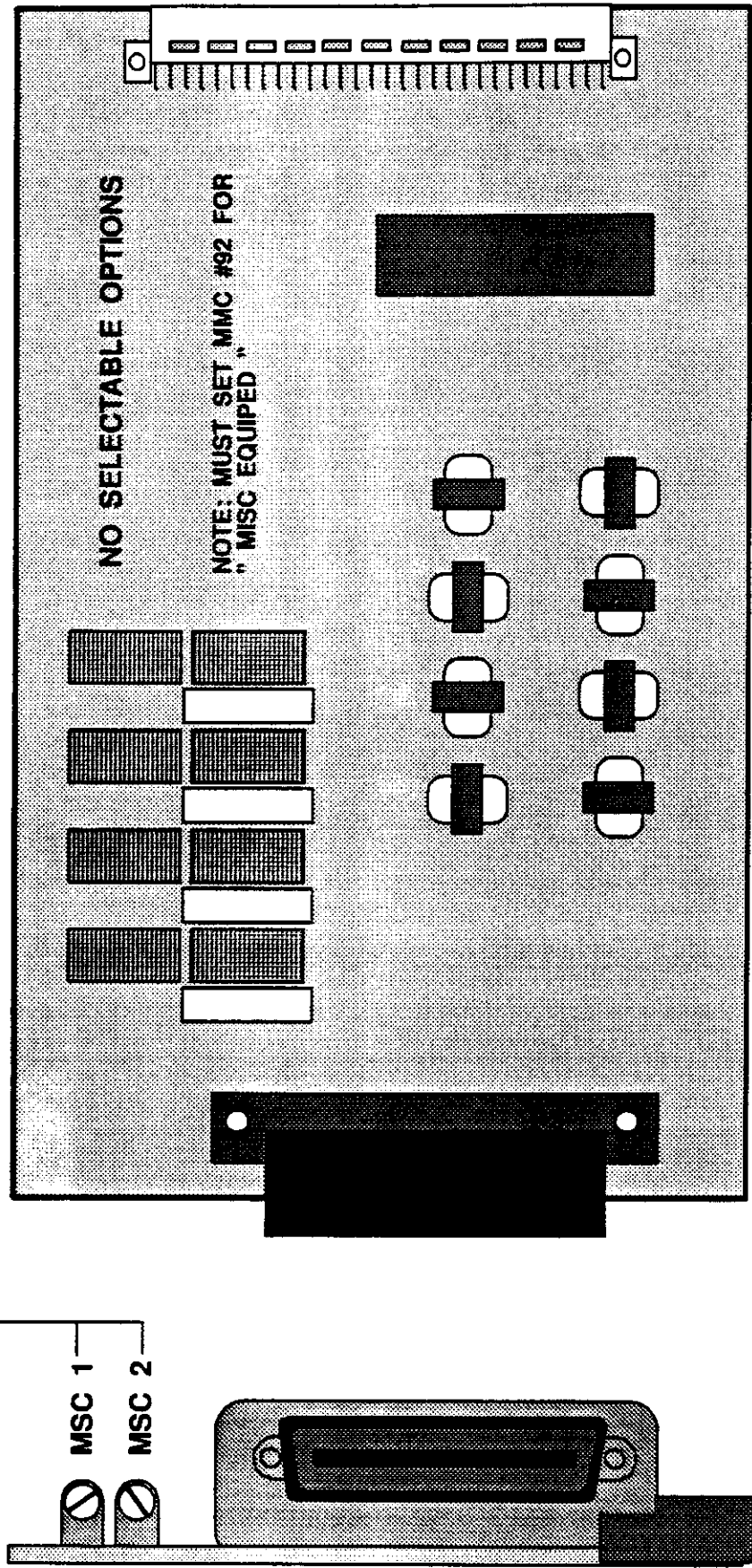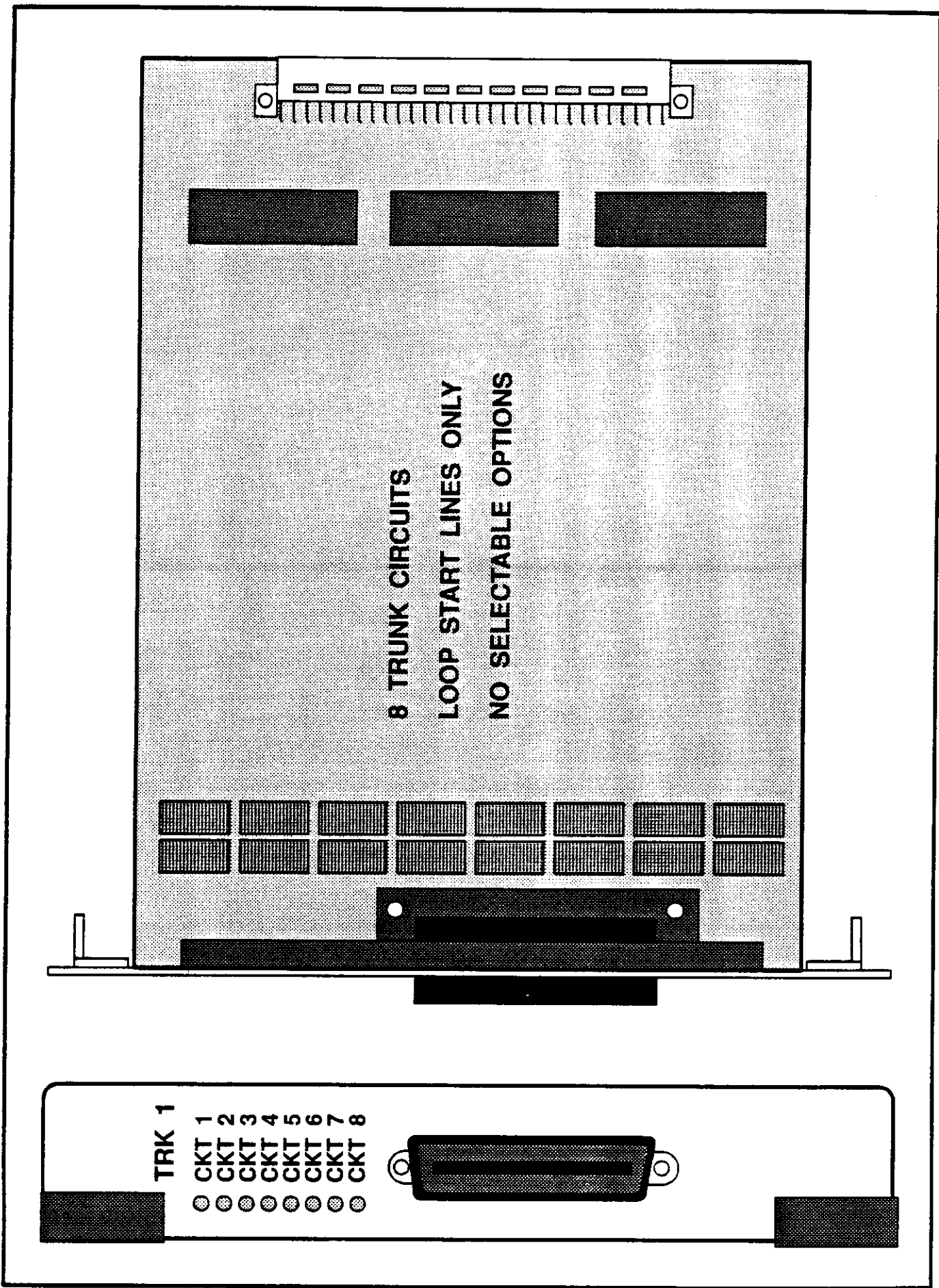
TRUNK 1 CARD

FIGURE 3-4

INSTALL ANY TYPE DUAGHTER BOARD IN ANY POSITION

LOOP/GROUND   D.I.D. TRUNK   E&M TIE LINE

POSITION
3
CIRCUITS 5&6

POSITION
4
CIRCUITS 7&8

POSITION
1
CIRCUITS 1&2

POSITION
2
CIRCUITS 3&4

TRK 2
○ CKT 1
○ CKT 2
○ CKT 3
○ CKT 4
○ CKT 5
○ CKT 6
○ CKT 7
○ CKT 8
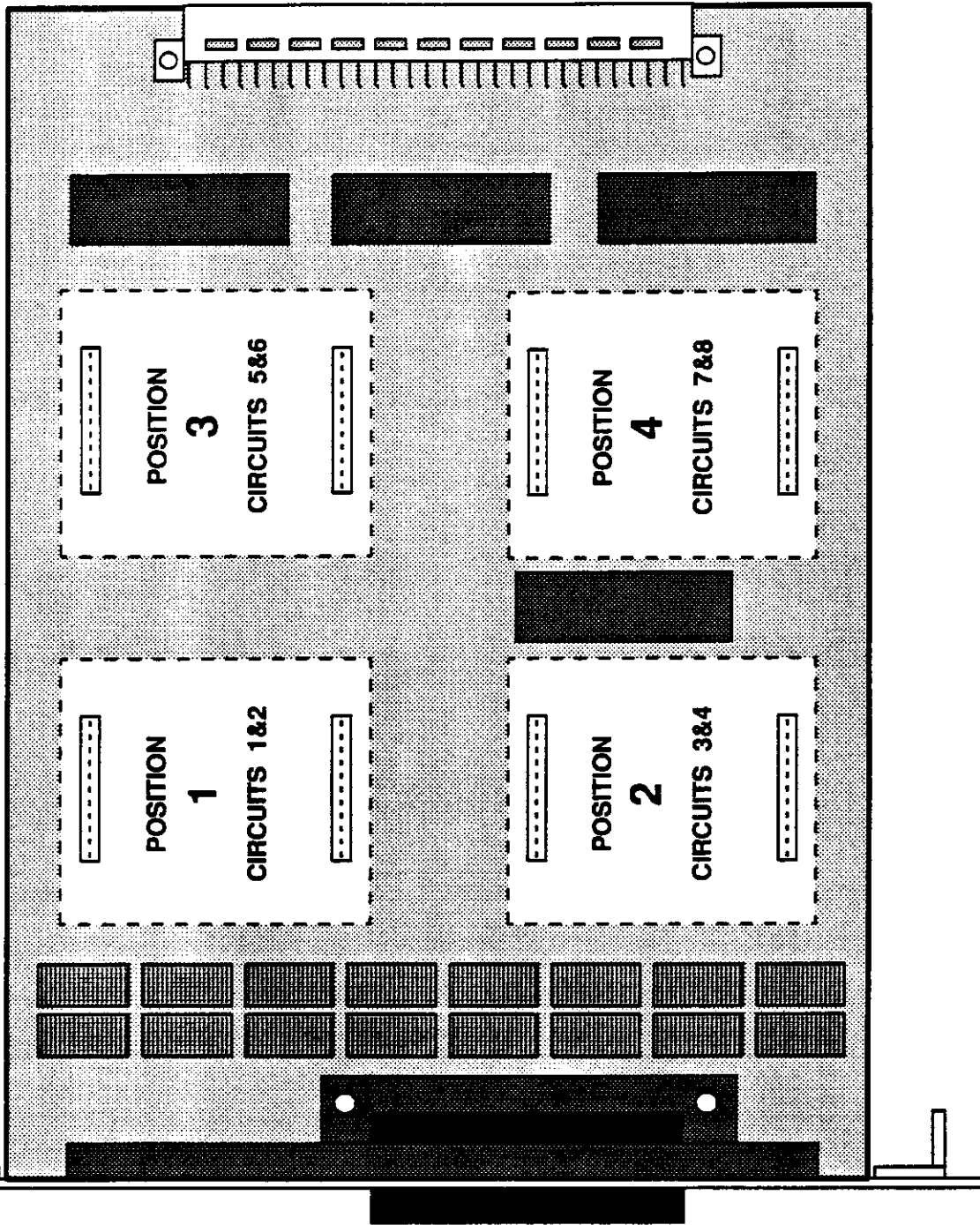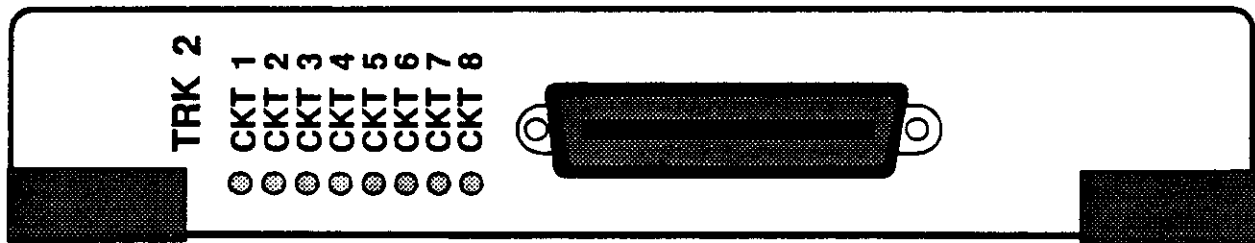
TRUNK 2 CARD
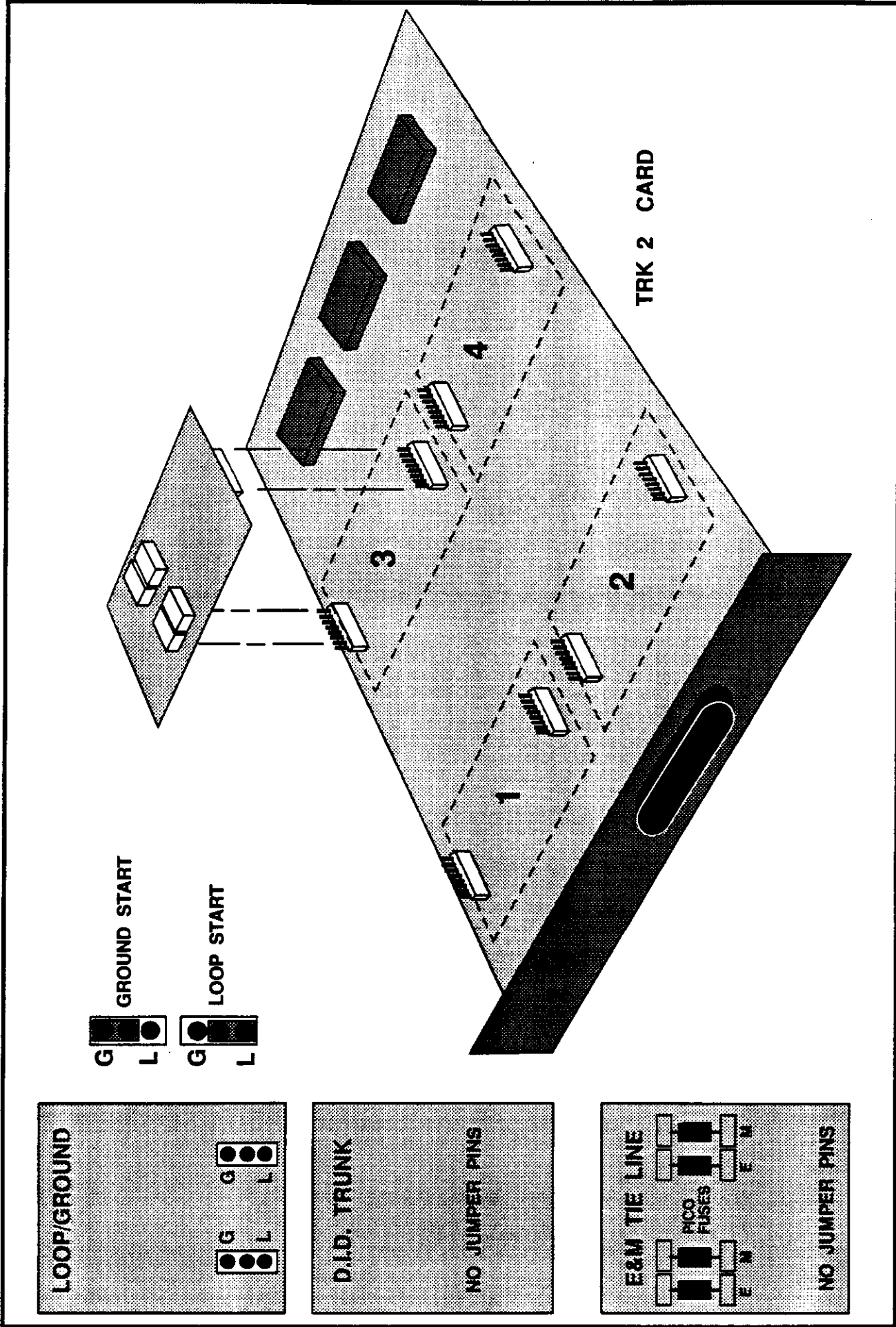
**FIGURE 3-5**

DAUGHTER BOARD INSTALLATION

**FIGURE 3-6**
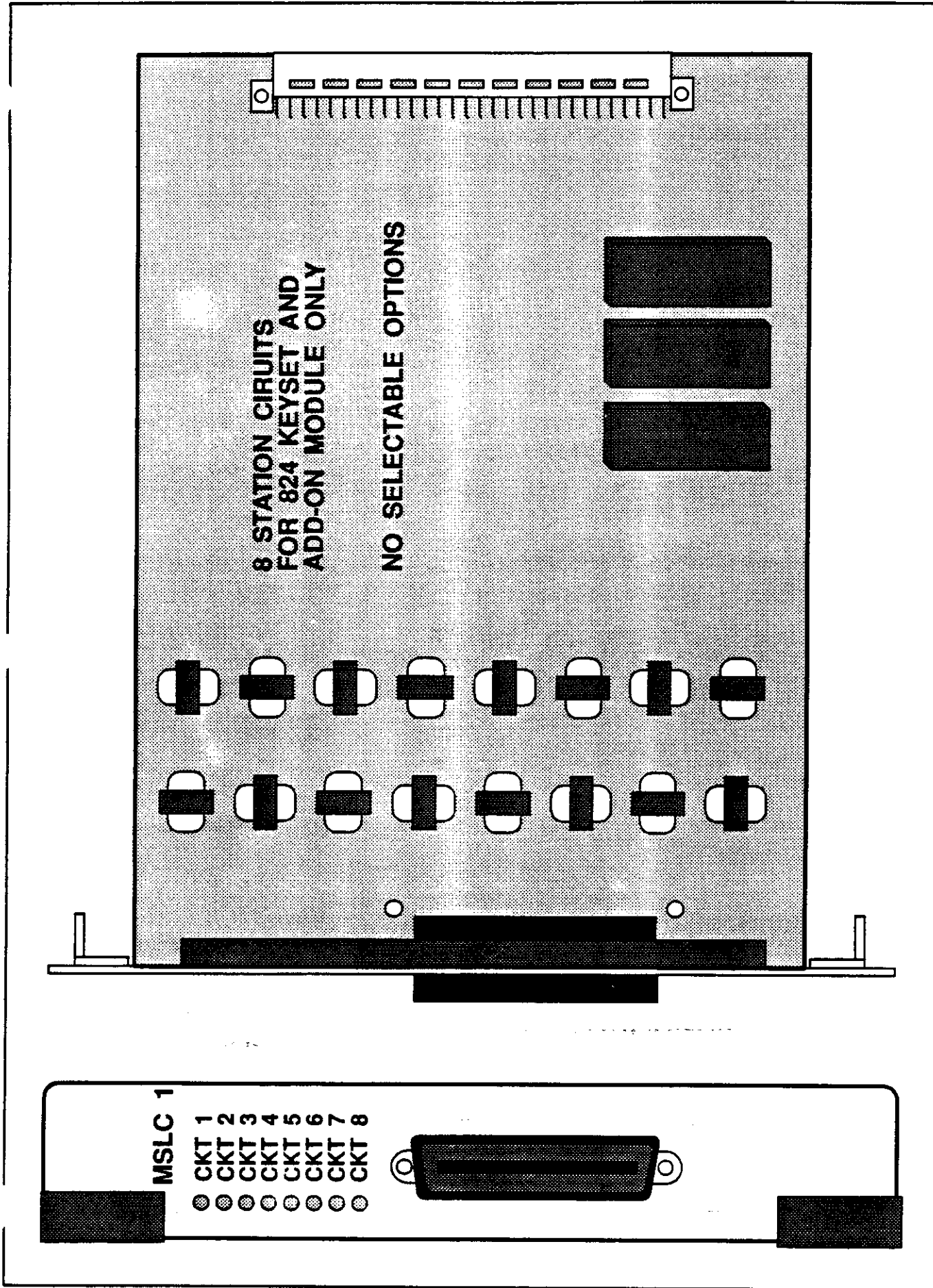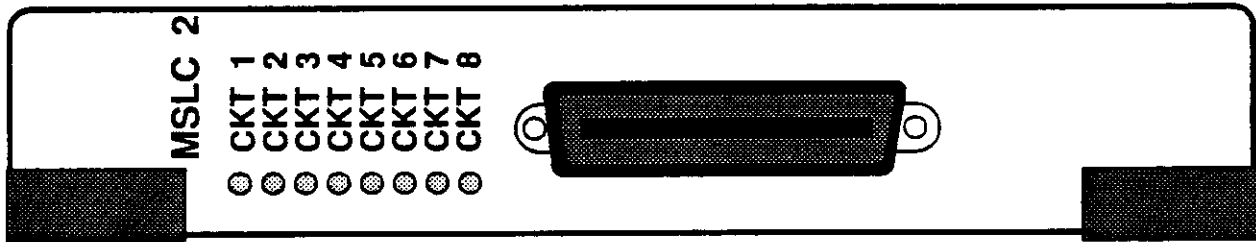
TRK 2 CARD

GROUND START

LOOP START

**LOOP/GROUND**

**D.I.D. TRUNK**

NO JUMPER PINS

**E&M TIE LINE**

PICO FUSES

NO JUMPER PINS

FIGURE 3-7

MSLC 1 CARD

8 STATION CIRUITS
FOR 824 KEYSET AND
ADD-ON MODULE ONLY

NO SELECTABLE OPTIONS

MSLC 1

CKT 1
CKT 2
CKT 3
CKT 4
CKT 5
CKT 6
CKT 7
CKT 8

MSLC 2 CARD

FIGURE 3-8

POWER FAILURE TRANFER RELAYS CIRCUITS 1-4 ONLY

8 STANDARD TELEPHONE CIRCUITS

DTMF/PULSE

LINE PROTECTION FOR OFF PREMISE EXTENTIONS CIRCUITS 5-8 ONLY

SLC
CKT 1
CKT 2
CKT 3
CKT 4
CKT 5
CKT 6
CKT 7
CKT 8
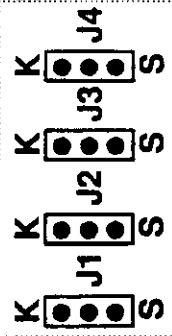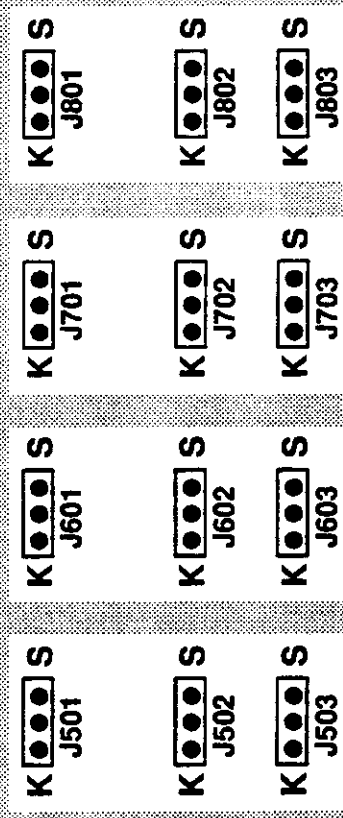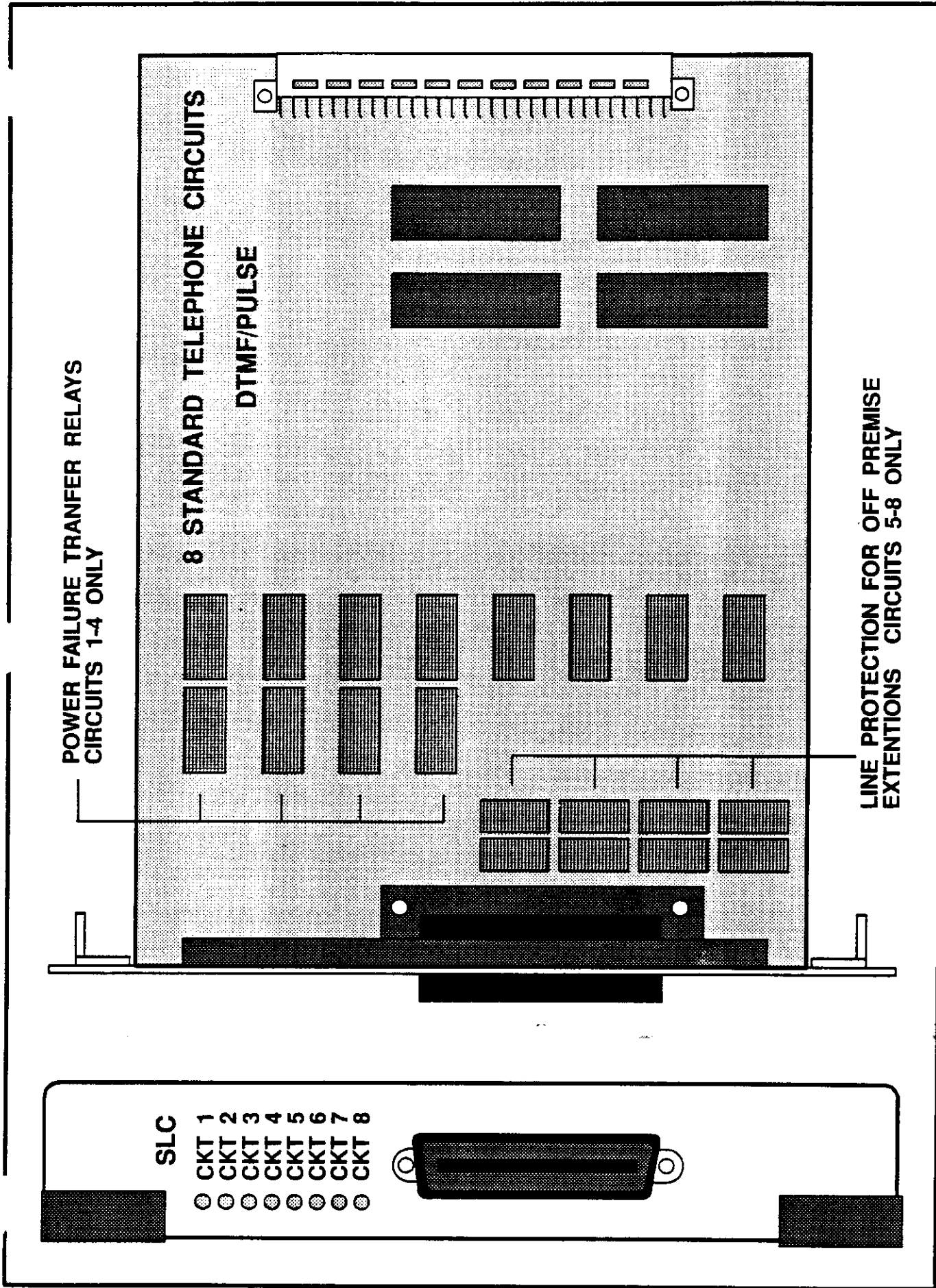
SLC CARD

**FIGURE 3-9**

# PART 4.  POWER UP PROCEDURES

## 4.1  CONNECT POWER TO THE SYSTEM

During the initial installation, it is best to verify proper system operation before plugging in any amphenol-type cables to the MDF. If you have already plugged the cables in, unplug them.

Verify that the AC voltage at the dedicated electric outlet is in the range of 88-132 VAC for 110V operation or 176-264 VAC for 220V operation.

NOTE: For 220 VAC operation, use a HAR-flexible cord assembly approved by the safety agency in the end use country.

Make sure the AC power switch is in the OFF position. Plug the KSU power cord into the dedicated three wire AC outlet.

Turn the AC power switch to the ON position. The power supply low voltage warning buzzer will sound until the -48VDC voltage reaches the required operating range. If there are no lights and no buzzer, check the AC fuse on front of power supply or both power supplies if this is an expanded system. When the -48VDC supply to the system drops below the operating range, the buzzer will sound.

Verify that all power indicator LEDs are on. The ON condition indicates supply of each voltage source (see Figure 4-1). This is its normal operating status. The ring generator (R/G) LED will flicker. Using a digital voltmeter, check the output level for -48 and +5 volts DC. If these voltages are in the specified range, continue with the installation.

[-48VDC range -45.6 to -50.4]
[+5VDC range +4.75 to +5.25]

If these voltages are not within the specified range, you must correct the problem before continuing. Turn off both power switches. Unplug all cards using the card ejectors. Turn the system on. Check power supply LEDs and voltages again. If the problem is corrected, you have a defective card. Test and remove the faulty card before continuing. If you still have improper voltages, unplug the KSU and change power supplies. This in all probability will solve the problem. If it does not, contact PROSTAR Technical Support.

## 4.2  CPU INDICATIONS

Having verified proper operation of the power supply, visually check the CPU/MEMORY card indications.

The **RUN** light should flicker rapidly indicating the main processor is functioning. This LED flicker rate will vary depending on the processor load. The heavier the load, the slower the rate.

When the **IDLE** light is ON, there are no phones in use. You can turn power off without fear of disrupting calls. NOTE: Any keyset in the programming mode is considered as in use and the **IDLE** light will not come ON. This includes station and system programming.

The system is equipped with a halt program. When this program is running, the **HALT** light is ON. The red **RESET** button must be pressed to release the halt program and restore the system to normal operation. See MMC #00 for operation of the Halt program.

Pressing the **RESET** button will stop all system operations and clear temporary

data. The system will begin normal operation in approximately 10 to 15 seconds. No customer data (programming) is lost during a reset. Removing and restoring power to the KSU will have the same effect as pressing the **RESET** button.

The third unmarked LED is reserved for future use.

# 4.3 PCB VERIFICATION

Before connecting all MDF cabling, plug in a test cable to the first MSLC1 card. Connect an 824 display set and verify that it is working.

Use maintenance program MMC #02 to verify the system version, software version and that all cards are recognized by the CPU.

Remove the test cable and plug in all amphenol-type cables to the MDF. Proceed with the rest of the installation.

Table 4-A describes the LED "CKT" indications on station and trunk cards for the following conditions.

# 4.4 DEFAULT TRUNK AND STATION NUMBERING

Upon initial power up, the CPU reads each slot for the existence of a card and identifies the type of card. It stores this as the default configuration.

The trunk card in the lowest slot number is assigned trunk numbers 701 through

708. The next highest slot number with a trunk card is assigned trunk numbers 709 through 716. This numbering sequence is followed until the last trunk board in the highest slot number is assigned the last trunk number.

For example: if a TRK1 card is in the first slot, then port S11 would be assigned trunk number 701 (first slot, first circuit, first trunk). If the second slot had a TRK2 card installed, then port S28 would be assigned trunk number 716 (second slot, eighth circuit, sixteenth trunk).

Station numbers are assigned in the same manner. The lowest slot number containing any type of station card is assigned station numbers 201 through 208. The next highest slot with a station card is assigned stations 209 through 216. This numbering sequence follows until all of the stations are assigned. Default data assigns the 824 keyset in the lowest port to the operator group and all trunks ring that station until default is changed. It is recommended that the first station card be an MSLC1 so that the operation station will default to an 824 keyset as extension 201.

Both station and trunk numbers can be changed, rearranged and reassigned as needed using MMC #05.

NOTE:
Changing any station or trunk number from the default number will cause newly added station or trunk cards to come up without directory numbers.

**56ex / 120mx**

BATTERY
250V/5A

AC
250V/5A

- A C - F/G

(+) (-) (-)
BATTERY

- A C - F/G

(+) (-) (-)
BATTERY

○ + 5V
○ + 12V
○ - 12V
○ - 48V
○ - 56V BATTERY
○ R/G
◉ + 5V
◉ - 48V
◉ GND

BATTERY    ON / OFF

AC POWER    ON / OFF
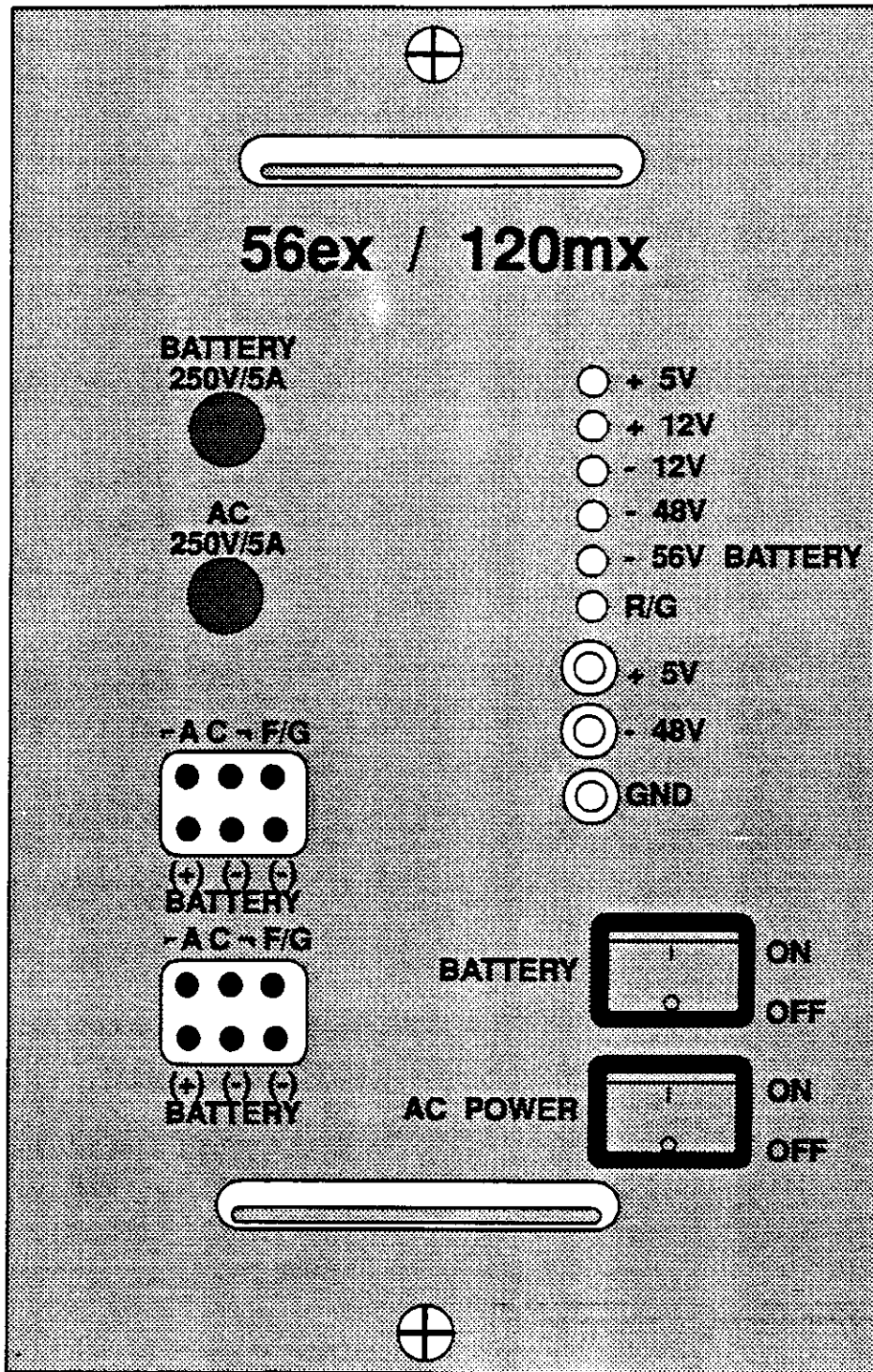
**POWER SUPPLY**

**FIGURE 4-1**

# PART 5.  CONNECTING TELCO CIRCUITS

## 5.1  SAFETY PRECAUTIONS

To limit the risk of personal injury, always follow these precautions before connecting Telco circuits:

a. Never install telephone wiring during a lightning storm.
b. Never install telephone jacks in wet location unless the jack is specifically designed for wet locations.
c. Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
d. Use caution when installing or modifying telephone lines.

## 5.2  LOOP START LINES

Using one pair twisted #24 AWG or #26 AWG jumper wire, cross- connect each loop start C.O. line to the TRK1 or TRK2 port of your choice (see Figures 5-1 and 5-2).

Remember TRK1 cards are always loop start lines. When connecting a loop start C.O. line to a TRK2 card, that slot must be equipped with a LOOP/GROUND daughterboard. The jumper pin corresponding to that circuit for that port must be set for loop operation. Refer to Part 3.4 and Figure 3-6 if necessary.

## 5.3  GROUND START TRUNKS

Using one pair twisted #24 AWG or #26 AWG jumper wire, cross-connect each ground start trunk to the TRK2 port of your choice (see Figure 5-3).

The TRK2 port must be equipped with a LOOP/GROUND daughterboard. The jumper pin corresponding to that circuit must be set for ground start. Refer to Part 3.4 and Figure 3-6 if necessary.
NOTE: You must program trunks for ground start operation in MMC #57 TRK SIGNAL TYPE because the CPU cannot recognize the jumper pin settings.

## 5.4  DID SERVICE

Using one pair twisted #24 AWG or #26 AWG jumper wire, cross-connect each direct inward dialing (DID) trunk to the TRK2 port of your choice (see Figure 5-4).

The TRK2 port must be equipped with a DID daughterboard. The default signal type for the DID trunk is "WINK" start. If DID service is not engineered for wink signal type, use MMC #57 to change signalling as required.

The DID digit translation table, MMC #85, must be programmed before DID calls will ring the assigned stations.

## 5.5  E & M TIE LINES

Using two pair twisted #24 AWG or #26 AWG jumper wire, cross-connect each tie line to a TRK2 port configured with an E & M daughterboard (see Figure 5-5).

Each tie line circuit on the daughterboard has two pico fuses for overcurrent protection on the E lead and the M lead. Use an ohm meter to check for continuity of pico fuses. If the component shows an open condition, replace the defective pico fuse. Push down on the connector to release pico fuse.

The default signal type is "WINK." If the tie line is not engineered for this signal

type, use MMC #57 to change signalling as required.

# 5.6  OFF PREMISE EXTENSIONS (OPX)

Using one pair twisted #24 AWG or #26 AWG jumper wire, cross-connect PROSTAR single line extensions to telephone company OPX circuits (see Figure 5-6).

Circuits 5, 6, 7 and 8 on the SLC card are specifically designed to meet Telco requirements for OPX use. These four circuits are provided with the same over voltage and over current protection as C.O. line circuits. Using single line stations not assigned to these circuits may cause damage to the card and/or the KSU.

There is no special programming required for OPX use. The telephone company service facility interface code for OPX circuits is OL13C.

## 25 PAIR CABLE WITH FEMALE CONNECTOR TO ANY TRK 1 CARD

| FUNCTION | CIRCUIT | TERM | COLOR | PIN |
|---|---|---|---|---|
| C.O. TIP | 1 | 1 | W-BL | 26 |
| C.O. RING | | 2 | BL-W | 1 |
| —— | | 3 | W-O | 27 |
| —— | | 4 | O-W | 2 |
| C.O. TIP | 2 | 5 | W-GN | 28 |
| C.O. RING | | 6 | GN-W | 3 |
| —— | | 7 | W-BR | 29 |
| —— | | 8 | BR-W | 4 |
| C.O. TIP | 3 | 9 | W-S | 30 |
| C.O. RING | | 10 | S-W | 5 |
| —— | | 11 | R-BL | 31 |
| —— | | 12 | BL-R | 6 |
| C.O. TIP | 4 | 13 | R-O | 32 |
| C.O. RING | | 14 | O-R | 7 |
| —— | | 15 | R-GR | 33 |
| —— | | 16 | GR-R | 8 |
| C.O. TIP | 5 | 17 | R-BR | 34 |
| C.O. RING | | 18 | BR-R | 9 |
| —— | | 19 | R-S | 35 |
| —— | | 20 | S-R | 10 |
| C.O. TIP | 6 | 21 | BK-BL | 36 |
| C.O. RING | | 22 | BL-BK | 11 |
| —— | | 23 | BK-O | 37 |
| —— | | 24 | O-BK | 12 |
| C.O. TIP | 7 | 25 | BK-GN | 38 |
| C.O. RING | | 26 | GN-BK | 13 |
| —— | | 27 | BK-BR | 39 |
| —— | | 28 | BR-BK | 14 |
| C.O. TIP | 8 | 29 | BK-SL | 40 |
| C.O. RING | | 30 | SL-BK | 15 |
| —— | | 31 | Y-BL | 41 |
| —— | | 32 | BL-Y | 16 |

TELCO PROVIDED
NETWORK ACCESS JACK

RJ 11C

RJ 14C

RJ 21X

NOTE: ONLY LOOP START LINES
CAN BE CONNECTED TO A TRK 1 CARD

CONNECT TO ANY CIRCUIT
ON ANY TRK 1 CARD

## MDF CONNECTIONS
## LOOP START LINE - TO - TRK 1 CARD

# FIGURE 5-1

## 25 PAIR CABLE WITH FEMALE CONNECTOR TO ANY TRK 2 CARD

| FUNCTION | CIRCUIT | TERM | COLOR | PIN |
|---|---|---|---|---|
| C.O. TIP | 1 | 1 | W-BL | 26 |
| C.O. RING | | 2 | BL-W | 1 |
| ———— | | 3 | W-O | 27 |
| ———— | | 4 | O-W | 2 |
| C.O. TIP | 2 | 5 | W-GN | 28 |
| C.O. RING | | 6 | GN-W | 3 |
| ———— | | 7 | W-BR | 29 |
| ———— | | 8 | BR-W | 4 |
| | 3 | 9 | W-S | 30 |
| | | 10 | S-W | 5 |
| | | 11 | R-BL | 31 |
| | | 12 | BL-R | 6 |
| | 4 | 13 | R-O | 32 |
| | | 14 | O-R | 7 |
| | | 15 | R-GR | 33 |
| | | 16 | GR-R | 8 |
| | 5 | 17 | R-BR | 34 |
| | | 18 | BR-R | 9 |
| | | 19 | R-S | 35 |
| | | 20 | S-R | 10 |
| | 6 | 21 | BK-BL | 36 |
| | | 22 | BL-BK | 11 |
| | | 23 | BK-O | 37 |
| | | 24 | O-BK | 12 |
| | 7 | 25 | BK-GN | 38 |
| | | 26 | GN-BK | 13 |
| | | 27 | BK-BR | 39 |
| | | 28 | BR-BK | 14 |
| | 8 | 29 | BK-SL | 40 |
| | | 30 | SL-BK | 15 |
| | | 31 | Y-BL | 41 |
| | | 32 | BL-Y | 16 |

TELCO PROVIDED
NETWORK ACCESS JACK

RJ 11C

RJ 14C

RJ 21X
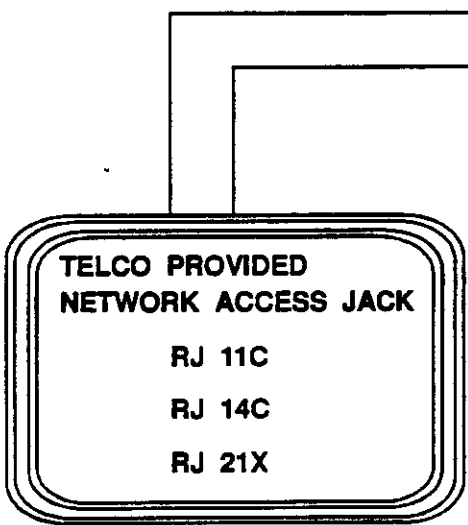
NOTE: SET JUMPER PINS FOR
LOOP START SEE FIGURE 3-6

CONNECT TO ANY CIRCUIT
ON ANY TRK 2 CARD THAT IS
EQUIPPED WITH A LOOP/GROUND
DAUGHTER BOARD
SEE FIGURES 3-5 & 3-6

MDF CONNECTIONS
LOOP START LINE - TO - TRK 2 CARD

# FIGURE 5-2

## 25 PAIR CABLE WITH FEMALE CONNECTOR TO ANY TRK 2 CARD

| FUNCTION | CIRCUIT | TERM | COLOR | PIN |
|---|---|---|---|---|
| C.O. TIP | | 1 | W-BL | 26 |
| C.O. RING | 1 | 2 | BL-W | 1 |
| ___ | | 3 | W-O | 27 |
| ___ | | 4 | O-W | 2 |
| C.O. TIP | | 5 | W-GN | 28 |
| C.O. RING | 2 | 6 | GN-W | 3 |
| ___ | | 7 | W-BR | 29 |
| ___ | | 8 | BR-W | 4 |
| | | 9 | W-S | 30 |
| | 3 | 10 | S-W | 5 |
| | | 11 | R-BL | 31 |
| | | 12 | BL-R | 6 |
| | | 13 | R-O | 32 |
| | 4 | 14 | O-R | 7 |
| | | 15 | R-GR | 33 |
| | | 16 | GR-R | 8 |
| | | 17 | R-BR | 34 |
| | 5 | 18 | BR-R | 9 |
| | | 19 | R-S | 35 |
| | | 20 | S-R | 10 |
| | | 21 | BK-BL | 36 |
| | 6 | 22 | BL-BK | 11 |
| | | 23 | BK-O | 37 |
| | | 24 | O-BK | 12 |
| | | 25 | BK-GN | 38 |
| | 7 | 26 | GN-BK | 13 |
| | | 27 | BK-BR | 39 |
| | | 28 | BR-BK | 14 |
| | | 29 | BK-SL | 40 |
| | 8 | 30 | SL-BK | 15 |
| | | 31 | Y-BL | 41 |
| | | 32 | BL-Y | 16 |

TELCO PROVIDED
NETWORK ACCESS JACK

RJ 11C

RJ 14C

RJ 21X
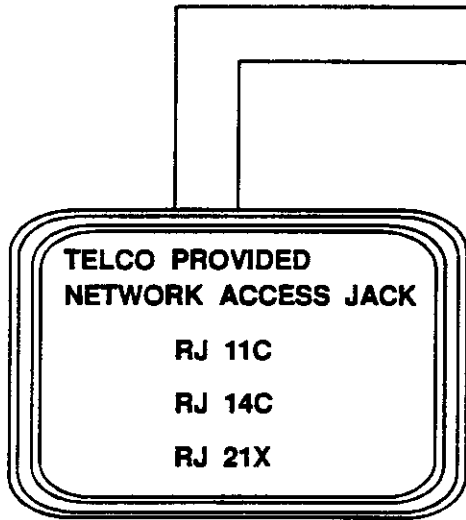
NOTE: SET JUMPER PINS FOR
GROUND START SEE FIGURE 3-6
SET TRUNK SIGNAL TYPE TO GROUND

CONNECT TO ANY CIRCUIT
ON ANY TRK 2 CARD THAT IS
EQUIPPED WITH A LOOP/GROUND
DAUGTHER BOARD
SEE FIGURES 3-5 & 3-6

## MDF CONNECTIONS
## GROUND START TRUNK - TO - TRK 2 CARD

# FIGURE 5-3

**25 PAIR CABLE WITH FEMALE CONNECTOR TO ANY TRK 2 CARD**

| FUNCTION | CIRCUIT | TERM | COLOR | PIN |
|---|---|---|---|---|
| C.O. TIP | | 1 | W-BL | 26 |
| C.O. RING | 1 | 2 | BL-W | 1 |
| ___ | | 3 | W-O | 27 |
| ___ | | 4 | O-W | 2 |
| C.O. TIP | | 5 | W-GN | 28 |
| C.O. RING | 2 | 6 | GN-W | 3 |
| ___ | | 7 | W-BR | 29 |
| ___ | | 8 | BR-W | 4 |
| | | 9 | W-S | 30 |
| | 3 | 10 | S-W | 5 |
| | | 11 | R-BL | 31 |
| | | 12 | BL-R | 6 |
| | | 13 | R-O | 32 |
| | 4 | 14 | O-R | 7 |
| | | 15 | R-GR | 33 |
| | | 16 | GR-R | 8 |
| | | 17 | R-BR | 34 |
| | 5 | 18 | BR-R | 9 |
| | | 19 | R-S | 35 |
| | | 20 | S-R | 10 |
| | | 21 | BK-BL | 36 |
| | 6 | 22 | BL-BK | 11 |
| | | 23 | BK-O | 37 |
| | | 24 | O-BK | 12 |
| | | 25 | BK-GN | 38 |
| | 7 | 26 | GN-BK | 13 |
| | | 27 | BK-BR | 39 |
| | | 28 | BR-BK | 14 |
| | | 29 | BK-SL | 40 |
| | 8 | 30 | SL-BK | 15 |
| | | 31 | Y-BL | 41 |
| | | 32 | BL-Y | 16 |

TELCO PROVIDED
NETWORK ACCESS JACK

RJ 11C

RJ 14C

RJ 21X

NOTE: SET SIGNAL TYPE
TO MATCH TELCO PROVIDED
SIGNALING

CONNECT TO ANY CIRCUIT
ON ANY TRK 2 CARD THAT IS
EQUIPPED WITH A D.I.D.
DAUGHTER BOARD
*SEE FIGURES 3-5 & 3-6*

**MDF CONNECTIONS
D.I.D. TRUNK - TO - TRK 2 CARD**

# FIGURE 5-4
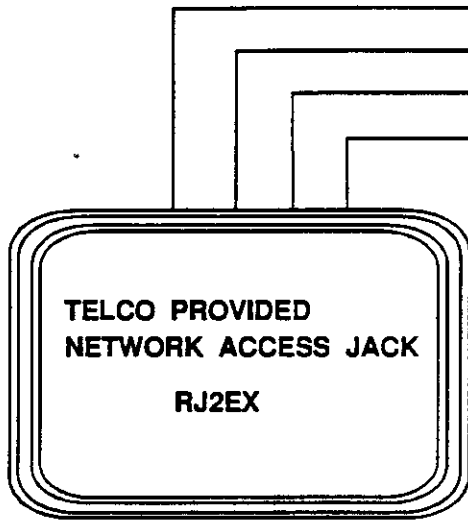
| FUNCTION | CIRCUIT | TERM | COLOR | PIN |
|----------|---------|------|-------|-----|
| C.O. TIP | 1 | 1 | W-BL | 26 |
| C.O. RING | | 2 | BL-W | 1 |
| E LEAD | | 3 | W-O | 27 |
| M LEAD | | 4 | O-W | 2 |
| C.O. TIP | 2 | 5 | W-GN | 28 |
| C.O. RING | | 6 | GN-W | 3 |
| E LEAD | | 7 | W-BR | 29 |
| M LEAD | | 8 | BR-W | 4 |
| | 3 | 9 | W-S | 30 |
| | | 10 | S-W | 5 |
| | | 11 | R-BL | 31 |
| | | 12 | BL-R | 6 |
| | 4 | 13 | R-O | 32 |
| | | 14 | O-R | 7 |
| | | 15 | R-GR | 33 |
| | | 16 | GR-R | 8 |
| | 5 | 17 | R-BR | 34 |
| | | 18 | BR-R | 9 |
| | | 19 | R-S | 35 |
| | | 20 | S-R | 10 |
| | 6 | 21 | BK-BL | 36 |
| | | 22 | BL-BK | 11 |
| | | 23 | BK-O | 37 |
| | | 24 | O-BK | 12 |
| | 7 | 25 | BK-GN | 38 |
| | | 26 | GN-BK | 13 |
| | | 27 | BK-BR | 39 |
| | | 28 | BR-BK | 14 |
| | 8 | 29 | BK-SL | 40 |
| | | 30 | SL-BK | 15 |
| | | 31 | Y-BL | 41 |
| | | 32 | BL-Y | 16 |

TELCO PROVIDED
NETWORK ACCESS JACK

RJ2EX

NOTE: SET SIGNAL TYPE
TO MATCH TELCO PROVIDED
SIGNALING

CONNECT TO ANY CIRCUIT
ON ANY TRK 2 CARD THAT IS
EQUIPPED WITH AN E&M TIE
LINE DAUGHTER BOARD
SEE FIGURES 3-5 & 3-6

MDF CONNECTIONS
E&M TIE LINE - TO - TRK 2 CARD

FIGURE 5-5

## 25 PAIR CABLE WITH FEMALE CONNECTOR TO ANY SLC CARD

CONNECT TO CIRCUIT
5,6,7 OR 8 ON ANY
SLC CARD

TELCO PROVIDED
NETWORK ACCESS JACK

RJ 11C

RJ 14C

RJ 21X

| FUNCTION | CIRCUIT | TERM | COLOR | PIN |
|---|---|---|---|---|
|  |  | 1 | W-BL | 26 |
|  | 1 | 2 | BL-W | 1 |
|  |  | 3 | W-O | 27 |
|  |  | 4 | O-W | 2 |
|  |  | 5 | W-GN | 28 |
|  | 2 | 6 | GN-W | 3 |
|  |  | 7 | W-BR | 29 |
|  |  | 8 | BR-W | 4 |
|  |  | 9 | W-S | 30 |
|  | 3 | 10 | S-W | 5 |
|  |  | 11 | R-BL | 31 |
|  |  | 12 | BL-R | 6 |
|  |  | 13 | R-O | 32 |
|  | 4 | 14 | O-R | 7 |
|  |  | 15 | R-GR | 33 |
|  |  | 16 | GR-R | 8 |
| STA TIP |  | 17 | R-BR | 34 |
| STA RING | 5 | 18 | BR-R | 9 |
| ——— |  | 19 | R-S | 35 |
| ——— |  | 20 | S-R | 10 |
| STA TIP |  | 21 | BK-BL | 36 |
| STA RING | 6 | 22 | BL-BK | 11 |
| ——— |  | 23 | BK-O | 37 |
| ——— |  | 24 | O-BK | 12 |
| STA TIP |  | 25 | BK-GN | 38 |
| STA RING | 7 | 26 | GN-BK | 13 |
| ——— |  | 27 | BK-BR | 39 |
| ——— |  | 28 | BR-BK | 14 |
| STA TIP |  | 29 | BK-SL | 40 |
| STA RING | 8 | 30 | SL-BK | 15 |
| ——— |  | 31 | Y-BL | 41 |
| ——— |  | 32 | BL-Y | 16 |

## MDF CONNECTIONS
## OFF PREMISE EXTENSION - FROM - SLC CARD

# FIGURE 5-6

# PART 6. CONNECTING STATION EQUIPMENT

## 6.1 SAFETY PRECAUTIONS

To limit the risk of personal injury, always follow these precautions before connecting Telco circuits:

a. Never install telephone wiring during a lightning storm.
b. Never install telephone jacks in wet location unless the jack is specifically designed for wet locations.
c. Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
d. Use caution when installing or modifying telephone lines.

## 6.2 824 KEYSET

Using two pair twisted #24 AWG or #26 AWG jumper wire, cross-connect each 824 keyset to the MSLC1 port of your choice (see Figure 6-1).

## 6.3 ADD-ON MODULE

Using two pair twisted #24 AWG or #26 AWG jumper wire, cross-connect each AOM to the MSLC1 port of your choice (see Figure 6-2).

If an AOM is to operate as a stand-alone unit, there is nothing else required other than assigning softkeys.

When an AOM is to be used with a station, it must be assigned in MMC #38. Add-on modules can be assigned to any keyset or single line telephone. A station that wants OFF-HOOK VOICE ANNOUNCE must have an AOM assigned to it.

## 6.4 816 KEYSET

Using two pair twisted #24 AWG or #26

AWG jumper wire, cross-connect each 816 keyset to the MSLC2 port of your choice (see Figure 6-3).

When circuits 5, 6, 7 and 8 are used on any MSLC2 card, verify that jumper pins are set for keyset operation. Each of these positions have three jumper pins per circuit. For the fifth circuit, they are identified as J501, J502 and J503. Each jumper pin must be positioned across the center pin and the pin marked "K" for keyset operation. The set of pins for the sixth are labelled J601, J602 and J603. The seventh and eighth circuits follow the sequence. Refer to Part 3.6 and Figure 3-8 if necessary.

## 6.5 SINGLE LINE TELEPHONE

Using two pair twisted #24 AWG or #26 AWG jumper wire, cross-connect each single line telephone to the SLC or MSLC2 port of your choice (see Figures 6-4 and 6-5).

When connecting a single line telephone or any device that uses a single line port to the MSLC2 card, only circuits 5, 6, 7 and 8 can be used.

Verify that the jumper pins are set for single line operation. Each of these positions have three jumper pins per circuit. For the fifth circuit, they are identified as J501, J502 and J503. Each jumper pin must be positioned across the center pin and the pin marked "S" for single line telephone operation. The set of pins for the sixth are labelled J601, J602 and J603. The seventh and eighth circuits follow the sequence. Refer to Part 3.6 and Figure 3-8 if necessary.

## 6.6 DOOR PHONE AND DOOR LOCK RELEASE

Using two pair twisted #24 AWG or #26 AWG jumper wire, cross-connect each door phone to one of the circuits on the MISCELLANEOUS card (see Figure 6-6).

When a customer-provided electric door release is installed, cross-connect the corresponding door release contacts on MISC connecting block to the door lock mechanism (see Figure 6-6). Use MMC #74 to program the duration of the contact closure as required. See user guides for door lock release operation.

The door release contacts on the MISC card are to be used for low voltage relay control only. The contacts are rated at 24VDC-1 amp.

> **WARNING:** Do not attempt to connect commercial AC power to these contacts.

| PIN | COLOR | TERM | CIRCUIT | FUNCTION |
|-----|-------|------|---------|----------|
| 26 | W-BL | 1 | | VOICE TIP |
| 1 | BL-W | 2 | 1 | VOICE RING |
| 27 | W-O | 3 | | DATA TIP |
| 2 | O-W | 4 | | DATA RING |
| 28 | W-GN | 5 | | VOICE TIP |
| 3 | GN-W | 6 | 2 | VOICE RING |
| 29 | W-BR | 7 | | DATA TIP |
| 4 | BR-W | 8 | | DATA RING |
| 30 | W-S | 9 | | VOICE TIP |
| 5 | S-W | 10 | 3 | VOICE RING |
| 31 | R-BL | 11 | | DATA TIP |
| 6 | BL-R | 12 | | DATA RING |
| 32 | R-O | 13 | | VOICE TIP |
| 7 | O-R | 14 | 4 | VOICE RING |
| 33 | R-GR | 15 | | DATA TIP |
| 8 | GR-R | 16 | | DATA RING |
| 34 | R-BR | 17 | | VOICE TIP |
| 9 | BR-R | 18 | 5 | VOICE RING |
| 35 | R-S | 19 | | DATA TIP |
| 10 | S-R | 20 | | DATA RING |
| 36 | BK-BL | 21 | | VOICE TIP |
| 11 | BL-BK | 22 | 6 | VOICE RING |
| 37 | BK-O | 23 | | DATA TIP |
| 12 | O-BK | 24 | | DATA RING |
| 38 | BK-GN | 25 | | VOICE TIP |
| 13 | GN-BK | 26 | 7 | VOICE RING |
| 39 | BK-BR | 27 | | DATA TIP |
| 14 | BR-BK | 28 | | DATA RING |
| 40 | BK-SL | 29 | | VOICE TIP |
| 15 | SL-BK | 30 | 8 | VOICE RING |
| 41 | Y-BL | 31 | | DATA TIP |
| 16 | BL-Y | 32 | | DATA RING |

TWO PAIR TWISTED
SHEATHED STATION CABLE
24 OR 26 AWG

824 KEYSET

CONNECT TO ANY CIRCUIT
ON ANY MSLC1 CARD

**MDF CONNECTIONS
824 KEYSET - TO - MSLC1 CARD**

# FIGURE 6-1

| PIN | COLOR | TERM | CIRCUIT | FUNCTION |
|---|---|---|---|---|
| 26 | W-BL | 1 | | VOICE TIP |
| 1 | BL-W | 2 | 1 | VOICE RING |
| 27 | W-O | 3 | | DATA TIP |
| 2 | O-W | 4 | | DATA RING |
| 28 | W-GN | 5 | | VOICE TIP |
| 3 | GN-W | 6 | 2 | VOICE RING |
| 29 | W-BR | 7 | | DATA TIP |
| 4 | BR-W | 8 | | DATA RING |
| 30 | W-S | 9 | | VOICE TIP |
| 5 | S-W | 10 | 3 | VOICE RING |
| 31 | R-BL | 11 | | DATA TIP |
| 6 | BL-R | 12 | | DATA RING |
| 32 | R-O | 13 | | VOICE TIP |
| 7 | O-R | 14 | 4 | VOICE RING |
| 33 | R-GR | 15 | | DATA TIP |
| 8 | GR-R | 16 | | DATA RING |
| 34 | R-BR | 17 | | VOICE TIP |
| 9 | BR-R | 18 | 5 | VOICE RING |
| 35 | R-S | 19 | | DATA TIP |
| 10 | S-R | 20 | | DATA RING |
| 36 | BK-BL | 21 | | VOICE TIP |
| 11 | BL-BK | 22 | 6 | VOICE RING |
| 37 | BK-O | 23 | | DATA TIP |
| 12 | O-BK | 24 | | DATA RING |
| 38 | BK-GN | 25 | | VOICE TIP |
| 13 | GN-BK | 26 | 7 | VOICE RING |
| 39 | BK-BR | 27 | | DATA TIP |
| 14 | BR-BK | 28 | | DATA RING |
| 40 | BK-SL | 29 | | VOICE TIP |
| 15 | SL-BK | 30 | 8 | VOICE RING |
| 41 | Y-BL | 31 | | DATA TIP |
| 16 | BL-Y | 32 | | DATA RING |

TWO PAIR TWISTED
SHEATHED STATION CABLE
24 OR 26 AWG

ADD - ON
MODULE
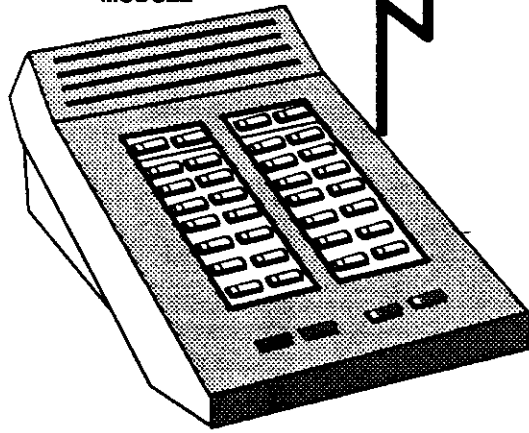
CONNECT TO ANY CIRCUIT
ON ANY MSLC1 CARD

# MDF CONNECTIONS
# ADD-ON MODULE - TO - MSLC1 CARD

# FIGURE 6-2

## 25 PAIR CABLE WITH FEMALE CONNECTOR TO ANY MSLC2 CARD.

| PIN | COLOR | TERM | CIRCUIT | FUNCTION |
|-----|-------|------|---------|----------|
| 26 | W-BL | 1 | | VOICE TIP |
| 1 | BL-W | 2 | 1 | VOICE RING |
| 27 | W-O | 3 | | DATA TIP |
| 2 | O-W | 4 | | DATA RING |
| 28 | W-GN | 5 | | VOICE TIP |
| 3 | GN-W | 6 | 2 | VOICE RING |
| 29 | W-BR | 7 | | DATA TIP |
| 4 | BR-W | 8 | | DATA RING |
| 30 | W-S | 9 | | VOICE TIP |
| 5 | S-W | 10 | 3 | VOICE RING |
| 31 | R-BL | 11 | | DATA TIP |
| 6 | BL-R | 12 | | DATA RING |
| 32 | R-O | 13 | | VOICE TIP |
| 7 | O-R | 14 | 4 | VOICE RING |
| 33 | R-GR | 15 | | DATA TIP |
| 8 | GR-R | 16 | | DATA RING |
| 34 | R-BR | 17 | | VOICE TIP |
| 9 | BR-R | 18 | 5 | VOICE RING |
| 35 | R-S | 19 | | DATA TIP |
| 10 | S-R | 20 | | DATA RING |
| 36 | BK-BL | 21 | | VOICE TIP |
| 11 | BL-BK | 22 | 6 | VOICE RING |
| 37 | BK-O | 23 | | DATA TIP |
| 12 | O-BK | 24 | | DATA RING |
| 38 | BK-GN | 25 | | VOICE TIP |
| 13 | GN-BK | 26 | 7 | VOICE RING |
| 39 | BK-BR | 27 | | DATA TIP |
| 14 | BR-BK | 28 | | DATA RING |
| 40 | BK-SL | 29 | | VOICE TIP |
| 15 | SL-BK | 30 | 8 | VOICE RING |
| 41 | Y-BL | 31 | | DATA TIP |
| 16 | BL-Y | 32 | | DATA RING |

TWO PAIR TWISTED
SHEATHED STATION CABLE
24 OR 26 AWG

R    G

BK    Y

W    BL

1  2  3  4  5  6

816 KEYSET

## CONNECT TO ANY CIRCUIT ON ANY MSLC2 CARD

NOTE: FOR CIRCUITS 5,6,7 & 8
SET JUMPER PINS FOR KEYSET USE.

## MDF CONNECTIONS
## 816 KEYSET - TO - MSLC2 CARD

# FIGURE 6-3

**25 PAIR CABLE WITH FEMALE CONNECTOR TO ANY SLC CARD.**

| PIN | COLOR | TERM | CIRCUIT | FUNCTION |
|-----|-------|------|---------|----------|
| 26 | W-BL | 1 | | TIP |
| 1 | BL-W | 2 | 1 | RING |
| 27 | W-O | 3 | | PFT - TIP |
| 2 | O-W | 4 | | PFT - RING |
| 28 | W-GN | 5 | | TIP |
| 3 | GN-W | 6 | 2 | RING |
| 29 | W-BR | 7 | | PFT - TIP |
| 4 | BR-W | 8 | | PFT - RING |
| 30 | W-S | 9 | | TIP |
| 5 | S-W | 10 | 3 | RING |
| 31 | R-BL | 11 | | PFT - TIP |
| 6 | BL-R | 12 | | PFT - RING |
| 32 | R-O | 13 | | TIP |
| 7 | O-R | 14 | 4 | RING |
| 33 | R-GR | 15 | | PFT - TIP |
| 8 | GR-R | 16 | | PFT - RING |
| 34 | R-BR | 17 | | TIP |
| 9 | BR-R | 18 | 5 | RING |
| 35 | R-S | 19 | | —— |
| 10 | S-R | 20 | | —— |
| 36 | BK-BL | 21 | | TIP |
| 11 | BL-BK | 22 | 6 | RING |
| 37 | BK-O | 23 | | —— |
| 12 | O-BK | 24 | | —— |
| 38 | BK-GN | 25 | | TIP |
| 13 | GN-BK | 26 | 7 | RING |
| 39 | BK-BR | 27 | | —— |
| 14 | BR-BK | 28 | | —— |
| 40 | BK-SL | 29 | | TIP |
| 15 | SL-BK | 30 | 8 | RING |
| 41 | Y-BL | 31 | | —— |
| 16 | BL-Y | 32 | | —— |

ONE PAIR TWISTED
SHEATHED STATION CABLE
24 OR 26 AWG

R   G

BK   Y

W   BL

1 2 3 4 5 6

DTMF/PULSE
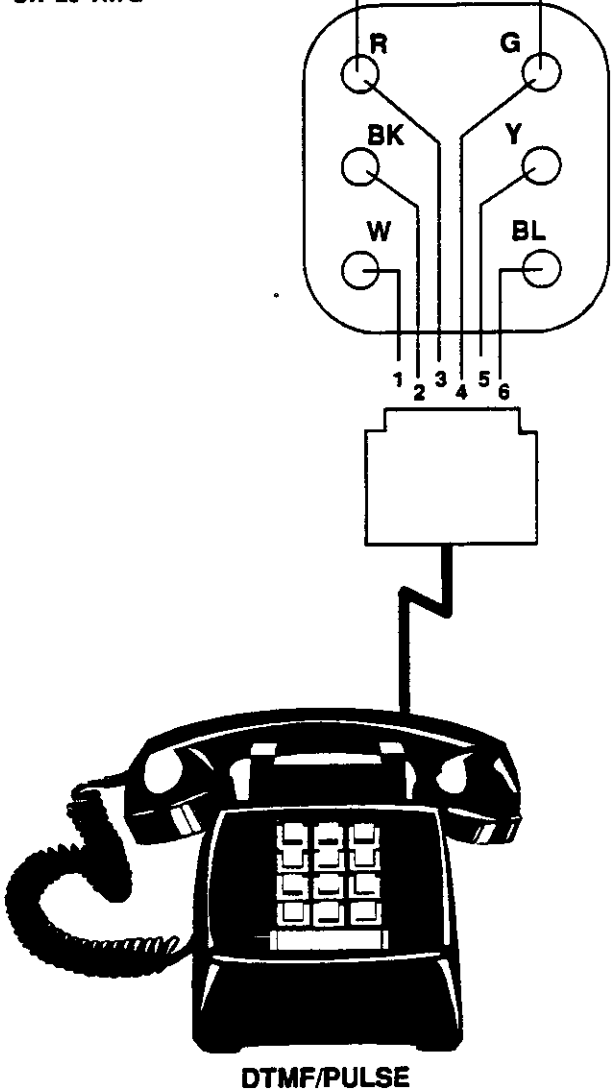
CONNECT TO ANY CIRCUIT
ON ANY SLC CARD

**MDF CONNECTIONS
STANDARD TELEPHONE - TO - SLC CARD**

**FIGURE 6-4**

## 25 PAIR CABLE WITH FEMALE CONNECTOR TO ANY MSLC2 CARD.

| PIN | COLOR | TERM | CIRCUIT | FUNCTION |
|-----|-------|------|---------|----------|
| 26 | W-BL | 1 | | VOICE TIP |
| 1 | BL-W | 2 | 1 | VIOCE RING |
| 27 | W-O | 3 | | DATA TIP |
| 2 | O-W | 4 | | DATA RING |
| 28 | W-GN | 5 | | VOICE TIP |
| 3 | GN-W | 6 | 2 | VIOCE RING |
| 29 | W-BR | 7 | | DATA TIP |
| 4 | BR-W | 8 | | DATA RING |
| 30 | W-S | 9 | | VOICE TIP |
| 5 | S-W | 10 | 3 | VIOCE RING |
| 31 | R-BL | 11 | | DATA TIP |
| 6 | BL-R | 12 | | DATA RING |
| 32 | R-O | 13 | | VOICE TIP |
| 7 | O-R | 14 | 4 | VIOCE RING |
| 33 | R-GR | 15 | | DATA TIP |
| 8 | GR-R | 16 | | DATA RING |
| 34 | R-BR | 17 | | TIP |
| 9 | BR-R | 18 | 5 | RING |
| 35 | R-S | 19 | | — |
| 10 | S-R | 20 | | — |
| 36 | BK-BL | 21 | | TIP |
| 11 | BL-BK | 22 | 6 | RING |
| 37 | BK-O | 23 | | — |
| 12 | O-BK | 24 | | — |
| 38 | BK-GN | 25 | | TIP |
| 13 | GN-BK | 26 | 7 | RING |
| 39 | BK-BR | 27 | | — |
| 14 | BR-BK | 28 | | — |
| 40 | BK-SL | 29 | | TIP |
| 15 | SL-BK | 30 | 8 | RING |
| 41 | Y-BL | 31 | | — |
| 16 | BL-Y | 32 | | — |

DTMF/PULSE
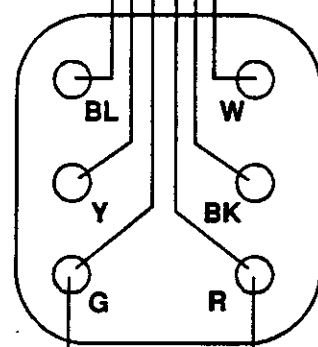
ONE PAIR TWISTED
SHEATHED STATION CABLE
24 OR 26 AWG

**CONNECT TO CIRCUIT 5,6,7 OR 8 ON ANY MSLC2 CARD**

NOTE: SET JUMPER PINS ON THESE CIRCUITS FOR STANDARD TELEPHONE USE

## MDF CONNECTIONS
## STANDARD TELEPHONE - TO -MSLC2 CARD

# FIGURE 6-5

| PIN | COLOR | TERM | CIRCUIT | FUNCTION |
|-----|-------|------|---------|----------|
| 26 | W-BL | 1 | EXTERNAL | PAGE TIP |
| 1 | BL-W | 2 | PAGE | PAGE RING |
| 27 | W-O | 3 | ZONE | CONTACT A |
| 2 | O-W | 4 | 6 | CONTACT B |
| 28 | W-GN | 5 | EXTERNAL | PAGE TIP |
| 3 | GN-W | 6 | PAGE | PAGE RING |
| 29 | W-BR | 7 | ZONE | CONTACT A |
| 4 | BR-W | 8 | 7 | CONTACT B |
| 30 | W-S | 9 | EXTERNAL | PAGE TIP |
| 5 | S-W | 10 | PAGE | PAGE RING |
| 31 | R-BL | 11 | ZONE | CONTACT A |
| 6 | BL-R | 12 | 8 | CONTACT B |
| 32 | R-O | 13 | EXTERNAL | PAGE TIP |
| 7 | O-R | 14 | PAGE | PAGE RING |
| 33 | R-GR | 15 | ZONE | CONTACT A |
| 8 | GR-R | 16 | 9 | CONTACT B |
| 34 | R-BR | 17 | DOOR | VIOCE TIP |
| 9 | BR-R | 18 | PHONE | VIOCE RING |
| 35 | R-S | 19 | #1 | + 12V |
| 10 | S-R | 20 | | GND |
| 36 | BK-BL | 21 | DOOR | VIOCE TIP |
| 11 | BL-BK | 22 | PHONE | VIOCE RING |
| 37 | BK-O | 23 | #2 | + 12V |
| 12 | O-BK | 24 | | GND |
| 38 | BK-GN | 25 | DOOR | CONTACT 1A |
| 13 | GN-BK | 26 | LOCK #1 | CONTACT 1B |
| 39 | BK-BR | 27 | DOOR | CONTACT 2A |
| 14 | BR-BK | 28 | LOCK #2 | CONTACT 2B |
| 40 | BK-SL | 29 | MUSIC #1 | INPUT 1T |
| 15 | SL-BK | 30 | | SIGNAL 1R |
| 41 | Y-BL | 31 | MUSIC #2 | INPUT 2T |
| 16 | BL-Y | 32 | | SIGNAL 2R |

L1
L2
P+
P-

TWO PAIR TWISTED
SHEATHED STATION CABLE
24 OR 26 AWG

L1
L2
P+
P-

DOOR LOCK
RELEASE MECHANISM

COSTUMER PROVIDED

DOOR LOCK
RELEASE MECHANISM

## MDF CONNECTIONS
## DOOR PHONE - TO - MISC CARD

# FIGURE 6-6

# PART 7.  CONNECTING OPTIONAL EQUIPMENT

## 7.1  MUSIC ON HOLD/ BACKGROUND MUSIC

Connect customer-provided music sources to music inputs A and B on the MISCELLANEOUS card connecting block (see Figure 7-1).

Both music inputs on the MISC card have internal automatic gain compensation features. Adjust input level of source A using MSC1 (Music Source Control) and source B using MSC2. See Figure 3-3. Both potentiometers are located on the front of the MISC card.

Music input A is auto switching. If the input signal drops out of the acceptable level range, the system switches music source A to the internal music source. The tune is titled "Fur Elise."

```
IMPORTANT NOTICE:
In accordance with U.S. Copyright
Law, a license may be required from
the American Society of Composers,
Authors and Publishers (ASCAP) or
another similar organization if
copyrighted music is transmitted
through the Music on Hold feature.
PROSTAR TELECOM, INC. hereby
disclaims any liability arising out of
failure to obtain such a license.
```

Each C.O. line (trunk) can be programmed to receive MUSIC A, MUSIC B, or NO MUSIC when it is put on hold. See MMC #56.

Each keyset can select MUSIC A, MUSIC B or NO MUSIC for background music. See keyset user guide for instructions.

## 7.2  EXTERNAL PAGING

The MISC card provides four voice pairs and four dry contact pairs to be used with customer-provided paging equipment. This allows for two options as set in MMC #26. The COMMON amplifier selection allows for one amplifier using the first voice pair and four dry contacts for control of speakers (See Figure 7-1). The INDIVIDUAL selection provides for four individual amplifier outputs, each with their own muting contacts (See Figure 7-2).

The page voice pairs are 600 ohm impedance. When the amplifier page input is not 600 ohm, an impedance matching transformer must be used. The paging contact pairs are for control of low voltage circuits or amplifier output. The contacts are rated at 24VDC-1 amp.

```
WARNING: Do not attempt to
connect commercial AC power to
these contacts.
```

## 7.3 COMMON BELL 1 AND 2

Two customer-provided loud ringing devices can be controlled using dry contacts pairs on the MISC card. See Figure 7-2.

Programming allows for INTERRUPTED or CONTINUOUS

operation of the contacts using MMC #29. The interrupted selection follows the C.O. ring cadence, one second ON/two seconds OFF.

After connecting a common bell, you must assign it to a group in MMC #33 as the "NEXT" ring destination by using the code *1 for Common Bell #1 and *2 for Common Bell #2.

The basic steps for common bell operation are the following:

a. Wire the loud ringing device to one of the common bell control contact pairs.
b. Set contacts for continuous or steady operation.
c. Program the hunt group to include the common bell as the "NEXT" entry and adjust overflow timer as required.
d. Assign the trunk to ring the hunt group containing the common bell.

Common bell control can be used with station hunt groups, individual stations and universal night answer. Contacts are rated at 24VDC-1 amp.

> **WARNING:** Do not attempt to connect commercial AC power to these contacts.

## 7.4  RING OVER PAGE

When a customer-provided paging system is installed, incoming calls can be assigned to ring over page. Program the line or lines to ring a hunt group. Using MMC #33, assign *0 (ROP) as the "NEXT" destination in this hunt group. Program the group overflow timer as desired. Incoming calls will ring these stations first, then overflow to ROP plus

the stations. Setting the overflow timer to "000" will ring over page immediately. Ring over page can be used for day or night operation or both.

## 7.5  824 KEYSET LOUD RINGER

All 824 model keysets are designed to send the keyset ring tone out on the WHITE and BLUE wires of the line cord. Connect this pair to any customer-provided amplifying device (see Figures 7-3A and 7-3B). Program the 824 station in MMC #47, KEYSET LOUD BELL for "ENABLED." Select one of four ring tones as instructed in the keyset user guide. NOTE: Remove the factory-supplied four conductor line cord and replace with a six conductor line cord. If the jack is four conductors, change to a six conductor jack.

## 7.6  RS232C - SMDR/TRAFFIC REPORT

The front of the CPU/MEMORY card has an RS232C serial interface connector. Connect a customer-provided serial printer to collect SMDR call records or TRAFFIC REPORTS (see Figure 7-4). If available, use a pin to pin RS232C cable to connect a printer or optional call accounting device. Only pins 1, 2, 3 and 7 are required.

The cable connecting the printer on call accounting system must not exceed 300 feet. When distance is more than 15 feet, use shielded computer cable and attach connector on both ends.

Use MMC #96 to set SMDR options and baud rate.

The CPU/MEM card has a call buffer that can store 32 SMDR call records while the traffic report is printing. However the system circuitry can not detect if the signalling between the RS-232C port and the printer or call accounting system has been interrupted. Should these devices lose power or the RS-232C cable be disconnected call records are lost during this period.

It is suggested that a printer with a data buffer be used for SMDR printout. You can go "OFF LINE" to add paper. The printer's data buffer will collect call records during this period and print them when it is back "ON LINE".

## 7.7  POWER FAILURE TRANSFER (PFT)

When the system loses AC power and there are no reserve power batteries connected, selected loop start lines and ground start trunks are automatically switched to PFT stations.

The SLC card provides power failure transfer relays for the first four circuits. Cross-connect these single line stations as shown in Figure 7-5. Cross-connect the selected lines to the Power Failure Transfer, TIP and RING pairs of the stations that are to have power failure operation. The allowable number of PFT stations is determined by the number of SLC cards.

When ground start trunks are used for PFT, the telephone sets must be modified for ground button operation (see manufacturer's instructions). Optional ground to loop converters are recommended as they are more convenient to install.

## 7.8  RESERVE POWER BATTERIES

The 56ex/120mx power supply contains a monitoring circuit to switch the system to customer-provided 48VDC batteries when AC power is interrupted. Calls in progress will not be disconnected. The power supply circuitry will monitor and recharge batteries as needed.

Connect four 12V batteries or eight 6V batteries in series. Any NICAD or car battery can be used if its rating is not less than 6AH (amp hours) but not more than 40 AH. The batteries must be located within three feet of the KSU. Use the factory-supplied wire harness with 36" red and black leads to connect batteries (see Figure 7-6). Battery terminals must be of the type that will permit connection of circle connectors with " hole.

Observe the following precautions when installing batteries:

a.  Make sure the batteries you install conform to local building, fire and safety codes.  Some battery types emit hydrogen gas during the charging state and may require venting to fresh air.

b.  Do not place batteries directly on a concrete floor. This will cause them to discharge very quickly.

c.  Follow the battery manufacturer's recommended installation and maintenance procedures.

For power consumption and estimated battery holdup times, see power reserve estimated holdup times in the general description section of this manual.

# 7.9  VOICE MAIL/AUTO ATTENDANT

System operation provides special programming and hardware for use with a customer-provided voice mail/auto attendant system.

Only single line stations on the MSLC2 card have additional DTMF senders and provide a disconnect signal required for VM/AA operation.

Use one pair twisted #24 AWG or #26 AWG jumper wire to cross-connect SLT circuits 5, 6, 7 or 8 to the VM/AA system (see Figure 7-7). Verify that these stations are set for SLT use. Refer to Part 6.4 and Figure 3-8 if necessary.

Program these ports for VM/AA use in MMC #45 and set VM/AA options in MMC #94. See standard telephone user guide for feature codes and instructions. Some voice mail manufacturers may require you to set these stations for data security (MMC #46) to stop call waiting and intrusion tone.

# MISC. CARD

600 Ω

# MISC. CONNECTION BLOCK

| PIN | COLOR | TERM | CIRCUIT | FUNCTION |
|---|---|---|---|---|
| 26 | W-BL | 1 | EXTERNAL | PAGE TIP |
| 1 | BL-W | 2 | PAGE | PAGE RING |
| 27 | W-O | 3 | ZONE | CONTACT A |
| 2 | O-W | 4 | 6 | CONTACT B |
| 28 | W-GN | 5 | EXTERNAL | PAGE TIP |
| 3 | GN-W | 6 | PAGE | PAGE RING |
| 29 | W-BR | 7 | ZONE | CONTACT A |
| 4 | BR-W | 8 | 7 | CONTACT B |
| 30 | W-S | 9 | EXTERNAL | PAGE TIP |
| 5 | S-W | 10 | PAGE | PAGE RING |
| 31 | R-BL | 11 | ZONE | CONTACT A |
| 6 | BL-R | 12 | 8 | CONTACT B |
| 32 | R-O | 13 | EXTERNAL | PAGE TIP |
| 7 | O-R | 14 | PAGE | PAGE RING |
| 33 | R-GR | 15 | ZONE | CONTACT A |
| 8 | GR-R | 16 | 9 | CONTACT B |
| 34 | R-BR | 17 | DOOR | VIOCE TIP |
| 9 | BR-R | 18 | PHONE | VIOCE RING |
| 35 | R-S | 19 | #1 | + 12V |
| 10 | S-R | 20 | | GND |
| 36 | BK-BL | 21 | DOOR | VIOCE TIP |
| 11 | BL-BK | 22 | PHONE | VIOCE RING |
| 37 | BK-O | 23 | #2 | + 12V |
| 12 | O-BK | 24 | | GND |
| 38 | BK-GN | 25 | DOOR | CONTACT 1A |
| 13 | GN-BK | 26 | LOCK #1 | CONTACT 1B |
| 39 | BK-BR | 27 | DOOR | CONTACT 2A |
| 14 | BR-BK | 28 | LOCK #2 | CONTACT 2B |
| 40 | BK-SL | 29 | MUSIC #1 | INPUT 1T |
| 15 | SL-BK | 30 | | SIGNAL 1R |
| 41 | Y-BL | 31 | MUSIC #2 | INPUT 2T |
| 16 | BL-Y | 32 | | SIGNAL 2R |

600 Ω
600 Ω

PAGING AMPLIFIER

IN    OUT

ZONE 6

ZONE 7

ZONE 8

ZONE 9

CUSTOMER
PROVIDED

MUSIC SOURCES

#1

#2

MDF CONNECTION
EXTERNAL PAGE & MUSIC - TO - MISC CARD

# FIGURE 7-1

# MISC. CARD

600 Ω

600 Ω

600 Ω

600 Ω

## MISC. CONNECTION BLOCK

| PIN | COLOR | TERM | CIRCUIT | FUNCTION |
|-----|-------|------|---------|----------|
| 26 | W-BL | 1 | EXTERNAL | PAGE TIP |
| 1 | BL-W | 2 | PAGE | PAGE RING |
| 27 | W-O | 3 | ZONE | CONTACT A |
| 2 | O-W | 4 | 6 | CONTACT B |
| 28 | W-GN | 5 | EXTERNAL | PAGE TIP |
| 3 | GN-W | 6 | PAGE | PAGE RING |
| 29 | W-BR | 7 | ZONE | CONTACT A |
| 4 | BR-W | 8 | 7 | CONTACT B |
| 30 | W-S | 9 | EXTERNAL | PAGE TIP |
| 5 | S-W | 10 | PAGE | PAGE RING |
| 31 | R-BL | 11 | ZONE | CONTACT A |
| 6 | BL-R | 12 | 8 | CONTACT B |
| 32 | R-O | 13 | EXTERNAL | PAGE TIP |
| 7 | O-R | 14 | PAGE | PAGE RING |
| 33 | R-GR | 15 | ZONE | CONTACT A |
| 8 | GR-R | 16 | 9 | CONTACT B |
| 34 | R-BR | 17 | | |
| 9 | BR-R | 18 | DOOR | |
| 35 | R-S | 19 | | |
| 10 | | | | |

| | | | | CONTACT 1B |
| | | | DOOR | CONTACT 2A |
| | BK | 28 | LOCK #2 | CONTACT 2B |
| 40 | BK-SL | 29 | MUSIC #1 | INPUT 1T |
| 15 | SL-BK | 30 | | SIGNAL 1R |
| 41 | Y-BL | 31 | MUSIC #2 | INPUT 2T |
| 16 | BL-Y | 32 | | SIGNAL 2R |
| 42 | Y-O | 33 | BELL | CONTACT B1A |
| 17 | O-Y | 34 | #1 | CONTACT B1B |
| 43 | Y-GN | 35 | BELL | CONTACT B2A |
| 18 | GN-Y | 36 | #2 | CONTACT B2B |

## AMPLIFIER #1
IN  OUT  ZONE 6  MUTE

## AMPLIFIER #2
IN  OUT  ZONE 7  MUTE

## AMPLIFIER #3
IN  OUT  ZONE 8  MUTE

## AMPLIFIER #4
IN  OUT  ZONE 9  MUTE
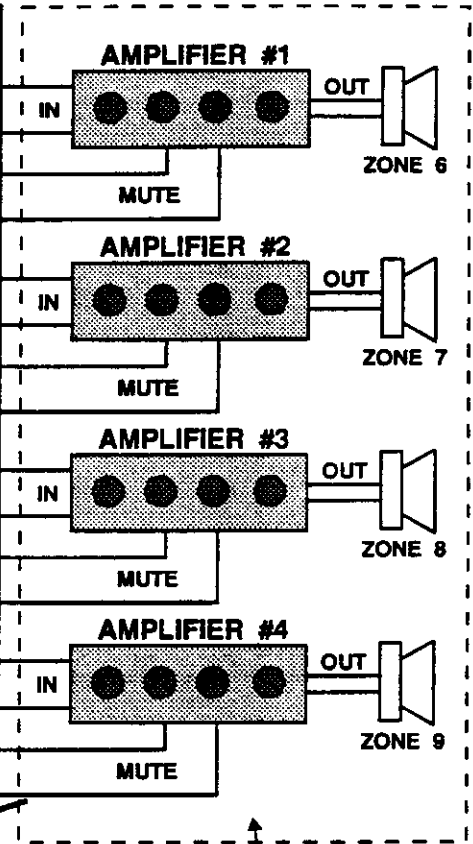
CUSTOMER
PROVIDED

## COMMON BELLS
#1

#2
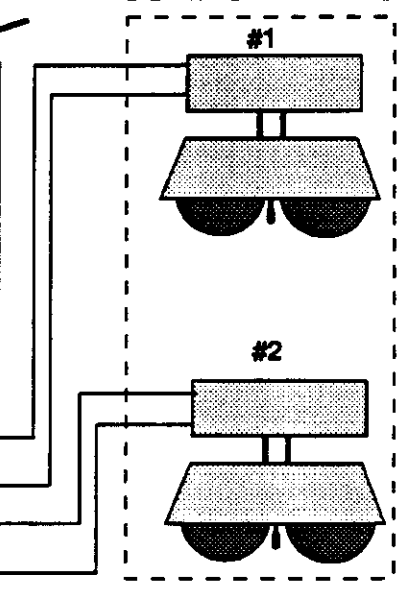
# MDF CONNECTIONS
# EXTERNAL PAGE & COMMON BELL

# FIGURE 7-2

TWO PAIR TWISTED SHEATHED STATION CABLE 24 OR 26 AWG

MDF

CUSTOMER PROVIDED AMPLIFYING DEVICE

824 KEYSET

824 KEYSET LOUD RINGER **FIGURE 7-3b**



ONE PAIR TWISTED SHEATHED STATION CABLE 24 OR 26 AWG

CUSTOMER PROVIDED AMPLIFYING DEVICE

TWO PAIR TWISTED SHEATHED STATION CABLE 24 OR 26 AWG

TO MDF
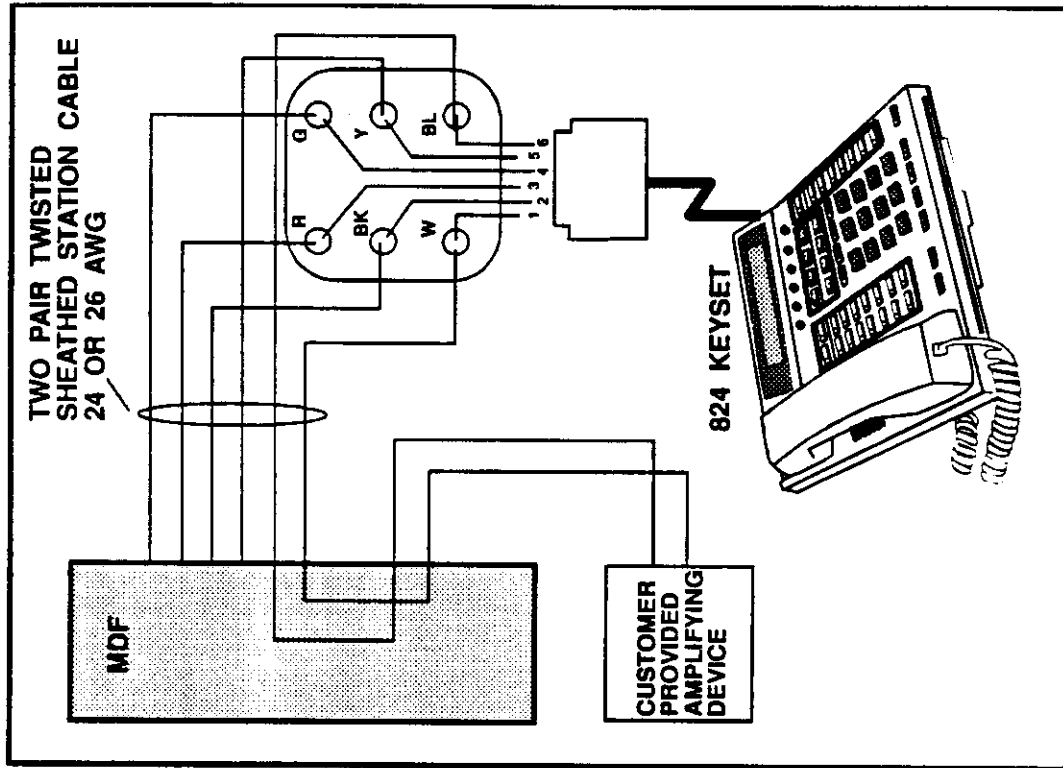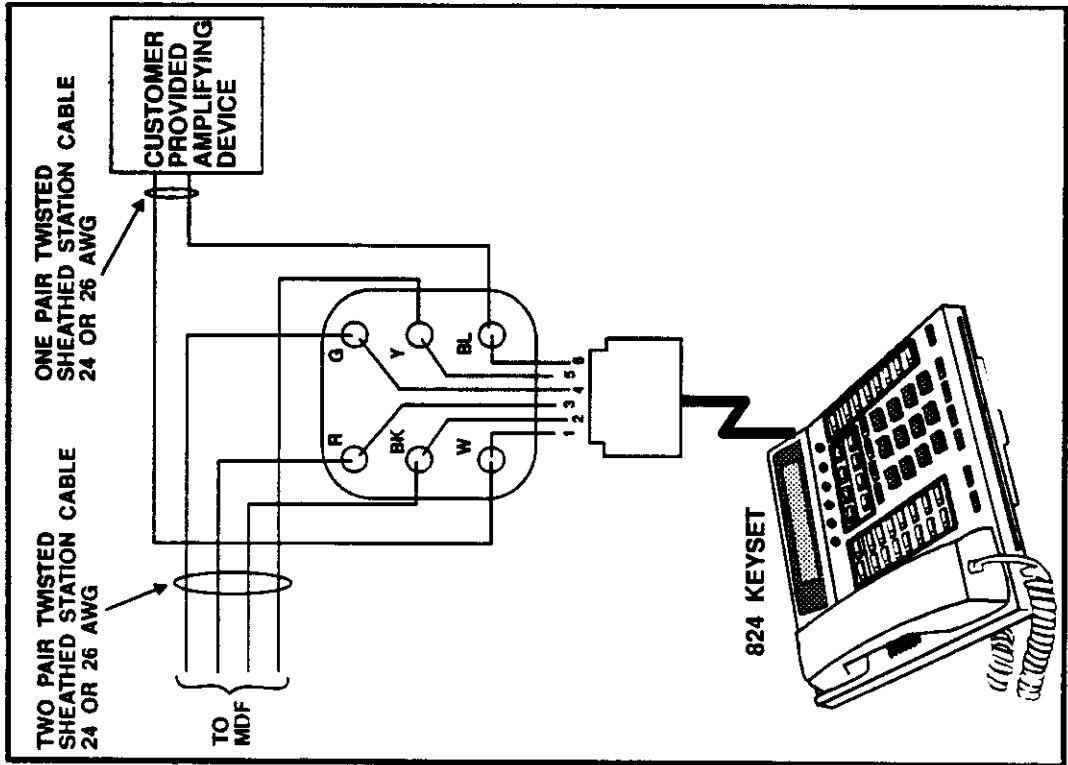
824 KEYSET

824 KEYSET LOUD RINGER **FIGURE 7-3a**

# SMDR CONNECTIONS

**CPU
MEMORY**

HALT

IDLE

RUN

ON
BATT.
OFF

RS-232C

RESET

**PRINTER REQUIREMENTS**

- SERIAL INTERFACE
- 8 BITS
- 1 STOP BIT
- NO PARITY

**SET BAUD RATE IN MMC #96**

- 7 SG
- 3 TD
- 2 RD
- 1 GRD

**SERIAL PRINTER**

**CALL ACCOUNTING SYSTEM**

MAXIMUM CABLE LENGTH IS 300 Ft
MUST USE SHIELDED COMPUTER
CABLE, STRANDED WIRE

**FIGURE 7-4**

## SLC CONNECTING BLOCK

| PIN | COLOR | TERM | CIRCUIT | FUNCTION |
|-----|-------|------|---------|----------|
| 26 | W-BL | 1 | 1 | TIP |
| 1 | BL-W | 2 | | RING |
| 27 | W-O | 3 | | PFT - TIP |
| 2 | O-W | 4 | | PFT - RING |
| 28 | W-GN | 5 | 2 | TIP |
| 3 | GN-W | 6 | | RING |
| 29 | W-BR | 7 | | PFT - TIP |
| 4 | BR-W | 8 | | PFT - RING |
| 30 | W-S | 9 | 3 | TIP |
| 5 | S-W | 10 | | RING |
| 31 | R-BL | 11 | | PFT - TIP |
| 6 | BL-R | 12 | | PFT - RING |
| 32 | R-O | 13 | 4 | TIP |
| 7 | O-R | 14 | | RING |
| 33 | R-GR | 15 | | PFT - TIP |
| 8 | GR-R | 16 | | PFT - RING |

**TYPICAL POWER FAILURE CIRCUIT ON SLC CARD**

PFT RELAYS

SINGLE LINE STATION INTERFACE

R    G

BK    Y

W    BL

1  2  3  4  5  6

DTMF/PULSE
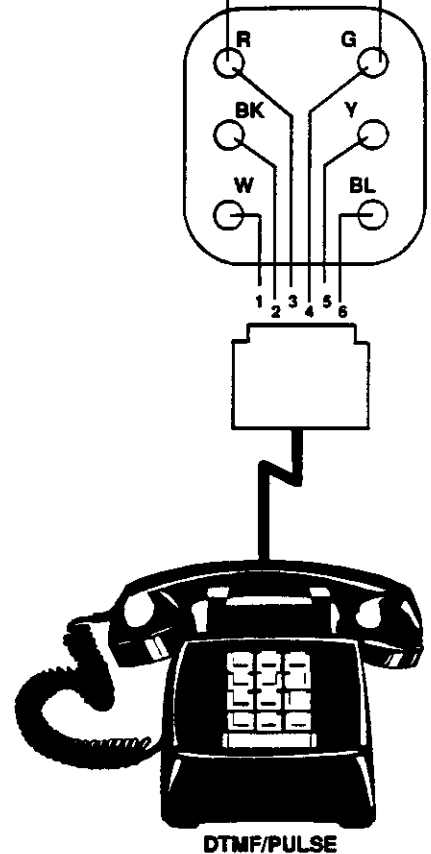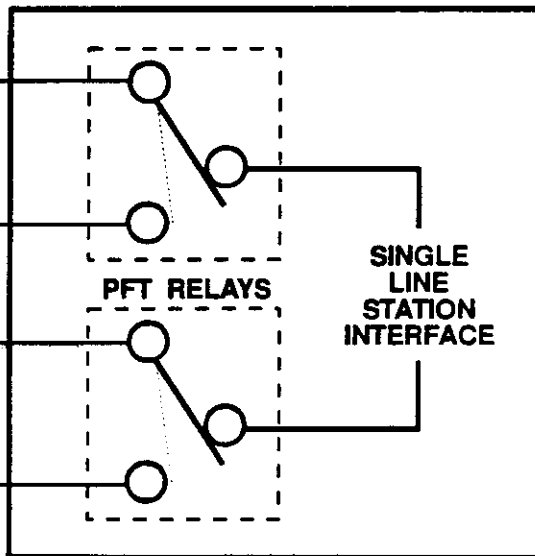
CONNECT ANY LOOP/GROUND C.O. LINE TO PFT TIP & RING CIRCUIT 1,2,3 OR 4 ON ANY SLC CARD

## POWER FAILURE TRANSFER CONNECTIONS - TO - SLC CARD

# FIGURE 7-5

OPTION A

12V 12V
12V 12V

CONNECT TO EITHER A OR B

OPTION B

6V 6V
6V 6V
6V 6V
6V 6V

F/G

F/G

BATT
[ 48V ]

RESERVE POWER
BATTERY CONNECTOR

NOTE:
BATTERIES SHOULD
BE PLACED WITHIN
THREE FEET OF KSU
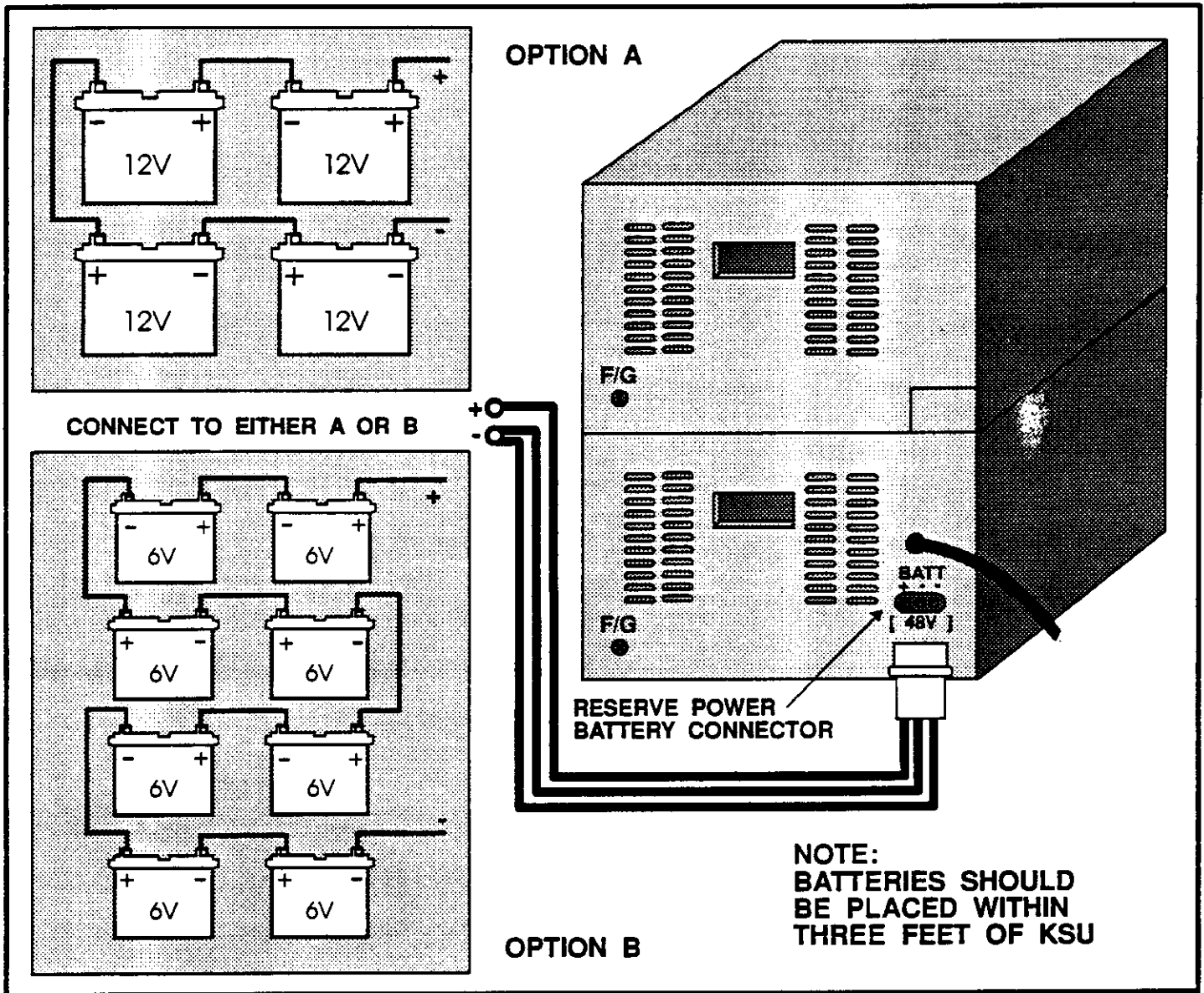
**RESERVE POWER BATTERY CONNECTIONS** **FIGURE 7-6**

| PIN | COLOR | TERM | CIRCUIT | FUNCTION |
|---|---|---|---|---|
| 26 | W-BL | 1 | | VOICE TIP |
| 1 | BL-W | 2 | 1 | VIOCE RING |
| 27 | W-O | 3 | | DATA TIP |
| 2 | O-W | 4 | | DATA RING |
| 28 | W-GN | 5 | | VOICE TIP |
| 3 | GN-W | 6 | 2 | VIOCE RING |
| 29 | W-BR | 7 | | DATA TIP |
| 4 | BR-W | 8 | | DATA RING |
| 30 | W-S | 9 | | VOICE TIP |
| 5 | S-W | 10 | 3 | VIOCE RING |
| 31 | R-BL | 11 | | DATA TIP |
| 6 | BL-R | 12 | | DATA RING |
| 32 | R-O | 13 | | VOICE TIP |
| 7 | O-R | 14 | 4 | VIOCE RING |
| 33 | R-GR | 15 | | DATA TIP |
| 8 | GR-R | 16 | | DATA RING |
| 34 | R-BR | 17 | | TIP |
| 9 | BR-R | 18 | 5 | RING |
| 35 | R-S | 19 | | — |
| 10 | S-R | 20 | | — |
| 36 | BK-BL | 21 | | TIP |
| 11 | BL-BK | 22 | 6 | RING |
| 37 | BK-O | 23 | | — |
| 12 | O-BK | 24 | | — |
| 38 | BK-GN | 25 | | TIP |
| 13 | GN-BK | 26 | 7 | RING |
| 39 | BK-BR | 27 | | — |
| 14 | BR-BK | 28 | | — |
| 40 | BK-SL | 29 | | TIP |
| 15 | SL-BK | 30 | 8 | RING |
| 41 | Y-BL | 31 | | — |
| 16 | BL-Y | 32 | | — |

VOICE MAIL SYSTEM

NOTE: PROGRAM THESE EXTENSIONS FOR VM/AA USE MMC#45
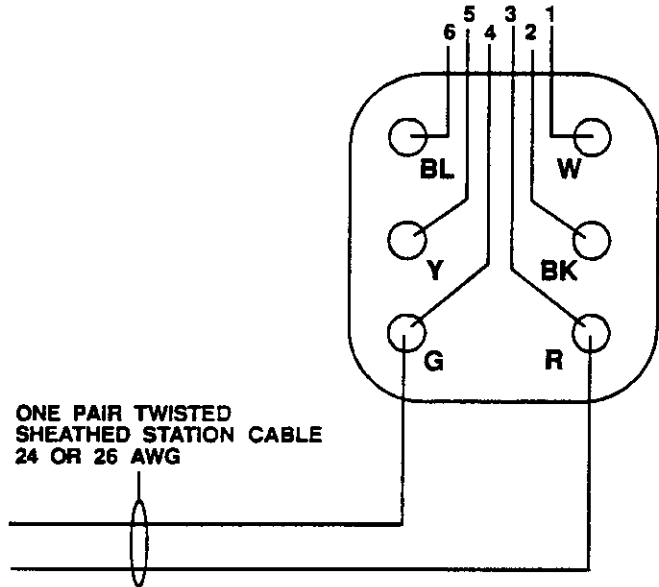
6 5 4 3 2 1

BL W
Y BK
G R

ONE PAIR TWISTED SHEATHED STATION CABLE 24 OR 26 AWG

CONNECT TO CIRCUIT 5,6,7 OR 8 ON ANY MSLC2 CARD

NOTE: SET JUMPER PINS ON THESE CIRCUITS FOR STANDARD TELEPHONE USE

MDF CONNECTIONS  VOICE MAIL & AUTO ATTENDANT - TO - MSLC2 CARD

# FIGURE 7-7

# T A B L E   O F   C O N T E N T S

## PROGRAMMING SECTION

## PART  DESCRIPTION                                    PAGE

# PART 1. INTRODUCTION TO PROGRAMMING

## 1.1 PROGRAMMING OVERVIEW

The PROSTAR 56ex/120mx system arrives from the factory with default data. Connect it to trunks, stations and power, turn the system on and it is fully operational. The only thing left to do is customize the data to fit the customer's needs. This is called programming the system.

MMC stands for Man Machine Code and each program is assigned a different two digit code. These MMC codes are used to view, create or change customer data. Programming is simply deciding what needs to be done, and knowing which MMC is used to do it. For example, to create a station group, use MMC #33. System speed dial numbers are entered in MMC #64 and soft keys are assigned to individual keysets using MMC #81.

System programming may be done from any 824 display keyset. The first thing you must do is open system programming using MMC #20. As a security measure, a passcode must be known to do this.

## 1.2 PROGRAMMING LEVELS

There are three levels of programming: SYSTEM, CUSTOMER and STATION. System and customer levels are under passcode protection while station programming does not require a passcode or a display.

To prevent conflicting data from being entered, only one person at a time can enter programming with the technician passcode and only one person at a time can enter programming with the customer passcode. There can be two people in programming at the same time BUT only one with each code. While programming is in progress, normal system operation is not affected. For your convenience, the system displays [ xxx IN SYS PGM ] when another keyset is in the program mode.

### A. System level

Requires the technician level passcode and allows access to all system programs, station programs and maintenance programs.

### B. Customer level

Requires the customer passcode and allows access to station programs #10-19 and system programs allowed by the technician in MMC #93. When using the customer passcode to access station programs, data for all stations can be viewed or changed.

After opening programming with the customer passcode, you must press # to exit. Now dial # and the MMC number you wish to access.

## C. Station level

All keysets can access station programs #10-19 without using a passcode. Each user can only change station data for his/ her own keyset.

When the 824 display keyset is in programming, the display shows instructions, prompts and choices. Existing data is always displayed before it can be changed. The keystroke sequence for each MMC is detailed in the following pages.

Before you begin entering customer data, follow this important reminder.

---

### IMPORTANT REMINDER

When first installing this system, always use MMC #01 to reset and clear memory. This will ensure that you begin with clean default data. Set battery switch on CPU/Memory card to the ON position. Failure to follow these instructions can result in lost or corrupted data.

---

Now begin entering customer data.

# PART 2.  SOFTWARE PACKAGE A

## 2.1 PROGRAM LIST

| | | | | |
|---|---|---|---|---|
| #00 | HALT PROCESSING | | #49 | DISA AVAILABLE |
| #01 | RESET SYSTEM | | #50 | PULSE/DTMF TYPE |
| #02 | SYSTEM VERSION | | #51 | SET PABX LINE |
| #03 | PORT STATUS | | #52 | DISA LINE |
| #04 | TEST KEYS & LAMPS | | #53 | TRUNK TOLL RSTR |
| #05 | FLEXIBLE NUMBERS | | #54 | TRK LINE FORWARD |
| #06 | RESERVED | | #55 | 1A2 EMULATION |
| #07 | RESERVED | | #56 | MOH SOURCE |
| #08 | RESERVED | | #57 | TRK SIGNAL TYPE |
| #09 | RESERVED | | #58 | TIE LINE CLASS |
| #10 | STATION LOCK | | #59 | RESERVED |
| #11 | CHANGE PASSCODE | | #60 | DAY RING STATION |
| #12 | SET ANSWER MODE | | #61 | NIGHT RING STN |
| #13 | KEY CONFIRM TONE | | #62 | DOOR RING STN |
| #14 | EXTEND KEY | | #63 | SPEED DIAL BLOCK |
| #15 | CLOCK DISPLAY | | #64 | SYS SPEED NUMBER |
| #16 | SELECT RING FREQ | | #65 | PBX ACCESS CODE |
| #17 | BGM SOURCE | | #66 | VACANT MESSAGES |
| #18 | AUTOMATIC HOLD | | #67 | ASSIGN TRK TO GP |
| #19 | RING PREFERENCE | | #68 | RESERVED |
| #20 | ENABLE PROGRAMMING | | #69 | RESERVED |
| #21 | CHANGE PASSCODE | | #70 | SET CURRENT TIME |
| #22 | OPERATOR GROUP | | #71 | TIMER TABLE NO.1 |
| #23 | NIGHT TOLL CLASS | | #72 | TIMER TABLE NO.2 |
| #24 | ASSIGN UNA | | #73 | TIMER TABLE NO.3 |
| #25 | BARGE-IN TYPE | | #74 | TIMER TABLE NO.4 |
| #26 | EXT. PAGE OPTIONS | | #75 | TIMER TABLE NO.5 |
| #27 | RESERVED | | #76 | # OF ATTEMPTS |
| #28 | RESERVED | | #77 | RESERVED |
| #29 | SYS. ODDS & ENDS | | #78 | RESERVED |
| #30 | STN TOLL CLASS | | #79 | RESERVED |
| #31 | TOLL DENY TABLE | | #80 | KEY PROGRAM[SYS] |
| #32 | TOLL ALLOW TABLE | | #81 | KEY PROGRAM[STN] |
| #33 | STN HUNT GROUP | | #82 | RESERVED |
| #34 | STN PICK UP GROUP | | #83 | RESERVED |
| #35 | HOT/WARM LINE | | #84 | RESERVED |
| #36 | EXT/TRK USE | | #85 | DID DIGIT TABLE |
| #37 | EXEC/SECT PAIRS | | #86 | DIRECTORY NAMES |
| #38 | ASSIGN AOM UNITS | | #87 | RESERVED |
| #39 | SPEED NUMBERS[STN] | | #88 | RESERVED |
| #40 | ASSIGN BARGE-IN | | #89 | RESERVED |
| #41 | INT. PAGE ZONE | | #90 | RESERVED |
| #42 | ABLE TO PAGE | | #91 | PULSE M/B RATIO |
| #43 | RECEIVE PAGE | | #92 | MISC.CARD STATUS |
| #44 | ALLOW DND | | #93 | CUSTOMER ACCESS |
| #45 | VM/AA PORT | | #94 | VM/AA OPTIONS |
| #46 | DATA/VOICE PORT | | #95 | CALL TRAFFIC |
| #47 | KEYSET LOUD BELL | | #96 | SMDR OPTIONS |
| #48 | HEADSET USE | | #97 | TRAFFIC REPORT |

# 2.2  PROGRAM PROCEDURES

THE FOLLOWING INSTRUCTIONS FOR EACH MMC ASSUME THAT YOU HAVE ALREADY OPENED PROGRAMMING.

HELPFUL HINT:

When you are finished programming in MMC codes #10-97 and have other programming to do, press SPK/RLS key to exit the MMC but stay in the programming mode and use one of the following methods.

1) Dial another MMC code directly and continue programming.

2) Press volume UP and DOWN keys to scroll through all MMC codes.  When the desired MMC code is reached, press SPK/RLS and continue programming.

Pressing # will always save changes and exit the programming mode.

# MMC #: 00          HALT PROCESSING

## DESCRIPTION:

This program is used to reduce call activity to zero, so that the system may be powered down without disconnecting calls in progress.

This program may be used at any 824 keyset regardless of MMC #20 being open or closed. The technician level passcode is needed.

When the HALT program is initiated, the HALT LED is on and idle stations are disabled. Stations with calls in progress are not disabled until they hang up. When the last station is disabled, the LED indicator labeled IDLE will light. The red reset button can now be pressed or the power switches turned off. If the system is to be powered down, be sure to turn off battery switches if batteries are used.

Since this MMC is intended for use only by a technician, it is not possible to allow access through customer level programming. Up and down arrows cannot be used to scroll to this MMC. It must be selected directly by dialing #00. The technician passcode must then be entered.

### PROGRAM KEYS

MUTE - Press repeatedly to select processing mode.

| ACTION | DISPLAY |
|---|---|
| 1.  Press # 00<br>Enter technician passcode | **HALT PROCESSING<br>ENTER CODE:** |
| 2.  Display shows current selection | **HALT PROCESSING<br>PROCESSING:** |
| 3.  Press MUTE repeatedly to make selection<br>e.g., HALTED | **HALT PROCESSING<br>HALTED:** |
| 4.  Press # to execute | |

**DEFAULT DATA:**      **PROCESSING**

**RELATED ITEMS:**    **CPU INDICATOR LIGHTS**

# MMC #: 01                    RESET SYSTEM

## DESCRIPTION:

Used to re-initialize or reset the system.

This program may be used at any 824 keyset regardless of MMC #20 being open or closed. The technician level passcode is needed.

Select one of the following options:

EXIT-NO CHANGE: - In the event that this MMC is entered by accident, selecting this option will exit the MMC immediately with no change to system memory.

RESET SYSTEM: - This will drop all calls in progress, and reset the system as if it had just been switched off and on. This is only normally used by a technician to clear out the RAM on the CPU. This will not affect the customer data. Pressing the red button on the CPU/Memory card will also do this.

CLEAR MEMORY: - This will reset the system memory to default data. All customer data will be lost. To prevent you from accidently clearing memory, there is an added ARE YOU SURE? prompt. Press # to reset system and clear memory. If # is not pressed within a few seconds, this program will automatically exit with no change.

Since this MMC is used only by a technician, it is not possible to allow access through customer level programming. Up and down arrows cannot be used to scroll to this MMC; you must select it by dialing #01. The technician passcode must then be entered.

## PROGRAM KEYS

MUTE - Press repeatedly to select reset option.

| ACTION | DISPLAY |
|---|---|
| 1. Press # 01<br>Enter technician passcode | **RESET SYSTEM**<br>**ENTER CODE:** |
| 2. Display shows | **RESET SYSTEM**<br>**EXIT-NO CHANGE:** |
| 3. Press MUTE to select data<br>e.g., RESET SYSTEM | **RESET SYSTEM**<br>**RESET SYSTEM** |
| 4. Press # to set data | |

**DEFAULT DATA:  EXIT-NO CHANGE**          **RELATED ITEMS:  NONE**

# MMC #: 02          SYSTEM VERSION

## DESCRIPTION:

Used to display the software versions and installed hardware.

This program may be used at any 824 keyset regardless of MMC #20 being open or closed. The technician level passcode is needed.

This MMC will scroll through the KSU software version number, the keyset software version number and then display the interface card type and software level installed in each card slot.

The slots in the card cage are labeled S1 through S7 in the basic KSU and S8, S9, SA, SB, SC, SD, SE and SF in the expansion KSU. The miscellaneous card does not appear in this program.

Since this MMC is used only by a technician, it is not possible to allow access through customer level programming. Up and down arrows cannot be used to scroll to this MMC. It must be selected by dialing #02. The technician passcode must then be entered.

**PROGRAM KEYS**

UP & DOWN - Used to view each card slot.

| ACTION | DISPLAY |
|---|---|
| 1.  Press # 02<br>Enter technician passcode | **SYSTEM VERSION**<br>**ENTER CODE:** |
| 2.  Display shows KSU software version | **SYSTEM VERSION**<br>**KSU:A10 92.01.21** |
| 3.  Press UP<br>Display shows keyset version | **SYSTEM VERSION**<br>**KTS:V00 91.04.27** |
| 4.  Press UP<br>Display shows first card slot | **SYSTEM VERSION**<br>**S1:  TRK1 :V20** |
| 5.  Press UP<br>Display shows second card slot | **SYSTEM VERSION**<br>**S2:  TRK2 :V00** |
| 6.  Press UP<br>Display shows third card slot | **SYSTEM VERSION**<br>**S3:  MSLC1:V20** |

7. Repeat as necessary to display all cards

8. Press # to exit MMC


**DEFAULT DATA:**   **THIS IS A READ ONLY PROGRAM; DATA CANNOT BE CHANGED.**

**RELATED ITEMS:**   **NONE**

# MMC #: 03                    PORT STATUS

## DESCRIPTION:

Used to display the status of each port in the system.

This program may be used at any 824 keyset regardless of MMC #20 being open or closed. The technician level passcode is needed.

This MMC will scroll through each trunk and station and identify it as one of the following:

| | |
|---|---|
| IDLE | – The station is not in use. |
| CALL BACK | – The station is ringing after setting a call back. |
| DOOR RING | – The station is being called by a door phone. |
| TRK RING | – The station is recieving trunk ring signal. |
| STN RING | – The called station is ringing. |
| GRP RING | – The called station in a group is ringing. |
| BUSY | – The station or trunk is in use. |
| PROGRAM | – The station is in programming mode. |
| ON T HOLD | – The trunk or station is on transfer hold. |
| ON S HOLD | – The trunk or station is on system hold. |
| ON E HOLD | – The trunk or station is on exclusive hold. |
| IS PAGED | – The station is being paged. |
| SEIZED | – The ground start trunk has been seized. |
| OFF-HOOK | – The station or trunk has not disconnected after a call. It is off-hook but not connected to a speech path. |

To aid in troubleshooting, the TRANSFER key will display the voice path number for all non idle ports. When this is done, pressing HOLD will make the port idle by disconnecting the speech path. This will drop the call in progress at that speech path. Speech paths are numbered in hexidecimal code from 00-2F.

Since this MMC is used only by a technician, it is not possible to allow access through customer level programming. Up and down arrows cannot be used to scroll to this MMC. It must be selected by dialing #03. The technician passcode must then be entered.

## PROGRAM KEYS

UP & DOWN - Used to view each trunk and station. TRANSFER - Used to display the voice path number. HOLD - Press to make the selected talkpath idle.

## ACTION                                    DISPLAY

1.  Press # 03                              **PORT STATUS**
    Enter technician passcode               **ENTER CODE:**

2.  Display shows first trunk and status

**PORT STATUS**
**[701] IDLE**

3.  Press UP
    Display shows next trunk and port status

**PORT STATUS**
**[702] BUSY**

4.  Press TRANSFER
    Display shows voice path number

**VOICE PATH NO.**
**[702] PATH2F**

5.  Press HOLD to make talkpath idle

**VOICE PATH NO.**
**[702] CLEARED**

6.  In step 2, DOWN can be used to
    display the next port

7.  Press # to exit MMC

**DEFAULT DATA:**    **NOT APPLICABLE**

**RELATED ITEMS:**    **NONE**

# MMC #: 04    TEST KEYS & LAMPS

## DESCRIPTION:

Used to test all keys, lamps and display on keysets.

This program may be used at any 824 keyset regardless of MMC #20 being open or closed. The technician level passcode is needed.

After pressing #04, all the display pixels are turned on and all the LED are turned on. Press each key and the LED will go out as the display confirms what key you press and one burst from the ringer will be heard.

Lift the handset and hang up to exit this test. If all the keys are not pressed during the key test the LEDs will remain on after you exit. To clear any LEDs that remain on if you exit before completing the test, unplug the keyset for a few seconds.

Since this MMC is intended for use only by a technician, it is not possible to allow access through customer level programming. Up and down arrows cannot be used to scroll to this MMC. It must be selected directly by dialing #04. The technician passcode must then be entered.

**ACTION**

1.  Press # 04
    Enter technician passcode

2.  All LED pixels are on

3.  Press each key. Key number
    or function is displayed.

4.  Go off-hook and on-hook to exit

**DISPLAY**

**KEYSET TEST**
**ENTER CODE:**

**DEFAULT DATA:**   **N/A**

**RELATED ITEMS:**   **NONE**

# MMC #: 05   FLEXIBLE NUMBERS

## DESCRIPTION:

Used to change numbering plan.

NOTE: USE EXTREME CAUTION. CHANGING THE NUMBERING PLAN FROM DEFAULT MAY RENDER THE STATION USER GUIDES USELESS. THINK VERY CAREFULLY BEFORE YOU USE THIS PROGRAM TO AVOID DELETING NUMBERS IN USE.

Numbers are in one of the following categories: EXTENSION NUMBERS, TRUNK NUMBERS, EXTENSION GROUP NUMBERS, TRUNK GROUP NUMBERS and FEATURE ACCESS CODES. Each number may be changed to 1, 2, 3 or 4 digits.

The port assigned with each number is identified with an "S" followed by 2 characters. The first character (1 - 9, A, B, C, D, E or F) is the card slot number. The second character (1 - 8) is the circuit on that card. S11 is the first card slot, first circuit. SB8 is the eleventh card slot, eighth circuit. The trunk and station ports are displayed in order of hardware, S11 to SF8.

Any attempt to use a number already assigned will prompt you to clear the existing number. Enter 1 for YES and 0 for NO. Be careful not to delete numbers in use.

Default extension group access numbers are 500-529. Group 500 defaults as the operator group.

This program reads every station group (01-30) and displays its corresponding group access number.

Default trunk numbers on the first trunk card are 701-708. The next trunk card installed is assigned trunk numbers 709-716.

Default extension numbers on the first station card are 201-208. The next station card installed is assigned extension numbers 209- 216.

Pressing HOLD at any time will reset the number plan to default. When HOLD is pressed, you will be prompted to confirm your choice by dialing 1 for YES or 2 for NO.

NOTE: AFTER ANY NUMBER IS CHANGED, ANY NEW CIRCUIT CARD ADDED TO THE SYSTEM WILL NOT BE ASSIGNED ANY DEFAULT NUMBERS.

## PROGRAM KEYS:

MUTE - Select number category.
UP & DOWN - Select number to change.
KEYPAD - Used to select 0 and 1.

SPK/RLS - Save data and advance to next MMC.
HOLD - Used to restore number plan to default.

| ACTION | DISPLAY |
|---|---|

1. Press # 05
   Enter technician passcode

**NUMBER PLAN**
**ENTER CODE:**

2. Display shows first number category

**EXTENSION NUMBER**
**[201] S31:_**

3. Press MUTE to select category
   e.g., trunk numbers

**NUMBER PLAN**
**[701] S11:**

4. Press UP to display next number

**TRUNK NUMBER**
**[702] S12:**

5. Enter new trunk number
   e.g., 788

**TRUNK NUMBER**
**[701] S11:788**

6. Press # to store and exit

**DEFAULT DATA:** EXTENSIONS ARE NUMBERED SEQUENTIALLY FROM THE FIRST STATION CARD INSTALLED, 201 - 320.
TRUNKS ARE NUMBERED SEQUENTIALLY FROM THE FIRST TRUNK CARD INSTALLED, 701 - 799.

| | | | |
|---|---|---|---|
| 0 | Attendant calls | 49 | Send flash to C.O. or PBX (following hookflash) |
| 10 | Pick up parked call | | |
| 11 | SLT on hold/off hold | 50X | Station hunt groups |
| 12 | Retrieves held call | 51X | Station hunt groups |
| 15 | Program speed dial | 52X | Station hunt groups |
| 16 | Dial speed dial | 53 | In/Out of group |
| 18 | Save and redial number | 55 | Paging |
| 19 | Last number redial | 56 | Meet me answer |
| | | 58 | Door phone |
| 2XX | Station numbers | 59 | Toll restriction override |
| | | 60 | Cancel all types of call forwarding |
| 3XX | Station numbers | 61 | Forward all calls |
| | | 62 | Forward on busy |
| 400 | Barge in | 63 | Forward no answer |
| 401 | Executive/Secretary | 64 | Do Not Disturb |
| 402 | New call | 65 | Directed call pickup |
| 41 | Message indication | 66 | Group pickup |
| 42 | Cancel message indication previously set | 67 | Universal night answer |
| | | 7XX | Trunk numbers |
| 43 | Reply to messages | | |
| 44 | Call back | 8X | Trunk groups |
| 45 | Call offer | | |
| 46 | Conference | 9 | LCR or dial 9 group |
| 47 | Account code (following hookflash) | | |
| 48 | Vacant station messaging | **RELATED ITEMS:** | **NONE** |

# MMC #: 10     STATION LOCK

## DESCRIPTION:

Used to lock keysets. A locked station cannot be used to make or receive calls.

1 is used to lock the station and 0 is used to unlock the station. All stations (keysets and SLTs) in the system can be individually locked or unlocked.

### PROGRAM KEYS

UP & DOWN - Select the extension number.
KEYPAD - Used to enter 0 and 1.
SPK/RLS - Save data and advance to next MMC.

### ACTION

1. Press # 10
   Display shows

2. Enter 0 or 1
   e.g., 1 to lock station

3. Press UP to view next station
   Next station is displayed

4. Press # to store and exit

### DISPLAY

```
STATION LOCK
[201]UNLOCKED
```

```
STATION LOCK
[201]LOCKED
```

```
STATION LOCK
[202]UNLOCKED
```

**DEFAULT DATA:**   ALL STATIONS UNLOCKED

**RELATED ITEMS:**   11
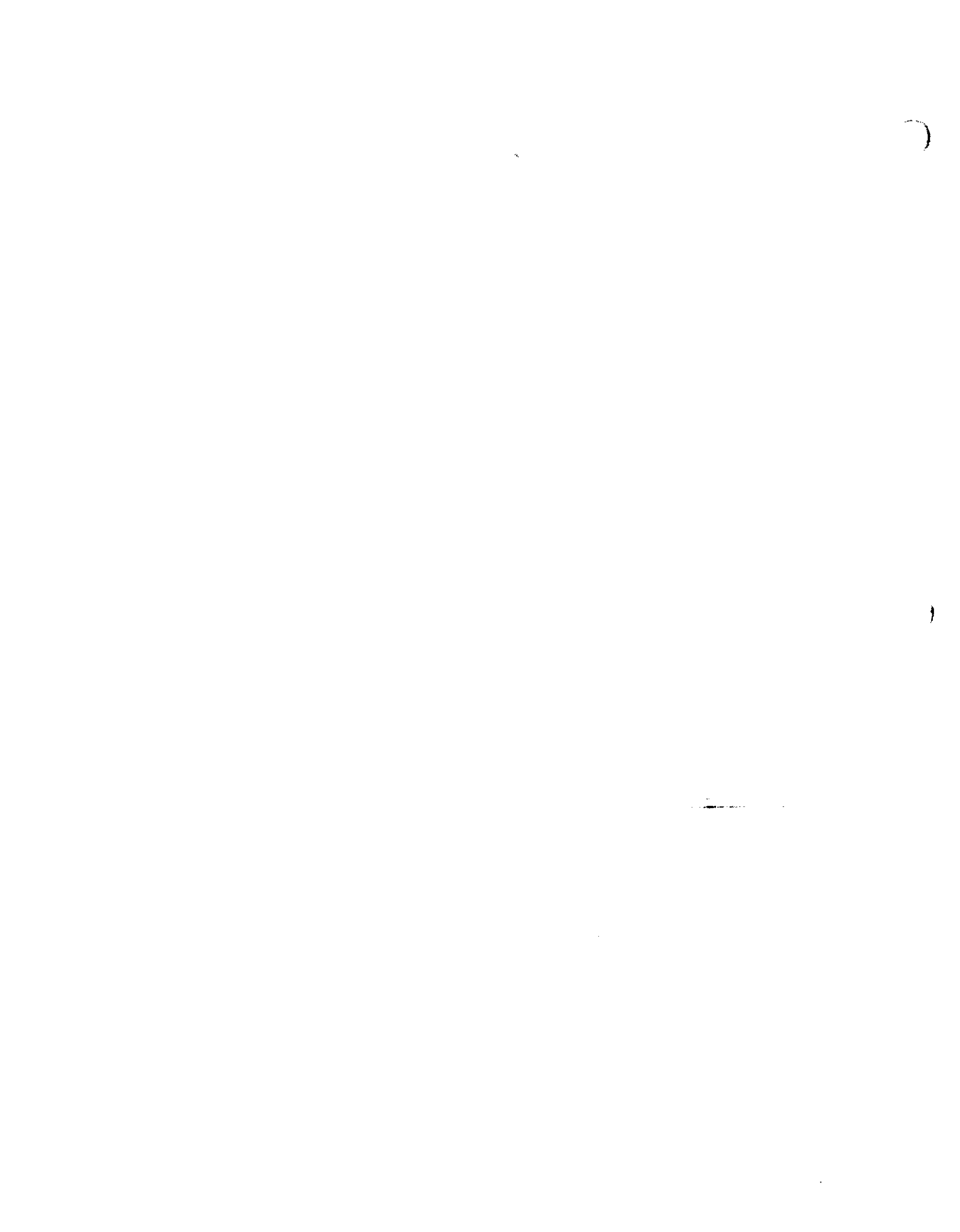
# MMC #: 11          CHANGE PASSCODE

## DESCRIPTION:

Used to reset station passcodes to default settings.

Each individual keyset user can set or change his/her own individual passcodes. These passcodes are used to lock and unlock keysets, override toll restriction and access the DISA feature.

Default passcodes cannot be used for DISA access or toll restriction override.

This MMC allows a system administrator using the technician or customer passcode to reset any stations passcode to default "1234." This MMC cannot be used to display passcodes. It can only reset them to default.

### PROGRAM KEYS

UP & DOWN - Select the extension number.
HOLD - Press to reset the passcode.
SPK/RLS - Save data and advance to next MMC.

In this MMC, the HOLD button is used to reset the passcode to default and UP and DOWN are used to select extension numbers.

### ACTION

1. Press # 11
   Display shows

2. Press HOLD to reset passcode
   Display shows

3. Press UP to view next station
   Next station is displayed

4. Press # to store and exit

### DISPLAY

**CHANGE PASSCODE**
**[201] DEFAULT?**

**CHANGE PASSCODE**
**[201] DEFAULT.**

**CHANGE PASSCODE**
**[202] DEFAULT?**

**DEFAULT DATA:**     **ALL STATION PASSCODES = 1234**

**RELATED ITEMS:**    **MMC:  10 STATION LOCK**

# MMC #: 12         SET ANSWER MODE

## DESCRIPTION:

Used to set answer mode for each keyset.

Each individual keyset can have its answer mode set to one of the following options:

1. RING - The station will ring in one of four custom ring patterns. Calls are answered by pressing the SPK/RLS key or lifting the handset.

2. VOICE - The station will not ring. After a short attention burst, callers can make an announcement but the SPK/RLS key or handset must be used to answer calls.

3. AUTO - After a short attention burst, the station will automatically answer calls on the speaker phone. The microphone is turned on for a hands free reply. When a C.O. line is transpared to a station in auto ans, the screened portion of the transfer will be auto ans, but the C.O. line will ring when the transfer is complete.

This MMC allows a system administrator using the technician or customer passcode to set or change any station's answer mode.

Add-on modules cannot ring. Although they can be programmed as RING, they have no ring circuit and will VOICE announce.

### PROGRAM KEYS

UP & DOWN - Select the extension number.
KEYPAD - Used to enter 1, 2 and 3.
SPK/RLS - Save data and advance to next MMC.

| ACTION | DISPLAY |
|--------|---------|
| 1. Press # 12<br>Display shows | **SET ANSWER MODE<br>[201] RING:** |
| 2. Press 1, 2 or 3 to change ring mode<br>e.g., 2.  Display shows | **SET ANSWER MODE<br>[201] VOICE:** |
| 3. Press UP to view next station<br>Next station is displayed | **SET ANSWER MODE<br>[202] RING:** |
| 4. Press # to store and exit | |

**DEFAULT DATA:      ALL STATIONS RING**

**RELATED ITEMS:     MMC 19  RING FREQUENCE**

# MMC #: 13    KEY CONFIRM. TONE

## DESCRIPTION:

Used to turn on and off key confirmation tones at keysets.

Each keyset can turn on and off key confirmation tones. Key confirmation tones are used to provide audible confirmation when a dialing key is pressed in systems where the DTMF tones have been MUTED.

This program has no affect on systems when the DTMF tones are NOT MUTED.

Select one of the following options: enter 0 for MUTED and 1 for AUDIBLE.

AUDIBLE: - A key confirmation tone is heard each time one of the dialing keys is pressed.

MUTED: - No key confirmation tone is heard.

This MMC allows a system administrator using the technician or customer passcode to view or change key confirm tones on any 824 keyset.

### PROGRAM KEYS

UP & DOWN - Select the extension number.
KEYPAD - Used to enter 0 and 1.
SPK/RLS - Save data and advance to next MMC.

| ACTION | DISPLAY |
|---|---|
| 1.  Press # 13<br>    Display shows | **KEY CONFIRM.TONE**<br>**[201]AUDIBLE:** |
| 2.  Press 0 or 1<br>    e.g., 0.  Display shows | **KEY CONFIRM TONE**<br>**[201]MUTED:** |
| 3.  Press UP<br>    Display shows next station | **KEY CONFIRM TONE**<br>**[202]AUDIBLE:** |
| 4.  Press # to store and exit | |

**DEFAULT DATA:**    **ALL STATIONS AUDIBLE**

**RELATED ITEMS:**    **MMC #29 MUTE DTMF TONES**

# MMC #: 14 — EXTEND KEY

## DESCRIPTION:

Used to assign an extender to certain soft keys.

Each station can program an extender for one touch speed dial keys, page keys, directed call pick up, group call pick up, vacant messages, door phone and call buttons.

An extender is a number that makes an otherwise general soft key very specific. For example:

SPEED DIAL KEYS - The extender can be any personnel or system speed dial number. When an extender is programmed to a speed dial key, the key becomes a one touch dialing key.

PAGE - The extender is a page zone 0 - 9 or *. This will allow one touch access to any page zone.

DIRECTED CALL PICK UP - Add an extension number.

GROUP CALL PICK UP - Add a station group.

VACANT MESSAGES - Add a vacant message number (1 - 19).

DOOR PHONE - Add a door phone (1 or 2).

FORWARD EXTERNAL - Add a personal or system speed dial number.

CALL BUTTON - Add a number (1 - A).

NOTE: If extenders do not work, check that the correct digits have been entered as the system will allow a user to input incorrect information.

This MMC allows a system administrator using the technician or customer passcode to view or change any soft key extender on any keyset.

## PROGRAM KEYS

UP & DOWN - Used to select station number.
FLASH & TRANSFER - Used to select the individual soft key (or the key can be pressed directly).
KEYPAD - Used to enter extenders.
HOLD - Used to clear an entry.
SPK/RLS - Save data and advance to next MMC.

# MMC #: 15                    CLOCK DISPLAY

## DESCRIPTION:

Used to assign the type of clock display for each display keyset.

Each display keyset can select one of four clock displays. This is the time and date display that appears on an idle display keyset.

Select one of the following options: use 1, 2, 3 and 4 on the keypad. 1 is for 24 WESTERN, 2 is for 12 WESTERN, 3 is for 24 EASTERN and 4 is for 12 EASTERN.

| | |
|---|---|
| 24 WESTERN - | [Wed,19 Feb 18:57] |
| 12 WESTERN - | [Wed,19 Feb 06:57] |
| 24 EASTERN - | [02/19 Wed 18:57 ] |
| 12 EASTERN - | [02/19 Wed 06:57 ] |

This MMC allows a system administrator using the technician or customer passcode to view or change any clock display on any keyset.

NOTE:  816 keysets can only use EASTERN clock displays.

### PROGRAM KEYS

UP & DOWN - Select the extension number.
KEYPAD - Used to enter 1, 2, 3 and 4.
SPK/RLS - Save data and advance to next MMC.

### ACTION                                        DISPLAY

1.  Press # 15
    Display shows

    > **CLOCK DISPLAY**
    > **[201]12 WESTERN**

2.  Press 0, 1, 2 or 3
    e.g., 1. Display shows

    > **CLOCK DISPLAY**
    > **[201]24 WESTERN**

3.  Press UP
    Display shows next station

    > **CLOCK DISPLAY**
    > **[202]12 WESTERN**

4.  Press # to store and exit

**DEFAULT DATA:    ALL STATIONS ARE 12 WESTERN**

**RELATED ITEMS:    NONE**

# MMC #: 16     SELECT RING FREQ.

## DESCRIPTION:

Used to assign one of four individual ring tones to each keyset. Each station can select frequency 1, 2, 3 or 4.

This MMC allows a system administrator using the technician or customer passcode to view or change any ring frequency for any 824 keyset.

### PROGRAM KEYS

FLASH & TRANSFER - Select the extension number.
KEYPAD - Used to enter 1, 2, 3 and 4.
SPK/RLS - Save data and advance to next MMC.

### ACTION

1.  Press # 16
    Ring type is heard and display shows

2.  Press 1, 2, 3 or 4, e.g., 2
    Selected FREQ is heard and display shows

3.  Press TRANSFER
    Display shows next station

4.  Press # to store and exit

### DISPLAY

| SELECT RING FREQ |
| --- |
| [201]FREQ1 |

| SELECT RING FREQ |
| --- |
| [201]FREQ2 |

| SELECT RING FREQ |
| --- |
| [202]FREQ1 |

DEFAULT DATA:     ALL KEYSETS RING WITH FREQ1

RELATED ITEMS:    MMC 12:  SET ANSWER MODE

# MMC #: 17                               BGM SOURCE

## DESCRIPTION:

Used to assign a background music selection for each keyset.

Each keyset can select one of two choices for background music (BGM). This music will be heard when the keyset is in the idle condition with BGM turned on or when put on hold by another internal station.

Music source is selected using 0, 1 and 2 on the keypad. Select one of the following options: 0 for NO MUSIC, 1 for MUSIC A or 2 for MUSIC B.

NO MUSIC - Background music cannot be heard at the station.

MUSIC A - Background music is from source A.

MUSIC B - Background music is from source B.

This MMC allows a system administrator using the technician or customer passcode to view or change any background music choice on any keyset.

### PROGRAM KEYS

UP & DOWN - Select the extension number.
KEYPAD - Used to enter 0, 1 and 2.
SPK/RLS - Save data and advance to next MMC.

### ACTION

1. Press # 17
   Display shows

2. Press 0, 1 or 2
   e.g., 2. Display shows

3. Press UP
   Display shows next station

4. Press # to store and exit

### DISPLAY

BGM SOURCE
[201]MUSIC A

BGM SOURCE
[201]MUSIC B

BGM SOURCE
[202]MUSIC A

**DEFAULT DATA:**    A

**RELATED ITEMS:**    MMC #56 MOH SOURCE

# MMC #: 18         AUTOMATIC HOLD

## DESCRIPTION:

Used to select automatic hold or disconnect for each keyset.

Select one of the following options:

NO - When connected to a trunk, pressing a trunk key, call button or route key will disconnect the trunk and make connection with the button pressed.

YES - When connected to a trunk, pressing a trunk key, call button or route key will automatically put the trunk on hold and make connection with the button pressed.

This MMC allows a system administrator using the technician or customer passcode to view or change automatic hold for any keyset.

## PROGRAM KEYS

UP & DOWN - Select the extension number.
KEYPAD - Used to enter 0 and 1.
SPK/RLS - Save data and advance to next MMC.

## ACTION                                    DISPLAY

1. Press # 18
   Display shows

   ```
   AUTOMATIC HOLD
   [201] YES
   ```

2. Press 0 or 1
   e.g., 1. Display shows

   ```
   AUTOMATIC HOLD
   [201] NO
   ```

3. Press UP
   Display shows next station

   ```
   AUTOMATIC HOLD
   [202] YES
   ```

4. Press # to store and exit


**DEFAULT DATA:**     ALL STATIONS YES

**RELATED ITEMS:**    NONE

# MMC #: 19     RING PREFERENCE

## DESCRIPTION:

Used to turn on and off ring preference for each station.

Select one of the following options:

NO - When the keyset rings, lifting the handset or pressing SPK/RLS will NOT automatically answer the ringing call. To answer a call, the flashing green button must be pressed. When more than one call is ringing, they can be answered in any order.

YES - If the keyset has any call ringing, simply lifting the handset or pressing the SPK/RLS key will answer the ringing call. In cases where there is more than one call ringing, the oldest ringing call will be answered first.

Ringing preference affects C.O. calls, internal (intercom) calls and recalls.

This MMC allows a system administrator using the technician or customer passcode to view or change automatic hold for any keyset.

### PROGRAM KEYS

UP & DOWN - Select the extension number.
KEYPAD - Used to enter 0 and 1.
SPK/RLS - Save data and advance to next MMC.

### ACTION

1. Press # 19
   Display shows

2. Press 0 or 1
   e.g., 1. Display shows

3. Press UP
   Display shows next station

4. Press # to store and exit

### DISPLAY

```
RING PREFERENCE
[201]YES
```

```
RING PREFERENCE
[201]NO
```

```
RING PREFERENCE
[202]YES
```

**DEFAULT DATA:**     ALL STATIONS YES

**RELATED ITEMS:**     NONE

# MMC #: 20 ENABLE PROGRAMMING

## DESCRIPTION:

Used to open and close programming. This is the first step in performing any programming. If programming is not opened, any attempt to access other programs will result in an error message ACCESS DENIED.

If the technician passcode is used, access to all programs is allowed. If the customer passcode is used, access is only allowed to programs enabled in MMC #93 and to all station programs.

The passcode is four digits.  Each digit can be 0 - 9 or *.

If the wrong passcode is entered, the display will show ACCESS DENIED and the keyset will return to idle condition.

### PROGRAM KEYS

MUTE - Press repeatedly to select OPEN and CLOSED.
KEYPAD - Used to enter passcode.
SPK/RLS - Save data and advance to next MMC.

### ACTION

1.  Press # 20

2.  Enter passcode
    "XXXX"

3.  Press MUTE to select CLOSED/OPENED

4.  Press # to store and exit

### DISPLAY

| OPEN SYSTEM PGM |
| ENTER CODE |

| OPEN SYSTEM PGM |
| CLOSED |

| OPEN SYSTEM PGM |
| OPENED |
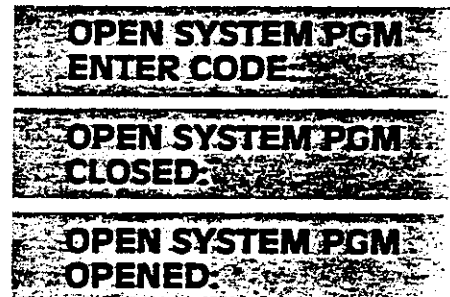
**DEFAULT DATA:**      CLOSED

**RELATED ITEMS:**      MMC #21 CHANGE PASSCODE
MMC #74 TIMER TABLE #4 - MMC TIMEOUT

# MMC #: 21     CHANGE PASSCODE

## DESCRIPTION:

Used to change customer and system passcodes.

If the wrong passcode is entered, the display will show ACCESS DENIED and the keyset will return to idle condition.

To discourage unauthorized access to system software, the technician level passcode should be changed from the default when the system is cut over.

The passcode must be four digits.  Each digit can be 0 - 9 or *.

The customer passcode is assigned by the technician and can be any four digit number, but it cannot be the same as the technician level passcode.

### PROGRAM KEYS

MUTE - Press repeatedly to select passcode option.
KEYPAD - Used to enter passcode.
SPK/RLS - Save data and advance to next MMC.

### ACTION

1. Press # 21

2. Enter old technician passcode "XXXX"

3. Enter new technician passcode "XXXX"

   OR

   Press MUTE, then enter new customer passcode

4. Press # to store and exit

### DISPLAY

| CHANGE PASSCODE |
| OLD CODE: |

| CHANGE PASSCODE |
| NEW CODE: |

| CHANGE PASSCODE |
| NEW CODE:XXXX |

| CHANGE PASSCODE |
| CUST:XXXX |

DEFAULT DATA:     TECHNICIAN LEVEL PASSCODE: 4321
                  CUSTOMER LEVEL PASSCODE: 1234

RELATED ITEMS:   MMC 20:  ENABLE PROGRAMMING
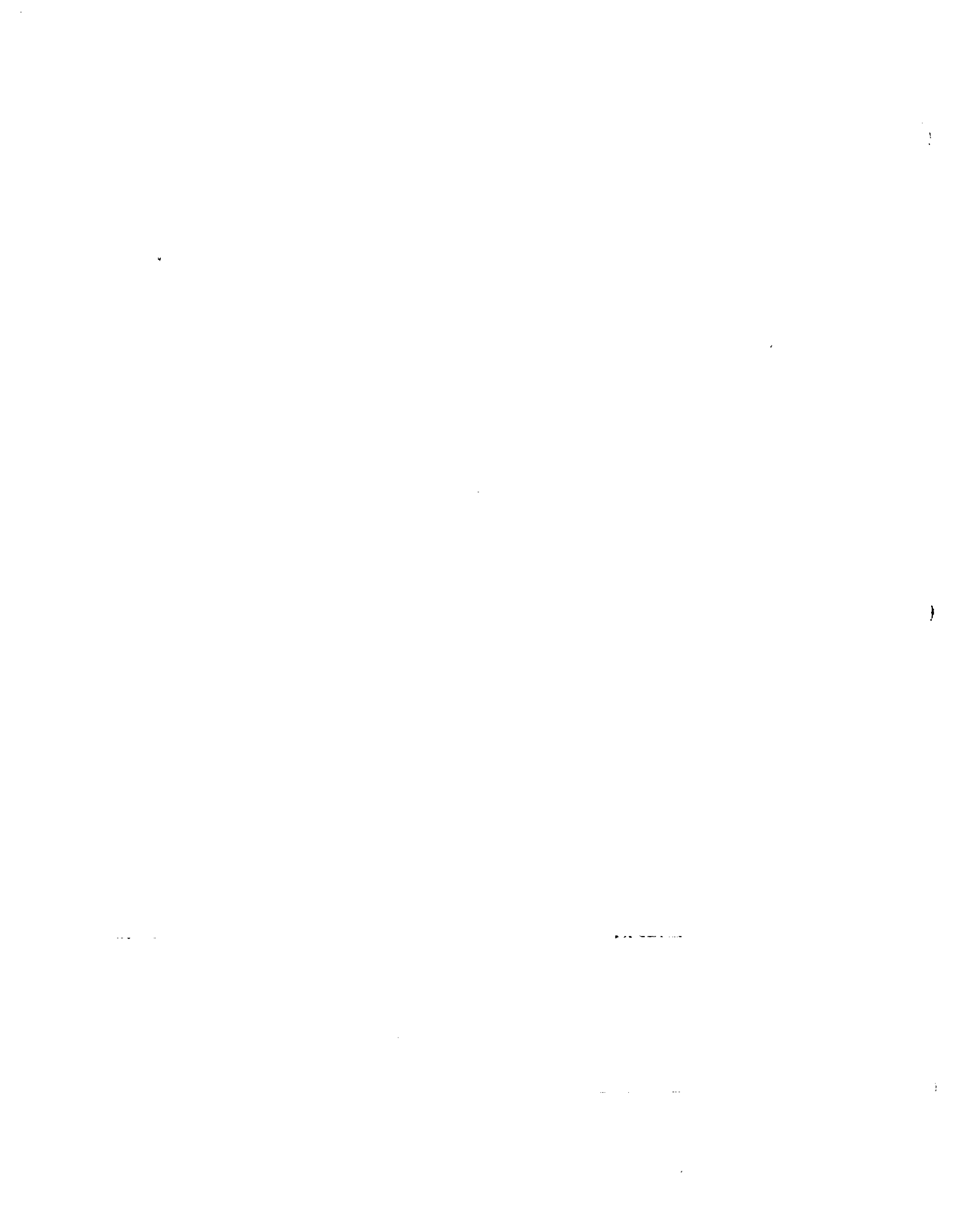
# MMC #: 22          OPERATOR GROUP

## DESCRIPTION:

Used to assign any station group as the operator group.

Any of the 30 station groups (500-529) can be used as an operator group.

This group can be called by dialing 0 or its group number.

An operator group may have up to 120 members. Group members are assigned in program #33.

When the system is first switched on, all outside lines ring the operator group (500) and the first 824 keyset (usually 201) in the system is placed in this group as a default answering position for all outside lines.

### PROGRAM KEYS

KEYPAD - Used to enter group number.
SPK/RLS - Save data and advance to next MMC.

### ACTION

1. Press # 22
   Display shows operator group

2. Enter new operator group
   500 through 529

3. Press # to store and exit

### DISPLAY

```
OPERATOR GROUP
GROUP 500
```

```
OPERATOR GROUP
GROUP 500:XXX
```

**DEFAULT DATA:**    500

**RELATED ITEMS:**    MMC #33 STN HUNT GROUP

# MMC #: 23     NIGHT TOLL CLASS

## DESCRIPTION:

Used to set the maximum night toll restriction class systemwide.

This will override the night toll class assigned to every station in MMC #30. When the system is in the night mode, no station can exceed this dialing class.
Valid classes are A-F

## PROGRAM KEYS

MUTE - Press repeatedly to select night toll class.
SPK/RLS - Save data and advance to next MMC.

### ACTION

1.  Press # 23
    Night toll class is displayed

2.  Press MUTE repeatedly to select
    a new night toll class A through F

3.  Press # to store and exit

### DISPLAY

NIGHT TOLL CLASS
CLASS A

NIGHT TOLL CLASS
CLASS C

DEFAULT DATA:     CLASS A

RELATED ITEMS:     MMC 31:  TOLL DENY TABLE
                   MMC 32:  TOLL ALLOW TABLE

# MMC #: 24                    ASSIGN UNA

## DESCRIPTION:

Used to select Universal Night Answer device.

Any line can be assigned to ring a night ringing device. The ringing call can be answered at any station by dialing the UNA code (67). If a UNA device is to be used, it must be assigned to "NEXT" destination of any station hunt group. Assign the lines that are to ring this group by using MMC #61.

Select one of the following options:

NO UNA RINGER - No UNA device is selected.

RING OVER PAGE - Sends a keyset type ring signal over the customer provided paging system.

COMMON BELL1 - Controls contacts of common bell control relay
1.  Closure can be CONTINUOUS or INTERRUPTED.

COMMON BELL2 - Controls contacts of common bell control relay
2.  Closure can be CONTINUOUS or INTERRUPTED.

## PROGRAM KEYS

MUTE - Press repeatedly to select UNA device.
SPK/RLS - Save data and advance to next MMC.

## ACTION

1.  Press # 24

2.  Press MUTE repeatedly to select option
    e.g., RING OVER PAGE

3.  Press # to store and exit

## DISPLAY

```
ASSIGN UNA
NO UNA RINGER
```

```
ASSIGN UNA
RING OVER PAGE
```

**DEFAULT DATA:**     **NO UNA RINGER**

**RELATED ITEMS:**     **MMC #29 COMMON BELL**

# MMC #: 25                    BARGE-IN TYPE

## DESCRIPTION:

This program is used to select a systemwide executive barge in option.

Select one of the following options:

NO BARGE IN: - barge in feature is not available regardless of a station's barge in status.

WITH TONE: - barge in will have an intrusion tone. This tone is repeated according to the BARGE-IN TONE INTERVAL program in MMC #74.

WITHOUT TONE: - barge in is allowed. There is no barge in tone. If the station barging in is an 824 keyset, the handset microphone is also muted.

### PROGRAM KEYS

MUTE - Press repeatedly to select barge in status.
SPK/RLS - Save data and advance to next MMC.

### ACTION

1. Press # 25
   Display shows barge in type

2. Press MUTE repeatedly to select option
   e.g., WITH TONE

3. Press # to store and exit

### DISPLAY

| BARGE IN TYPE |
| NO BARGE IN |

| BARGE IN TYPE |
| WITH TONE |

**DEFAULT DATA:**    **NO BARGE IN**

**RELATED ITEMS:**    **MMC #74 BARGE IN TONE INTERVAL**
                         **MMC #40 ASSIGN BARGE IN**

# MMC #: 26     EXT. PAGE OPTIONS

## DESCRIPTION:

This program selects the type of page output. This will allow the PROSTAR to interface with a variety of paging systems.

A common output is for use with a single amplifier and individual outputs are for use with multiple amplifiers.

Select one of the following options:

INDIVIDUAL: - The system will use four tip and ring page outputs. Each of the four page relay contact pairs work with its associated page zone tip and ring when that zone is dialed.

COMMON OUTPUT: - All paging output is to the first page zone tip and ring, but the page relay contacts operate individually for each zone selected. The contacts can be used to control speakers. This option allows a single amplifier to serve multiple page zones.

## PROGRAM KEYS

MUTE - Press repeatedly to select page option.
SPK/RLS - Save data and advance to next MMC.
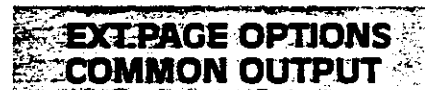
**ACTION**                                                          **DISPLAY**

1.  Press # 26
    Display shows ext. page option

```
EXT.PAGE OPTIONS
INDIVIDUAL
```

2.  Press MUTE repeatedly to select option
    e.g., COMMON OUTPUT

```
EXT.PAGE OPTIONS
COMMON OUTPUT
```

3.  Press # to store and exit

**DEFAULT DATA:     INDIVIDUAL**

**RELATED ITEMS:     MMC #42 ABLE TO PAGE**
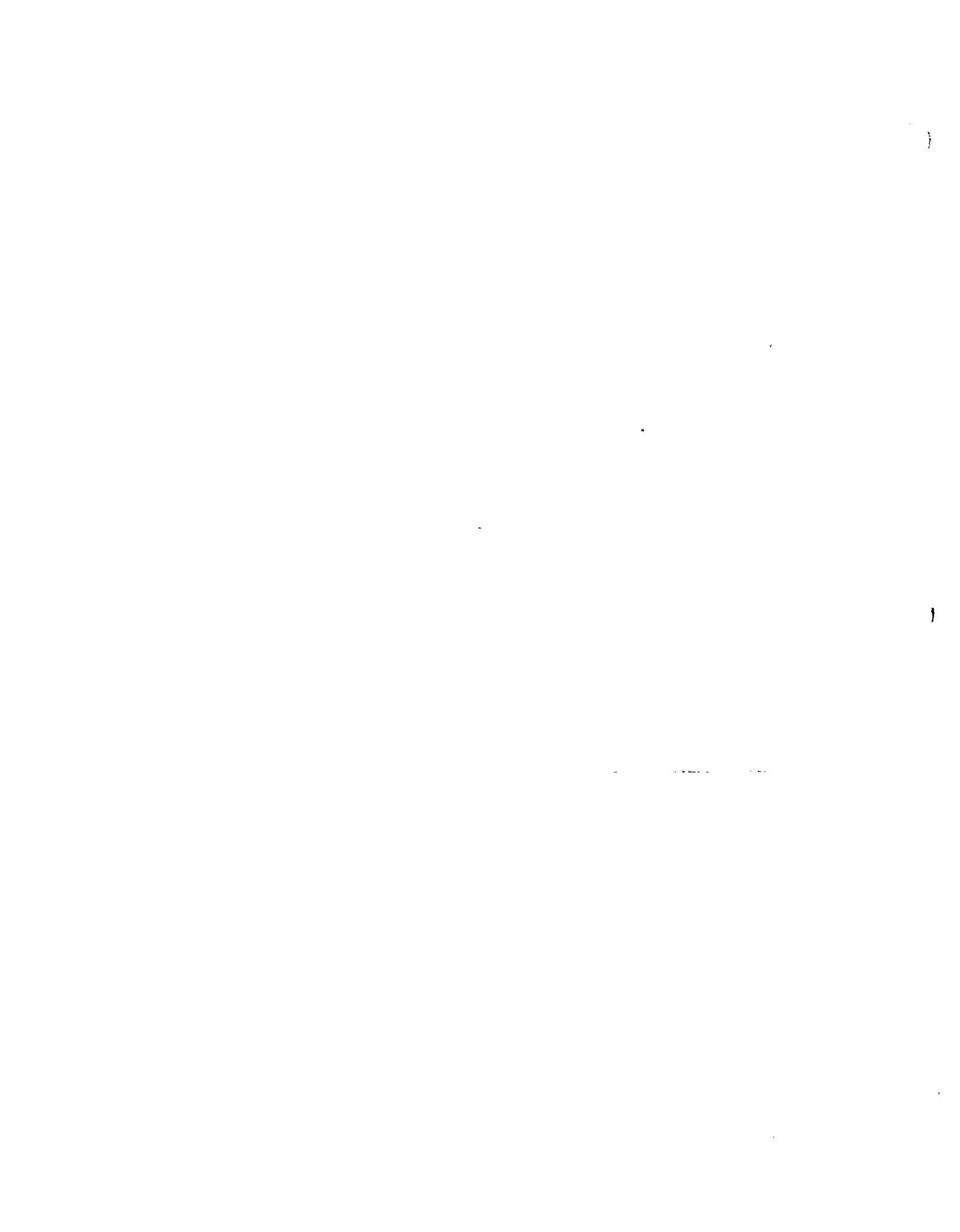
# MMC #: 29     SYS. ODDS & ENDS

## DESCRIPTION:

Used to select the systemwide options listed below.

CALL TIMER: - This sets the start method for the display keyset automatic call duration timer.

- AUTO START - Timer begins automatically at 00-00-00 after AUTO TIMER/SMDR timer in table number 3 expires.

MANUAL START - The call duration timer must be started manually. See KEYSET USER GUIDE. The keyset must have a TIMER key assigned in MMC #80 or #81.

SYS. SPEED DIAL: - This determines how toll restriction affects system speed dial numbers. Station speed dial numbers are not affected by this program.

- FOLLOW TOLL RSTR - System speed dial numbers are subject to toll restriction rules.

BYPASS TOLL RSTR - System speed dial numbers are not subject to toll restriction rules. This means that a toll restricted station can use any system speed dial numbers.

DTMF TONES: - This turns the DTMF tones on or off for all keysets. This program does not affect the tones being sent to the central office.

- MUTED - When dialing, DTMF cannot be heard at the keyset.

NOT MUTED - When dialing, DTMF tones can be heard at the keyset.

TRK SELECT TYPE: - Sets the selection pattern for outgoing trunks when a route button is pressed or a trunk group access code is dialed. When the system is first powered up, all trunk groups are built with the highest trunk number first and the lowest last.

- SEQUENTIAL - Searches the trunk group, first trunk in the group to the last. If the first trunk is busy, the next is selected, etc.

DISTRIBUTED - Searches the trunk group in circular order. Each time the group is accessed, the next available trunk in the group is selected.

CALL DURATION: - If enabled, this feature will repeat a tone burst on all outside calls.

ALERT - A tone burst is repeated according to the CALL DURATION ALERT timer in Timer Table 3.

- NO ALERT - No tone burst is heard.

COMMON BELL: - This sets the relay contacts for common bell 1 and common bell 2 as interrupted or continuous closure to accommodate the use of various loud ringing devices.

- INTERRUPTED - Contacts open and close at the C.O. ring cadence one second on/two seconds off.

CONTINUOUS - Contacts stay closed until ringing call is answered.

FWD ICM TO VM/AA: - This determines whether internal (intercom) calls will follow call forward instructions to a VM/AA port. This program only affects internal calls and only affects VM/AA ports.

- YES - Internal calls will follow call forwarding to VM/AA ports.

NO - Internal calls will not follow call forwarding to VM/AA ports.

TRANSFER TO AOM: - This will determine if outside calls can be transfered to AOMs.

YES - Outside calls can be transfered to AOMs.

- NO - Outside calls can not be transfered to AOMs. Any attempt to do so will result in an error tone.

TRANSFER TYPE: - This will determine whether the calling party will hear ringback tone or music during blind transfers.

- MUSIC - Calling party will hear music.

RINGBACK - Calling party will hear ringback.

## PROGRAM KEYS

UP & DOWN - Select the program options.
MUTE - Press repeatedly to make selection.
SPK/RLS - Save data and advance to next MMC.

## ACTION

1. Press # 29
   Display shows system option and selection

2. Press MUTE repeatedly to make selection
   e.g., MANUAL START

3. Press UP to advance to next option
   Display shows option and selection

## DISPLAY

```
CALL TIMER
AUTO START
```

```
CALL TIMER
MANUAL START
```

```
SYS.SPEED DIAL
BYPASS TOLL RSTR
```

4. Press MUTE repeatedly to make selection
   e.g., FOLLOW TOLL RSTR

> **SYS.SPEED DIAL**
> **FOLLOW TOLL RSTR**

5. Press UP to advance to next option
   Display shows option and selection

> **DTMF TONES**
> **MUTED**

6. Press MUTE repeatedly to make selection
   e.g., NOT MUTED

> **DTMF TONES**
> **NOT MUTED**

7. Press UP to advance to next option
   Display shows option and selection

> **TRK SELECT TYPE**
> **LINEAR**

8. Press MUTE repeatedly to make selection
   e.g., CIRCULAR

> **TRK SELECT TYPE**
> **CIRCULAR**

9. Press UP to advance to next option
   Display shows option and selection

> **CALL DURATION**
> **NO ALERT**

10. Press MUTE repeatedly to make selection
    e.g., ALERT

> **CALL DURATION**
> **ALERT**

11. Press UP to advance to next option
    Display shows option and selection

> **COMMON BELL**
> **INTERRUPTED**

12. Press MUTE repeatedly to make selection
    e.g., CONTINUOUS

> **COMMON BELL**
> **CONTINUOUS**

13. Press UP to advance to next option
    Display shows option and selection

> **ICM FWD TO VM/AA**
> **YES**

14. Press MUTE repeatedly to make selection
    e.g., NO

> **ICM FWD TO VM/AA**
> **NO**

15. Press UP to advance to next option
    Display shows option and selection

> **TRANSFER TO AOM**
> **NO**

16. Press MUTE repeatedly to make selection
    e.g., YES

> **TRANSFER TO AOM**
> **YES**

17. Press UP to advance to next option
    Display shows option and selection

> **TRANSFER TYPE**
> **MUSIC**

18. Press MUTE repeatedly to make selection
    e.g., RINGBACK

> **TRANSFER TYPE**
> **RINGBACK TONE**

19. Press # to store and exit

**DEFAULT DATA:**    **NOTED IN DESCRIPTION WITH AN ASTERISK**

**RELATED ITEMS:    NONE**
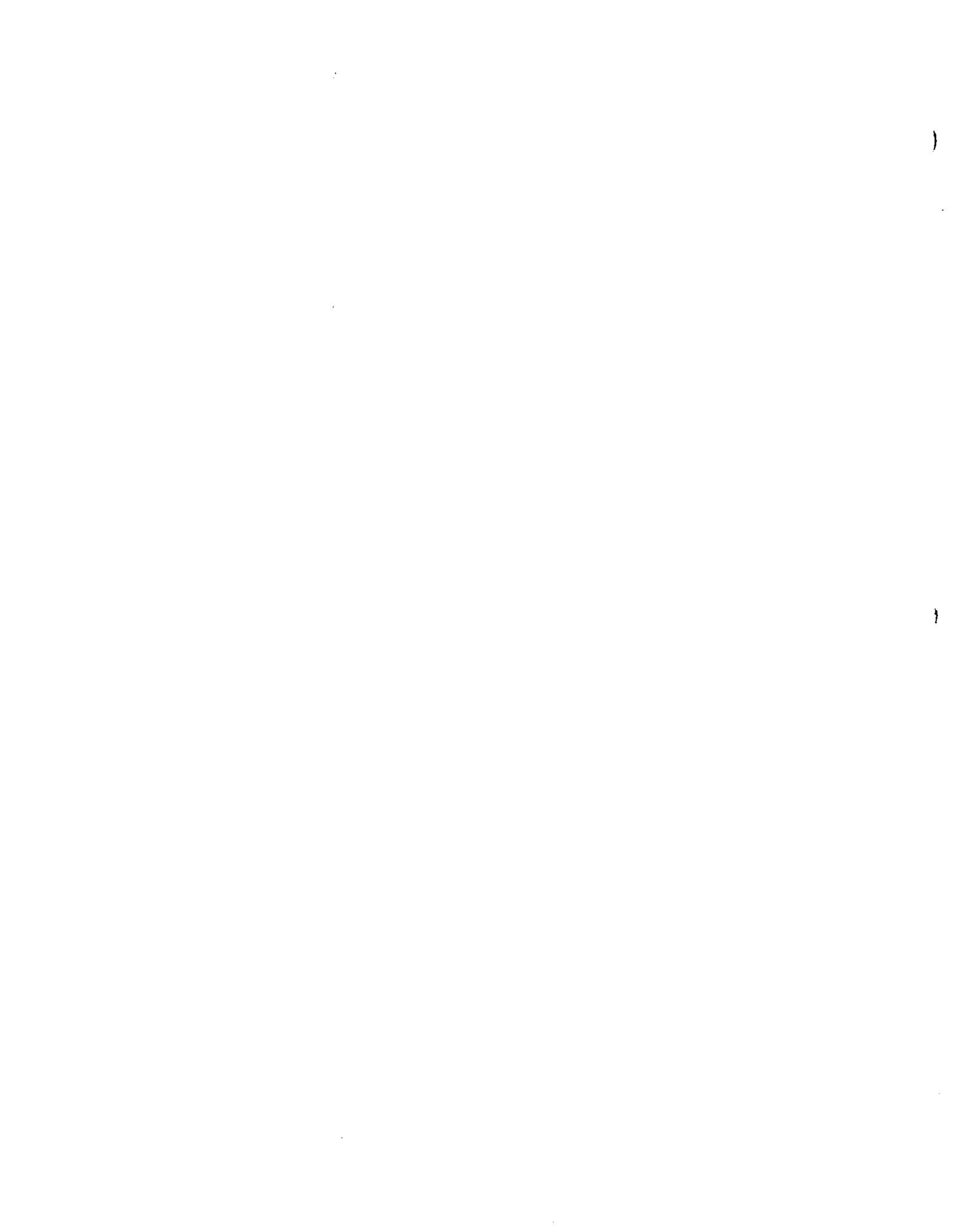
# MMC #: 30 — STN TOLL CLASS

## DESCRIPTION:

Used to assign two dialing classes for each station. One is for the day mode and one is for the night mode.

Classes can be A through F and correspond to the toll restriction classes A through F. Class B stations follows class B allow and deny toll restriction rules.

Input data using the keys 0 through 5.

| | | |
|---|---|---|
| 1 = A | UNRESTRICTED |
| 2 = B | FOLLOW CLASS B TOLL RESTRICTION RULES |
| 3 = C | FOLLOW CLASS C TOLL RESTRICTION RULES |
| 4 = D | FOLLOW CLASS D TOLL RESTRICTION RULES |
| 5 = E | FOLLOW CLASS E TOLL RESTRICTION RULES |
| 6 = F | INTERNAL CALLS ONLY |

Although during input the display will show numeric values for data, the next time the station is read, the class data will be displayed as letters, e.g., 35 will become CE.

## PROGRAM KEYS

UP & DOWN - Select the extension number.
KEYPAD - Used to enter toll class.
SPK/RLS - Save data and advance to next MMC.

## ACTION

1. Press # 30
   First station's toll class is displayed

2. Enter day class for station 201
   e.g., 3

3. Enter night class for station 201
   e.g., 5

4. Press UP to advance to next station
   Display shows next station and toll class

5. Repeat as necessary

## DISPLAY

```
STN TOLL CLASS
[201] AA:
```

```
STN TOLL CLASS
[201] AA:3
```

```
STN TOLL CLASS
[201] AA:35
```

```
STN TOLL CLASS
[202] AA:
```

6.  Press # to store and exit


**DEFAULT DATA:**      **All stations:**

**RELATED ITEMS:**     **MMC #31 TOLL DENY TABLE**
                       **MMC #32 TOLL ALLOW TABLE**
                       **MMC #29 SYSTEM SPEED DIAL**
                       **MMC #23 NIGHT TOLL CLASS**
                       **MMC #53 TRUNK TOLL RESTRICTION**
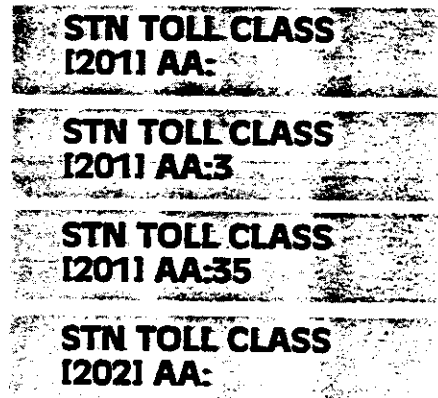
# MMC #: 31    TOLL DENY TABLE

## DESCRIPTION:

This program is used to list the leading digits to be restricted. There are 250 entries in this table. Each entry can have up to 11 digits and can apply or not apply to toll restriction classes B, C, D and E.

This program has two stages. Enter the leading digits to be denied, and then enter data for each class.

After accessing this MMC, the technician has a choice of options:

NEW ENTRY - Used to add a new entry to the deny table. The system will select the first available blank entry and the technician enters the leading digits to be restricted. After this is done, the system will check to make sure the leading digits do not already exist.

If the leading digits do not exist, the technician can enter the apply/not apply status for each toll restriction class. If the leading digits already exist, the display shows the entry number where the digits exist. Data for each toll restriction class can now be changed.

NOTE - "*" can be entered for "any digit." If "*" is entered as the last digit, the system toll restriction program will check the exceptions listed in MMC #32.

SEARCH ALL - This option will step through all entries sequentially. Each time a blank entry is encountered, a NEW ENTRY can be input.

SEARCH CLASS B, C, D or E - This option will only step through each entry for the selected class. When all entries have been displayed, the system displays the next available blank entry and a NEW ENTRY can be input.

## PROGRAM KEYS

UP & DOWN - Selects the entry number.
MUTE - Moves cursor between fields.
KEYPAD - Used to enter leading digits and toll class data.
HOLD - Used to clear the entry.
SPK/RLS - Saves data and advances to next MMC.

| ACTION | DISPLAY |
|---|---|
| 1.  Press # 31<br>Display shows new entry option | **TOLL DENY TABLE**<br>**NEW ENTRY** |

2.  Press UP
    Display shows blank entry

```
DENY001 :BCDE
         :0000
```

3.  Enter leading digits to be restricted
    e.g., 1213555

```
DENY001 :BCDE
1213555  :0000
```

4.  Press MUTE to move cursor
    to toll class field

```
DENY001 :BCDE
1213555  :0000
```

5.  Assign apply or not apply data:
    1 = apply, 0 = not apply, e.g., 1010

```
DENY001 :BCDE
1213555  :1010
```

6.  Press UP for another new entry
    or press # to store and exit


**DEFAULT DATA:**     **ALL ENTRIES ARE BLANK**

**RELATED ITEMS:**     **MMC #30 STN TOLL CLASS**
                       **MMC #58 TIE LINE CLASS**

# MMC #: 32          TOLL ALLOW TABLE

## DESCRIPTION:

This program is used to list leading digits to be allowed as exceptions to the deny tables in MMC #31. There are 250 entries. Each entry can have up to 11 digits and can either apply or not apply to toll restriction classes B, C, D and E.

This program has two stages. Enter the leading digits to be allowed, and enter apply/not apply data for each toll class to which these digits apply.

After accessing this MMC, the technician has a choice of selections.

NEW ENTRY - Used to add a new entry to the allow table. The system will select the first available blank entry. The technician enters the leading digits to allow as exceptions to deny entries. After this is completed, the system will check to make sure the leading digits do not already exist.

If the leading digits do not exist, the technician can enter the apply/not apply status for each toll restriction class. If the leading digits already exist, the display shows the entry number where the digits exist. Data for each toll restriction class can now be changed.

NOTE: "*" can be entered for "any digit."

SEARCH ALL - This option will step through all entries sequentially. Each time a blank entry is encountered, a NEW ENTRY can be input.

SEARCH CLASS B, C, D or E - This option will only step through each entry for the selected class. When all entries have been displayed, the system displays the next available blank entry and a NEW ENTRY can be input.

## PROGRAM KEYS

UP & DOWN - Select the entry number.
MUTE - Moves cursor between fields.
KEYPAD - Used to enter leading digits and toll class data.
HOLD - Used to clear the entry.
SPK/RLS - Save data and advance to next MMC.

| ACTION | DISPLAY |
|---|---|
| 1. Press # 32<br>Display shows new entry option | **TOLL ALLOW TABLE**<br>**NEW ENTRY** |

2.  Press UP
    Display shows blank entry

**ALLOW001 :BCDE**
**:0000**

3.  Enter leading digits to be allowed
    e.g., 12125553681

**ALLOW001 :BCDE**
**12135553681:0000**

4.  Press MUTE to move cursor
    to toll class field

**ALLOW001 :BCDE**
**12135553681:0000**

5.  Enter apply/not apply data:  1 = apply,
    0 = not apply, e.g., 1010

**ALLOW001 :BCDE**
**12135553681:1000**

6.  Press UP for next new entry
    or press # to store and exit


**DEFAULT DATA:**   **ALL ENTRIES ARE BLANK**

**RELATED ITEMS:**   **MMC #30 STN TOLL CLASS**
**MMC #31 TOLL DENY TABLE**

# MMC #: 33          STN HUNT GROUP

## DESCRIPTION:

Used to assign stations to one of 30 station hunt groups.

Dial the station hunt group number to reach stations in that group. This is often used when a caller needs to reach a department rather than a specific individual, e.g., accounting, shipping or technical support.

A station hunt group can have up to 120 members. A station cannot be in more than one station hunt group.

Station hunt groups can have two or three digit access codes beginning with 50, 51 and 52.

Each station hunt group can have an optional overflow destination. If a call to a group is not answered before the OVERFLOW timer expires, the ringing call will be diverted to the location specified in NEXT:. The overflow timer can be in the range of 000-250 seconds. A setting of 000 means overflow immediately to NEXT:.

The NEXT: location can be a station, station hunt group, ring over page, common bell 1 or common bell 2. The codes for auxiliary ringers are the following:

> ROP - *0
> CB1 - *1
> CB2 - *2

If there is no NEXT: destination, calls will continue ringing to the group until they are answered.

If there are no members in a group but there is a NEXT destination, the NEXT destination will ring after the overflow timer. If the overflow timer is 000 the NEXT destination will ring immediately.

If there are members in the group the members will ring. The NEXT destination will ring after the overflow timer. If the overflow timer is 000 then the NEXT destination will ring immediately in addition to any group members that should ring.

Calls to a station hunt group ring in one of four ring modes. These ring modes are:

UNCONDITIONAL - All the stations listed in the group will ring; busy stations will receive off-hook ringing.

SEQUENTIAL - The first idle station listed in the group will ring. If the first station

is busy, the second station will ring. If the first two stations are busy, the third station will ring, etc.

DISTRIBUTED - The first call will ring the first station listed in the group. The next call will ring the next station listed in the group, etc.

COLLECTIVE - All idle stations listed in the group will ring.

NOTE: The overflow trimer must be less than the transfer recall timer or overflow will not work.

## PROGRAM KEYS

UP & DOWN - Select the station group number.
MUTE - Press repeatedly to select ring mode.
FLASH & TRANSFER - Assign members.
KEYPAD - Used to enter extension numbers.
HOLD - Press to clear entry.
SPK/RLS - Save data and advance to next MMC.

| ACTION | DISPLAY |
|---|---|
| 1. Press # 33<br>The first group and ring mode are<br>displayed | **STN HUNT GROUP**<br>**[500]UNCONDITION** |
| 2. Press MUTE repeatedly to select option,<br>e.g., SEQUENTIAL | **STN HUNT GROUP**<br>**[500] SEQUENTIAL** |
| 3. Press TRANSFER<br>NEXT: location is displayed | **STN HUNT GROUP**<br>**[500] NEXT:** |
| 4. Enter the NEXT: destination (optional) | **STN HUNT GROUP**<br>**[500] NEXT:XXXX** |
| 5. Press TRANSFER<br>Overflow timer is displayed | **STN HUNT GROUP**<br>**[500] OVER:030S** |
| 6. Enter new overflow timer (this is only<br>necessary when a NEXT: destination is used | **STN HUNT GROUP**<br>**[500] OVER:030S** |
| 7. Press TRANSFER<br>The first member is displayed | **STN HUNT GROUP**<br>**[500] 001:** |
| 8. Enter the first member's extension number | **STN HUNT GROUP**<br>**[500] 001:XXXX** |
| 9. Press TRANSFER again<br>The second member is displayed | **STN HUNT GROUP**<br>**[500] 002:** |

# MMC #: 34     STN PICK UP GROUP

## DESCRIPTION:

Used to assign stations to one of 30 pick up groups.

These groups are used to allow ringing phones to be easily answered by stations in the same pick up group. A pick up group may have up to 120 members. A station cannot be in multiple pick up groups. Entering a station number already assigned to a pick up group will cancel the previous assigned number.

### PROGRAM KEYS

UP & DOWN - Select the pick up group number.
FLASH & TRANSFER - Select member number.
KEYPAD - Used to enter extension number.
HOLD - Press to clear entry.
SPK/RLS - Save data and advance to next MMC.

### ACTION

1. Press # 34
   Display shows group 01, entry 001

2. Enter any valid station number "XXX"

3. Press TRANSFER for next entry
   The next member is displayed

4. Repeat steps 2 and 3 until all
   members are in the group

5. Press UP for next group
   Display shows next group and first member

6. Enter any valid station number "XXX"

7. Repeat steps 2 through 5 as necessary

8. Press # to store and exit

### DISPLAY

| |
|---|
| **STN PICKUP GROUP** |
| **[01]001:** |

| |
|---|
| **STN PICKUP GROUP** |
| **[01]001:XXX** |

| |
|---|
| **STN PICKUP GROUP** |
| **[01]002:** |

| |
|---|
| **STN PICKUP GROUP** |
| **[02]001:** |

| |
|---|
| **STN PICKUP GROUP** |
| **[02]002:XXX** |

**DEFAULT DATA:**    ALL PICK UP GROUPS ARE EMPTY

**RELATED ITEMS:**    NONE

# MMC #: 35                HOT / WARM LINE

## DESCRIPTION:

Used to assign a hot or warm line destination to any station. The destination can be any station, station group, trunk or trunk group.

The hot line option program will immediately ring the programmed destination station when the handset is lifted.

The warm line option will ring the programmed destination following a preprogrammed time after the handset is lifted. The delay timer is located in MMC #73.

A station can be assigned with a hot line destination or a warm line destination, but not both.

Every station in the system may have a hot or warm line destination.

### PROGRAM KEYS

UP & DOWN - Select the extension number.
FLASH & TRANSFER - Select between HOT and WARM.
KEYPAD - Used to enter extension numbers.
HOLD - Press to clear entry.
SPK/RLS - Save data and advance to next MMC.

| ACTION | DISPLAY |
|---|---|
| 1. Press # 35<br>Lowest station's hot line is displayed | HOT/WARM LINE<br>[201]HOT :NONE |
| 2. Press TRANSFER repeatedly to select HOT and WARM option | HOT/WARM LINE<br>[201]WARM :NONE |
| 3. Enter a destination<br>"XXXX" | HOT/WARM LINE<br>[201]WARM :XXXX |
| 4. Press UP<br>Next station is displayed | HOT/WARM LINE<br>[202]HOT :NONE |
| 5. Repeat steps 2 through 4 as necessary | |
| 6. Press # to store and exit | |

**DEFAULT DATA:**      **ALL STATIONS = NONE**

**RELATED ITEMS:**      **MMC #73 WARM LINE DELAY TIMER**

# MMC #: 36                    EXT / TRK USE

## DESCRIPTION:

Used to program how each extension can use each trunk.

DIAL - YES means the station can access the line to dial out.
DIAL - NO means the station cannot access the line to dial out.
ANSWER - YES means the station can access the ringing line or held line.
ANSWER - NO means the station cannot access the ringing line.

In this MMC, any EXT-to-TRK combination can be viewed and changed as necessary.

This program is useful when setting up private lines or executive suites as it provides a high degree of trunk access control.

For faster programming, pressing mute will allow selection of all stations and all trunks. This can save time when first programming the system, but care should be taken because USING THIS PROGRAM WILL OVERWRITE EXISTING DATA.

### PROGRAM KEYS

UP & DOWN - Select the extension number.
MUTE - Used to select the ALL/ALL mode.
FLASH & TRANSFER - Select the trunk number.
KEYPAD - Used to enter data for each EXT-to-TRK combination.
SPK/ RLS - Save data and advance to next MMC.

### ACTION                              DISPLAY

1. Press # 36
   Display shows lowest EXT and TRK

   [EXT TRK:DIAL:ANS]
   [201/701:Y :Y ]

2. Press UP to advance to the next EXT

   [EXT TRK:DIAL:ANS]
   [202/701:Y :Y ]

3. Press TRANSFER to advance to
   the next TRK

   [EXT TRK:DIAL:ANS]
   [202/702:Y :Y ]

4. Enter new data using 1 and 0
   0 = NO and 1 = YES

   [EXT TRK:DIAL:ANS]
   [202/702:NO :NO ]

5. Press # to store and exit

DEFAULT DATA:     ALL EXT-TO-TRK COMBINATIONS YES: YES

RELATED ITEMS:    NONE
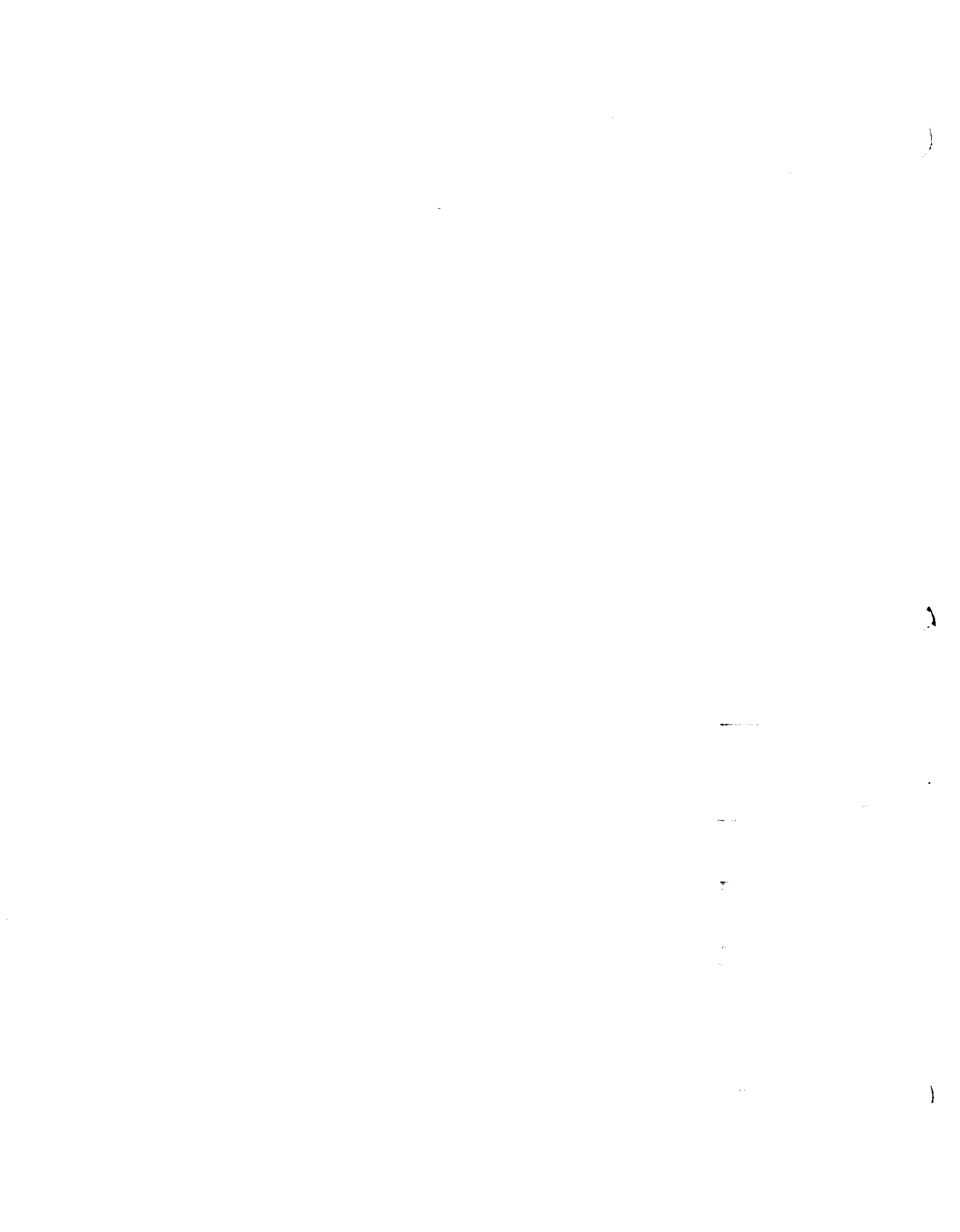
# MMC #: 37          EXEC / SECT PAIRS

## DESCRIPTION:

Used to set up executive/secretary pairs.

The system can have as many pairs as needed. There can only be one SECT station for each EXEC. If you assign the same SECT to another EXEC, the previous SECT will be cancelled.

When an executive/secretary pair is created, both the executive station and the secretary station must be programmed with an executive/secretary button (soft key).

### PROGRAM KEYS

UP & DOWN - Select the executive extension number.
KEYPAD - Used to enter the secretary number for each executive.
HOLD - Press to clear entry.
SPK/RLS - Save data and advance to next MMC.

### ACTION

1. Press # 37
   Lowest EXEC station is displayed

2. Enter secretary station for
   EXEC 201 if desired, e.g., 233

3. Press UP to view next station
   Display shows

4. Repeat steps 2 through 4 as necessary

5. Press # to store and exit

### DISPLAY

**EXEC/SECT PAIRS**
**EX:201 SE:**

**EXEC/SECT PAIRS**
**EX:201 SE:233**

**EXEC/SECT PAIRS**
**EX:202 SE:**

**DEFAULT DATA:**    NO EXECUTIVE/SECRETARY PAIRS DEFINED

**RELATED ITEMS:**    MMC #80 KEY PROGRAMMING [SYS]
                      MMC #81 KEY PROGRAMMING [STN]

# MMC #: 38     ASSIGN AOM UNITS

## DESCRIPTION:

Used to assign add-on modules (AOMs).

An add-on module can be assigned as a stand-alone unit or it can work with any other station. The AOM is identified by its extension number.

When used as a stand-alone unit, the AOM can be called directly. The AOM's answer mode is programmable as AUTO ANSWER or VOICE ANNOUNCE. Selecting RING has no effect as there is no ringer circuit in the AOM. When assigned with a station, the AOM cannot be called directly but it can be used for off-hook voice announce.

Any station can be assigned one or two AOMs. Voice announcing is always to the first AOM installed.

NOTE: If an AOM is plugged into a port that has been previously programmed for a keyset, the AOM will assume the same button programming as the keyset.

### PROGRAM KEYS

UP & DOWN - Select the AOM number.
KEYPAD - Used to enter AOM's associated extension number.
HOLD - Press to clear entry.
SPK/RLS - Save data and advance to next MMC.

### ACTION

1. Press # 38
   First AOM is displayed

2. Enter station number that AOM is to
   be assigned to, e.g., 268

3. Press UP to view next AOM, e.g.,
   next AOM is assigned to extension 221

4. Repeat as necessary

5. Press # to store and exit

### DISPLAY

```
ASSIGN AOM UNITS
AOM272:NONE:
```

```
ASSIGN AOM UNITS
AOM 272:NONE:268
```

```
ASSIGN AOM UNITS
AOM281:221 :
```

DEFAULT DATA:     ALL INSTALLED AOMS ARE STAND ALONE AND AUTO
                  ANSWER

RELATED ITEMS:    MMC #12 SET ANSWER MODE
                  MMC #81 KEY PROGRAMMING [STN]
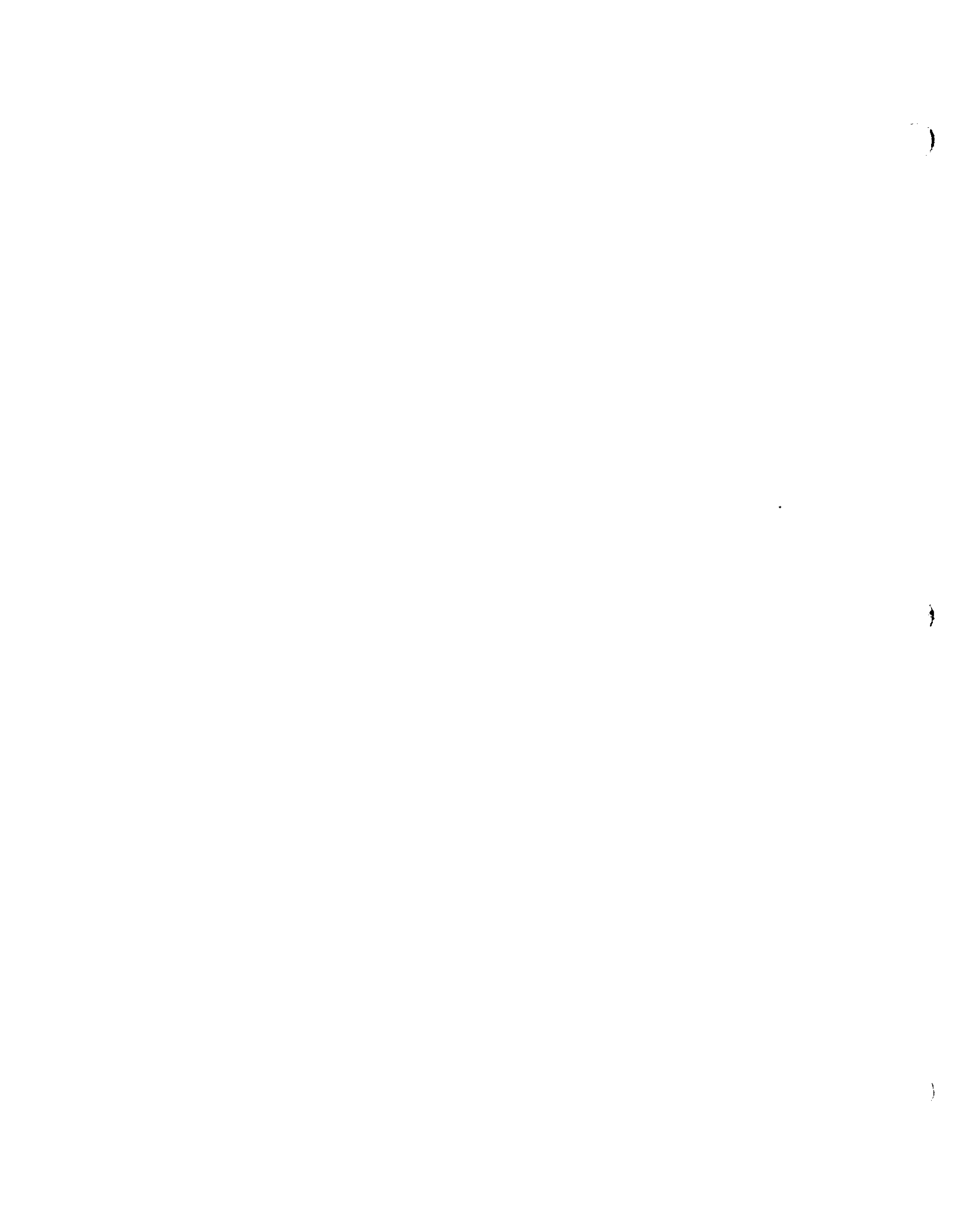
# MMC #: 39  SPEED DIAL NO.'S [STN]

## DESCRIPTION:

Used to program station speed dial numbers for any station in the system.

Each individual station user can program his/her own numbers, but in cases where this is not practical, this program allows a system administrator using the technician or customer passcode to view or change any station's speed dial numbers.

A speed dial number consists of an access code and the number to be dialed. The access code can be any trunk group, individual trunk, station group or individual station. The speed dial number may be up to 16 digits long. The number may include # and *

During entry of the speed dial number, there are a number of special keys that can be used.

> CONF - This key must be pressed after an access code has been dialed. If an access code is not used, the system will select a trunk from trunk group 9.

> PAGE - This will insert a pause into the speed dial number.

> SPD - After pressing this key, any digits dialed will be unlisted. Pressing this key a second time will once again list numbers.

> MESSAGE - This will insert a flash into the speed dial number.

NOTE: When connecting this system to voice mail that cannot utilize the in-band signalling defined in MMC #94, speed dial numbers may be programmed with a station group access code instead of a trunk group access code. Enter the station group number before [CONF]. Any digits entered after [CONF] will be sent immediately after the station group answers. This is used to build voice mail log-in and password instructions which will provide one touch message retrieval.

### PROGRAM KEYS

UP & DOWN - Select the extension number.
MUTE - Press repeatedly to move cursor between data fields.
FLASH & TRANSFER - Select speed dial entry number.
KEYPAD - Used to enter number.
HOLD - Press to clear entry.
SPK/RLS - Save data and advance to next MMC.

## ACTION

1. Press # 39
   Display shows first station's speed #00

2. Press UP repeatedly to select
   another extension number

3. Press TRANSFER repeatedly
   or enter speed dial # using the keypad

4. Press MUTE to move cursor to lower half
   of display

5. Enter trunk group and number to be dialed,
   e.g., 9 [CONF] 1 305 426 4100

6. Press TRANSFER to store number

7. Press # to store and exit programming mode

## DISPLAY

```
[201]00:
```

```
[208]00:
```

```
[208]09:
```

```
[208]09:
_
```

```
[208]09:
13054264100
```

**DEFAULT DATA:**   NO SPEED DIAL NUMBERS PROGRAMMED

**RELATED ITEMS:**   MMC #64 SYS SPEED NUMBER
                     MMC #63 SPEED DIAL BLOCK

# MMC #: 40     ASSIGN BARGE IN

## DESCRIPTION:

Used to assign each station a barge in and a security status.

BARGE IN - When set to YES, the station being programmed can monitor or intrude on any other conversations. When BARGE IN is set to no, BARGE IN cannot be used.

SECURE - When set to YES, the station being programmed is secure from BARGE IN. When set to NO, other stations assigned BARGE IN - YES can monitor or intrude on the programmed station's conversation.

A station assigned BARGE IN - YES cannot intrude on a conversation if either party of the conversation is SECURE.

An additional option is available using the MUTE key. Pressing MUTE will allow ALL stations to be programmed at once. This can save time when first programming the system, but care should be taken because USING THIS PROGRAM WILL OVERWRITE EXISTING DATA.

Enter 0 for NO and 1 for YES.

### PROGRAM KEYS

UP & DOWN - Select the extension number.
MUTE - Press to select ALL mode.
KEYPAD - Used to enter 0 and 1.
SPK/RLS - Save data and advance to next MMC.

### ACTION

1. Press # 40
   Display shows

2. Select station number by
   using UP and DOWN

3. Enter status using 0 for NO and
   1 for YES, e.g., 1, 0

4. Press # to store and exit

### DISPLAY

**BARGE IN/SECURE**
**[201] N /N**

**BARGE IN/SECURE**
**[233] N /N**

**BARGE IN/SECURE**
**[233] YES/NO**

**DEFAULT DATA:**     **All stations NO/NO**

**RELATED ITEMS:**     **MMC #25 BARGE IN TYPE**
                            **MMC #74 BARGE IN TONE INT.**

# MMC #: 41　　　INT. PAGE ZONE

## DESCRIPTION:

Used to assign a station to one of the four internal page zones, or NO ZONE.

If a station is programmed for "NO ZONE," it will not receive zone page announcements, but it will receive "ALL PAGE" announcements.

If a station should not receive "ALL PAGE," see MMC #43.

### PROGRAM KEYS

UP & DOWN - Select the extension number.
MUTE - Press repeatedly to select zone.
SPK/RLS - Save data and advance to next MMC.

### ACTION

1.  Press # 41
    Display shows first station

2.  Press UP to view next station
    (repeat as necessary)

3.  Press MUTE to select zone
    (repeat to scroll through zones)

4.  Press # to store and exit

### DISPLAY

```
INT. PAGE ZONE
[201]NO ZONE
```

```
INT. PAGE ZONE
[202]NO ZONE
```

```
INT. PAGE ZONE
[202]ZONE1
```

**DEFAULT DATA:**　　**ALL STATIONS NO ZONE**

**RELATED ITEMS:**　　**MMC #42 ABLE TO PAGE**
　　　　　　　　　　　**MMC #43 RECEIVE PAGE**

# MMC #: 42                    ABLE TO PAGE

## DESCRIPTION:

This program determines who is able to make page announcements.

Each station has two options. YES = able to page and NO = cannot page.

Keysets programmed as NO cannot make page announcements. Any attempt to do so will show PAGE RESTRICTED.

### PROGRAM KEYS

UP & DOWN - Select the extension number.
MUTE - Press repeatedly to select YES or NO.
SPK/RLS - Save data and advance to next MMC.

### ACTION

1. Press # 42
   Display shows lowest station

2. Press UP to view next station
   (repeat as necessary)

3. Press MUTE to select YES or NO
   Display shows

4. Press # to store and exit

### DISPLAY

```
ABLE TO PAGE
[201]YES
```

```
ABLE TO PAGE
[202]YES
```

```
ABLE TO PAGE
[202]NO
```

**DEFAULT DATA:**     ALL STATIONS ARE ABLE TO PAGE

**RELATED ITEMS:**    USER GUIDE - PAGING
                      MMC #41 INT PAGE ZONE
                      MMC #43 RECEIVE PAGE

# MMC #: 43 — RECEIVE PAGE

## DESCRIPTION:

Allows or denies each station receipt of any type of page announcements. Enter YES to allow and NO to deny.

## PROGRAM KEYS

UP & DOWN - Select the extension number.
MUTE - Press repeatedly to select YES and NO.
SPK/RLS - Save data and advance to next MMC.

## ACTION

1. Press # 43
   Display shows first station

2. Press UP to view next station
   (repeat as necessary)

3. Press MUTE to toggle YES/NO option
   Display shows

4. Press # to store and exit

## DISPLAY

```
RECEIVE PAGE
[201]YES
```

```
RECEIVE PAGE
[202]YES
```

```
RECEIVE PAGE
[202]NO
```

**DEFAULT DATA:**     ALL STATIONS ABLE TO RECEIVE PAGE

**RELATED ITEMS:**     MMC #41 INT PAGE ZONE
                       MMC #42 ABLE TO PAGE

# MMC #: 44                                 ALLOW DND

## DESCRIPTION:

Allows the use of DND for each station individually. Enter YES for allow and NO to deny.

Stations programmed as NO will receive error tone if they attempt to use DND.

### PROGRAM KEYS

UP & DOWN - Select the extension number.
MUTE - Press repeatedly to select YES and NO.
SPK/RLS - Save data and advance to next MMC.

### ACTION                                    DISPLAY

1. Press # 44
   Display shows first station

   **ALLOW DND**
   **[201]YES**

2. Press UP to view next station
   (repeat as necessary)

   **ALLOW DND**
   **[202]YES**

3. Press MUTE to toggle YES/NO option
   Display shows

   **ALLOW DND**
   **[202]NO**

4. Press # to store and exit


**DEFAULT DATA:**     **ALL STATIONS:  YES**

**RELATED ITEMS:**     **USER GUIDES**
                       **MMC #80 KEY PROGRAM[SYS]**
                       **MMC #81 KEY PROGRAM[STN]**

# MMC #: 45                    VM / AA  PORT

## DESCRIPTION:

Used to program an SLT port as a Voice Mail/Auto Attendant port.

When programmed as VM/AA, the extension number will follow the VM/ AA rules defined in MMC #94.

When programmed as NORMAL, the extension number will behave as an SLT voice port and will not follow the VM/AA rules defined in MMC #94.

Because special hardware is required, only single line ports on MSLC2 cards can be programmed as VM/AA ports (circuits 5, 6, 7 and 8).

## PROGRAM KEYS

UP & DOWN - Select the extension number.
MUTE - Press repeatedly to select NORMAL and VM/AA.
SPK/RLS - Save data and advance to next MMC.

| ACTION | DISPLAY |
|---|---|
| 1.  Press # 45<br>Display shows first MSLC2 SLT port | VM/AA PORT<br>[231]NORMAL |
| 2.  Press UP to view next MSLC2 SLT port<br>(repeat as necessary) | VM/AA PORT<br>[232]NORMAL |
| 3.  Press MUTE repeatedly to select<br>NORMAL or VM/AA<br>Display shows | VM/AA PORT<br><br>[232]VM/AA |
| 4.  Press # to store and exit | |

DEFAULT DATA:    ALL MSLC2 SLT PORTS ARE NORMAL

RELATED ITEMS:   MMC #94 VM/AA OPTIONS
                 MMC #33 STN HUNT GROUPS

# MMC #: 46    DATA / VOICE PORT

## DESCRIPTION:

Used to assign SLT ports that will be used for data transmission.

Select one of the following options:

VOICE: - The station will be used for voice communications. All intrusion and warning tones will be heard during conversation.

DATA: - The station will be used for data communication. No intrusion or warning tones will interfere with data transmission.

### PROGRAM KEYS

UP & DOWN - Select the extension number.
MUTE - Press repeatedly to select DATA and VOICE.
SPK/RLS - Save data and advance to next MMC.

### ACTION

1. Press # 46
   Display shows first SLT port

2. Press UP to view next SLT port
   (repeat as necessary)

3. Press MUTE to toggle VOICE - DATA option
   Display shows

4. Press # to store and exit

### DISPLAY

**DATA/VOICE PORT**
**I217IVOICE**

**DATA/VOICE PORT**
**I218IVOICE**

**DATA/VOICE PORT**
**I218IDATA**

**DEFAULT DATA:**    **ALL STATIONS ARE VOICE PORTS**

**RELATED ITEMS:**    **NONE**

# MMC #: 47     KEYSET LOUD BELL

## DESCRIPTION:

Used to enable the loud bell tone output at each 824 keyset. The tone is output on the third pair of wires of the line cord. Enter ENABLED or DISABLED.

ENABLED: - Keyset ring tone is provided for external use.

DISABLED: - Keyset ring tone is not available for external use.

### PROGRAM KEYS

UP & DOWN - Select the extension number.
MUTE - Press repeatedly to select DISABLED and ENABLED.
SPK/RLS - Save data and advance to next MMC.

### ACTION

1. Press # 47
   Display shows first installed 824 keyset

2. Press UP to view next 824 keyset
   (repeat as necessary)

3. Press MUTE to toggle DISABLED - ENABLED
   Display shows

4. Press # to store and exit

### DISPLAY

```
LOUD BELL
[201]DISABLED
```

```
LOUD BELL
[202]DISABLED
```

```
LOUD BELL
[202]ENABLED
```
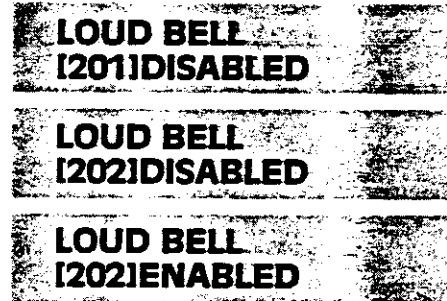
**DEFAULT DATA:**   RING TONE OUTPUT DISABLED

**RELATED ITEMS:**   MMC #16 SELECT RING FREQUENCY

# MMC #: 48                    HEADSET USE

## DESCRIPTION:

Used to enable headset operation at each keyset. If a keyset is equipped with a headset but not enabled in this program, user will have to hang up calls and complete transfers by depressing the hookswitch after each call. Select either HANDSET or HEADSET.

NO: - The keyset will operate normally (the handset is fully operational).

YES: - The keyset hookswitch will be disabled and the SPK RLS key is used to answer and release calls.

**PROGRAM KEYS**

UP & DOWN - Select the extension number.
MUTE - Press repeatedly to select YES and NO.
SPK/RLS - Save data and advance to next MMC.

| ACTION | DISPLAY |
|---|---|
| 1. Press # 48<br>Display shows first keyset | **HEADSET USE**<br>**[201]NO** |
| 2. Press UP to view next keyset<br>(repeat as necessary) | **HEADSET USE**<br>**[202]NO** |
| 3. Press MUTE to select NO - YES<br>Display shows | **HEADSET USE**<br>**[202]YES** |
| 4. Press # to store and exit | |

**DEFAULT DATA:      HANDSET OPERATION**

**RELATED ITEMS:    KEYSET USER GUIDE**

# MMC #: 49                    DISA AVAILABLE

## DESCRIPTION:

Used to allow or deny access to DISA feature. DISA calls are always originated from outside the system. Dialing the correct DISA security code is necessary to gain access. This security code is comprised of a valid station number plus a valid station passcode (the passcode cannot be default). Also, if the two do not match, access is denied.

PROGRAM EACH STATION FOR ONE OF THE FOLLOWING OPTIONS:

YES - Station can access DISA.

NO - Station cannot access DISA feature.

## PROGRAM KEYS

UP & DOWN - Select the extension number.
MUTE - Press repeatedly to select YES and NO.
SPK/RLS - Save data and advance to next MMC.

### ACTION

1. Press # 49
   Display shows first station and DISA status

2. Press UP to view next station (repeat as necessary)

3. Press MUTE to toggle YES - NO Display shows

4. Press # to store and exit

### DISPLAY

```
DISA AVAILABLE
[201]NO
```

```
DISA AVAILABLE
[202]NO
```

```
DISA AVAILABLE
[202]YES
```

DEFAULT DATA:    ALL STATIONS:  NO

RELATED ITEMS:    SPECIAL FEATURES GUIDE
                  MMC #11 CHANGE PASSCODE
                  MMC #52 DISA LINE
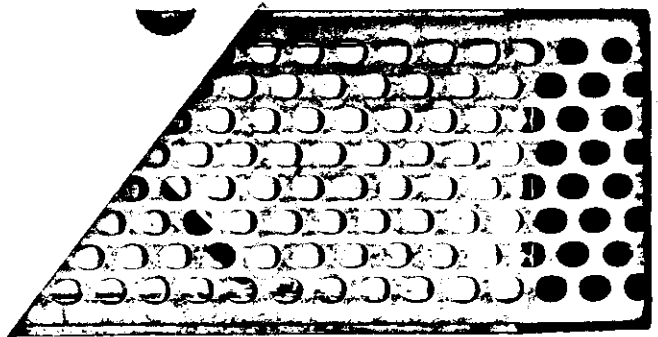
# MMC #: 50   PULSE / DTMF TYPE

## DESCRIPTION:

Used to assign pulse or tone dialing for each outside line.

### PROGRAM KEYS

UP & DOWN - Select the trunk number.
MUTE - Press repeatedly to select DTMF and PULSE.
SPK/RLS - Save data and advance to next MMC.

### ACTION

1. Press # 50
   Display shows first trunk

2. Press UP to view next trunk
   (repeat as necessary)

3. Press MUTE to toggle DTMF - PULSE
   Display shows

4. Press # to store and exit

### DISPLAY

```
PULSE/DTMF TYPE
[701]DTMF
```

```
PULSE/DTMF TYPE
[702]DTMF
```

```
PULSE/DTMF TYPE
[702]PULSE
```

**DEFAULT DATA:**   **All trunks set to DTMF**

**RELATED ITEMS:**   **NONE**
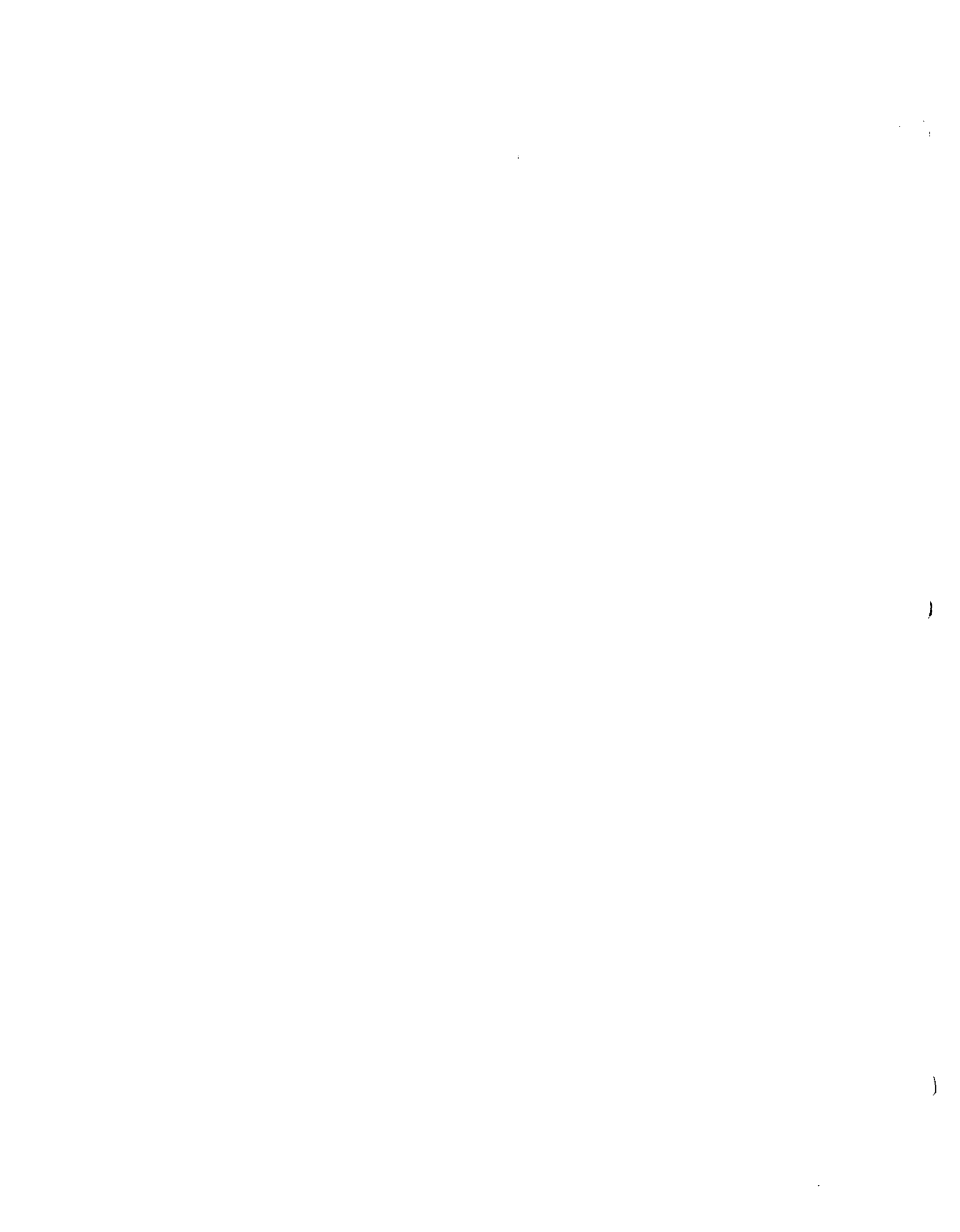
10. Continue until all entries are made

11. Press UP
    The next group is displayed

```
STN HUNT GROUP
[501]UNCONDITION
```

12. Repeat as necessary

13. Press # to store and exit


**DEFAULT DATA:**     **ALL GROUPS ARE EMPTY**

**RELATED ITEMS:**    **MMC #24 ASSIGN UNA**
                      **MMC #83 EXT.GROUP NUMBER**
                      **IN/OUT GROUP FEATURE**

# MMC #: 51 · SET PABX LINE

## DESCRIPTION:

Used to program each outside line for use behind a PBX office.

Select one of the following options:

C.O. - Normal central office use.

PBX - For lines connected to a Private Branch Exchange (PBX) or Centrex. PBX lines will have a different flash time than lines programmed for C.O. use.

### PROGRAM KEYS

UP & DOWN - Select the trunk number.
MUTE - Press repeatedly to select CO and PBX.
SPK/RLS - Save data and advance to next MMC.
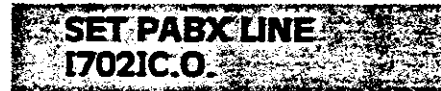
### ACTION

1. Press # 51
   Display shows first trunk

2. Press UP to view next trunk
   (repeat as necessary)

3. Press MUTE to toggle C.O. - PBX
   Display shows

4. Press # to store and exit

### DISPLAY

```
SET PABX LINE
[701]C.O.
```

```
SET PABX LINE
[702]C.O.
```

```
SET PABX LINE
[702]PBX
```

**DEFAULT DATA:**     **ALL OUTSIDE LINES ARE C.O. LINES**

**RELATED ITEMS:**     **MMC #71 TIMER TABLE 1 PBX FLASH**
**MMC #71 TIMER TABLE 1 C.O. FLASH**
**MMC #65 PBX ACCESS CODES**

# MMC #: 52 — DISA LINE

## DESCRIPTION:

Assigns lines to be used for DISA feature.

If the Direct Inward System Access (DISA) feature is to be used, at least one incoming line must be dedicated for DISA. DISA lines cannot be used to originate calls. The DISA line or lines are not affected by night service operation.

Select one of the following options:

NORMAL:  The line is used to make and/or receive calls.

DISA:  The line is used exclusively for DISA.

When a DISA line is dialed, the system automatically answers and prompts the caller for the security code. If a correct security code is entered, system dial tone is returned and the caller may use the system lines and features. If an incorrect security code is entered, the line is disconnected.

In this MMC, MUTE is used to select data (NORMAL or DISA) and UP and DOWN are used to select the trunk number.

NOTE: Only one DISA line should be assigned for each TRK card. This is because the receiver on the card is occupied during a DISA call and would not be available for other DISA calls.

## PROGRAM KEYS

UP & DOWN - Select the trunk number.
MUTE - Press repeatedly to select NORMAL and DISA.
SPK/RLS - Save data and advance to next MMC.

| ACTION | DISPLAY |
|---|---|
| 1. Press # 52<br>Display shows first trunk | DISA LINE<br>[701]NORMAL |
| 2. Press UP to view next trunk<br>(repeat as necessary) | DISA LINE<br>[702]NORMAL |
| 3. Press MUTE to toggle NORMAL - DISA<br>Display shows | DISA LINE<br>[702]DISA |

4.  Press # to store and exit


**DEFAULT DATA:**     **ALL OUTSIDE LINES ARE NORMAL**

**RELATED ITEMS:**    **SPECIAL FEATURES GUIDE**
                      **MMC #49 DISA AVAILABLE**

# MMC #: 53 TRUNK TOLL RSTR

## DESCRIPTION:

Sets each outside line to FOLLOW or BYPASS toll restriction.

Select one of the following options:

FOLLOW: - All calls made on the line will be subject to the toll restriction rules of the station that dialed.

BYPASS: - Any call can be made on the line regardless of the toll restriction class of the station that dialed.

### PROGRAM KEYS

UP & DOWN - Select the trunk number.
MUTE - Press repeatedly to select FOLLOW or BYPASS.
SPK/RLS - Save data and advance to next MMC.

### ACTION

1. Press # 53
   Display shows first trunk

2. Press UP to view next trunk
   (repeat as necessary)

3. Press MUTE to toggle FOLLOW - BYPASS
   Display shows

4. Press # to store and exit

### DISPLAY

TRUNK TOLL RSTR
[701]FOLLOW

TRUNK TOLL RSTR
[702]FOLLOW

TRUNK TOLL RSTR
[702]BYPASS

**DEFAULT DATA:   ALL TRUNKS FOLLOW TOLL RESTRICTION**

**RELATED ITEMS:   NONE**

# MMC #: 54   TRK LINE FORWARD

## DESCRIPTION:

Assign each trunk to follow or not follow station call forwarding.

This program affects only new incoming calls that have not been answered. Once an outside line has been answered and transferred to another station, it will follow call forwarding.

Select one of the following options:

FOLLOW - The ringing line will follow any call forward conditions set at the station.

NOT FOLLOW - The ringing line will not follow call forward conditions set at the station.

### PROGRAM KEYS

UP & DOWN - Select the trunk number.
MUTE - Press repeatedly to select FOLLOW or NOT FOLLOW.
SPK/RLS - Save data and advance to next MMC.

| ACTION | DISPLAY |
|---|---|
| 1. Press # 54<br>Display shows first trunk | TRK LINE FORWARD<br>[701]NOT FOLLOW |
| 2. Press UP to view next trunk<br>(repeat as necessary) | TRK LINE FORWARD<br>[702]NOT FOLLOW |
| 3. Press MUTE to select FOLLOW - NOT FOLLOW<br>Display shows | TRK LINE FORWARD<br>[702]FOLLOW |
| 4. Press # to store and exit | |

**DEFAULT DATA:**   **NOT FOLLOW**

**RELATED ITEMS:**   **STATION CALL FORWARD**

# MMC #: 55                      1A2 EMULATION

## DESCRIPTION:

Defeats automatic privacy from lines so they can be used like 1A2 key system.

Select one of the following options:

NO - Line has automatic privacy.

YES - Line emulates 1A2. When this outside line is in use, up to four other people may press the same line button and join the conversation.

NOTE: When a line is programmed for 1A2 = YES, single line phones may also join the conversation by dialing the trunk number 7XX.

### PROGRAM KEYS

UP & DOWN - Select the trunk number.
MUTE - Press repeatedly to select YES or NO.
SPK/RLS - Save data and advance to next MMC.

| ACTION | DISPLAY |
|---|---|
| 1. Press # 55<br>Display shows first trunk | 1A2 EMULATION<br>[701]NO |
| 2. Press UP to view next trunk<br>(repeat as necessary) | 1A2 EMULATION<br>[702]NO |
| 3. Press MUTE repeatedly to select option<br>Display shows | 1A2 EMULATION<br>[702]YES |
| 4. Press # to store and exit programming<br>mode | |

DEFAULT DATA:    ALL OUTSIDE LINES SET TO NO

RELATED ITEMS:    NONE
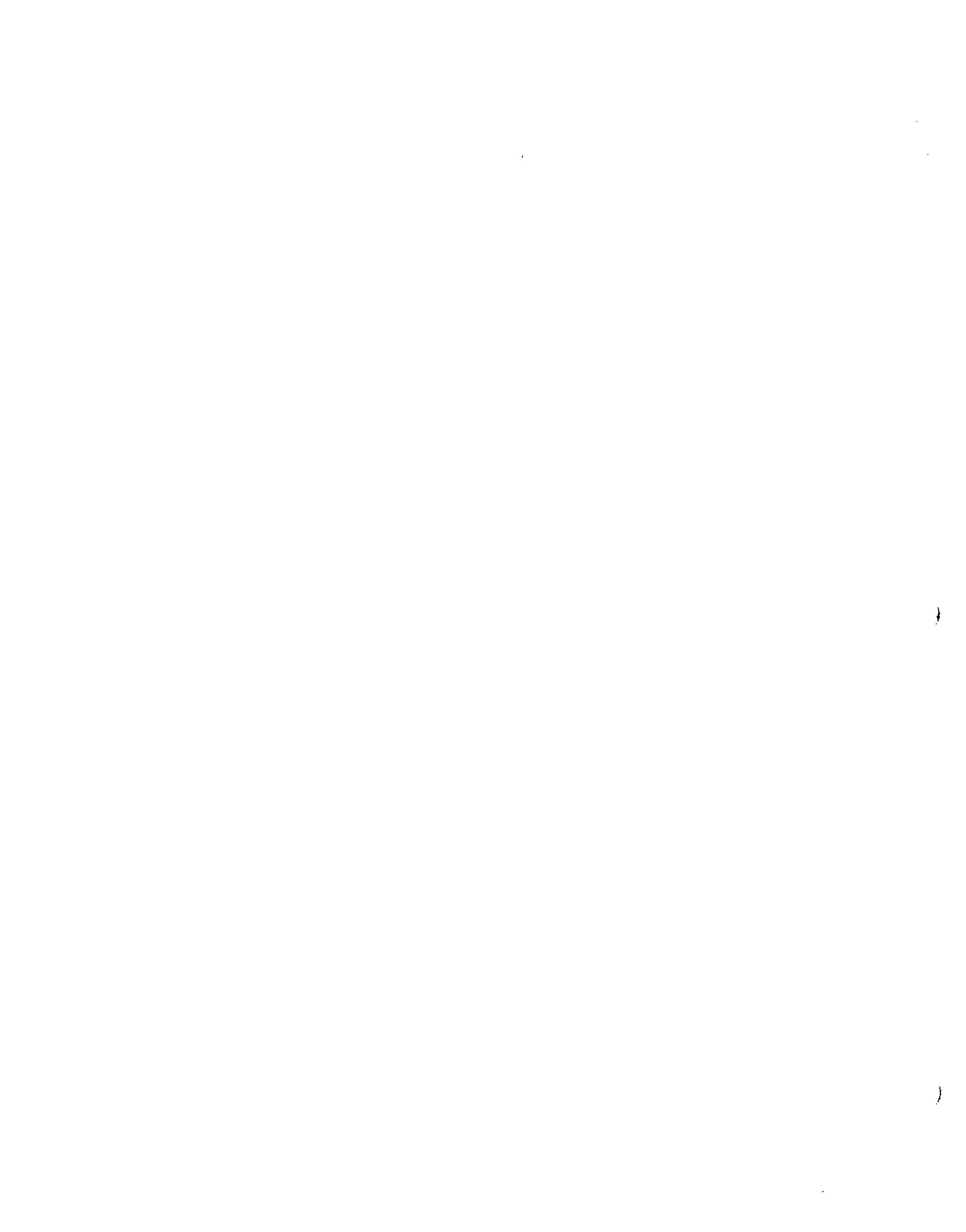
# MMC #: 56                    MOH SOURCE

## DESCRIPTION:

Used to select a Music on Hold source for each individual outside line.

Select one of the following options:

SOURCE A - Music on Hold will be from input A.

SOURCE B - Music on Hold will be from input B.

NO MUSIC - There will be no Music on Hold.

### PROGRAM KEYS

UP & DOWN - Select the trunk number.
MUTE - Press repeatedly to select music option.
SPK/RLS - Save data and advance to next MMC.

### ACTION                                    DISPLAY

1. Press # 56
   Display shows first trunk

   | MOH SOURCE |
   | [701]MUSIC B |

2. Press UP to view next trunk
   (repeat as necessary)

   | MOH SOURCE |
   | [702]MUSIC B |

3. Press MUTE repeatedly to select option
   Display shows

   | MOH SOURCE |
   | [702]NO MUSIC |

4. Press # to store and exit programming
   mode

DEFAULT DATA:    ALL OUTSIDE LINES HAVE SOURCE B FOR MOH

RELATED ITEMS:   HARDWARE MISC CARD

# MMC #: 57            TRK SIGNAL TYPE

## DESCRIPTION:

Used to assign each outside line for LOOP, GROUND, IMMEDIATE, WINK or DELAY signalling.

The choices available in this program depend on the type of circuit card installed.

TRK1 fixed as LOOP ONLY.

TRK2 CIRCUITS: Loop/ground daughter boards can be LOOP or GROUND. Jumper pins on daughter board must match software setting.

E & M lines can be WINK, IMMEDIATE, DELAY or NO SIGNAL.

DID lines can be IMMEDIATE, WINK or DELAY.

If in doubt, check with the local phone company for correct settings.

### PROGRAM KEYS

UP & DOWN - Select the trunk number.
MUTE - Press repeatedly to select trunk signal type.
SPK/RLS - Save data and advance to next MMC.

### ACTION

1. Press # 57
   Display shows first trunk

2. Press UP to view next trunk
   (repeat as necessary)

3. Press MUTE repeatedly to select option
   Display shows

4. Press # to store and exit programming
   mode

### DISPLAY

```
TRK SIGNAL TYPE
TRK701:LOOP ONLY
```

```
TRK SIGNAL TYPE
TRK702:LOOP
```

```
TRK SIGNAL TYPE
TRK702:GROUND
```

**DEFAULT DATA:**      ALL TRK1 LINES LOOP ONLY
                       TRK2 - L/G DAUGHTERBOARD = LOOP
                       E & M DAUGHTERBOARD = WINK
                       DID DAUGHTERBOARD = WINK

**RELATED ITEMS:**   NONE

# MMC #: 58     TIE LINE CLASS

## DESCRIPTION:

Used to assign two dialing classes for each tie line. One is for the day mode and one is for the night mode. This will control what can be dialed by stations on other systems when accessing this system on a tie line.

Classes can be A through F and correspond to the toll restriction classes A through F. Class B stations follows class B allow and deny toll restriction rules.

Data is input using the keys 1 through 5.

| | | |
|---|---|---|
| 1 = A | UNRESTRICTED | |
| 2 = B | FOLLOW CLASS B TOLL RESTRICTION RULES | |
| 3 = C | FOLLOW CLASS C TOLL RESTRICTION RULES | |
| 4 = D | FOLLOW CLASS D TOLL RESTRICTION RULES | |
| 5 = E | FOLLOW CLASS E TOLL RESTRICTION RULES | |
| 6 = F | INTERNAL CALLS ONLY | |

Although during input the display will show numeric values for data, the next time the station is read the class data will be displayed as letters, e.g., 35 will become CE.

## PROGRAM KEYS

UP & DOWN - Select the tie line number.
KEYPAD - Used to enter toll class.
SPK/RLS - Save data and advance to next MMC.

## ACTION

1. Press # 58
   First tie line's toll class is displayed

2. Enter day class for the tie line,
   e.g., 3

3. Enter night class for the tie line,
   e.g., 5

4. Press UP to advance to next tie line
   Display shows next station and toll class

5. Repeat as necessary

## DISPLAY

TIE TOLL CLASS
[721] AA:

TIE TOLL CLASS
[721] AA:3

TIE TOLL CLASS
[721] AA:35

TIE TOLL CLASS
[722] AA:
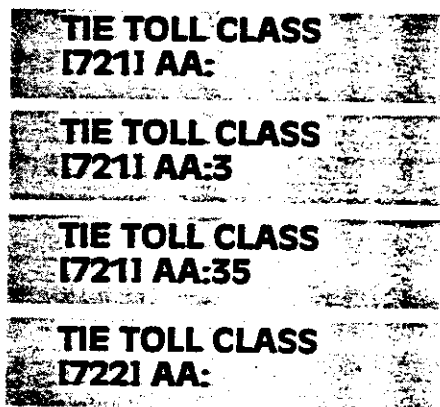
6.  Press # to store and exit


**DEFAULT DATA:**    **ALL TIE LINES:  AA**

**RELATED ITEMS:**    **MMC #31 TOLL DENY TABLE**
                                    **MMC #32 TOLL ALLOW TABLE**
                                    **MMC #23 NIGHT TOLL CLASS**
                                    **MMC #53 TRUNK TOLL RESTRICTION**

# MMC #: 60    DAY RING STATION

## DESCRIPTION:

Used to assign day ring destinations for incoming lines.

For each incoming line, a ring mode must be selected. The ring modes are:

UNCONDITIONAL - All the stations listed in the group will ring; busy stations will receive off-hook ringing.

SEQUENTIAL - The first station listed in the group will ring. If the first station is busy, the second station will ring. If the first two stations are busy, the third station will ring, etc. Also known as sequential hunting.

DISTRIBUTED - The first call will ring the first station listed in the group. The next call will ring the next station listed in the group, etc.

COLLECTIVE - All idle stations listed in the group will ring at the same time.

After a ring mode is selected, up to 16 ring destinations can be programmed. The ring destinations can be a station number or a station hunt group.

If the first entry is a station hunt group, all other locations and the ring mode are ignored. The outside line will ring the station hunt group listed in entry 01 and follow the ring mode of that station hunt group.

## PROGRAM KEYS

UP & DOWN - Select the trunk number.
MUTE - Press repeatedly to make ring mode selection.
FLASH & TRANSFER - Select entry numbers. ——— *AD STATIONS*
KEYPAD - Used to enter extension numbers.
HOLD - Press to clear entry.
SPK/RLS - Save data and advance to next MMC.

## ACTION

1. Press # 60
   Display shows first trunk

2. Press UP to view next trunk
   (repeat as necessary)

## DISPLAY

```
DAY RING STATION
[701]UNCONDITION
```

```
DAY RING STATION
[702]UNCONDITION
```

3.  Press MUTE repeatedly to select option
    Display shows

4.  Press TRANSFER to view first entry
    (repeat as necessary)

5.  Enter ring destination,
    e.g., 221

6.  Press TRANSFER to view next entry
    Display shows

7.  Enter data or press # to store and exit

```
DAY RING STATION
[702] SEQUENTIAL
```

```
DAY RING STATION
[702] 01:
```

```
DAY RING STATION
[702] 01:221
```

```
DAY RING STATION
[702] 02:
```

**DEFAULT DATA:**    **ALL LINES RING IN UNCONDITIONAL MODE**
**THERE ARE NO RING DESTINATIONS**

**RELATED ITEMS:**    **MMC #33 STA HUNT GROUP**
**MMC #22 OPERATOR GROUP**
**SPECIAL FEATURES GUIDE - NIGHT SERVICE**

NOTE:    When a trunk is set to ring a specific station (DIL), the station will not ring if it
is in the DND mode. The calling party will hear ringback tone from the central
office. Stations that have DILs should use forwarding feature to divert calls,
not DND.

# MMC #: 61          NIGHT RING STN

## DESCRIPTION:

Used to assign night ring destinations for incoming lines.

For each incoming line, a ring mode must be selected. The ring patterns are the following:

UNCONDITIONAL - All the stations listed in the group will ring; busy stations will receive off-hook ringing.

SEQUENTIAL - The first station listed in the group will ring. If the first station is busy, the second station will ring. If the first two stations are busy, the third station will ring, etc. Also known as sequential ringing.

DISTRIBUTED - The first call will ring the first station listed in the group. The next call will ring the next station listed in the group, etc.

COLLECTIVE - All idle stations listed in the group will ring at the same time.

After a ring mode is selected, up to 16 ring destinations can be programmed. The ring destinations can be a station number or a station hunt group.

If the first entry is a station hunt group, all other locations and the ring mode are ignored. The outside line will ring the station hunt group listed in entry 01 and follow the ring pattern of that station hunt group.

## PROGRAM KEYS

UP & DOWN - Select the trunk number.
MUTE - Press repeatedly to make ring mode selection.
FLASH & TRANSFER - Select entry numbers.
KEYPAD - Used to enter extension numbers.
HOLD - Press to clear entry.
SPK/RLS - Save data and advance to next MMC.

## ACTION

1. Press # 61
   Display shows first trunk

2. Press UP to view next trunk
   (repeat as necessary)

## DISPLAY

NIGHT RING STN
[701]UNCONDITION

NIGHT RING STN
[702]UNCONDITION

3.  Press MUTE repeatedly to select option
    Display shows

**NIGHT RING STN
[702] SEQUENTIAL**

4.  Press TRANSFER to view first entry
    (repeat as necessary)

**NIGHT RING STN
[702] 01:**

5.  . Enter ring destination,
    e.g., 256

**NIGHT RING STN
[702] 01:256**

6.  Press TRANSFER to view next entry
    Display shows

**NIGHT RING STN
[702] 02:**

7.  Enter data or press # to store and exit

**DEFAULT DATA:**    **ALL LINES RING IN UNCONDITIONAL MODE
                     THERE ARE NO RING DESTINATIONS**

**RELATED ITEMS:**   **MMC #33 STA HUNT GROUP
                     MMC #22 OPERATOR GROUP
                     MMC #24 ASSIGN UNA
                     SPECIAL FEATURES GUIDE - NIGHT SERVICE**

**NOTE:**   When a trunk is set to ring a specific station (DIL), the station will not ring if it
            is in the DND mode. The calling party will hear ringback tone from the central
            office. Stations that have DILs should use forwarding feature to divert calls,
            not DND.

# MMC #: 62   . DOOR RING STN

## DESCRIPTION:

Used to assign door phone ring destinations.

For each door phone, a ring mode must be selected. The ring patterns are the following:

UNCONDITIONAL - All the stations listed in the group will ring; busy stations will receive off hook ringing.

SEQUENTIAL - The first station listed in the group will ring. If the first station is busy, the second station will ring. If the first two stations are busy, the third station will ring, etc., also known as sequential hunting.

DISTRIBUTED - The first call will ring the first station listed in the group. The next call will ring the next station listed in the group, etc.

COLLECTIVE - All idle stations listed in the group will ring at the same time.

After a ring mode is selected, up to 16 ring destinations can be programmed. The ring destinations can be a station number or a station hunt group.

If the first entry is a station hunt group, all other locations and the ring mode are ignored. The outside line will ring the station hunt group listed in entry 01 and follow the ring pattern of that station hunt group.

### PROGRAM KEYS

UP & DOWN - Select the door phone number.
MUTE - Press repeatedly to make ring mode selection.
FLASH & TRANSFER - Select entry numbers.
KEYPAD - Used to enter extension numbers.
HOLD - Press to clear entry.
SPK/RLS - Save data and advance to next MMC.

### ACTION

1.  Press # 62
    Display shows first door phone

2.  Press UP to view next door phone
    Display shows

### DISPLAY

DOOR RING STN
[1] INDIVIDUAL

DOOR RING STN
[2] SEQUENTIAL

3.  Press MUTE to select ring mode
    Display shows

4.  Press TRANSFER to view first entry
    (repeat as necessary)

5.  Enter ring destination,
    e.g., 267

6.  Press TRANSFER to view next entry
    Display shows

7.  Enter data or press # to store and exit

**DOOR RING STN**
**[2]DISTRIBUTE**

**DOOR RING STN**
**[2] 01:**

**DOOR RING STN**
**[2] 01:267**

**DOOR RING STN**
**[2] 02:**

**DEFAULT DATA:**   **ALL DOORPHONES RING IN INDIVIDUAL MODE**
**THERE ARE NO RING DESTINATIONS**

**RELATED ITEMS:**   **NONE**

# MMC #: 63     SPEED DIAL BLOCK

## DESCRIPTION:

Used to distribute speed dial numbers.

There are 1200 speed dial numbers available for either system or station use. Each station defaults with ten personal numbers. The system list defaults with 200 numbers. The remainder are in a FREE LIST. The station lists and system list are expanded in blocks of ten each.

Any station can have up to 50 numbers, providing they are available (00-49). The system can have up to 500 numbers, providing they are available (500-999).

### PROGRAM KEYS

UP & DOWN - Assigns blocks of speed dial numbers.
FLASH & TRANSFER - Select extension numbers.
SPK/RLS - Save data and advance to next MMC.

| ACTION | DISPLAY |
|---|---|
| 1. Press # 63<br>Display shows system list | **FREE LIST: 0800**<br>**SYSTEM:200** |
| 2. Press UP and numbers are added to the system list in blocks of ten | **FREE LIST: 0790**<br>**SYSTEM:210** |
| 3. Press DOWN and numbers are deducted from the system list in blocks of ten | **FREE LIST: 0800**<br>**SYSTEM:200** |
| 4. Press TRANSFER<br>Lowest station is displayed | **FREE LIST: 0800**<br>**EXT201:010** |
| 5. Press UP and DOWN to add and subtract speed dial numbers | |
| 6. Press FLASH and TRANSFER to scroll through extension numbers (SYSTEM is located above station 201) | |

**DEFAULT DATA:**     SYSTEM 200 NUMBERS (500-699)
                           STATION 10 NUMBERS (00-09)

**RELATED ITEMS:**     MMC #64 SYS SPEED NUMBER
                         MMC #39 SPEED NUMBERS [STN]
                         MMC #29 SYS ODD & ENDS - BYPASS OR FOLLOW

# MMC #: 64     SYS SPEED NUMBER

## DESCRIPTION:

Used to program system speed dial numbers.

A speed dial number consists of an access code and the number to be dialed. The access code can be any trunk group, individual trunk, station group or individual station. The speed dial number may be up to 32 digits long. The number may include # and *.

During entry of the speed dial number, there are a number of special keys that can be used.

CONF - This key must be pressed after an access code has been dialed. If an access code is not used, the system will select a trunk from trunk group 9.

PAGE - This will insert a pause into the speed dial number.

SPD - After pressing this key, any digits dialed will be unlisted. Pressing this key a second time will once again list numbers.

MESSAGE - This will insert a flash into the speed dial number.

NOTE: When connecting this system to voice mail that cannot utilize the in-band signalling defined in MMC #94, speed dial numbers may be programmed with a station group access code instead of a trunk group access code. Enter the station group number before [CONF]. Any digits entered after the [CONF] will be sent immediately after the station group answers. This is used to build voice mail log-in and password instructions which will provide one touch message retrieval.

## PROGRAM KEYS

UP & DOWN - Select the speed dial number.
MUTE - Press repeatedly to move cursor between data fields.
KEYPAD - Used to enter number.
HOLD - Press to clear entry. SPK/RLS - Save data and advance to next MMC.

| ACTION | DISPLAY |
|---|---|
| 1. Press # 64<br>Display shows station and first speed # | [SYS]500: |
| 2. Press UP repeatedly to select<br>location number or use keypad to dial it | [SYS]501: |

3.  Press MUTE to move cursor to lower half
    of display

4.  Enter trunk group and number to be dialed,
    e.g., 9 [CONF] 1 305 426 4100

5.  Press UP to store and advance or
    press # to store and exit

**[SYS]501:**

**[SYS]501:**
**13054264100**
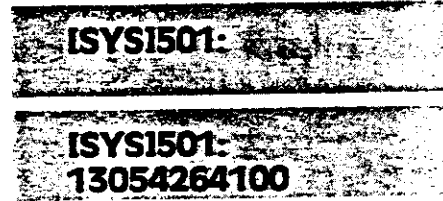
**DEFAULT DATA:**     **NO SPEED NUMBERS ASSIGNED**

**RELATED ITEMS:**     **MMC #63 SPEED DIAL BLOCK**

# MMC #: 65   PBX ACCESS CODE

## DESCRIPTION:

Used to identify PBX/Centrex trunk access codes so that toll restriction will work.

When a PBX line is accessed, the dial tone originates in another PBX (or Centrex switch), and extension numbers on that switch can be dialed. To get an outside line, an access code must be dialed. If this access code appears in this list, it is ignored and toll restriction plan examines the digits following the PBX access code. The list has ten entries (1-10). Maximum of three digits each.

### PROGRAM KEYS

UP & DOWN - Select the entry number.
KEYPAD - Used to enter access codes.
HOLD - Press to clear entry.
SPK/RLS - Save data and advance to next MMC.

### ACTION

1. Press # 65
   Display shows first PBX access code

2. Enter new PBX access code (optional),
   e.g., 9

3. Press UP to advance to next entry

4. Press # to store and exit

### DISPLAY

```
PBX ACCESS CODE
[01]NONE:
```

```
PBX ACCESS CODE
[01]NONE:9
```

```
PBX ACCESS CODE
[02]NONE:
```
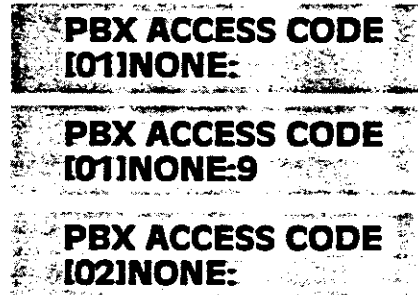
**DEFAULT DATA:   NO ACCESS CODES LISTED**

**RELATED ITEMS: MMC #51 SET PABX LINE**

# MMC #: 66    VACANT MESSAGES

## DESCRIPTION:

Used to program the ten customer programmable vacant station messages (#10 to #19). Each message can be up to 16 characters long.

Write your message using the dial pad keys. Each press of a key will select a character. Pressing the FLASH and TRANSFER keys will move the cursor left and right. For example, if your message will be "GONE FISHING," press the number "4" two times to get the letter "G". Now press the TRANSFER key. Press the number "6" four times to get the letter "O." Continue selecting characters from the table below to complete your message.

### Number of presses

| DIGIT | | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| Keypad # | 1 | 1 | space | & | ! | : |
| | 2 | 2 | A | B | C | ? |
| | 3 | 3 | D | E | F | , |
| | 4 | 4 | G | H | I | % |
| | 5 | 5 | J | K | L | $ |
| | 6 | 6 | M | N | O | – |
| | 7 | 7 | P | R | S | < |
| | 8 | 8 | T | U | V | > |
| | 9 | 9 | W | X | Y | / |
| | 0 | 0 | Q | Z | . | = |
| | * | * | # | [ | ] | " |

## PROGRAM KEYS

UP & DOWN - Select the message number.
FLASH & TRANSFER move cursor left and right.
KEYPAD - Used to enter message.
HOLD - Press to clear entry.
SPK/RLS - Save data and advance to next MMC.

## ACTION

## DISPLAY

1.  Press # 66
    Display shows message entry mode

**MESSAGE [10]**
—

2.  Press UP to select next message

**MESSAGE [11]**
—

3. Enter message using instructions above

4. Press # to store and exit

**DEFAULT DATA:**     **MESSAGES 10 - 19 ARE BLANK**

**RELATED ITEMS:**   **KEYSET USER GUIDE MESSAGE CODES**

)

)

# MMC #: 67          ASSIGN TRK TO GP

## DESCRIPTION:

Used to assign trunks to one of eleven trunk groups. Each group can have a maximum of 120 numbers.

Each trunk can only be in one group. If a trunk is assigned to a second group, the system automatically deletes it from its previous group.

The trunk group and access codes are the same. They are 9 and 80 through 89.

The system selects trunks from the trunk group based on the "TRUNK SELECT TYPE" option in MMC #29.

Trunks must be in a group if a trunk group report is needed in MMC #97.

### PROGRAM KEYS

UP & DOWN - Select the trunk access codes.
KEYPAD - Used to enter the trunk numbers.
HOLD - Press to clear entry.
SPK/RLS - Save data and advance to next MMC.

| ACTION | DISPLAY |
|---|---|
| 1. Press # 67 <br> Display shows first member of first group | ASSIGN TRK TO GP <br> [9] 001:701 |
| 2. Press UP <br> Display shows first member of next group | ASSIGN TRK TO GP <br> [80] 001:725 |
| 3. Press TRANSFER to view next member | ASSIGN TRK TO GP <br> [80] 002:726 |
| 4. Press TRANSFER until end of group | ASSIGN TRK TO GP <br> [80] 003: |
| 5. Enter trunk number, e.g., 730 | ASSIGN TRK TO GP <br> [80] 003:730 |
| 6. Press UP and DOWN to view groups | |
| 7. Press FLASH and TRANSFER to view group members | |
| 8. Press HOLD to clear an entry | |

9.  Press # to store and exit


**DEFAULT DATA:**     **ALL LOOP AND GROUND START TRUNKS ARE IN GROUP 9**
**ALL DID AND TIE-LINES ARE IN GROUP 80**

**RELATED ITEMS:**    **MMC #29 SYSTEM ODDS AND ENDS - TRUNK SELECT TYPE**
**MMC #36 EXT/TRK USE**

# MMC #: 70        SET CURRENT TIME

## DESCRIPTION:

Used to set the system time and date.

> YY  = Year; last two digits.
> MM  = Month; enter 01 for January, 12 for December.
> DD  = Day; enter 01 - 31.
> W   = Weekday; 0 for Sunday; 6 for Saturday.
> HH  = Hours in 24 hour clock (00-24).
> MM  = Minutes; enter 00 - 59.

Failure to enter time in 24 hour clock may cause the date to change at 12:00 noon.

| ACTION | DISPLAY |
|---|---|
| 1.  Press # 70<br>Display shows | SET CURRENT TIME<br>YY MM/DD W HH:MM |
| 2.  Enter year time,<br>e.g., 3:15 p.m., Mon Jan 6th 1992 | SET CURRENT TIME<br>92 01/06 1 15:15 |
| 3.  Press # to store and exit | |

**DEFAULT DATA:**     **NOT DETERMINED**

**RELATED ITEMS:**     **MMC #15 CLOCK DISPLAY**

# MMC #: 71  TIMER TABLE NO.1

## DESCRIPTION:

This program is used to set the following system timers:

NOTE: Each timer is adjusted in 20 millisecond increments (20, 40, 60, etc.). If these exact numbers are not entered, the system will adjust the timer to the next lowest increment. For example, if 53 is entered, the value will be stored as 40.

PBX FLASH TIMER - The duration of a flash when connected to a PBX line. This timer is measured in milliseconds. It is adjusted in 20 millisecond increments. The default value is 600. Range 0000- 5000.

C.O. FLASH TIMER - The duration of a flash when connected to a C.O. line. This timer is measured in milliseconds. It is adjusted in 20 millisecond increments. The default value is 1000. Range 0000-5000.

NEW CALL TIMER - The duration of a flash sent to the central office to disconnect the line. The system will then re-access the same line and connect it to the station that pressed NEW CALL. This timer is measured in milliseconds. It is adjusted in 20 millisecond increments. The default value is 2000. Range 0000- 5000.

ATTENTION TONE - This tone is used at the start of all paging announcements, off-hook voice announce and calls to a station in auto answer mode or voice announce mode. This timer is measured in milliseconds. It is adjusted in 20 millisecond increments. The default value is 1000. Range 0000-5000.

## PROGRAM KEYS

UP & DOWN - Select the timer.
KEYPAD - Used to timer values.
SPK/RLS - Save data and advance to next MMC.

| ACTION | DISPLAY |
|---|---|
| 1. Press # 71 <br> Display shows | **PBX FLASH TIMER** <br> **0600MS : ■■■■ MS** |
| 2. Enter new data if required, <br> e.g., 0650 | **PBX FLASH TIMER** <br> **0600MS :0650MS** |
| 3. Press UP to view next timer <br> Display shows | **C.O. FLASH TIMER** <br> **1000MS : ■■■■ MS** |

4. Enter new data if required,
   e.g., 1.5 seconds (1500)

5. Press UP to view next timer
   Display shows

6. Repeat as necessary

7. Press # to store and exit

```
C.O. FLASH TIMER
1000MS :1500MS
```

```
NEW CALL TIMER
2000MS : ■■■■ MS
```

**DEFAULT DATA:    SEE ABOVE**

**RELATED ITEMS:    NONE**

# MMC #: 72    TIMER TABLE NO.2

## DESCRIPTION:

This program is used to set the following system timers:

NOTE: Each timer is adjusted in 20 millisecond increments (20, 40, 60, etc.). If these exact numbers are not entered, the system will adjust the timer to the next lowest increment. For example, if 53 is entered, the value will be stored as 40.

SLT HOOK FLASH - This is the maximum flash duration that the KSU will recognize as a flash. Any SLT that flashes longer than this duration will be disconnected. This timer is measured in milliseconds. It is adjusted in 20 millisecond increments. The default value is 840. The range is 0000 - 5000.

DTMF DURATION - This timer sets the duration of each DTMF tone sent out by the system. This timer is measured in milliseconds. It is adjusted in 20 millisecond increments. The default value is 100. The range is 0000 - 5000.

RING DETECTION - This timer must be set shorter than the on cycle for C.O. ring. It is intended to prevent noise on the C.O. line from triggering a false ring. This timer is measured in milliseconds. It is adjusted in 20 millisecond increments. The default value is 300. The range is 0000 - 5000.

PAUSE TIMER - This is the pause duration timer. A pause is an instruction for the system to wait. It is used when required in speed dial numbers. This timer is measured in milliseconds. It is adjusted in 20 millisecond increments. The default value is 1000. The range is 0000 - 5000.

DISCONNECT TIMER - This is a valid disconnect timer. This must be set longer than the disconnect signal from the central office. This timer is measured in milliseconds. It is adjusted in 20 millisecond increments. The default value is 200. The range is 0000 - 5000. IT IS STRONGLY RECOMMENDED THAT YOU DO NOT CHANGE THIS TIMER.


## PROGRAM KEYS

UP & DOWN - Select the timer.
KEYPAD - Used to timer values.
SPK/RLS - Save data and advance to next MMC.


| ACTION | DISPLAY |
|---|---|
| 1. Press # 72<br>   Display shows | **SLT HOOK FLASH**<br>**0840MS: ■■■■ MS** |

2. Enter new data if required,
   e.g., 0600

3. Press UP to view next timer
   Display shows

4. Enter new data if required,
   e.g., 0120

5. Press UP to view next timer
   Display shows

6. Repeat as necessary

7. Press # to store and exit

**DEFAULT DATA:   SEE ABOVE**

**RELATED ITEMS: NONE**

PBX FLASH TIMER
0840MS :0600MS

DTMF DURATION
0100 MS: ■■■■ MS

DTMF DURATION
0100 MS :0120MS

RING DETECTION
0300MS : ■■■■

# MMC #: 73     TIMER TABLE NO.3

## DESCRIPTION:

This program is used to set the following system timers:

HOLD RECALL TIME - This timer determines the amount of time a call will remain on hold before recalling the station. This timer is measured in seconds. It is adjusted in one second increments. The default value is 045. The range is 000-250.
NOTE: When this timer is set to 000 hold recall is disabled.

TRANSFER RECALL - This timer determines the amount of time a transferred call will ring before recalling to the station that transferred it. This timer is measured in seconds. It is adjusted in one second increments. The default value is 015. The range is 000-250.

PARK RECALL - This timer determines the amount of time a parked call will remain parked before recalling to the station that parked it. This timer is measured in seconds. It is adjusted in one second increments. The default value is 045. The range is 000-250.
NOTE: When this timer is set to 000 park recall is disabled.

CAMP-ON RECALL - This timer determines the amount of time a transferred call will remain camped on to a station before recalling to the station that performed the transfer camp on. This timer is measured in seconds. It is adjusted in one second increments. The default value is 060. The range is 000-250.

WARM LINE DELAY - When a station is programmed with a warm line destination, this timer will control the delay before the warm line destination is automatically called. This timer is measured in seconds. It is adjusted in one second increments. The default value is 005. The range is 000-250.

FORWARD-NO ANS - When a station is programmed with call forward no answer, this timer will control the delay before the destination station begins to ring. This timer is measured in seconds. It is adjusted in one second increments. The default value is 015. The range is 000-250.

FORWARD-EXTERNAL - When a station is programmed with call forward external, this timer will control the delay before the external destination is called. This timer is measured in seconds. It is adjusted in one second increments. The default value is 010. The range is 000-250.

AUTO TIMER/SMDR - This timer determines the amount of time after which the SMDR considers the call connected. If a outside line is selected, a number is dialed and the station originating the call hangs up before this timer expires, then no call record will be printed.

This timer also controls the start of the automatic CALL DURATION timer on display

keysets. When it starts, the call is considered a connected call. This timer is measured in seconds. It is adjusted in one second increments. The default value is 015. The range is 000-250.

AUTO REDIAL INT - This timer determines the interval between automatic redial attempts when retry is used. This timer is measured in seconds. It is adjusted in one second increments. The default value is 030. The range is 000-250.

## PROGRAM KEYS

UP & DOWN - Select the timer.
KEYPAD - Used to timer values.
SPK/RLS - Save data and advance to next MMC.

| ACTION | DISPLAY |
|---|---|
| 1. Press # 73<br>Display shows | **HOLD RECALL TIME**<br>**045SEC : ■■■ SEC** |
| 2. Enter new data if required,<br>e.g., 090 | **HOLD RECALL TIME**<br>**045SEC :090SEC** |
| 3. Press UP to view next timer<br>Display shows | **TRANSFER RECALL**<br>**015SEC : ■■■ SEC** |
| 4. Enter new data if required,<br>e.g., 060 | **TRANSFER RECALL**<br>**015SEC :060SEC** |
| 5. Press UP to view next timer<br>Display shows | **PARK RECALL**<br>**045SEC : ■■■ SEC** |
| 6. Repeat as necessary | |
| 7. Press # to store and exit | |

**DEFAULT DATA:**    **SEE ABOVE**

**RELATED ITEMS:**    **NONE**

# MMC #: 74          TIMER TABLE NO.4

## DESCRIPTION:

This program is used to set the following system timers:

ALARM RING DUR - The length of time the alarm feature will ring the keyset. This timer is measured in seconds. It is adjusted in one second increments. The default value is 015. The range is 000-250.

HOLD RING DUR - The length of time a hold recall will ring at the station before going to the operator. This timer is measured in seconds. It is adjusted in one second increments. The default value is 015. The range is 000-250.

PAGE TIME OUT - Controls the length of a page announcement. This timer is measured in seconds. It is adjusted in one second increments. The default value is 015. The range is 000-250.

BARGE-IN TONE IN - When a station barges into another stations conversation, a barge in tone is heard. The duration of this tone is specified in TIMER TABLE #1 (attention tone). This tone is repeated according to the BARGE IN TONE INTERVAL (this program). When this tone interval is set to 030SEC, the tone will repeat every 30 seconds. When set to 000SEC, the tone is heard once and not repeated. This timer is measured in seconds. It is adjusted in one second increments. The default value is 000. The range is 000-250.

OFF-HOOK RING IN - Determines the interval between off hook ring signals sent to a keyset or camps on tones to an SLT. This timer is measured in seconds. It is adjusted in one second increments. The default value is 010. The range is 000-250.

MMC TIME OUT - This determines the amount of time programming will remain open if no data is input at the keyset. Entering or changing data will restart the timer. This timer is measured in seconds. It is adjusted in one second increments. The default value is 060. The range is 030-250.

FIRST DIGIT TIME - Determines the amount of time a single station has to dial the first digit. If the first digit is not dialed before this timer expires, the line will be dropped. This timer is measured in seconds. It is adjusted in one second increments. The default value is 010. The range is 000-250.

INTERDIGIT TIME - This timer determines the minimum duration between DTMF digits when dialing on an outside line. This timer is measured in seconds. It is adjusted in one second increments. The default value is 020 seconds. Setting this value less than the central office interdigit timer could allow single line telephones to bypass toll restriction. The range is 000-250.

DOOR CONTACT - After being called by a door phone, a keyset can press 1 to

close a contact that will activate a customer provided automatic door lock. Single line telephone must hook flash to open door lock. This timer is measured in seconds. It is adjusted in one second increments. The default value is 004. The range is 000-250.

## PROGRAM KEYS

UP & DOWN - Select the timer.
KEYPAD - Used to timer values.
SPK/RLS - Save data and advance to next MMC.

| ACTION | DISPLAY |
|---|---|
| 1. Press # 74<br>Display shows | **ALARM RING DUR**<br>**015SEC : ■■■ SEC** |
| 2. Enter new data if required,<br>e.g., 060 | **ALARM RING DUR**<br>**015SEC:060SEC** |
| 3. Press UP to view next timer<br>Display shows | **HOLD RING DUR**<br>**015SEC : ■■■ SEC** |
| 4. Enter new data if required,<br>e.g., 060 | **HOLD RING DUR**<br>**015SEC:060SEC** |
| 5. Press UP to view next timer<br>Display shows | **PAGE TIME OUT**<br>**015SEC : ■■■ SEC** |
| 6. Repeat as necessary | |
| 7. Press # to store and exit | |

**DEFAULT DATA:**    **SEE ABOVE**

**RELATED ITEMS:**    **NONE**

# MMC #: 75 TIMER TABLE NO.5

## DESCRIPTION:

This program is used to set the following system timers:

C.O.-C.O. DISCONNECT - This timer limits the amount of time that two loop start C.O. lines may remain connected in an unsupervised conference. This timer is measured in minutes. It is adjusted in one minute increments. The default value is 15. The range is 000-250.

This is used when the system is connected to Central Offices that do not supply a disconnect signal when the distant party hangs up.

CALL DUR ALERT - The call duration alert determines the interval between alert tones when CALL DURATION ALERT is enabled in MMC # 29. This timer is measured in minutes. It is adjusted in one minute increments. The default value is 30. The range is 000-250

### PROGRAM KEYS

UP & DOWN - Select the timer.
KEYPAD - Used to enter timer values.
SPK/RLS - Save data and advance to next MMC.

### ACTION

1. Press # 75
   Display shows

2. Enter new data if required,
   e.g., 060

3. Press UP to view next timer
   Display shows

4. Press # to store and exit programming
   mode

### DISPLAY

```
CO-CO DISCONNECT
015MIN :■■■ MIN
```

```
CO-CO DISCONNECT
015MIN :060MIN
```

```
CAL DUR ALERT
180MIN :■■■ MIN
```

**DEFAULT DATA:**    **SEE ABOVE**

**RELATED ITEMS:**    **NONE**

)

)
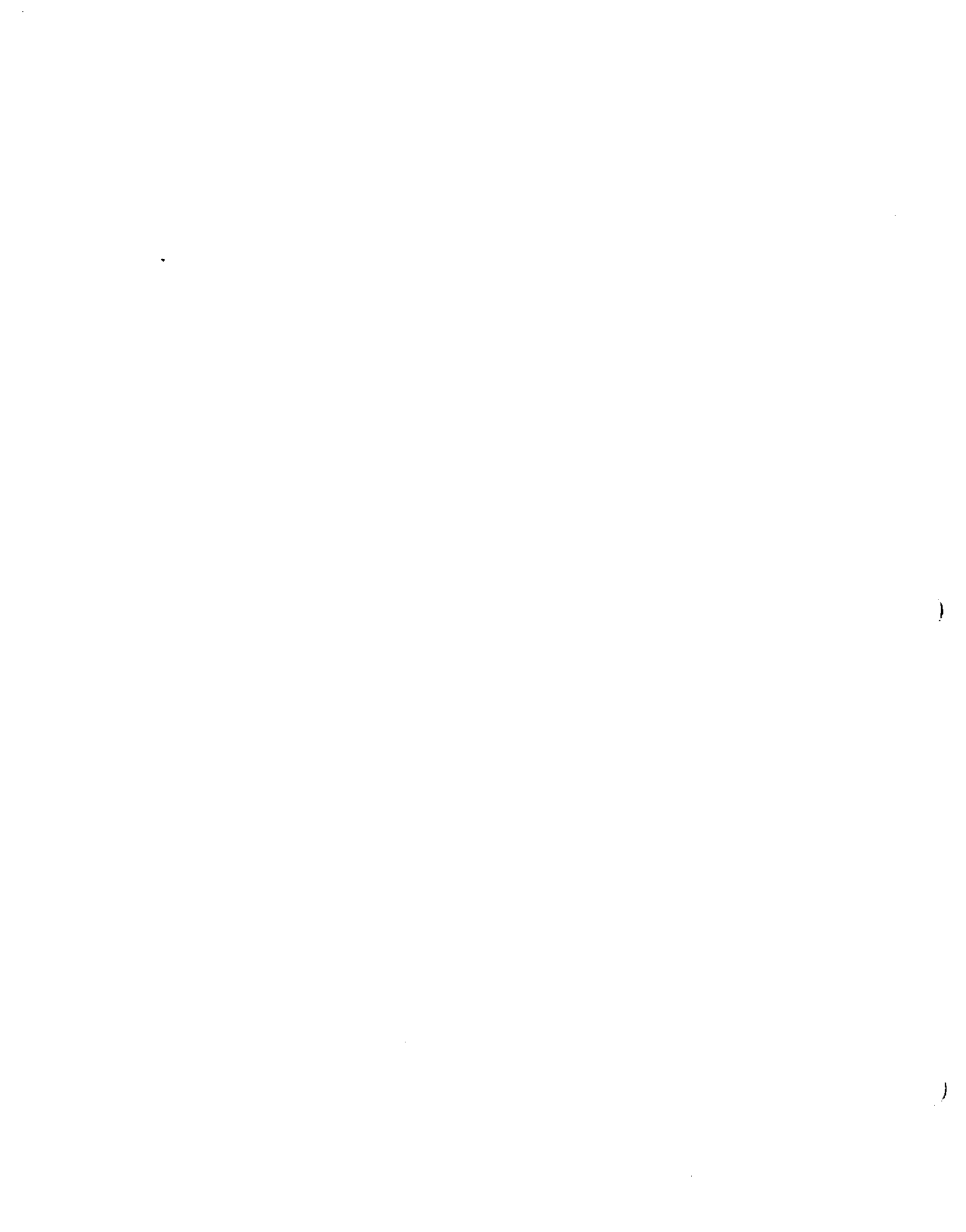
# MMC #: 76          # OF ATTEMPTS

## DESCRIPTION:

Used to set the number of attempts that the Auto Retry feature attempts to redial a busy number. Default is 5. Range is 01 to 15. If 00 is entered, the system will redial once.

### PROGRAM KEYS

KEYPAD - Used to enter the number of attempts.
SPK/RLS - Save data and advance to next MMC.

| ACTION | DISPLAY |
|---|---|
| 1. Press # 76<br>Display shows | **AUTO RDL ATTEMPT**<br>**05TIMES : ■■ TIMES** |
| 2. Enter new data if required,<br>e.g., 12 | **AUTO RDL ATTEMPT**<br>**05TIMES :12TIMES** |
| 3. Press # to store and exit | |

**DEFAULT DATA:**      **FIVE TIMES**

**RELATED ITEMS:**     **KEYSET USER GUIDE**
                       **MMC #80 PROGRAM KEYS[SYS]**
                       **MMC #81 PROGRAM KEYS[STN]**

# MMC #: 80          KEY PROGRAM [SYS]

## DESCRIPTION:

Used to program soft keys systemwide.

This program allows the technician to program all 824 soft keys or all 816 soft keys AT THE SAME TIME. Add-on modules must be programmed in MMC #81.

It is good practice when installing a new system to use MMC #80 to configure all keysets with essential features and then use MMC #81 to customize individual keysets.

CAUTION: This program will overwrite any data already programmed using MMC #81.

### BUTTON NUMBERING

The buttons on 816 keysets are numbered from 1-28. The buttons on 824 keysets are numbered from 1-38. See keyset diagrams following this program.

The soft keys are assigned using three digit soft key codes. See the table following keyset diagram. Pressing MUTE will scroll through these soft key codes.

Some feature keys can be programmed with an extender. The best example of this is speed dial. The code for a speed dial key is *10. If a soft key is programmed with this code, it will function the same way as the dedicated SPD that already exists on every keyset. But if the soft key is programmed with an EXTENDER, (a two or three digit speed dial location, e.g., *1000 or *10500), then the soft key becomes a one touch dialing key for that speed dial number. Personal or system speed dial numbers may be used.

## PROGRAM KEYS

UP & DOWN - Select the button number.
KEYPAD - Used to enter button codes.
MUTE - Press repeatedly to scroll through soft key codes.
HOLD - Press to clear entry.
SPK/RLS - Save data and advance to next MMC.

NOTE: You can select any button by using FLASH and TRANSFER keys or press the desired button.

| ACTION | DISPLAY |
|---|---|
| 1.  Press # 80<br>Display shows | **KEY PROGRAM[SYS]**<br>**824[0]/816[1]?** |

2. Enter 0 to program 824 keysets or 1 to program 816 keysets, e.g., 0

3. Enter button code for first button, e.g., ∗11 or press MUTE to scroll through soft key choices.

4. Press UP to advance to next button or directly press another button.

5. Press # to store and exit programming mode

```
KEY PROGRAM[824]
01:EMPTY:
```

```
KEY PROGRAM[824]
01:EMPTY:∗11
```

```
KEY PROGRAM[824]
02:EMPTY:
```

**DEFAULT DATA:      SEE KEYSET DIAGRAM**

## 56ex/120mx SOFT KEY CODES

| CODE | DISPLAY | FEATURE |
|------|---------|---------|
| 2XXX-3XXX | | DSS KEY; ENTER EXTENSION NUMBER |
| 5XXX | | STATION GROUP KEY; ENTER A GROUP ACCESS CODE |
| 7XXX | | TRUNK KEY; ENTER A TRUNK NUMBER |
| 8XXX-9XXX | | TRUNK GROUP KEY; ENTER A TRUNK GROUP ACCESS CODE |
| ∗00 | DPC | ∗ PICK UP - DIRECTED |
| ∗01 | GPC | ∗ PICK UP - GROUP |
| ∗02 | UNA | UNIVERSAL NIGHT ANSWER |
| ∗03 | PPC | PICK UP - PARKED |
| ∗04 | CBK | CALL BACK |
| ∗05 | LNR | LAST NUMBER REDIAL |
| ∗06 | SNR | SAVED NUMBER REDIAL |
| ∗07 | ARD | AUTOMATIC REDIAL |
| ∗08 | EXC | EXECUTIVE/SECRETARY |
| ∗09 | PAG | ∗ PAGE |
| ∗10 | SPD | ∗ SPEED DIAL |
| ∗11 | VAC | ∗ VACANT MESSAGE (01 - 09) |
| ∗12 | DOR | ∗ DOOR |
| ∗13 | BRG | EXECUTIVE OVERRIDE |
| ∗14 | MTM | MEET ME ANSWER |
| ∗15 | CMP | CALL OFFERING (BUSY STATION CAMP ON) |
| ∗16 | FLS | TRUNK FLASH |
| ∗17 | NCL | NEW CALL |
| ∗18 | FWE | ∗ FORWARD EXTERNAL |
| ∗19 | TRN | TRANSFER |
| ∗20 | TMR | TIMER |
| ∗21 | LSN | LISTEN |

| ★22 | ALM | ALARM |
| ★23 | NIT | NIGHT KEY |
| ★24 | RLS | RELEASE |
| ★25 | ACC | ACCOUNT CODE |
| ★26 | IOG | IN/OUT GROUP |
| ★27 | DND | DND |
| ★28 | OHV | OHVA |
| ★29 | FWA | FORWARD - ALL |
| ★30 | FDB | FORWARD - BUSY |
| ★31 | FDN | FORWARD - NO ANSWER |
| ★32 | CAL | * CALL KEY (MUST HAVE AN EXTENDER 1 - A) |

* You may enter an extender to further define the use of these keys.

**RELATED ITEMS:    MMC #14 EXTEND KEY**

EXTENSION
TEL. NO.

CBK (25)  (26)  LSN (27)  SNR (28)

| 1 | 9 |
| 2 | 10 |
| 3 | 11 |
| 4 | 12 |
| 5 | 13 |
| 6 | 14 |
| 7 | 15 |

FLASH 8    TRANSFER 16

SPK VOL

CALL 1  CALL 2
17  18  19  20
21  22  23  24

ALM/SD   MSG   CONF   PAGE

| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |
| * | 0 | # |

SPK   RD   MUTE/DND   HOLD

# 816 KEYSET BUTTON NUMBERING

EXTENSION
TEL. NO.

CBK
(33) (34) (35)

LSN SNR LNR
(36) (37) (38)

| 1 | 9 |
| 2 | 10 |
| 3 | 11 |
| 4 | 12 |
| 5 | 13 |
| 6 | 14 |
| 7 | 15 |
| 8 | 16 |

CALL 1  CALL 2

| 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 |

SPD   MESSAGE   CONF   PAGE

| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |
| * | 0 | # |

| 25 |
| 26 |
| 27 |
| 28 |
| 29 |
| 30 |
| 31 |
| 32 |

VOLUME

SPK/RLS   MUTE   FLASH   TRANSFER

HOLD
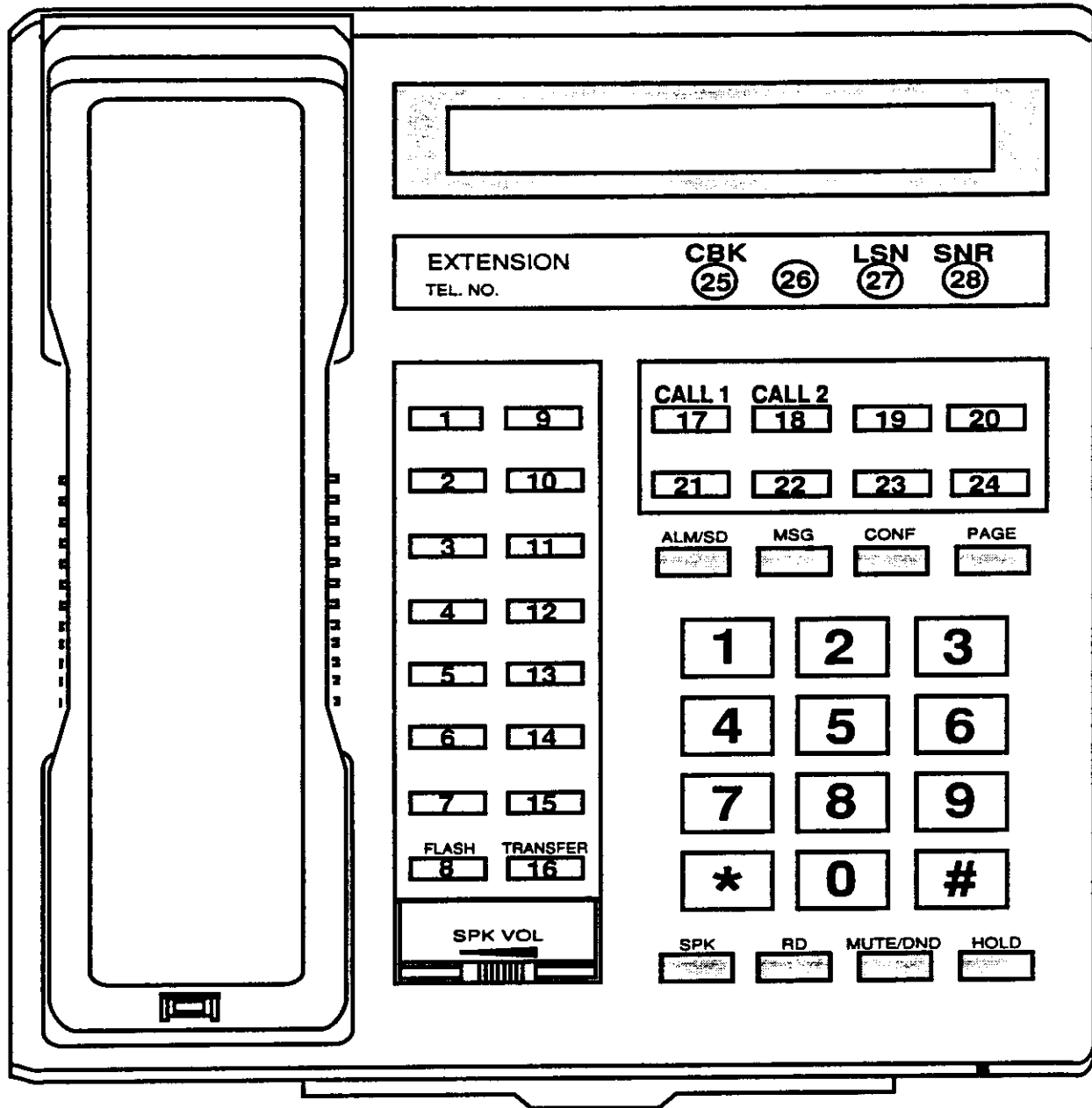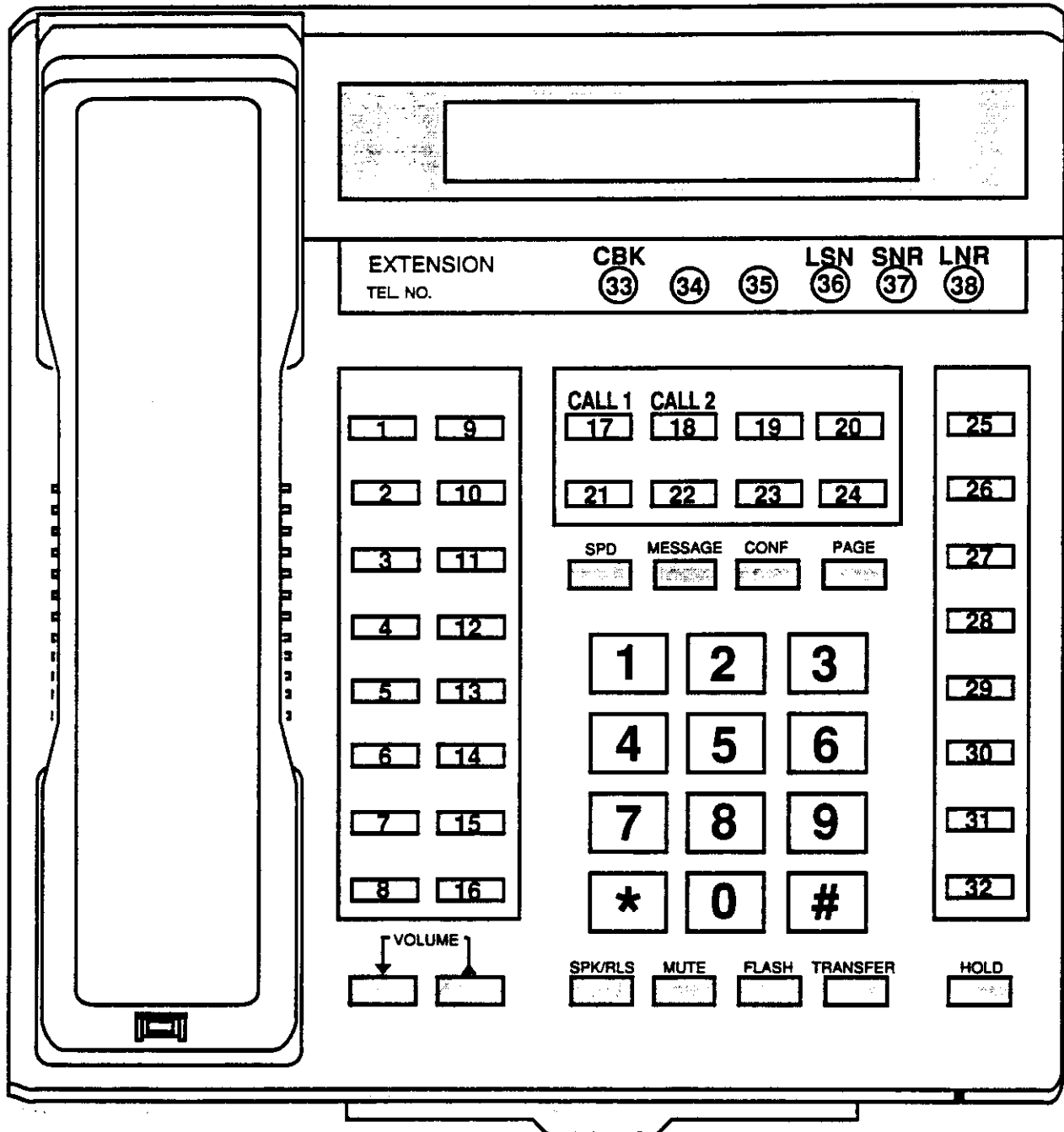
# 824 KEYSET BUTTON NUMBERING

# FIRST AOM

# SECOND AOM

| 1 | 9 | 17 | 25 |
| 2 | 10 | 18 | 26 |
| 3 | 11 | 19 | 27 |
| 4 | 12 | 20 | 28 |
| 5 | 13 | 21 | 29 |
| 6 | 14 | 22 | 30 |
| 7 | 15 | 23 | 31 |
| 8 | 16 | 24 | 32 |

VOLUME

MUTE   SPK/RLS

| 33 | 41 | 49 | 57 |
| 34 | 42 | 50 | 58 |
| 35 | 43 | 51 | 59 |
| 36 | 44 | 52 | 60 |
| 37 | 45 | 53 | 61 |
| 38 | 46 | 54 | 62 |
| 39 | 47 | 55 | 63 |
| 40 | 48 | 56 | 64 |

VOLUME

MUTE   SPK/RLS
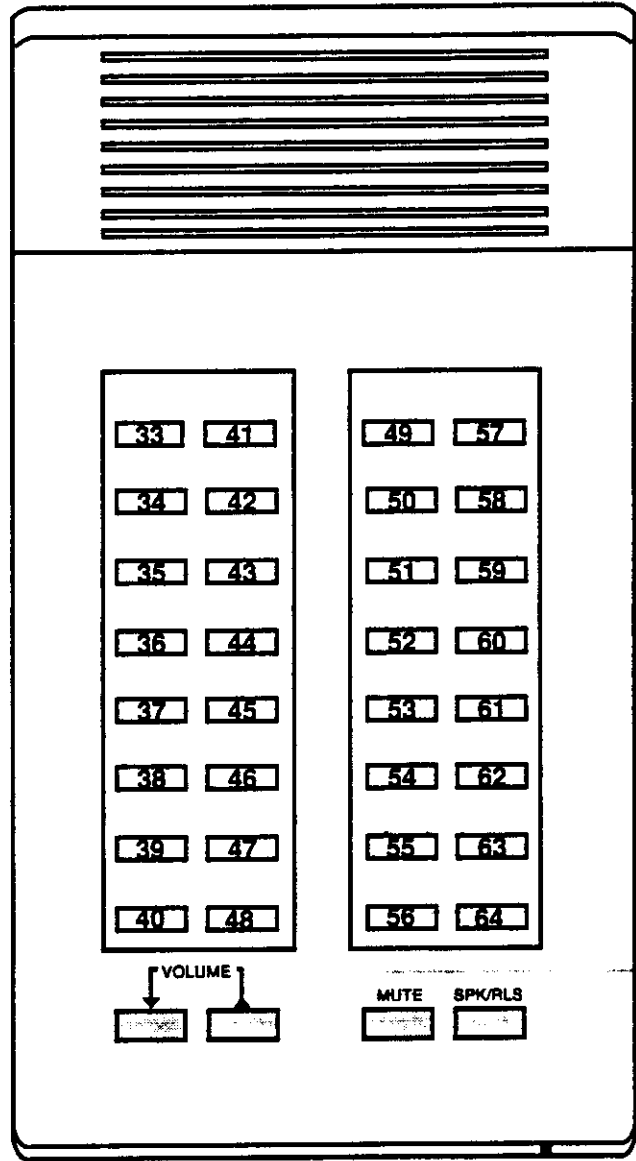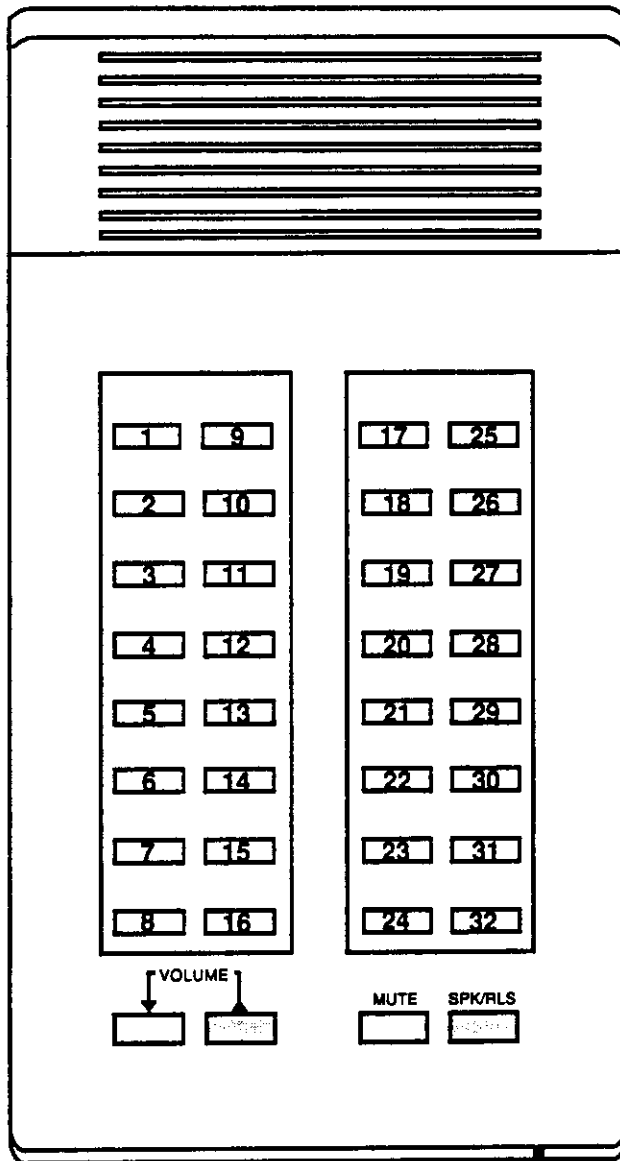
# AOM BUTTON NUMBERING

# MMC #: 81    KEY PROGRAM [STN]

## DESCRIPTION:

Used to program soft keys individually.

This program allows the technician to program all soft keys for 816 and 824 keysets and add-on modules individually. (To program a stand alone add-on module, assign it to a station, program the AOM keys and then remove it from the station.)

It is good practice when installing a new system to use MMC #80 to configure all keysets with essential features and then use MMC #81 to customize individual phones.

### BUTTON NUMBERING

The buttons on 816 keysets are numbered from 1-28. The buttons on 824 keysets are numbered from 1-38. See keyset diagrams following this program. The buttons on AOMs are identified /01 to /64.

The soft keys are assigned using three digit soft key codes. See the table following keyset diagram.

Some feature keys can be programmed with an extender. The best example of this is speed dial. The code for a speed dial key is *10. If a soft key is programmed with this code, it will function the same way as the dedicated SPD that already exists on every keyset. But If the soft key is programmed with an EXTENDER (a two or three digit speed dial location, e.g., *1000 or *10500), then the soft key becomes a one touch dialing key for that speed dial number. Personal or system speed dial numbers may be used.

## PROGRAM KEYS

UP & DOWN - Select the station number.
FLASH & TRANSFER - Used to select the desired button.
KEYPAD - Used to enter button codes.
HOLD - Press to clear entry.
SPK/RLS - Save data and advance to next MMC.
MUTE - Press repeatedly to scroll through soft key codes.

NOTE: You can select any button by using FLASH and TRANSFER keys or pressing the desired button.

| ACTION | DISPLAY |
|---|---|
| 1.  Press # 81<br>    Display shows | **KEY PROGRAM[201]**<br>**01:EMPTY** |

2.  Press UP for next station

**KEY PROGRAM[202]**
**01:EMPTY**

3.  Enter button code for first button,
    e.g., *11 or press MUTE to scroll through
    soft key choices.

**KEY PROGRAM[202]**
**01:EMPTY:*11**

4.  Press TRANSFER to advance to next button
    or directly press another button

**KEY PROGRAM[202]**
**02:EMPTY:**

5.  Press # to store and exit programming
    mode

**DEFAULT DATA:       SEE KEYSET DIAGRAM**

# 56ex/120mx SOFT KEY CODES

| CODE | DISPLAY | FEATURE |
|---|---|---|
| 2XXX-3XXX | | DSS KEY; ENTER EXTENSION NUMBER |
| 5XXX | | STATION GROUP KEY; ENTER A GROUP ACCESS CODE |
| 7XXX | | TRUNK KEY; ENTER A TRUNK NUMBER |
| 8XXX-9XXX | | TRUNK GROUP KEY; ENTER A TRUNK GROUP ACCESS CODE |
| *00 | DPC | * PICK UP - DIRECTED |
| *01 | GPC | * PICK UP - GROUP |
| *02 | UNA | UNIVERSAL NIGHT ANSWER |
| *03 | PPC | PICK UP - PARKED |
| *04 | CBK | CALL BACK |
| *05 | LNR | LAST NUMBER REDIAL |
| *06 | SNR | SAVED NUMBER REDIAL |
| *07 | ARD | AUTOMATIC REDIAL |
| *08 | EXC | EXECUTIVE/SECRETARY |
| *09 | PAG | * PAGE |
| *10 | SPD | * SPEED DIAL |
| *11 | VAC | * VACANT MESSAGE (01 - 09) |
| *12 | DOR | * DOOR |
| *13 | BRG | EXECUTIVE OVERRIDE |
| *14 | MTM | MEET ME ANSWER |
| *15 | CMP | CALL OFFERING (BUSY STATION CAMP ON) |
| *16 | FLS | TRUNK FLASH |
| *17 | NCL | NEW CALL |
| *18 | FWE | * FORWARD EXTERNAL |
| *19 | TRN | TRANSFER |

# FIRST AOM

# SECOND AOM
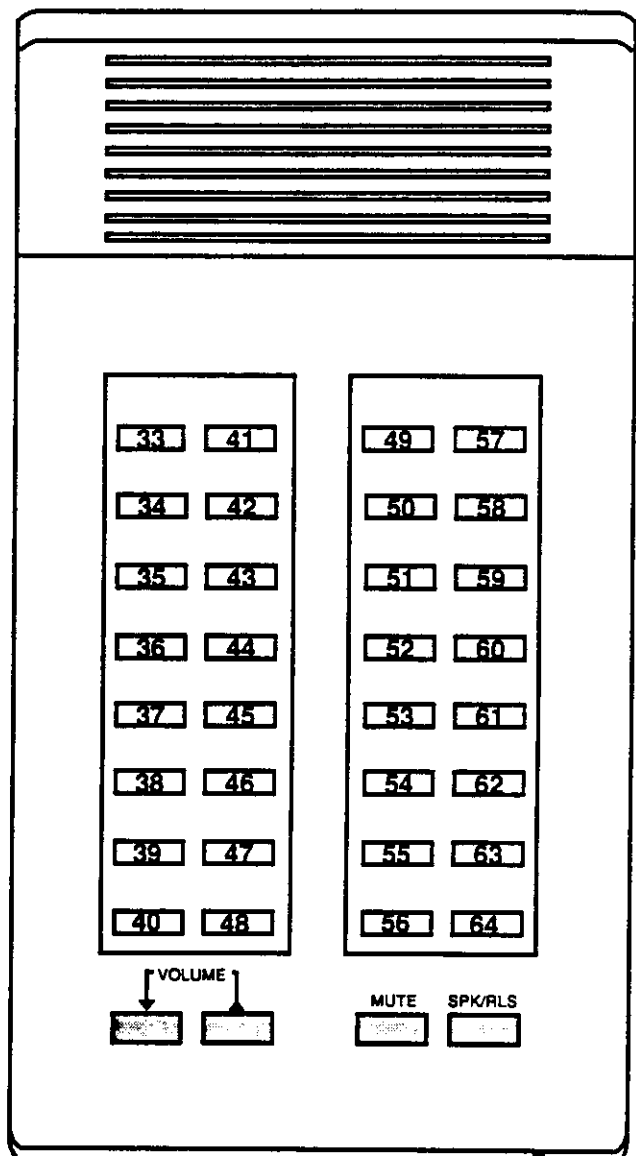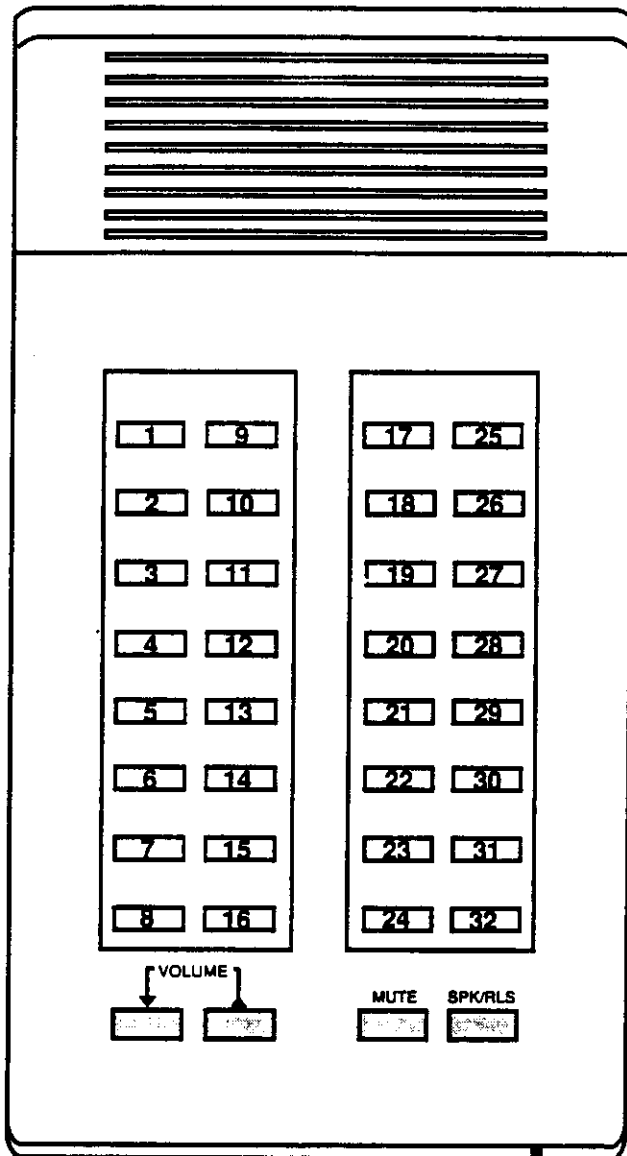
# AOM BUTTON NUMBERING

# 824 KEYSET BUTTON NUMBERING

EXTENSION
TEL. NO.

CBK (25) (26) LSN (27) SNR (28)

| 1 | 9 |
| 2 | 10 |
| 3 | 11 |
| 4 | 12 |
| 5 | 13 |
| 6 | 14 |
| 7 | 15 |

FLASH 8    TRANSFER 16

SPK VOL

CALL 1 — 17    CALL 2 — 18    19    20
21    22    23    24

ALM/SD    MSG    CONF    PAGE

| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |
| * | 0 | # |

SPK    RD    MUTE/DND    HOLD
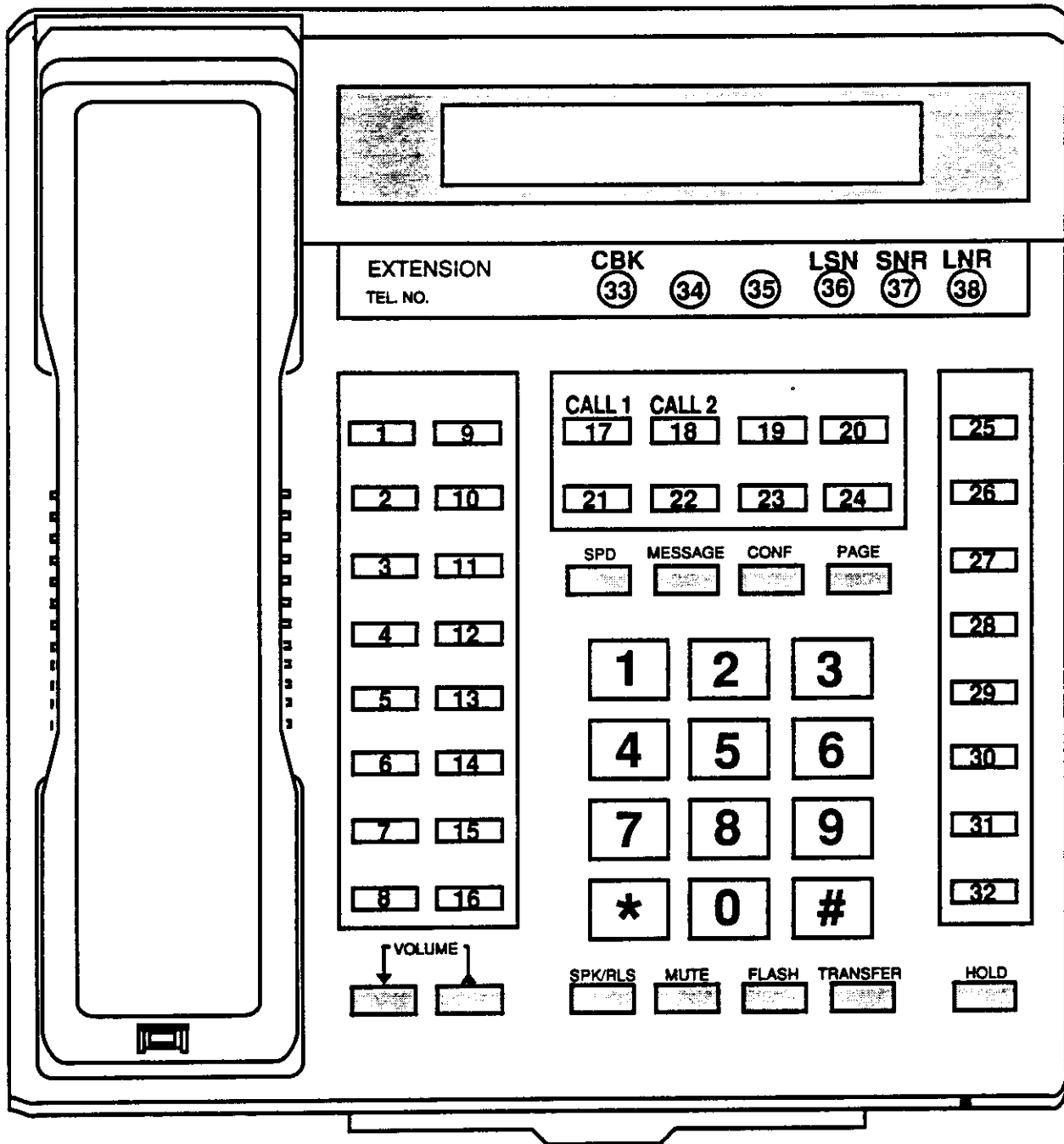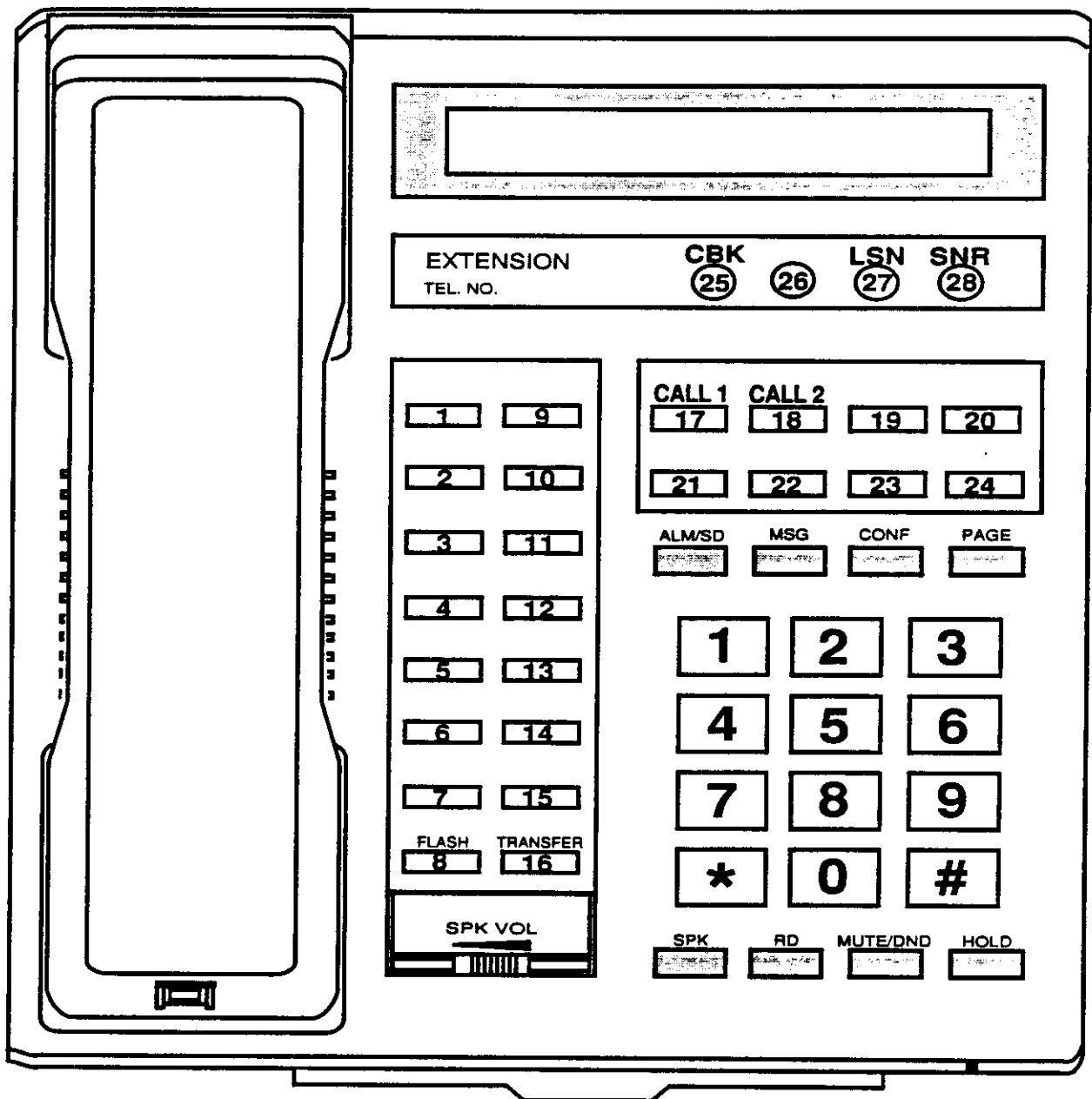
# 816 KEYSET BUTTON NUMBERING

| ★20 | TMR | TIMER |
|---|---|---|
| ★21 | LSN | LISTEN |
| ★22 | ALM | ALARM |
| ★23 | NIT | NIGHT KEY |
| ★24 | RLS | RELEASE |
| ★25 | ACC | ACCOUNT CODE |
| ★26 | IOG | IN/OUT GROUP |
| ★27 | DND | DND |
| ★28 | OHV | OHVA |
| ★29 | FWA | FORWARD - ALL |
| ★30 | FDB | FORWARD - BUSY |
| ★31 | FDN | FORWARD - NO ANSWER |
| ★32 | CAL | * CALL KEY (MUST HAVE AN EXTENDER 1 - A) |
|  |  | NOTE:  1=1, 0-A |

* You may enter an extender to further define the use of these keys.

**RELATED ITEMS:    MMC #14 EXTEND KEY**

# MMC #: 85                 DID DIGIT TABLE

## DESCRIPTION:

Used to assign a ring destination for each DID number.

120 entries are possible. Each entry must include both the DIGITS and the DESTINATION:

DIGITS - These are the digits sent from the central office on the DID trunk. Up to four digits can be entered.

DEST - The destination where the digits should ring. Enter any station or station group.

NOTE: DID number not listed in this MMC will ring the operator group. This is required by the local telephone company. Digits listed in this MMC without an assigned destination will ring busy.

### PROGRAM KEYS

UP & DOWN - Select the entry number.
MUTE - Press to move cursor between fields.
KEYPAD - Used to enter DID digits and ring destination.
HOLD - Press to clear entry.
SPK/RLS - Save data and advance to next MMC.

### ACTION

1. Press # 85
   Display shows first entry

2. Enter digits sent from C.O.,
   e.g., 240

3. Enter ring destination,
   e.g., 280

4. Press UP for next entry
   Display shows next entry

5. Repeat steps 2 and 3 as necessary

6. Press # to store and exit

### DISPLAY

```
DID DIGITS: DEST
001: :
```

```
DID DIGITS: DEST
001: 240 :
```

```
DID DIGITS: DEST
001: 240 : 280
```

```
DID DIGITS: DEST
002: :
```

**DEFAULT DATA:**    **NO DID TRANSLATION INFORMATION**

**RELATED ITEMS:**    **MMC #57 TRUNK SIGNAL TYPE**

# MMC #: 86     DIRECTORY NAMES

## DESCRIPTION:

Used to program directory names for each station and outside line (eleven characters maximum).

Names are written using the keypad. Each press of a key will select a character. Pressing the FLASH and TRANSFER key will move the cursor left and right. For example, if the directory name is "SAM SMITH," press the number "7" four times to get the letter "S." Press the TRANSFER key. Now press the number "2" two times to get the letter "A." Press TRANSFER. Continue selecting characters from the table below to complete the name.

|       | **Number of presses** | | | | |
|-------|---|---|---|---|---|
| **DIGIT** | **1** | **2** | **3** | **4** | **5** |
| Keypad #  1 | 1 | space | & | ! | : |
| 2 | 2 | A | B | C | ? |
| 3 | 3 | D | E | F | , |
| 4 | 4 | G | H | I | % |
| 5 | 5 | J | K | L | $ |
| 6 | 6 | M | N | O | – |
| 7 | 7 | P | R | S | < |
| 8 | 8 | T | U | V | > |
| 9 | 9 | W | X | Y | / |
| 0 | 0 | Q | Z | . | = |
| * | * | # | [ | ] | |

## PROGRAM KEYS

UP & DOWN - Select the stations and trunks.
FLASH & TRANSFER - Move cursor left and right.
KEYPAD - Used to enter message.
HOLD - Press to clear entry.
SPK/RLS - Save data and advance to next MMC.

## ACTION

1.  Press # 86
    Display shows first trunk

2.  Press UP to select next port

## DISPLAY

**DIRECTORY NAMES**
**[701]_**

**DIRECTORY NAMES**
**[702]_**

# MMC #: 91   PULSE M/B RATIO

## DESCRIPTION:

Used to set the make/break ratio for dial pulse lines.

## PROGRAM KEYS

KEYPAD - Used to enter make and break time.

| ACTION | DISPLAY |
|---|---|
| 1. Press # 91<br>Display shows current data | **PULSE M/B RATIO**<br>**MAKE:40 BREAK:60** |
| 2. Set make/break ratio by dialing<br>two digit make time and two digit<br>break time | **PULSE M/B RATIO**<br>**MAKE:30 BREAK:50** |
| 3. Press # to store and exit | |

**DEFAULT DATA:**     MAKE:  40 ms     BREAK:  60 ms

**RELATED ITEMS:**     MMC #57   TRK SIGNAL TYPE

# MMC #: 92     MISC. CARD STATUS

## DESCRIPTION:

Used to tell the system that the miscellaneous card is installed or not installed.

NOTE: Because the MISC card does not have a processor, the system software will not automatically recognize if it is installed or not. It is therefore necessary to set this program correctly. IF THIS PROGRAM IS NOT SET CORRECTLY, SOFTWARE PROBLEMS MAY ARISE.

### PROGRAM KEYS

MUTE - Press repeatedly to select EQUIP and EMPTY.
SPK/RLS - Save data and advance to next MMC.

### ACTION

1. Press # 92
   Display shows status of MISC board

2. Press MUTE to change to EMPTY

3. Press # to store and exit

### DISPLAY

**MISC.CARD STATUS**
**EQUIPPED:**

**MISC.CARD STATUS**
**EMPTY:**

**DEFAULT DATA:**     MISC.  CARD IS EQUIPPED

**RELATED ITEMS:**   NONE

# MMC #: 93   CUSTOMER ACCESS

## DESCRIPTION:

Used to enable customer access to each program. The customer passcode must be used. This program allows access to MMCs #22-99.

### PROGRAM KEYS

UP & DOWN - Select the MMC number.
MUTE - Press repeatedly to select YES or NO.
SPK/RLS - Save data and advance to next MMC.

| ACTION | DISPLAY |
|---|---|
| 1. Press # 93<br>Display shows MMC #22 and customer status | **CUSTOMER ACCESS**<br>**CODE22:NO** |
| 2. Press UP to advance to next MMC # | **CUSTOMER ACCESS**<br>**CODE23:NO** |
| 3. Press MUTE repeatedly to select YES or NO | **CUSTOMER ACCESS**<br>**CODE23:YES** |
| 4. Press # to store and exit | |

**DEFAULT DATA:**   MMCs 39, 64, 66, 70, 86, 95 and 97 are YES
                    All other MMCs are NO

**RELATED ITEMS:**   MMC #11  Customer Passcode

# MMC #: 94                    VM/AA OPTIONS

## DESCRIPTION:

Used to assign DTMF communication codes to MSLC2 SLT ports programmed as VM/AA ports.

NOTE: Voice mail machines that cannot utilize this type of in band signalling may be interfaced using one touch speed dial keys to perform automatic log in.

This program has many parameters that should be programmed according to the type of automated attendant and/or voice mail system connected.

Data can be programmed for the following:

### DTMF EXT.NUMBERS

USED - When a station calls a VM/AA port and the VM/AA port answers, the extension number of the calling station is sent in DTMF tones.

* NOT USED - No DTMF extension numbers are used.

### DTMF CALL TYPE

USED - A DTMF digit to indicate the type of call is sent before the DTMF EXT. NUMBER. When specific DTMF digits are entered, they can be in the range of 0-9, A, B, C, D, # and *.

Digits can be entered for the following:

DIRECT CALL - A call originating directly from another station in the system.

RECALL - A call is recalling the VM/AA port after being transferred and not answered.

FORWARD ALL - This indicates that a call was forwarded to the VM/AA port from a station with call forward ALL set.

FORWARD BUSY - This indicates that a call was forwarded to the VM/AA port from a station with call forward BUSY set.

FORWARD N/A - This indicates that a call was forwarded to the VM/AA port from a station with call forward NO ANSWER set.

* NOT USED - No call type information is sent. If no digit is entered, then no tone will be sent.

## DTMF C.O. NUMBERS

USED - The trunk number of the call (direct or transferred) is sent after the DTMF EXT NUMBER.

* NOT USED - No trunk information is sent.

## DN2 INFORMATION

USED - In cases where the call is forwarded, DN2 INFORMATION sends DTMF to identify the origin of the call (the dialing station).

* NOT USED - DN2 INFORMATION is not used

## PROGRESS TONES

NORMAL - The same tones that any station user hears are sent to the VM/AA port.

* DTMF - DTMF digits are sent in place of normal call progress tones. Digits can be entered for dial tone, ringback, busy, no more calls/DND, and error tone. If no digit is entered, the normal tone will be sent. When specific DTMF digits are entered, they can be in the range of 0-9, A, B, C, D, # and *.

## DISCONNECT SIGNAL

This is the signal sent to the VM/AA port when the calling station or C.O. line hangs up.

* LOOP OPEN - A break in loop current is sent.

DTMF - A specific DTMF digit is sent.

## SEPARATOR DIGIT

USED - In cases where DN2 is used, this specific digit is sent between the DTMF extension number and the DN2 information.

* NOT USED - No separator digit is used.


## PROGRAM KEYS

UP & DOWN - Select the program option.
FLASH & TRANSFER - Scroll through program selections.
MUTE - Press repeatedly to make selection.
KEYPAD - Used to enter DTMF information.
HOLD - Press to clear entry.
SPK/RLS - Save data and advance to next MMC.

| ACTION | DISPLAY |
|--------|---------|
| 1. Press # 94<br>Display shows status of DTMF ext. numbers | **DTMF EXT.NUMBERS**<br>**NOT USED** |
| 2. Press MUTE to change USE/NOT USE | **DTMF EXT.NUMBERS**<br>**USED** |
| 3. Press UP for next option<br>Display shows DTMF call type status | **DTMF CALL TYPE**<br>**NOT USED** |
| 4. Press MUTE to change USE/NOT USE | **DTMF CALL TYPE**<br>**USED** |
| 4a. Press TRANSFER to enter DTMF digits<br>for: DIRECT CALL, RECALL, FORWARD ALL,<br>FORWARD BUSY and FORWARD N/A | |
| 5. Press UP for next option<br>Display shows DTMF C.O. number status | **DTMF CO NUMBERS**<br>**NOT USED** |
| 6. Press MUTE to change USE/NOT USE | **DTMF CO NUMBERS**<br>**USED** |
| 6a. Press TRANSFER to enter DTMF digits for<br>C.O. CALL ID | |
| 7. Press UP for next option<br>Display shows DN2 INFORMATION status | **DN2 INFORMATION**<br>**NOT USED** |
| 8. Press MUTE to change USE/NOT USE | **DN2 INFORMATION**<br>**USED** |
| 9. Press UP for next option<br>Display shows PROGRESS TONES status | **PROGRESS TONES**<br>**NORMAL** |
| 10. Press MUTE to change NORMAL/DTMF | **PROGRESS TONES**<br>**DTMF** |
| 10a. Press TRANSFER to enter DTMF digits for<br>DIAL TONE, RINGBACK, BUSY TONE,<br>NO MORE CALL, ERROR TONE, HANDSET ANS<br>and SPK ANS | |
| 11. Press UP for next option<br>Display shows DISCONNECT SIGNAL and<br>status | **DISCONNECT SIGNAL**<br>**LOOP OPEN** |
| 12. Press MUTE to change LOOP OPEN/DTMF | **DISCONNECT SIGNAL**<br>**DTMF** |

12a.  Press TRANSFER to enter DTMF digits for
      DTMF DIGIT

13.   Press UP for next option
      Display shows SEPARATOR DIGIT status

14.   Press MUTE to change NOT USED/USED

14a.  Press TRANSFER to enter DTMF digits for
      DTMF DIGIT

```
SEPARATOR DIGIT
NOT USED
```

```
SEPARATOR DIGIT
USED
```

**DEFAULT DATA:**    **MARKED ABOVE WITH \***

**RELATED ITEMS:**    **MMC #45 VM/AA PORTS**
                      **MMC #64 SYSTEM SPEED DIAL**
                      **MMC #39 STATION SPEED DIAL**
                      **MMC #29 ICM FWD TO VM/AA**

# MMC #: 95     CALL TRAFFIC

## DESCRIPTION:

Used to display system activity.

This MMC displays a number and a bar graph for current system activity.

PORTS IN USE NOW - Displays a real time count of ports in use. As more stations come off hook or incoming calls are answered, this number will increase.

EXTS IN USE NOW - Shows total number of stations in use at current time.

TRKS IN USE NOW - Shows total number of trunks in use at current time.

MAX PORTS USED - Shows total number of ports used at any one time since this data was last cleared.

MAX EXTS. USED - Shows total number of stations used at any one time since this data was last cleared.

MAX TRKS. USED - Shows total number of trunks ports used at any one time since this data was last cleared.

The MAX USED data is saved in battery backed up RAM. MMC #01 will clear this data if the CLEAR MEMORY option is selected.

To reset MAX PORTS USED without losing other data, press the HOLD key while displaying the MAX USED value.

### PROGRAM KEYS

UP & DOWN - Display traffic information.
HOLD - Press to clear totals.
SPK/RLS - Save data and advance to next MMC.

| ACTION | DISPLAY |
|---|---|
| 1.  Press # 95 | **PORTS IN USE NOW**<br>005 ■■■■ |
| 2.  Press UP for next option | **EXTS. IN USE NOW**<br>003 ■■ |

3.  Press UP for next option

**TRKS. IN USE NOW**
**002 ■■**

4.  Press UP for next option

**MAX PORTS USED**
**010 ■■■■■■■■■**

5.  Press UP for next option

**MAX EXTS. USED**
**006 ■■■■■■■**

6.  Press UP for next option

**MAX TRKS.USED**
**004 ■■■**


**DEFAULT DATA:      NONE**

**RELATED ITEMS:     NONE**

# MMC #: 96 . SMDR OPTIONS

## DESCRIPTION:

Used to define set SMDR options.

COMPANY NAME - Enter a 16 character directory name to appear on the SMDR printout.

Write the name using the dial pad keys. Each press of a key will select a character. Pressing the TRANSFER and FLASH keys will move the cursor left and right. For example, if the name is "PROSTAR," press the number "7" twice to get the letter "P." Now press the TRANSFER key. Press the number "7" three times to get the letter "R." Continue selecting characters from the table below to complete the name.

| | | Number of presses | | | | |
|---|---|---|---|---|---|---|
| DIGIT | | 1 | 2 | 3 | 4 | 5 |
| Keypad # | 1 | 1 | space | & | ! | : |
| | 2 | 2 | A | B | C | ? |
| | 3 | 3 | D | E | F | , |
| | 4 | 4 | G | H | I | % |
| | 5 | 5 | J | K | L | $ |
| | 6 | 6 | M | N | O | – |
| | 7 | 7 | P | R | S | < |
| | 8 | 8 | T | U | V | > |
| | 9 | 9 | W | X | Y | / |
| | 0 | 0 | Q | Z | . | = |
| | * | * | # | [ | ] | |

CALL TYPE - Select the type of call records to print. ALL CALLS - All calls incoming and outgoing will print. INCOMING ONLY - Only incoming calls will print. OUTGOING ONLY - Only outgoing calls will print.

PRINT OPTION - This controls the format of the report as it appears on the page.

HEADER & 50/PAGE - A header showing the company name, date and time of report.

CONTINUOUS - This option will print the call records continuously.

BAUD RATE - Select a baud rate to match the CPE printer or call accounting system. The baud rates are 110, 300, 600, 1200, 2400, 4800 and 9600.

## PROGRAM KEYS

UP & DOWN - Select options.
MUTE - Press repeatedly to make selection.
SPK/RLS - Save data and advance to next MMC.

| ACTION | DISPLAY |
|---|---|
| 1. Press # 96<br>Display shows company name entry mode | **COMPANY NAME** |
| 2. Press UP to select type of calls to record | **CALL TYPES**<br>**ALL CALLS** |
| 3. Press MUTE repeatedly to make selection,<br>e.g., OUTGOING ONLY | **CALL TYPES**<br>**OUTGOING ONLY** |
| 4. Press UP to select PRINT OPTION | **PRINT OPTION**<br>**HEADER & 50/PAGE** |
| 5. Press MUTE repeatedly to select option<br>e.g., CONTINUOUS | **PRINT OPTION**<br>**CONTINUOUS** |
| 6. Press UP to select BAUD RATE option | **BAUD RATE**<br>**1200 BPS** |
| 7. Press MUTE repeatedly to select option,<br>e.g., 2400 | **BAUD RATE**<br>**2400 BPS** |
| 8. Press # to store and exit | |

**DEFAULT DATA:**     ALL CALLS HEADER & 50/PAGE 1200 BAUD

**RELATED ITEMS:**     NONE

# MMC #: 97     TRAFFIC REPORT

## DESCRIPTION:

Used to print a traffic report and select options.

The traffic report can be printed upon demand or automatically at the end of each day or at the end of each week. Automatic printing will always clear the totals.

The end of day reports are printed at 23:59. The end of week reports are printed at 23:59 on Sunday.

When a report is printed on demand, the options are:

NO REPORT - The program can be exited here if no report is needed.

SAVE TOTALS - A report is printed and all the totals are saved.

CLEAR TOTALS - A report is printed and all totals are reset to 0.

See sample report at the end of this MMC sheet.

If there are no trunks in a group, the trunk group report for that group will not print.

### PROGRAM KEYS

UP & DOWN - Select the option.
MUTE - Press repeatedly to make selection.
SPK/RLS - Save data and advance to next MMC.

| ACTION | DISPLAY |
|---|---|
| 1. Press # 97 | **PRINT REPORT NOW** <br> **NO REPORT** |
| 2. Press MUTE repeatedly to make selection, e.g., CLEAR TOTALS | **PRINT REPORT NOW** <br> **CLEAR TOTALS** |
| 3. Press UP to select auto print option | **AUTOMATIC PRINT** <br> **NOT SELECTED** |
| 4. Press MUTE repeatedly to make selection, e.g., END OF WEEK | **AUTOMATIC PRINT** <br> **END OF WEEK** |
| 5. Press # to print report or store and exit | |

**DEFAULT DATA:**     **NO REPORT**
**RELATED ITEMS:**     **BAUD RATE**

# 4.5 SAMPLE TRAFFIC REPORT (Simulated)

*********************** SYSTEM STATISTICS ***********************

BEGINNING: 07/04/92  23:59                                    ENDING: 07/05/92  16:43

| ACTIVITY | SYSTEM TOTAL |
|---|---|
| POWER FAIL OR SYSTEM RESET | 0 |
| | |
| INCOMING TRUNK CALLS - ANSWERED | 201 |
| INCOMING TRUNK CALLS - NOT ANSWERED | 7 |
| OUTGOING TRUNK CALLS | 185 |
| A SELECTED TRUNK WAS BUSY | 0 |
| | |
| INTERCOM CALLS - COMPLETED | 100 |
| INTERCOM CALLS - NOT ANSWERED | 38 |
| | |
| TRUNK RECALLS TO STATIONS | 11 |
| TRUNK RECALLS TO OPERATOR GROUP | 21 |
| | |
| INTERNAL PAGE USED | 0 |
| EXTERNAL PAGE USED | 18 |
| ALL PAGE USED | 2 |

*********************** TRUNK GROUPS ***********************

BEGINNING: 07/04/92  23:59                                    ENDING: 07/05/92  16:43

| GROUP | ANSWERED | UNANSWERED | OUTGOING | BUSY |
|---|---|---|---|---|
| 9 | 79 | 4 | 116 | 0 |
| 80 | 4 | 0 | 0 | 0 |
| 81 | 0 | 0 | 69 | 0 |
| 83 | 118 | 3 | 0 | 0 |

*********************** INDIVIDUAL TRUNKS ***********************

BEGINNING: 07/04/92  23:59                                    ENDING: 07/05/92  16:43

| TRUNK | DIRECTORY NAME | ANSWERED | UNANSWERED | OUTGOING | BUSY |
|---|---|---|---|---|---|
| 701 | LOCAL LINE | 53 | 2 | 0 | 0 |
| 702 | LOCAL LINE | 17 | 2 | 0 | 0 |
| 703 | LOCAL LINE | 5 | 0 | 0 | 0 |
| 705 | LOCAL LINE | 2 | 0 | 0 | 0 |
| 709 | IN WATTS | 18 | 1 | 0 | 0 |
| 710 | IN WATTS | 20 | 0 | 0 | 0 |
| 711 | IN WATTS | 19 | 0 | 0 | 0 |
| 712 | IN WATTS | 20 | 1 | 0 | 0 |
| 713 | IN WATTS | 21 | 0 | 0 | 0 |
| 714 | IN WATTS | 20 | 1 | 0 | 0 |
| 719 | OUT WATTS | 0 | 0 | 1 | 0 |
| 720 | OUT WATTS | 0 | 0 | 5 | 0 |
| 721 | OUT WATTS | 0 | 0 | 18 | 0 |
| 722 | OUT WATTS | 0 | 0 | 45 | 0 |
| 725 | LOCAL LINE | 0 | 0 | 1 | 0 |
| 726 | LOCAL LINE | 1 | 0 | 7 | 0 |
| 727 | LOCAL LINE | 0 | 0 | 26 | 0 |
| 728 | LOCAL LINE | 1 | 0 | 82 | 0 |
| 731 | DID LINE | 2 | 0 | 0 | 0 |
| 732 | DID LINE | 2 | 0 | 0 | 0 |

# 4.5 SAMPLE TRAFFIC REPORT (Simulated) *Continued*

*********************** STATION HUNT GROUPS ***********************

BEGINNING:  07/04/92  23:59                    ENDING:  07/05/92  16:43

| | OUTSIDE CALL | | | | INTERCOM CALL | |
| GROUP | ANSWERED | DIALED | TRANSFER | PICKED-UP | ANSWERED | DIALED |
|---|---|---|---|---|---|---|
| 500 | 197 | 22 | 46 | 4 | 24 | 18 |
| 501 | 0 | 29 | 43 | 0 | 8 | 25 |
| 502 | 0 | 39 | 69 | 5 | 6 | 10 |
| 503 | 0 | 0 | 0 | 0 | 5 | 2 |
| 529 | 0 | 0 | 0 | 0 | 26 | 1 |

*********************** INDIVIDUAL STATIONS ***********************

BEGINNING:  07/04/92  23:59                    ENDING:  07/05/92  16:43

| | | OUTSIDE CALL | | | | INTERCOM CALL | |
| STATION | DIRECTORY NAME | ANSWERED | DIALED | TRANSFER | PICKED-UP | ANSWERED | DIALED |
|---|---|---|---|---|---|---|---|
| 201 | SONDRA | 191 | 7 | 5 | 3 | 15 | 14 |
| 202 | JANET | 5 | 8 | 12 | 1 | 5 | 3 |
| 230 | SAUL | 0 | 2 | 4 | 3 | 4 | 2 |
| 223 | DENIS | 0 | 1 | 10 | 0 | 0 | 0 |
| 228 | NANCY | 1 | 4 | 2 | 0 | 3 | 0 |
| 207 | LINDA | 0 | 18 | 20 | 0 | 6 | 16 |
| 208 | JILL | 0 | 11 | 23 | 0 | 2 | 9 |
| 210 | ROCKY | 0 | 10 | 11 | 0 | 3 | 3 |
| 211 | KATHY | 0 | 3 | 27 | 0 | 1 | 1 |
| 212 | GAVIN | 0 | 9 | 1 | 0 | 3 | 2 |
| 213 | JANE | 0 | 10 | 2 | 1 | 1 | 4 |
| 214 | MIKE | 0 | 2 | 0 | 0 | 0 | 0 |
| 215 | STEVE R | 0 | 3 | 0 | 0 | 4 | 1 |
| 217 | STEVE D | 0 | 16 | 2 | 1 | 1 | 1 |
| 232 | BOB | 0 | 1 | 3 | 0 | 12 | 1 |
| 219 | ROB | 0 | 0 | 2 | 0 | 3 | 0 |
| 218 | ANDREW | 0 | 3 | 1 | 0 | 0 | 0 |
| 203 | **PROSTAR** | 0 | 2 | 0 | 0 | 0 | 0 |
| 204 | **PROSTAR** | 0 | 4 | 0 | 0 | 2 | 30 |
| 236 | PAULINE | 0 | 6 | 0 | 0 | 0 | 1 |
| 237 | PRO/XL/SDX | 0 | 1 | 0 | 0 | 0 | 0 |
| 396 | VOICE MAIL | 0 | 0 | 0 | 0 | 13 | 1 |
| 397 | VOICE MAIL | 0 | 0 | 0 | 0 | 2 | 0 |
| 398 | VOICE MAIL | 0 | 0 | 0 | 0 | 2 | 0 |
| 399 | VOICE MAIL | 0 | 0 | 0 | 0 | 14 | 2 |
| 248 | ANSWER MACH | 4 | 0 | 0 | 0 | 0 | 0 |
| 226 | CAGE | 0 | 14 | 4 | 0 | 1 | 0 |
| 247 | **PROSTAR** | 0 | 2 | 0 | 0 | 0 | 0 |
| 205 | COMPUTER | 0 | 0 | 0 | 0 | 1 | 1 |
| 240 | TRAINING | 0 | 0 | 3 | 0 | 0 | 0 |
| 222 | TECH #4 | 0 | 0 | 1 | 1 | 0 | 3 |
| 220 | BILL | 0 | 9 | 18 | 0 | 2 | 2 |
| 221 | * NATHAN * | 0 | 27 | 36 | 1 | 0 | 3 |
| 209 | SID | 0 | 12 | 4 | 0 | 0 | 0 |

# 2.3 56/120 DEFAULT DATA

## STATION PROGRAMS

| | | |
|---|---|---|
| #10 | STATION LOCK | UNLOCKED |
| #11 | CHANGE PASSCODE | 1234 |
| #12 | SET ANSWER MODE | RING |
| #13 | KEY CONFIRM TONE | AUDIBLE |
| #14 | EXTEND KEY | N/A |
| #15 | CLOCK DISPLAY | 12 HOUR WESTERN |
| #16 | SELECT RING FREQ | TYPE 1 |
| #17 | BGM SOURCE | A |
| #18 | AUTOMATIC HOLD | YES |
| #19 | RING PREFERENCE | YES |

## SYSTEM PROGRAMS

| | | |
|---|---|---|
| #20 | ENABLE PROGRAMMING | CLOSED |
| #21 | CHANGE PASSCODE | 4321 |
| #22 | OPERATOR GROUP | 500 |
| #23 | NIGHT TOLL CLASS | A |
| #24 | ASSIGN UNA | NO UNA RINGER |
| #25 | BARGE-IN TYPE | NO BARGE IN |
| #26 | EXT. PAGE OPTIONS | INDIVIDUAL |
| #29 | SYS. ODDS & ENDS | |
| | CALL TIMER | AUTO START |
| | SYS.SPEED DIAL | FOLLOW TOLL REST. |
| | DTMF TONES | MUTED |
| | TRK. SELECT TYPE | SEQUENTIAL |
| | CALL DURATION | NO ALERT |
| | COMMON BELL | INTERRUPTED |
| | FWD ICM TO VM/AA | YES |

|  | TRANSFER TYPE | MUSIC |
|  | TRANSFER TO AOM | NO |
| #30 | STN TOLL CLASS | AA |
| #31 | TOLL DENY TABLE | EMPTY |
| #32 | TOLL ALLOW TABLE | EMPTY |
| #33 | STN HUNT GROUP | EMPTY |
| #34 | STN PICK UP GROUP | EMPTY |
| #35 | HOT/WARM LINE | NONE |
| #36 | EXT/TRK USE | ALL COMBINATIONS YES:YES |
| #37 | EXEC/SECT PAIRS | NONE |
| #38 | ASSIGN AOM UNITS | NONE |
| #39 | SPEED NUMBERS[STN] | NONE |
| #40 | ASSIGN BARGE-IN | ALL STATIONS NO/NO |
| #41 | INT. PAGE ZONE | ALL STATIONS NO ZONE |
| #42 | ABLE TO PAGE | YES |
| #43 | RECEIVE PAGE | YES |
| #44 | ALLOW DND | YES |
| #45 | VM/AA PORT | NORMAL |
| #46 | DATA/VOICE PORT | VOICE |
| #47 | KEYSET LOUD BELL | DISABLED |
| #48 | HEADSET USE | HANDSET |
| #49 | DISA AVAILABLE | NO |
| #50 | PULSE/DTMF TYPE | DTMF |
| #51 | SET PABX LINE | C.O. LINE |
| #52 | DISA LINE | NORMAL |
| #53 | TRUNK TOLL RSTR | FOLLOW |

| #54 | TRK LINE FORWARD | NOT FOLLOW |
|---|---|---|
| #55 | 1A2 EMULATION | NO |
| #56 | MOH SOURCE | SOURCE B |
| #57 | TRK SIGNAL TYPE | "HARDWARE DEPENDENT" |
| #58 | TIE LINE CLASS | AA |
| #60 | DAY RING STATION | ALL LINES RING GROUP 500 |
| #61 | NIGHT RING STN | ALL LINES RING GROUP 500 |
| #62 | DOOR RING STN | 500 |
| #63 | SPEED DIAL BLOCK | EACH STATION HAS TEN NUMBERS |
| #64 | SYS SPEED NUMBER | NO NUMBERS ASSIGNED |
| #65 | PBX ACCESS CODE | NONE DEFINED |
| #66 | VACANT MESSAGES | NONE |
| #67 | ASSIGN TRK TO GP | ALL LOOP AND GROUND START LINES IN GROUP 9 |
| #70 | SET CURRENT TIME | WED,01 JAN,00:00,1992 |

| #71 | TIMER TABLE NO.1 | |
|---|---|---|
| | PBX FLASH | 0600ms |
| | C.O. FLASH | 1000ms |
| | NEW CALL | 2000ms |
| | ATTENTION TONE | 1000ms |

| #72 | TIMER TABLE NO.2 | |
|---|---|---|
| | SLT HOOK FLASH | 0840ms |
| | DTMF DURATION | 0100ms |
| | RING DETECTION | 0300ms |
| | PAUSE | 1000ms |
| | DISCONNECT | 0200ms |

| #73 | TIMER TABLE NO.3 | |
|---|---|---|
| | HOLD RECALL | 045sec |
| | TRANSFER RECALL | 015sec |
| | PARK RECALL | 045sec |
| | CAMP ON RECALL | 060sec |
| | WARM LINE DELAY | 005sec |
| | FORWARD NO ANS | 015sec |
| | FORWARD EXTERNAL | 010sec |

|  | AUTO TIMER/SMDR | 015sec |
|---|---|---|
|  | AUTO REDIAL INT. | 030sec |

| #74 | TIMER TABLE NO.4 | |
|---|---|---|
|  | ALARM RING DURATION | 015sec |
|  | HOLD RING DURATION | 015sec |
|  | PAGE TIME OUT | 015sec |
|  | BARGE IN TONE INT. | 000sec |
|  | OFF-HOOK RING INT. | 010sec |
|  | MMC TIMEOUT | 060sec |
|  | FIRST DIGIT TIME | 010sec |
|  | INTERDIGIT TIME | 020sec |
|  | DOOR CONTACT | 004sec |

| #75 | TIMER TABLE NO.5 | |
|---|---|---|
|  | CO-CO DISCONNECT | 015min |
|  | CALL DUR ALERT | 003min |

| #76 | # OF ATTEMPTS | 15 |
|---|---|---|

#80   KEY PROGRAM[SYS]

### 824 KEYSET

BUTTON 17 – CALL 1
BUTTON 18 – CALL 2
BUTTON 21 – DIAL "9" GROUP
BUTTON 33 – CALLBACK
BUTTON 36 – LISTEN
BUTTON 37 – SAVE
BUTTON 38 – LAST NUMBER REDIAL

### 816 KEYSET

BUTTON 8   – FLASH
BUTTON 16 – TRANSFER
BUTTON 17 – CALL 1
BUTTON 18 – CALL 2
BUTTON 21 – DIAL "9" GROUP
BUTTON 25 – CALLBACK
BUTTON 27 – LISTEN
BUTTON 28 – SAVE

| #81 | KEY PROGRAM[STN] | NO DEFAULT DATA |
|---|---|---|
| #85 | DID DIGIT TABLE | NONE |
| #86 | DIRECTORY NAMES | NONE |
| #91 | PULSE M/B RATIO | 40/60 |
| #92 | MISC. CARD STATUS | EQUIPPED |

#93   CUSTOMER ACCESS          MMCs #39,64,66,70,86,95,97 = YES
                              ALL OTHERS = NO

#94   VM/AA OPTIONS            NONE

#95   CALL TRAFFIC             N/A

#96   SMDR OPTIONS             ALL CALLS, HEADER & 50, 1200BPS

#97   TRAFFIC REPORT           N/A

# 2.4  SPECIAL APPLICATIONS

## VOICE MAIL/AUTO ATTENDANT INTEGRATION

Because of the increased popularity of voice mail and auto attendant use, PROSTAR 56ex/120mx includes many programmable options to address this demand. Obviously the degree of integration that can be achieved depends on the abilities of the voice mail/auto attendant (VM/AA) system as well as the telephone system.

This list details the capabilities provided by the PROSTAR 56ex/ 120mx for voice mail integration.

### HARDWARE PROVISIONS

a.  The VM/AA system must be connected to single line circuits 5, 6, 7 or 8 on any MSLC2 card.

b.  Each card is equipped with a dedicated sender and receiver for VM/AA to provide internal DTMF signalling.

c.  These ports will also provide an instant break in loop current when the calling party hangs up.  This is called a disconnect signal.

### SOFTWARE PROVISIONS

a.  SCREENED OR UNSCREENED TRANSFER
    There are no special codes needed to transfer a call. Simply hookflash, receive transfer dial tone and dial the destination.

b.  DIRECT IN LINES
    Any C.O. call can be assigned to ring at an individual station or a station hunt group assigned to the VM/AA.

c.  CALLS OR RECALLS TO THE OPERATOR
    Dialing 0 will always result in a ringback signal. If the operator is busy, the call continues to ring in queue to the operator.  This prevents a caller from dialing 0 and reaching another mailbox because the operator is busy.

d.  MESSAGE WAITING
    A VM/AA port can leave a message at any station or group of stations. The message waiting indication can be set or cancelled at any station or station group with or without the stations ringing.

e.  DTMF PROGRAMMABLE TONE DURATION
    From 20 millseconds to 5 seconds.

f.  IN BAND SIGNALLING
    The PROSTAR system can be programmed to send the calling

station's extension number after the voice mail system answers. These DTMF signals may include a leading digit to indicate the type of call and additional information about the original caller. DTMF signals may also be substituted for call progress tones to speed up voice mail call processing. This program allows call forwarding to a mail box and bypassing the main greeting for automatic message retrieval. Blind transfers may be performed because the recall will be correctly identified. NOTE: The effectiveness of this program depends on the ability of the voice mail system to make use of this information.

g. STATION HUNT GROUP WITH OVERFLOW
Each station group can have an individual overflow destination with an individual overflow timer.  The overflow destination will ring whenever a call to the group is not answered.  If the voice mail system becomes inoperative, calls are automatically routed to the overflow destination.

h. INTERNAL CALL FORWARDING TO VOICE MAIL
This option will allow or deny intercom calls from following call forward to voice mail.  This feature conserves disk drive space by only storing calls originating outside the PROSTAR system.

i. ONE TOUCH VOICE MAIL ACCESS
One touch speed dial keys can be programmed to automatically dial, log into and retrieve messages from voice mail.

j. CALL PROGRESS TONES
The only tones sent to a VM/AA port are dial tone, busy and ringback. To eliminate confusion, busy tone is substituted for DND or error tones on voice mail ports only.

# STAND-ALONE ADD-ON MODULE

To make an ADD-ON MODULE operate as a stand-alone unit, perform the following steps in the order they are listed.

1. MMC #63 — Advance to the extension number of the AOM you want to use as stand-alone. Assign blocks of speed dial numbers to this AOM.

2. MMC #38 — Temporarily assign the AOM to any keyset.

3. MMC #81 — Assign the keys you want to use. A stand alone AOM should only have the following keys and extenders must be included if they apply.

### ASSIGNABLE KEYS:

- DSS
- SPEED DIAL
- OHVA
- CALLBACK
- STATION GROUP

- DND
- DOORPHONE
- VACANT MESSAGE
- NIGHT ANSWER (UNA)
- PICKUP KEYS

4. MMC #38 — Separate AOM from keyset.

5. MMC #39 — Assign speed dial numbers for that AOM.

6. MMC #12 — With TECHNICIAN or CUSTOMER passcode, assign answer mode as voice announce or auto answer.

NOTES:   1.   Transferred calls cannot be camped on to a busy AOM. If a station attempts this, the transferred call will ring back to the station immediately.

2.   Busy station camp-on will not work when calling a busy AOM.

# 2.5  BLANK DATA RECORD SHEETS

The following blank data record sheets are provided for you to record the programmed data for each system you install.

**USEFUL GUIDELINES**

A. Keep a record of each system programming in a safe place on site.

B. Use a pencil to record the data. Ink cannot easily be erased or changed.

C. Always update the record sheets when changes are made to the system database.

D. These sheets may be copied as needed.

# PROSTAR 56ex / 120mx
# DATABASE FORMS

CUSTOMER
NAME: _____

ADDRESS: _____

_____

_____

_____

DATABASE CONTAINS _____ SHEETS

## SYSTEM CONFIGURATION FOR:

| SLOT 8 | SLOT 9 | SLOT A | SLOT B | SLOT C | SLOT D | SLOT E | SLOT F |
|---|---|---|---|---|---|---|---|
| CARD TYPE | CARD TYPE | CARD TYPE | CARD TYPE | CARD TYPE | CARD TYPE | CARD TYPE | CARD TYPE |
| 1 _____ | 1 _____ | 1 _____ | 1 _____ | 1 _____ | 1 _____ | 1 _____ | 1 _____ |
| 2 _____ | 2 _____ | 2 _____ | 2 _____ | 2 _____ | 2 _____ | 2 _____ | 2 _____ |
| 3 _____ | 3 _____ | 3 _____ | 3 _____ | 3 _____ | 3 _____ | 3 _____ | 3 _____ |
| 4 _____ | 4 _____ | 4 _____ | 4 _____ | 4 _____ | 4 _____ | 4 _____ | 4 _____ |
| 5 _____ | 5 _____ | 5 _____ | 5 _____ | 5 _____ | 5 _____ | 5 _____ | 5 _____ |
| 6 _____ | 6 _____ | 6 _____ | 6 _____ | 6 _____ | 6 _____ | 6 _____ | 6 _____ |
| 7 _____ | 7 _____ | 7 _____ | 7 _____ | 7 _____ | 7 _____ | 7 _____ | 7 _____ |
| 8 _____ | 8 _____ | 8 _____ | 8 _____ | 8 _____ | 8 _____ | 8 _____ | 8 _____ |

| SLOT 0 | SLOT 1 | SLOT 2 | SLOT 3 | SLOT 4 | SLOT 5 | SLOT 6 | SLOT 7 |
|---|---|---|---|---|---|---|---|
| C P U | CARD TYPE | CARD TYPE | CARD TYPE | CARD TYPE | CARD TYPE | CARD TYPE | CARD TYPE |
| | 1 _____ | 1 _____ | 1 _____ | 1 _____ | 1 _____ | 1 _____ | 1 _____ |
| | 2 _____ | 2 _____ | 2 _____ | 2 _____ | 2 _____ | 2 _____ | 2 _____ |
| | 3 _____ | 3 _____ | 3 _____ | 3 _____ | 3 _____ | 3 _____ | 3 _____ |
| SOFTWARE VERSION | 4 _____ | 4 _____ | 4 _____ | 4 _____ | 4 _____ | 4 _____ | 4 _____ |
| | 5 _____ | 5 _____ | 5 _____ | 5 _____ | 5 _____ | 5 _____ | 5 _____ |
| | 6 _____ | 6 _____ | 6 _____ | 6 _____ | 6 _____ | 6 _____ | 6 _____ |
| | 7 _____ | 7 _____ | 7 _____ | 7 _____ | 7 _____ | 7 _____ | 7 _____ |
| | 8 _____ | 8 _____ | 8 _____ | 8 _____ | 8 _____ | 8 _____ | 8 _____ |

SHEET _____ OF _____

# GENERAL SYSTEM DATA

| | | |
|---|---|---|
| 22 | OPERATOR GROUP | |
| 23 | NIGHT TOLL CLASS | |
| 24 | UNA DEVICE | |
| 25 | BARGE IN TYPE | |
| 26 | EXTERNAL PAGE OPT. | |

| | | |
|---|---|---|
| 29 | SYSTEM ODDS AND ENDS | |
| 29 | CALL TIMER | |
| 29 | SYS. SPEED DIAL | |
| 29 | DTMF TONES | |
| 29 | TRUNK SELECT TYPE | |
| 29 | CALL DURATION ALERT | |
| 29 | COMMON BELL | |
| 29 | ICM. FWD TO VM/AA | |
| 29 | TRANSFER TYPE | |
| 29 | TRANSFER TO AOM | |

| 58 | TIE LINE CLASS | | | |
|---|---|---|---|---|
| LINE | | | | |
| CLASS | | | | |

| 65 | PBX ACCESS CODES | | |
|---|---|---|---|
| 01: | | 06: | |
| 02: | | 07: | |
| 03: | | 08: | |
| 04: | | 09: | |
| 05: | | 10: | |

| 66 | VACANT MESSAGES |
|---|---|
| 10: | |
| 11: | |
| 12: | |
| 13: | |
| 14: | |
| 15: | |
| 16: | |
| 17: | |
| 18: | |
| 19: | |

| 91 | DIAL PULSE MAKE / BREAK | | |
|---|---|---|---|
| MAKE | | BREAK | |

| 92 | MISC. CARD STATUS |
|---|---|
| | |

| 96 | SMDR OPTIONS | |
|---|---|---|
| CUSTOMER NAME | | |
| TYPE OF CALLS | | |
| PRINTER OPTION | | |
| BAUD RATE | | |

| NOTES: | |
|---|---|
| | |
| | |

# SYSTEMS TIMERS

## DEFAULTS SHOWN IN PARANTHESES

| 71 | TIMER TABLE #1 | |
|---|---|---|
| PBX FLASH TIMER | (0600) | MS |
| CO FLASH TIMER | (1000) | MS |
| NEW CALL TIMER | (2000) | MS |
| ATTENTION TONE | (1000) | MS |

| 72 | TIMER TABLE #2 | |
|---|---|---|
| SLT HOOK FLASH | (0840) | MS |
| DTMF DURATION | (0100) | MS |
| RING DETECTION | (0300) | MS |
| PAUSE TIMER | (1000) | MS |
| DISCONNECT TIMER | (0200) | MS |

| 73 | TIMER TABLE #3 | |
|---|---|---|
| HOLD RECALL TIME | (015) | SEC |
| TRANSFER RECALL | (015) | SEC |
| PARK RECALL | (045) | SEC |
| CAMP - ON REDIAL | (060) | SEC |
| WARM LINE DELAY | (005) | SEC |
| FORWARD NO - ANS | (015) | SEC |
| FORWARD EXTERNAL | (010) | SEC |
| AUTO TIMER / SMDR | (015) | SEC |
| AUTO REDIAL INT. | (030) | SEC |

| 74 | TIMER TABLE #4 | |
|---|---|---|
| ALARM RING DUR. | (015) | SEC |
| HOLD RING DUR. | (015) | SEC |
| PAGE TIME OUT | (015) | SEC |
| BARGE IN TONE INT. | (000) | SEC |
| OFF HOOK RING INT. | (010) | SEC |
| MMC TIMEOUT | (060) | SEC |
| FIRST DIGIT TIME | (010) | SEC |
| INTERDIGIT TIME | (020) | SEC |
| DOOR CONTACT | (004) | SEC |

| 75 | TIMER TABLE #5 | |
|---|---|---|
| CO-CO DISCONNECT | (015) | MIN |
| CALL DUR ALERT | (030) | MIN |

| 76 | NUMBER OF ATTEMPTS | |
|---|---|---|
| AUTO REDIAL ATTEMPTS | (05) | |

## STATION DATA     (COPY AS NEEDED)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | PORT NUMBER | | | | | | | | |
| | EXT. TYPE | | | | | | | | |
| | EXT. NUMBER | | | | | | | | |
| 30 | TOLL CLASS | | | | | | | | |
| 35 | HOT LINE | | | | | | | | |
| 35 | WARM LINE | | | | | | | | |
| 37 | EXEC. STATION | | | | | | | | |
| 37 | SEC. STATION | | | | | | | | |
| 38 | AOM ATTACHED | | | | | | | | |
| 40 | BARGE IN | | | | | | | | |
| 41 | PAGE ZONE | | | | | | | | |
| 42 | ABLE TO PAGE | | | | | | | | |
| 43 | RECEIVE PAGE | | | | | | | | |
| 44 | ALLOW DND | | | | | | | | |
| 45 | VM/AA PORT | | | | | | | | |
| 46 | DATA PORT | | | | | | | | |
| 47 | LOUD BELL | | | | | | | | |
| 48 | HEADSET USE | | | | | | | | |
| 49 | ALLOW DISA | | | | | | | | |
| 63 | SPEED DIAL BK | | | | | | | | |

NOTES:

SHEET _____ OF _____

| 31 | **TOLL DENY TABLE** | | | | | (COPY AS NEEDED) |
|---|---|---|---|---|---|---|

| ENTRY | DIGITS TO RESTRICT | B | C | D | E |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
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| ENTRY | DIGITS TO RESTRICT | B | C | D | E |
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| 32 | **TOLL ALLOW TABLE** | | | | (COPY AS NEEDED) |
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| ENTRY | EXCEPTION DIGITS | B | C | D | E | | ENTRY | EXCEPTION DIGITS | B | C | D | E |
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| 85 | **DID DIGIT TRANSLATION TABLE** | (COPY AS NEEDED) |

| ENTRY | DIGITS | DESTINATION | ENTRY | DIGITS | DESTINATION |
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| GROUP NO. | |
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| RING TYPE | |
| NEXT: | |
| OVER: | |

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| GROUP # | | GROUP # | | GROUP # | | GROUP # | |
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| ENTRY # | TRUNK # | ENTRY # | TRUNK # | ENTRY # | TRUNK # | ENTRY # | TRUNK # |
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SHEET _____ OF _____

| | **TRUNK DATA** | | (COPY AS NEEDED) | | | | | |
|---|---|---|---|---|---|---|---|---|---|

| | PORT NUMBER | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | TRUNK NUMBER | | | | | | | | |
| | TRUNK TYPE | | | | | | | | |
| | PHONE NUMBER | | | | | | | | |
| 50 | PULSE / DTMF | | | | | | | | |
| 51 | CO / PBX | | | | | | | | |
| 52 | DISA LINE | | | | | | | | |
| 53 | TOLL REST. | | | | | | | | |
| 54 | TRUNK FORWARD | | | | | | | | |
| 55 | 1A2 EMULATION | | | | | | | | |
| 56 | MOH SOURCE | | | | | | | | |
| 57 | SIGNAL TYPE | | | | | | | | |

| | PORT NUMBER | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | TRUNK NUMBER | | | | | | | | |
| | TRUNK TYPE | | | | | | | | |
| | PHONE NUMBER | | | | | | | | |
| 50 | PULSE / DTMF | | | | | | | | |
| 51 | CO / PBX | | | | | | | | |
| 52 | DISA LINE | | | | | | | | |
| 53 | TOLL REST. | | | | | | | | |
| 54 | TRUNK FORWARD | | | | | | | | |
| 55 | 1A2 EMULATION | | | | | | | | |
| 56 | MOH SOURCE | | | | | | | | |
| 57 | SIGNAL TYPE | | | | | | | | |

SHEET _____ OF _____

| 60 | TRUNK DAY RING | (COPY AS NEEDED) |
|---|---|---|

| TRUNK NUMBER | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| RING MODE | | | | | | | | |
| 01: | | | | | | | | |
| 02: | | | | | | | | |
| 02: | | | | | | | | |
| 03: | | | | | | | | |
| 04: | | | | | | | | |
| 05: | | | | | | | | |
| 06: | | | | | | | | |
| 07: | | | | | | | | |
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| 14: | | | | | | | | |
| 15: | | | | | | | | |
| 16: | | | | | | | | |

SHEET _____ OF _____

| TRUNK NUMBER | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| RING MODE | | | | | | | | |
| 01: | | | | | | | | |
| 02: | | | | | | | | |
| 02: | | | | | | | | |
| 03: | | | | | | | | |
| 04: | | | | | | | | |
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| 06: | | | | | | | | |
| 07: | | | | | | | | |
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| 14: | | | | | | | | |
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| 16: | | | | | | | | |

| DOOR PHONE | 1 | 2 |
|---|---|---|
| RING MODE | | |
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| 02: | | |
| 03: | | |
| 04: | | |
| 05: | | |
| 06: | | |
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| 11: | | |
| 12: | | |
| 13: | | |
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| ENTRY | NUMBER | | ENTRY | NUMBER |
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| 36 | **EXTENSION / TRUNK USE** | (COPY AS NEEDED) |

| TRK | | | | | | | | | | | | | | | | | | | | |
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| STN | D | A | D | A | D | A | D | A | D | A | D | A | D | A | D | A | D | A | D | A | D | A | D | A | D | A | D | A | D | A | D | A | D | A | D | A |
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|  | USED / NOT USED | DTMF DIGIT |
|---|---|---|
| DTMF EXTENTION NUMBERS | | |

| DTMF CALL TYPE | | |
|---|---|---|
| DIRECT CALL | | |
| RECALL | | |
| FORWARD ALL | | |
| FORWARD BUSY | | |
| FORWARD NO ANSWER | | |

| DTMF CO NUMBERS | | |
|---|---|---|
| CO CALL ID | | |

| DN2 INFORMATION | | |
|---|---|---|

| PROGRESS TONES | | |
|---|---|---|
| DIAL TONE | | |
| RINGBACK | | |
| BUSY TONE | | |
| NO MORE CALLS | | |
| ERROR TONE | | |
| HANDSET ANS | | |
| SPK ANS | | |

| DISCONNECT SIGNAL | | |
|---|---|---|
| DTMF DIGIT | | |

| SEPERATOR DIGIT | | |
|---|---|---|
| DTMF DIGIT | | |

STATION NUMBER | 

NOTES _____
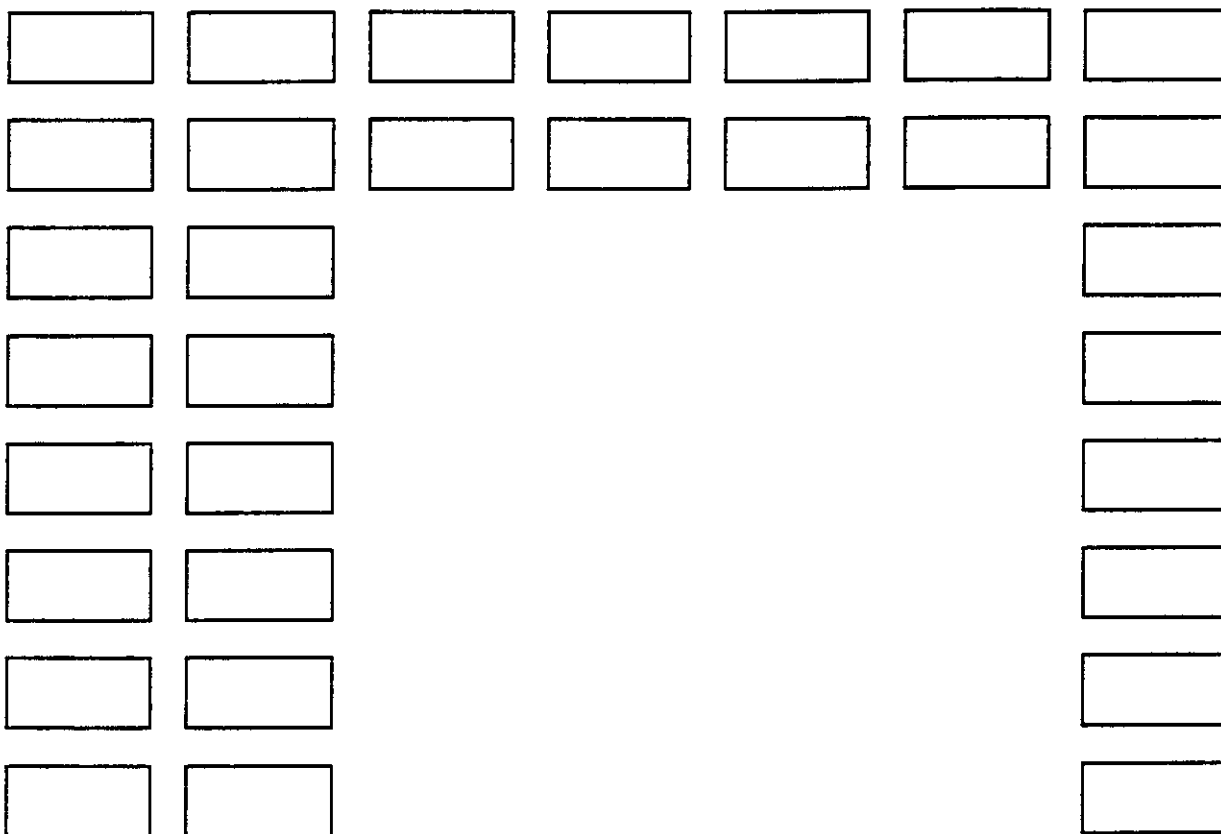
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┌─── **824 KEYSET** ─────────────────────────────────┐
├─── **816 KEYSET** ────────────────────────┐

| STATION NUMBER | | NOTES _____ |

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**824 KEYSET** _____

**816 KEYSET** _____
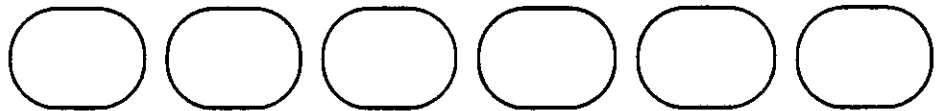
STATION NUMBER | | NOTES _____

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STATION NUMBER | NOTES _____

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# CROSSPOINT TEST CARD USER INSTRUCTIONS

1) This card is the property of PROSTAR Telecom, Inc., therefore must be returned promptly.

2) This card is fragile; please handle with care.

3) This card cannot be inserted into or removed from the system under power.

4) For the test to be effective the system must be idle.

5) A vacant card slot (1-F) must be available.


## EQUIPMENT REQUIRED

1) Single line telephone
2) MSLC 2
3) Crosspoint Test Card


## INSTRUCTIONS

1) Insert Crosspoint Test Card into vacant card slot with system power OFF.

2) With power OFF, remove MSLC2 card and move jumper pins to make any one port a single line port. (See Figure 3-8 of Installation Book.)

3) Program that single line port for VM/AA use.   (MMC #45)

4) Program first digit timer to 001 second. (MMC #74)


## TESTING

1) After configuring the MSLC 2 card for single line use, plug your single line phone into that port.

2) Go off hook on single line phone and REMAIN off hook.

## OBSERVATIONS

1) You will notice that after going off hook on the single line phone that one of the LEDs on the crosspoint test card will light.

2) You will notice that the single line telephone has dial tone after going off hook, but it only lasts for approximately 3 seconds, then disappears. Approximately 3 seconds later you will hear dial tone again.

3) When you hear dial tone the second time you will notice that a different LED is lit on the crosspoint test card. This process will repeat continuously.

4) Observe LEDs on crosspoint test card. They should light one at a time sequentially. (NOTE: J42 will not light)

5) If two or more LEDs come on at the same time you have a failure indication. Remove circuit cards one at a time and repeat test. Keep repeating this process until you find the bad circuit card. (It is recommended that you turn power OFF to remove and insert cards.)

MMC #: 72                     TIMER TABLE NO. 2

## DESCRIPTION:

This program is used to set the following system timers:

NOTE:  Each timer is adjusted in 20 millisecond increments (20, 40, 60, etc.).  If these exact numbers are not entered, the system will adjust the timer to the next lowest increment.  For example, if 53 is entered, the value will be stored as 40.

SLT HOOK FLASH:  This is the maximum flash duration that the KSU will recognize as a flash.  Any SLT that flashes longer than this duration will be disconnected.  This timer is measured in milliseconds.  It is adjusted in 20 millisecond increments.  The default value is 840.  The range is 0000-5000.

DTMF DURATION ON TIME:  This timer sets the duration of each DTMF tone sent out by the system.  This timer is measured in milliseconds.  It is adjusted in 20 millisecond increments.  The default value is 100.  The range is 0000-5000.

*DTMF DURATION OFF TIME:  This timer sets the duration of the silence between DTMF tones sent out by the system.  This timer is measured in milliseconds.  It is adjusted in 20 millisecond increments.  The default value is 100.  The range is 0000-5000.

RING DETECTION:  This timer must be set shorter than the on cycle for C.O. ring.  It is intended to prevent noise on the C.O. line from triggering a false ring.  This timer is measured in milliseconds.  It is adjusted in 20 millisecond increments. The default value is 300.  The range is 0000-5000.

PAUSE TIMER - This is the pause duration timer.  A pause is an instruction for the system to wait.  It is used when required in speed dial numbers.  This timer is measured in milliseconds.  It is adjusted in 20 millisecond increments.  The default value is 1000.  The range is 0000-5000.

DISCONNECT TIMER - This is a valid disconnect timer.  This must be set longer than the disconnect signal from the central office.  This timer is measured in milliseconds.  It is adjusted in 20 millisecond increments.  The default value is 200.  The range is 0000-5000.  IT IS STRONGLY RECOMMENDED THAT YOU DO NOT CHANGE THIS TIMER.


*DTMF DURATION OFF TIME is an addition to MMC #72.

| | |
|---|---|
| **MMC #: 92** | **MISC. CARD STATUS** |

## DESCRIPTION:

Used to tell the system that the miscellaneous card is
installed or not installed.

NOTE:  Because the MISC card does not have a processor, the
system software will not automatically recognize if it is
installed or not.  It is therefore necessary to set this
program correctly.  IF THIS PROGRAM IS NOT SET CORRECTLY,
SOFTWARE PROBLEMS MAY ARISE.

## PROGRAM KEYS

MUTE - Press repeatedly to select OPTIONS.
SPK/RLS - Save data and advance to next MMC.

**ACTION**                                          **DISPLAY**

1.  Press #92
    Display shows status of MISC board.

    | |
    |---|
    | MISC. CARD STATUS |
    | MISC. A |

2.  Press MUTE repeatedly to select option,
    e.g., EMPTY

    | |
    |---|
    | MISC. CARD STATUS |
    | EMPTY: |

3.  Press # to store and exit

DEFAULT DATA:  MISC. A

MISC. B:  CARD CAN BE USED WITH ANY SOFTWARE

          IT CAN BE IDENTIFIED ON THE COMPONENT SIDE BY TWO POTS
          FOR ADJUSTING MUSIC SOURCES #1 AND #2 AND ON THE SOLDER
          SIDE BY REV A, B AND C

MISC. A:  CANNOT BE USED WITH SOFTWARE DATED 10/22/92 OR EARLIER

          IT CAN BE IDENTIFIED ON THE COMPONENT SIDE BY THREE
          POTS, TWO FOR ADJUSTING MUSIC SOURCES #1 AND #2 AND ONE
          FOR ADJUSTING ROP (RING OVER PAGE), AND ON THE SOLDER
          SIDE BY REV D

# PROSTAR 56ex / 120mx
# DATABASE FORMS

CUSTOMER
NAME: _____

ADDRESS: _____

_____

_____

_____

To enter programming from 824 phone
#204321(mute)#

DATABASE CONTAINS _____ SHEETS

**Call Back** - If you receive a busy signal press *Call Back*, and the phone will ring when the phone line is no longer busy.

**Group Pick-up** - If the phone is ringing at an unoccupied location, press *Group Pick-up*, to receive the call.

**Listen** - If you want others to here your conversation without the caller knowing, press *Listen*.

**Auto Redial** - If you receive a busy signal on an outside call, press *Auto Redial*, and the system will redial the number for you.

## 816 Keyset

| Call Back | Group pick-up | listen | Auto Redial |
| ● | ● | ● | ● |

| 1. Rochelle | 9. Bruce |
| 2. Receptionist | 10. 215 |
| 3. Chuck | 11. Fab Lab |
| 4. George | 12. Lab Computer |
| 5. Victor | 13. Mac Table |
| 6. Koichi | 14. Conference 2 |
| 7. Andy | 15. Conference 1 |
| 8. Flash | 16. Transfer |

Line 1 | Line 2 | Line 3 | Line 4

Line 5 | Line 6 | Call 2 | Call 1

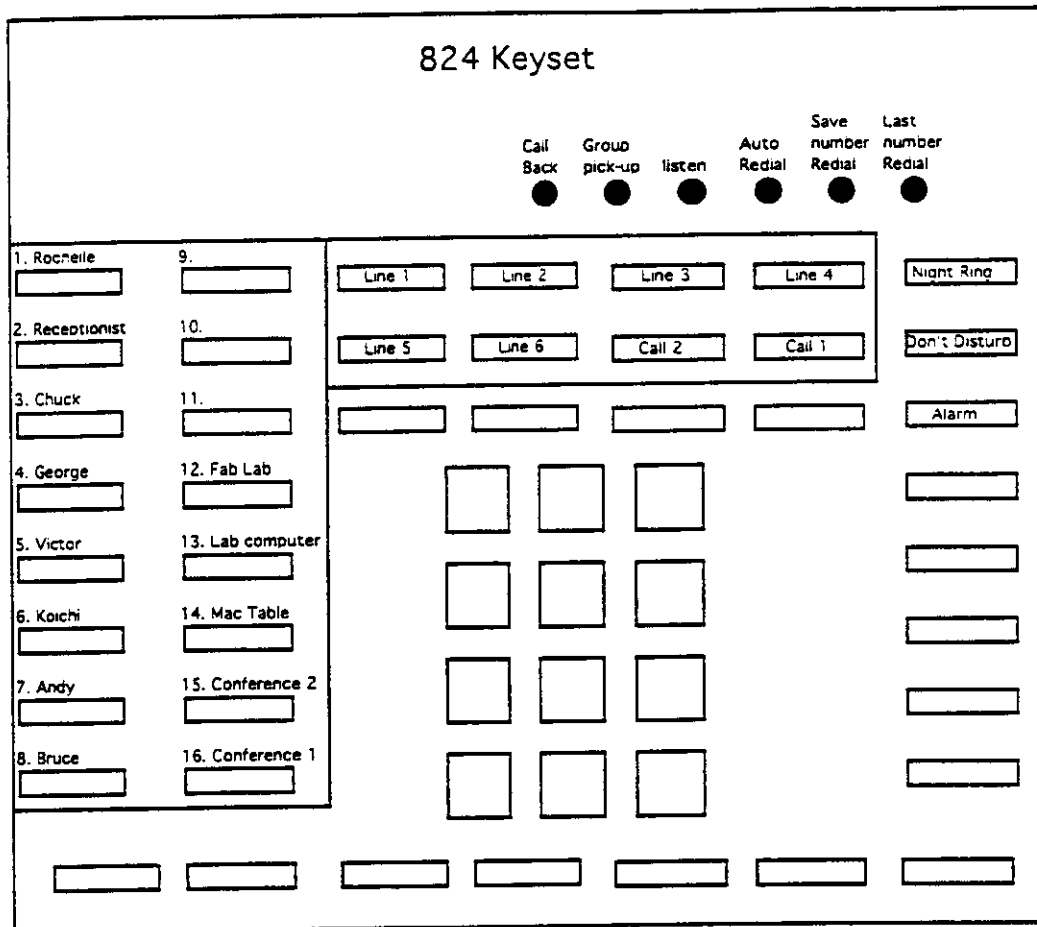| Ext. | Description |
|------|-------------|
| 201 | Rochelle |
| 202 | Receptionist |
| 203 | Koichi |
| 209 | Victor |
| 210 | Chuck |
| 211 | Science Computer |
| 212 | Conference 1 |
| 213 | Mac Table |
| 214 | Bruce |
| 215 | |
| 216 | Andy |
| 217 | Copy Machine |
| 218 | Lab Computer Station |
| 219 | Conference 2 |
| 220 | Fabrication Lab |
| 221 | Supply Room |
| 222 | George |
| 223 | East Lab |
| 224 | West Lab |
| 225 | Shop Area |

Page 0 = All phones
Page 1 = Front Phones
Page 2 = Lab Phones

Call Back - If you receive a busy signal press *Call Back*, and the phone will ring when the phone line is no longer busy.

Group Pick-up - If the phone is ringing at an unoccupied location, press *Group Pick-up*, to receive the call.

Listen - If you want others to here your conversation without the caller knowing, press *Listen*.

Auto Redial - If you receive a busy signal on an outside call, press *Auto Redial*, and the system will redial the number for you.

## 824 Keyset

| | | Call Back | Group pick-up | listen | Auto Redial | Save number Redial | Last number Redial |
|---|---|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| 1. Rochelle | 9. | Line 1 | Line 2 | Line 3 | Line 4 | Night Ring |
| 2. Receptionist | 10. | Line 5 | Line 6 | Call 2 | Call 1 | Don't Disturb |
| 3. Chuck | 11. | | | | | Alarm |
| 4. George | 12. Fab Lab | | | | | |
| 5. Victor | 13. Lab computer | | | | | |
| 6. Koichi | 14. Mac Table | | | | | |
| 7. Andy | 15. Conference 2 | | | | | |
| 8. Bruce | 16. Conference 1 | | | | | |

| 201 | Rochelle | 216 | Andy |
|---|---|---|---|
| 202 | Receptionist | 217 | Copy Machine |
| 203 | Koichi | 218 | Lab Computer Stn. |
| 209 | Victor | 219 | Conference 2 |
| 210 | Chuck | 220 | Fabrication Lab |
| 211 | Science Computer | 221 | Supply Room |
| 212 | Conference 1 | 222 | George |
| 213 | Mac Table | 223 | East Lab |
| 214 | Bruce | 224 | West Lab |
| 215 | | 225 | Shop Area |

Page 0 = All phones
Page 1 = Front Phones
Page 2 = Lab Phones