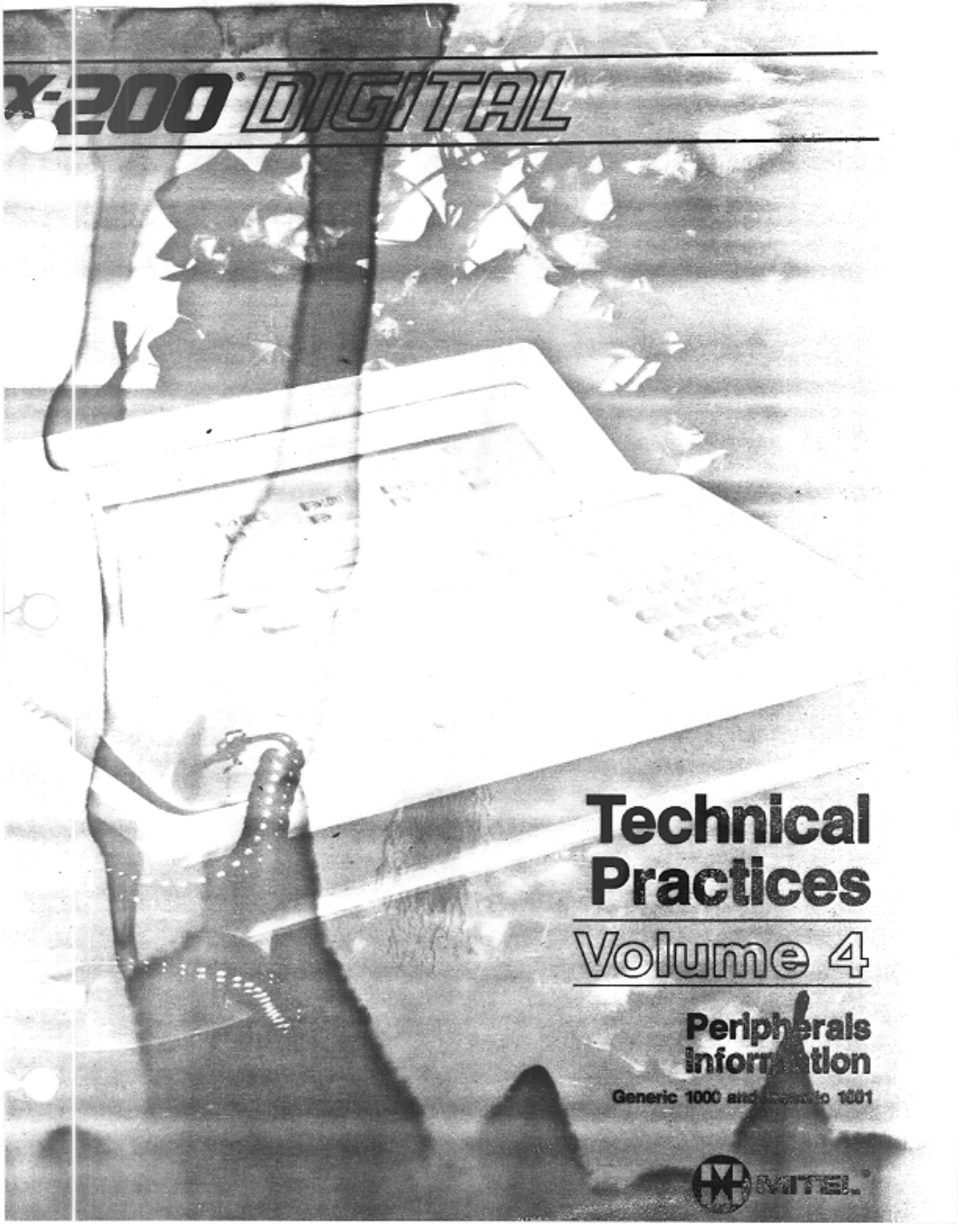

Technical Practices

Volume 4

Peripherals Information

Generic 1000 and Compatible 1001

MITEL®

WARNING

THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND, IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTIONS MANUAL, MAY CAUSE INTERFERENCE TO RADIO COMMUNICATIONS. IT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS A COMPUTING DEVICE PURSUANT TO SUBPART J OF PART 15 OF FCC RULES, WHICH ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST SUCH INTERFERENCE WHEN OPERATED IN A COMMERCIAL ENVIRONMENT. OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE INTERFERENCE, IN WHICH CASE THE USER, AT HIS OWN EXPENSE, WILL BE REQUIRED TO TAKE WHATEVER MEASURES MAY BE REQUIRED TO CORRECT THE INTERFERENCE.

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NOTICE

CANADIAN CUSTOMERS

"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 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 approved 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 jack-plug-cord ensemble (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations. Existing telecommunications company requirements do not permit their equipment to be connected to customer-provided jacks except where specified by individual telecommunications company tariffs.

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, as appropriate."

The Load Number (LN) assigned to each terminal device denotes the percentage of the total load, to be connected to a telephone loop, which is used by the device, to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirement that the total of the Load Numbers of all the devices does not exceed 100. An alphabetic suffix is also specified in the Load Number for the appropriate ringing type (A or B), if applicable. For example, LN = 20 A, designates a Load Number of 20 and an 'A' type ringer.

SX-200® DIGITAL PRIVATE AUTOMATIC BRANCH EXCHANGE (PABX) GENERIC 1000 AND GENERIC 1001

CONTROL SHEET - VOLUME 4 (PN 9108-092-004-NA)
PERIPHERALS INFORMATION
CONTENTS - THIS VOLUME

CONTENTS - OTHER VOLUMES

Volume 1 GENERAL DESCRIPTION (PN 9108-092-001-NA)

Volume 2 INSTALLATION AND CUSTOMER DATA ENTRY (PN 9108-092-002-NA)

Volume 3 ENGINEERING, MAINTENANCE and TROUBLESHOOTING (PN 9108-092-003-NA)

SX-200® DIGITAL
PRIVATE AUTOMATIC BRANCH EXCHANGE (PABX)
BAY POWER SUPPLY

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LIST OF ILLUSTRATIONS

FIGURE TITLE PAGE

1. GENERAL

Introduction

1.01 This Section describes the Bay Power Supply (BPS) which is used in the SX-200® DIGITAL PABX. Each Bay in the Control shelf has its own plug-in BPS which supplies all its power requirements.

Reason for Reissue

1.02 This Section is reissued to describe the Bay Power Supply.

2. BAY POWER SUPPLY DESCRIPTION

Physical Description

2.01 The Bay Power Supply is a card-mounted power supply which occupies the upper right position of each Digital Bay. The BPS connects to the backplane through a card-edge connector at the rear of the card; also at the rear is an IEC receptacle which connects to a line cord from the system AC distribution. The power supply itself is enclosed in a metal case, with ventilation holes which allow cooling air to circulate. Figure 2-1 shows a Bay Power Supply.

Dimensions (approximate):	Width	5.1 cm	(2.0 in.)
	Height	15.7 cm	(6.2 in.)
	Depth	36.8 cm	(14.5 in.)

Environmental Specifications

2.02 The environmental specifications for the Bay Power Supply are as follows:

Temperature and Humidity:	Operational	10°C to 50°C, 10% to 90% RH, Non-condensing
	Storage	-40°C to 80°C, 10% to 90% RH, Non-condensing
Altitude:	Operational	4,000 m
	Storage	12,000 m

Electrical Characteristics

2.03 All power is derived from either a commercial AC source or a 60 Hz Uninterruptible Power Supply (UPS) during commercial power failure. The BPS is preset at the factory to one of two input voltage ranges (low or high). The ranges and their specifications are:

Commercial power:	Low range	102 Vrms to 135 Vrms.
	High range	204 Vrms to 270 Vrms.
	Frequency	47 Hz to 63 Hz.
	Waveform	Sinusoidal, 5% THD max.
Inverter power:	Low range	102 Vrms to 135 Vrms.
	High range	204 Vrms to 270 Vrms.
	Frequency	47 Hz to 63 Hz.
	Waveform	Quasi-square wave, 0.71 duty cycle.
Input current:	Low range	2.0 A rms max.
	High range	1.1 A rms max.

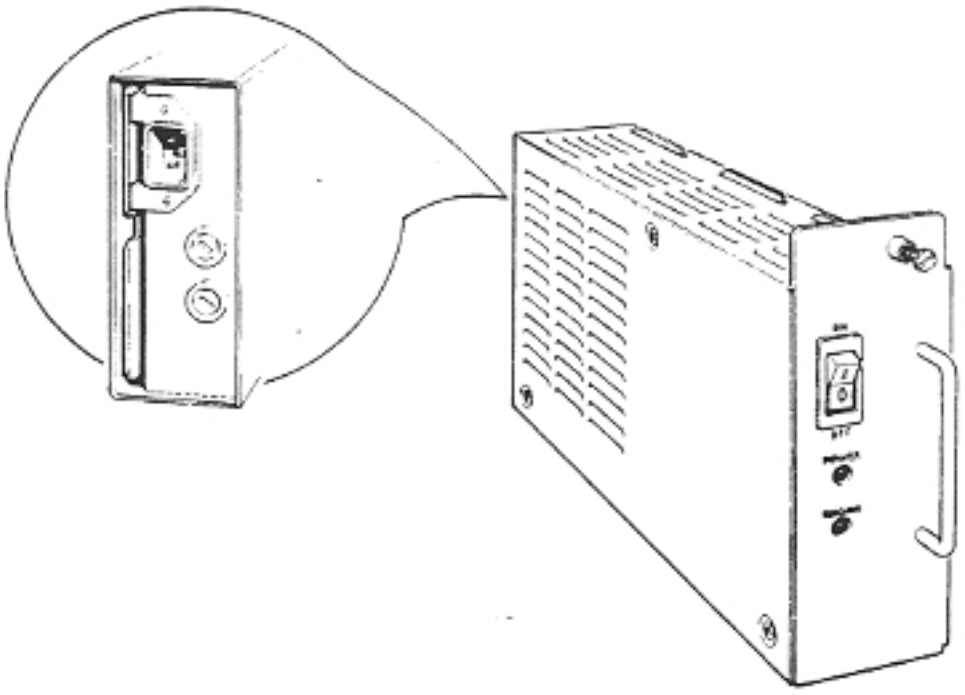
2.04 The BPS output voltages, current, and power rating for which the unit will operate within its design specifications are shown below:

OUTPUT	MAX CURRENT	POWER
+12 V DC	2.0 A	24 W
+5 V DC	15.0 A	75 W
+5 V (PC)	TRANSIENT	–
-5 V DC	1.0 A	5 W
-12 V DC	0.5 A	6 W
-28 V DC	1.6 A	45 W
-48 V DC	1.4 A	68 W
90 V-RING	0.1 A rms	10 W
TOTAL POWER (see Note)		110 W

Note: The maximum power supply output is 110 watts; therefore the outputs are partially exclusive. Maximum current values are for each individual rail.

Controls and Indicators

2.05 The ON/OFF switch is mounted on the front of the BPS and is used to turn the power on or off to the unit. Two LEDs are also on the front; the upper LED indicates that the BPS is operating, and the lower LED is ON when the ringing amplifier is producing power (flashing in cadence with it).



8092RO

Figure 2-1 Bay Power Supply

3. CIRCUIT DESCRIPTION

Description

3.01 Figure 3-1 is a block diagram of the Bay Power Supply. The main converter is a dual-stage converter. The first stage is a buck regulator, which provides output regulation and current limiting; the second stage is a push-pull converter which operates at a fixed 50/50 duty cycle. The +5 V output is regulated, and the other outputs track the 5 V output. There is an auxiliary +5 V precharge output (+5 V PRCHR), which precharges the +5 V decoupling capacitors on a card being plugged into the bay. The +5 V PRCHR and digital ground pins of each printed circuit card have advanced mating as the card is being inserted, and diodes couple the +5 V PRCHR into the +5 V board distribution.

3.02 The combined line and load regulation for the power rails is as follows:

+5 V	±1.5% maximum
+12 V, -12 V, -5 V	±10% maximum
-28 V, -48 V	+10%, -15% maximum
Ringer V	+10%, -30% maximum

3.03 The ringing amplifier is a separate printed circuit board attached to the main converter board which is driven by an output from the main converter transformer. Its amplitude and frequency of the output are determined by a sinusoidal input voltage provided from the PABX. The output voltage range is 50 V to 105 Vrms.

Input And Output Protection

3.04 The input to the converter is protected by a fuse, and by low voltage protection which shuts off the converter if the input voltage falls below the specified minimum. The converter will not be re-enabled until the input voltage returns to the specified minimum. The input also includes protection which limits the peak inrush current to 20 A.

3.05 Each output is protected against short circuits, overloads, and overvoltage. The overload/short circuit protection is self-resetting.

Holdover Time

3.06 The converter has a holdover time of 40 ms minimum when operating from 120 Vrms at full rated load.

Power Fail Sense

3.07 The converter has a single alarm signal, PFS (power fail sense), which is driven low when the incoming AC falls below its minimum specified value. At this point there will be approximately 10 ms before the outputs fall out of regulation.

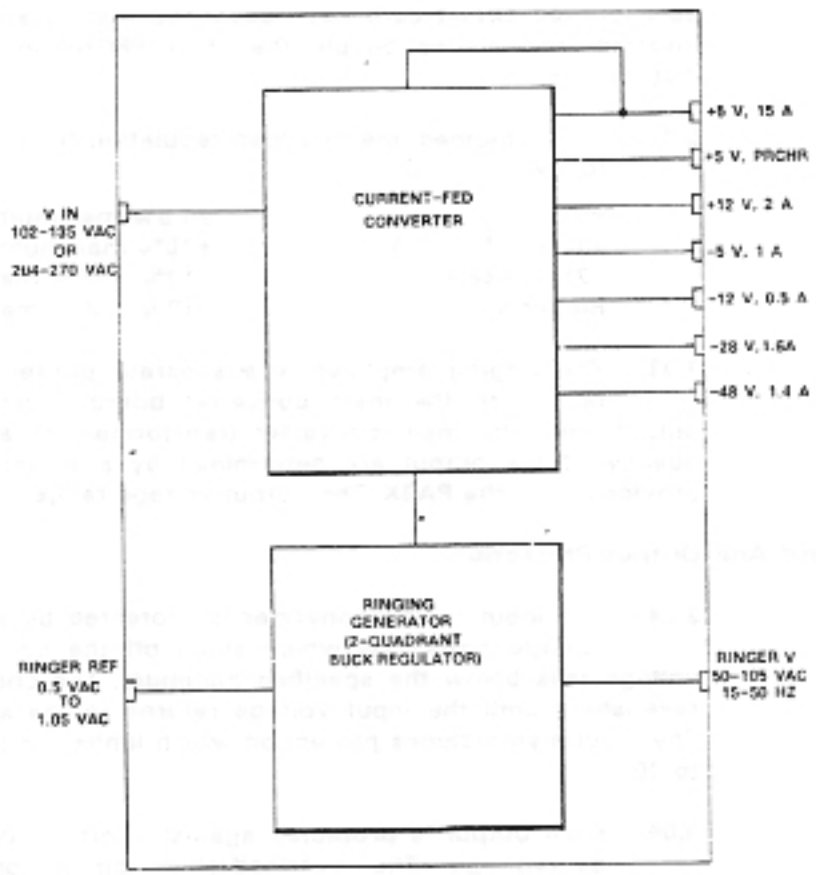


Figure 3-1 Bay Power Supply Block Diagram

SX-200® DIGITAL
PRIVATE AUTOMATIC BRANCH EXCHANGE (PABX)
SUPERSET 3™ SET INFORMATION

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CONTENTS (CONT'D)

LIST OF ILLUSTRATIONS

1. INTRODUCTION

General

1.01 This Section describes the SUPERSET 3™ set and provides information required to install, operate, and maintain a set.

Reason for Reissue

1.02 This Section is reissued to provide information about the SUPERSET 3™ set.

Page 1-1/1

2. PHYSICAL DESCRIPTION

2.01 The SUPERSET 3™ set is a microprocessor-controlled electronic telephone which provides the following features:

- single key feature activation
- multi-line appearances (installer-programmed) of up to three lines including primary line (Set Directory Number). Multiline appearances may be a mix of lines and trunks, and also multiple appearances of the same line
- Speed Dialing
- automatic selection of primary line
- key selection of non-primary line
- automatic ringing line selection (programmed option)
- hold function for any call at the SUPERSET 3™ set
- user programming of Call Forward destination number and Speed Dial entry
- Handsfree and Auto-Answer operation with switchable microphone
- speaker and ringer volume control
- ringer pitch control.

2.02 The SUPERSET 3™ set provides the following installation features:

- turn-key installation - connection to local area wiring by a modular jack
- no additional wiring - power, signal, and voice are carried over the single pair.

2.03 In addition, the SUPERSET 3™ set provides user confidence in handling incoming or outgoing calls. The user makes full use of all features in the user's assigned Class of Service by various key assignments.

Page 2-1/1

3. FEATURES DESCRIPTION

Introduction

3.01 This Part contains a description of the features available at a SUPERSET 3™ set. Only those features are described here that are special to a SUPERSET 3™ set, or are activated differently at a SUPERSET 3™ set than at a standard telephone. Each feature description includes one or more of the following sections:

DESCRIPTION – a detailed description of the feature.

CONDITIONS – any special conditions which are required before selecting the feature.

OPERATION – a brief description of feature operation.

3.02 This Part lists all feature descriptions in alphabetical order. The names of the features used refer directly to the text as closely as possible, to allow direct reference from any part of the documentation.

3.03 AUTO-HOLD

Description

A SUPERSET 3™ set user automatically places a call on hold by pressing another Line Select or Speed Dial key on the set. When this is not desirable, a Class-of-Service option can be programmed which allows a call to be placed on hold only by pressing the HOLD key.

Conditions

- The COS option 601 SUPERSET - Auto-Hold Disable must be disabled for the Auto-Hold feature to function.
- When the COS option SUPERSET - Auto-Hold Disable is enabled, calls can only be placed on hold by pressing the HOLD key.
- For this feature to be useful, at least one of the other line select keys must be programmed with a key line, multiline or personal outgoing line.

Operation

- Ensure the COS Option SUPERSET - Auto-Hold Disable is disabled.
- Establish a call.
- Press any Line Select or Speed Dial key. The call is placed on hold.

3.04 CALL FORWARDING – BUSY; BUSY/DON'T ANSWER; DON'T ANSWER; FOLLOW ME; I'M HERE

Description

This feature allows a SUPERSET 3™ set user to have all calls that are directed to the SUPERSET 3™ set forwarded to the Attendant, or to a selected extension within the PABX, when the extension is busy or does not answer within a specified time. While the feature is active and the set is idle, calls may be made and received normally.

Calls may also be forwarded as Call Forward – Follow Me by directing them to the extension (number) where you will be, or as Call Forward – I'm Here by directing calls normally appearing at your extension to your present location, from your present location.

Conditions

Callbacks will always ring the originating set; Call Forwarding has no effect.

Only one type of Call Forwarding may be active at one time. If the user enters a new Call Forwarding Access Code, the previous type of forwarding is cancelled.

Calls may be forwarded a maximum of two steps. once at the dialing stage (Call Forwarding – Follow Me or – Busy), and once after ringing (Call Forwarding – Don't Answer).

Call Forwarding on an extension takes precedence over system Call Forwarding.

Operation

To Select Call Forwarding – Busy, Busy/Don't Answer, Don't Answer or Follow Me:

- Lift the handset or press the SPEAKER ON/OFF feature key – dial tone is returned.
- Dial the appropriate Call Forward Access Code.
- Dial the number to which calls are to be forwarded – dial tone is returned.

  Note: Busy, Busy/Don't Answer, Don't Answer and Follow Me may be directed to the Attendant.
- The extension is available for normal use.

OR

- With handset on-hook, simply dial the Call Forward Access Code and the number to which calls are to be forwarded – dial tone is returned.
- The extension is available for normal use.

To Select Call Forwarding – I'm Here:

- Lift the handset or press the SPEAKER ON/OFF feature key – dial tone is returned.
- Dial the Call Forward – I'm Here Access Code and the extension number from which received calls are to be redirected – dial tone is returned.
- Replace the handset, or press the SPEAKER ON/OFF feature button. Calls directed to the dialed extension will now appear at the station from which the Call Forwarding – I'm Here Access Code was dialed.

  OR

- With handset on-hook, simply dial the Call Forward – I'm Here Access Code and the number from which calls are to be forwarded – dial tone is returned.
- The extension is available for normal use.

To Cancel Call Forwarding – All Types:

- Lift the handset or press the SPEAKER ON/OFF feature key – dial tone is returned.
- Dial any Call Forwarding Access Code. Replace the handset or press the SPEAKER ON/OFF feature key. Any active Call Forwarding will be canceled. The dialed code does not have to coincide with the type of Call Forwarding in effect.

  OR

- With the handset on-hook, simply dial any Call Forwarding Access Code. Press the SPEAKER ON/OFF feature key. Any active Call Forwarding will be canceled. The dialed code does not have to coincide with the type of Call Forwarding in effect.

  Note: To cancel Call Forwarding – I'm Here, follow the above cancellation procedures **at the extension from which calls were forwarded, not from the extension which enabled CALL FORWARDING – I'M HERE.**

3.05 CALL HOLD

Description

Call Hold allows a SUPERSET 3™ set user engaged in an active call, to place the call on hold, then to replace the handset or use the set for other calls. All features normally active on the set may be selected while the call is held. A held call may be retrieved locally or at another SUPERSET 3™ set that has an appearance of the line the call is held on.

Conditions

All calls appearing at a SUPERSET 3™ set, except from an Attendant, may be put on hold.

For this feature to be useful, at least one of the other line select keys must be programmed with a key line, multicall line or personal outgoing line.

Operation

To Place a Call on Hold:

Inform the caller, then press the red HOLD key. The call is held and the caller hears music, if provided. The holding SUPERSET 3™ set may select another line to make or receive calls, access features in the normal manner, or hang up. The line status LED associated with the call on hold flashes as a reminder.

To Retrieve the Call Locally (at the holding SUPERSET 3™ set):

Press the Line Select key associated with the call on hold. The call is returned to the holding SUPERSET 3™ set.

To Retrieve the Call Remotely (at another SUPERSET 3™ set that has an appearance of the line the call is held on):

Press the line select key associated with the call on hold. The call is connected to the remote SUPERSET 3™ set.

3.06 CALL HOLD RETRIEVE

Description

A call placed on HOLD at a SUPERSET 3™ set may be retrieved by pressing the Line Select key associated with the call on hold. For further information, refer to Call Hold in this Section.

3.07 CALL SWAP

Description

Call Swap permits the SUPERSET 3™ set user to alternate between two called or calling parties. When active, one called or calling party is placed on hold while the conversation continues with the other called or calling party.

Conditions

Call Swap will not operate during a conference call.

Operation

A call is placed from or received at the SUPERSET 3™ set.

Press the TRANS/CONF feature key. The call is placed on hold, and three short bursts of tone are returned before dial tone is heard.

Dial the second call. Call takes place between the SUPERSET 3™ set and the second party.

Press the SWAP feature key. The second call is placed on hold, and conversation continues with the first called or calling party.

Each subsequent press of the SWAP feature key alternates between the two calls.

Note: Pressing the TRANS/CONF feature key establishes conference between the three parties and disables the SWAP feature.

Page 3–7

3.08 CAMP-ON

Description

When a SUPERSET 3™ set equipped with the Camp-On option reaches a busy extension, Hunt Group or ARS Route and remains off-hook for 10 seconds (it receives special busy tone - 440Hz interrupted at 60 ipm) it will be camped on to the busy equipment. At this time, busy tone is received (480/620 Hz interrupted at 60 ipm) and the called equipment receives camp-on tone (a single burst of 440 Hz tone for 200 ms or a double burst if a trunk) if it is not dialing or listening to a tone. When the busy equipment hangs up, the calling extension receives ringback tone and the (formerly busy) equipment is rung.

Conditions

COS option 301, Camp-on must be enabled in the calling set's class of service.

Operation

To Camp On:

- Dial the number - busy tone is returned.
- After 10 seconds of special busy tone, the called extension receives camp-on tone.
- The busy extension goes on-hook - the calling set hears ringing tone, then the called extension is rung.

  OR

- The called trunk becomes idle - the calling set is connected to the trunk.

To Transfer into Busy:

- Press the TRANS/CONF key; call is on soft hold.

Dial the extension to which the call is to be transferred, then hang up - the call remains on hold until the called extension hangs up. The called extension is rung when it goes on-hook and the call on hold receives ringback tone.

OR

- A busy SUPERSET 3™ set receives camp-on tone.

Press SWAP feature key. The current call is placed on hold, and the camped-on party is connected to the SUPERSET 3™ set. Press SWAP feature key once again. The new (formerly camped-on) party is placed on hold, and conversation resumes with the original called or calling party.

3.09 CANCEL

Description

The CANCEL feature key is used to hang up at the end of a call, to exit from a conference call, or to cancel one party of a Broker's call and return to a 2-party conversation.

Conditions

None

Operation

Press the CANCEL feature key to terminate the current call as described above.

3.10 DELAY RING LINE APPEARANCES

Description

An appearance that is programmed "delay ring" will audibly ring the SUPERSET 3™ set after a programmed time delay.

In any case, the SUPERSET 3™ set will not ring if the set is in use.

Conditions

Immediate Ring must be programmed in the nested Expand Set form within the Stations/Superset Sets form of Customer Data Entry.

Delayed Ring cannot be programmed for the set's prime line.

Operation

A delayed ring call will ring at a designated set (after a specified delay) if the call is not answered at its first appearance.

3.11 DIRECT TRUNK SELECT

Description

This feature allows the user to directly access an outside trunk for both incoming and outgoing calls without the need of trunk access codes. The trunk is assigned to a line appearance of the set through system programming. SUPERSET 3™ sets having the Direct Trunk Select feature can be programmed for ring, delayed ring, or no ring.

Direct Trunk Select calls bypass the system's Automatic Route Selection (ARS), and are therefore unaffected by class of restriction (toll control). Account codes are also ineffective as they only serve as a record for call accounting purposes.

Conditions

Direct Trunk select line appearances can be Key System lines or Private lines. They must not be Multicall or Prime lines.

Only Central Office, E&M, and loop tie trunks can be programmed in a Direct Trunk select configuration. Incoming only trunks are not compatible.

Do Not Disturb is overridden by an incoming Direct Trunk Select call.

Direct Trunk Select trunks which are shared by a key system group can only be accessed by one member of the group at any one time, except in a conference application. The latter is permissible through the Privacy Release feature.

Operation

To originate a call using the Direct Trunk Select feature:

- Lift the handset – PABX dial tone is returned.
- Press the Direct Trunk Select line key – Central Office dial tone is returned.
- Dial the external number.

To answer an incoming Direct Trunk Select call:

- Lift the handset and press the Direct Trunk Select line key, when the set rings or the line appearance flashes, or both.

Note: The above examples can be completed in the handsfree mode.

3.12 DO NOT DISTURB

Description

The Do Not Disturb feature allows a SUPERSET 3™ set user to inhibit all incoming calls to the extension. Extension users calling a SUPERSET 3™ set with Do Not Disturb activated, receive reorder tone. The Attendant may override the feature. Other features (e.g., Hunting, Call Forwarding) work as if the extension were busy. Calls originating from an extension with this feature active are not affected in any way.

Conditions

Executive Busy Override will not override Do Not Disturb.

If there are multi-line appearances of the SUPERSET 3™ set, that can ring another SUPERSET® set, the caller will hear ringback tone and the SUPERSET 3™ set's line LED will flash, but the set will not ring.

Calls to sets with Do Not Disturb activated can be rerouted if a destination is programmed in the Call Rerouting Table of Customer Data Entry.

Operation

To Enable Do Not Disturb:

- The SUPERSET 3™ set user calls Attendant and requests Do Not Disturb to be enabled, or dials the Do Not Disturb Access Code and the digit "1".
- No calls will appear at the SUPERSET 3™ set. The SUPERSET 3™ set can be used to originate calls in the normal manner. When originating a call, the SUPERSET 3™ set user will hear interrupted dial tone as a reminder that Do Not Disturb is enabled.

To Cancel Do Not Disturb:

- The SUPERSET 3™ set user calls Attendant and requests Do Not Disturb to be disabled, or dials the Do Not Disturb Access Code and the digit "2".
- Calls appear at the SUPERSET 3™ set in the normal manner (flashing LED and ringing tone).

3.13 EXECUTIVE BUSY OVERRIDE

Description

This feature allows a SUPERSET 3™ set user who encounters a busy extension to enter the conversation. Before override voice contact is established, both parties in the original conversation receive a warning tone (440 Hz for 800 ms). The tone continues for 200 ms after override is established. A 200 ms burst of 440 Hz tone is repeated every 6 seconds for the duration of the override. If the overridden extension flashes the switchhook or goes on-hook, the overriding extension is dropped and receives reorder tone.

Conditions

The overriding extension cannot manipulate the original connection in any way.

Any extension speaking to the Attendant, dialing, or receiving supervisory tone cannot be overridden.

An extension that has multicall appearances cannot be overridden.

An extension on hold cannot be overridden.

An extension with a held call cannot be overridden.

Operation

Dial the extension number - busy tone is returned.

Dial the Executive Busy Override Access Code. After the warning tone the SUPERSET 3™ set is connected to the call.

3.14 HANDSFREE AND AUTO-ANSWER OPERATION

Description

The Handsfree and Auto-Answer features allow a SUPERSET 3™ set user to receive and make calls without lifting the handset. The Handsfree feature can be activated during a call, or prior to making or answering a call, and can be used on any of the lines appearing at the set. The SUPERSET 3™ set user can also dial from the keypad, or use Speed Dial or redial features, without previously lifting the handset, selecting a line, or obtaining dial tone.

Conditions

A Loop Trunk cannot be transferred to a SUPERSET 3™ set in the Auto-Answer mode.

Operation

To Use the Handsfree Feature to Make or Receive Calls:

- Press the SPEAKER ON/OFF feature key.
- Select the line required to originate or answer a call.
- If originating a call, dial tone is heard from the speaker. If answering a call, the caller can be communicated with by means of the speaker and microphone.

On Completion of a Call:

- Press CANCEL key or SPEAKER ON/OFF key.
- The microphone can be turned off (e.g., when required to consult privately with another person near the SUPERSET 3™ set), by setting the MIC/MUTE feature key.
- At any time, the conversation can become private by using the handset; lifting the handset disables the speaker and microphone.

To Return to Handsfree Mode:

- Press the SPEAKER ON/OFF feature key and replace the handset.
- Speaker and ringer volume can be adjusted by means of a single volume control.

To Use the Auto-Answer Feature:

- Enable the Auto-Answer feature by dialing the Auto-Answer Activation Access Code and the digit "1".
- Calls appearing at the set will cause ringing for 2 seconds, followed by the completion of the call. The call will be routed through the SUPERSET 3™ set's microphone and speaker. The handset remains on-hook.
- At the end of the call, the caller hangs up, and a tone is heard over the SUPERSET 3™ set's speaker to alert the set user that the caller has hung up.

- Auto-Answer is disabled by dialing the Auto-Answer Activation Access Code, and the digit "2". Once disabled, the set returns to normal handset or Handfree operation.

3.15 IMMEDIATE LINE SELECTION

Description

This feature permits the user to dial while on-hook. The SUPERSET 3™ set goes off-hook (handsfree) and selects the prime line immediately after the user presses one of the keypad keys. If the prime line is busy and there is another line available at the set, it is selected.

If immediate line selection is not enabled, the user must press the SPEAKER ON/OFF key or a programmed line select key, or lift the handset before attempting a call.

Conditions

- Only SUPERSET® sets may use this feature.
- COS option 604, SUPERSET - Immediate Line Select must be enabled in the set's class of service.

Operation

It is not necessary to lift the handset or operate the SPEAKER ON/OFF key to go off-hook. This occurs automatically when the first digit is dialed.

3.16 IMMEDIATE RING LINE APPEARANCES

Description

An appearance that is programmed "immediate ring" will audibly ring the SUPERSET 3™ set at the same time the LED flashes. This is typical telephone operation on incoming calls.

Conditions

Immediate Ring must be programmed in the nested Expand Set form within the Stations/Superset Sets form.

Operation

None

3.17 LAST NUMBER REDIAL

Description

This feature allows a SUPERSET 3™ set user to automatically redial the last external number manually dialed from the keypad.

Conditions

System Option 29, SUPERSET Set Last Number Redial must be enabled in the System Options/System Timers form of Customer Data Entry.

Redial applies only to the last external telephone number dialed manually from the SUPERSET 3™ set.

Operation

Press the REDIAL feature key. The last external telephone number is dialed automatically.

3.18 MESSAGE WAITING INDICATION (AUDIBLE)

Description

Message Waiting Indication is three cycles of 3.5 ips interrupted ringing.

Conditions

Message Waiting Indication is a COS Option. The type of indication (interrupted ringing) must be selected during Customer Data Entry, COS Option 231.

Operation

The Message Waiting indication can be provided as three cycles of 3.5 ips ringing 10 seconds after the set goes idle and every 20 minutes after.

Call the Attendant or the message center to receive the message.

3.19 MULTI-LINE APPEARANCE (3) (KEY LINE/MULTICALL LINE)

Description

Key lines are extension numbers of single line sets, SUPERSET 3™ set Prime Lines or other Key Lines. The Key Lines may be shared and appear on several SUPERSET 3™ sets. Even though these Key Lines may appear on several SUPERSET 3™ sets there is complete privacy. A SUPERSET 3™ set with a Key Line appearance of another set's Prime Line will be able to answer calls destined for that set. When the line is in use, all other appearances of that line on other sets become busy and cannot be accessed. For another party to access a busy Key Line the call must be on hold. Incoming calls may ring at the SUPERSET 3™ set immediately, after a delay (set by the system) or not at all. The Key Line can also be controlled in the direction of calling; i.e., allow incoming calls only, outgoing calls only or both ways.

Multicall Lines are similar to Key Lines. They are extension numbers of single line sets, SUPERSET 3™ set Prime Line, or Multicall Lines. The user has automatic call privacy on Multicall Lines. When someone is using a Multicall Line, anyone else with a similar Multicall Line may access the line and originate a call. If a Multicall Line is placed on hold, no one else with an appearance can take the line off hold. A SUPERSET 3™ set may have several Multicall Lines, all other appearances of the line are free when some are busy. Incoming calls may ring at the SUPERSET® set immediately, after a delay (Call Forward – Don't Answer Time-out), or not at all. The Multicall Line can also be controlled in the direction of calling; i.e., incoming calls only, outgoing calls only or both ways as required.

Conditions

A Multicall Line can never be an appearance of a Key Line.

A Key Line can never be an appearance of a Multicall Line.

Only one set can use a Key Line appearance at one time.

Assign an access code for Dial Call Pickup (Refer to Form 02, Feature Access Codes).

Operation

Pressing the associated Line Select key selects the Multicall or Key Lines in the same manner that Prime Line or Speed Dial numbers are selected. Incoming calls are handled in the same way (handset is lifted and/or Line Select key pressed).

3.20 NEW CALL TONE

Description

When a SUPERSET 3™ set is busy on a call, and a new call appears at the set, the new call results in a burst of tone to alert the user of a call waiting. The tone is not heard if the SUPERSET 3™ set is using the speaker in Handsfree mode.

Conditions

None

Operation

None

3.21 NO RING LINE APPEARANCES

Description

An appearance that is programmed as No Ring never audibly rings the SUPERSET 3 set. (Only the LED will flash.)

Conditions

A No Ring line appearance must be programmed in the nested Expand Set form within the Stations/Superset Sets form of Customer Data Entry.

Operation

When a call is received at a SUPERSET 3™ set, a flashing LED is the only signal.

3.22 SPEED DIALING ("SPEED CALL")

Description

This feature allows a SUPERSET 3™ set user to save frequently dialed telephone numbers and to access these numbers by pressing a single key. The quantity of Speed Dial numbers available to a SUPERSET 3™ set user is dependent on the number of lines programmed to appear at the set. Only unused (unassigned) Line Select keys can be used to save Speed Dial numbers. Normally, the three keys with LED indicators above them are used as lines; the remaining 12 keys on the upper portion of the set are used for Speed Dialed calls. Feature Access Codes for Directed Call Pickup, Remote Call Hold Retrieve and Call Forwarding may be programmed into Speed Dial numbers.

Conditions

Only unassigned lines may be programmed as Speed Dial (speed call) numbers. Only unassigned lines may be programmed for Feature Access Codes.

Operation

To Set Up a Speed Dial Number:

- With the handset on-hook, press the PROGRAM/SAVE feature key. Press an unused Speed Dial key. Dial the number to be stored. If no number is dialed, the entry is cleared.

Press the PROGRAM/SAVE feature key. The speed dial number is now saved.

If some digits are to be dialed manually (e.g. the area code in the general number for directory assistance 1+(area code)+555-1212), dial *3 at the point in the speed call sequence where this is to occur, followed by the number of digits required. The range is 01 to 14. For this example, the number stored would be 91*3035551212. (9 Is a Trunk Access Code).

To Change a Saved Speed Dial Number:

Follow the steps above.

To activate the feature:

- Press the programmed Speed Dial key with the set on-hook (dial tone returned).
- Press the speaker on/off key.

To cancel the feature:

- Dial the access code.

- Press speaker on/off key.

To Set Up a Feature Access Code:

- With the handset on-hook press the PROGRAM/SAVE feature key.
- Press an unassigned Speed Dial key.
- Dial the Feature Access code and the extension number of the set to which the feature applies.
- Press the PROGRAM/SAVE feature key.

To correct an entry, press the CANCEL feature key, then press the PROGRAM/SAVE key, and restart the sequence.

3.23 STATION TRANSFER, CONSULTATION HOLD/ADD-ON, TRANSFER WITH PRIVACY

Description

This feature allows a SUPERSET 3™ set user, on an established call, to hold the call, add a third party to the call, transfer the original call to a third party, or speak privately with either of the called parties.

Conditions

If COS Option 249, Transfer Dial Tone is selected, transfer dial tone is returned.

Operation

On an Established Call:

- Press the TRANS/CONF feature key - transfer dial tone is returned, the called party is held and hears music if provided.
- Dial the number of the required extension.
- If the number is busy or doesn't answer, press the CANCEL feature key to return to the held call.
- After the called party answers, private conversation with this party exists.
- To establish a 3-party call, press the TRANS/CONF feature key.

  OR

- To connect held party with third party and to back out of conversation, hang up, or press the SPEAKER ON/OFF key.

  OR

- To alternate between either party, press the SWAP feature key.

TRANSFER WITH PRIVACY -

To Transfer a Call:

- Press the TRANS/CONF key to place the current call on temporary hold.
- Dial the desired number.
- Press the SPEAKER ON/OFF key, if in Handsfree mode, or hang up. This can be done while listening to ringing or busy tone, or after the call has been answered.

  OR

- Press CANCEL to abort the transfer process and retrieve the held call.

3.24 SUB-ATTENDANT RECALL

Description

Calls not answered at a station may recall to a SUPERSET 3™ set programmed as a Sub-Attendant, rather than recall to an Attendant. If the Sub-Attendant is busy on another call at the time of the recall, a new call tone of a 0.5 second burst of ringing is received. This new call tone is not heard if the Sub-Attendant is using the speaker system.

Conditions

COS option 606, SUPERSET - Sub-Attendant, must be enabled in the set's class-of-service. Refer to Form 19 (CDE) Call Rerouting Table.

Operation

An incoming trunk call appears at the Sub-Attendant SUPERSET 3™ set.

The call is transferred to another extension. If the new extension does not answer the call, the call will be redirected to the Sub-Attendant SUPERSET 3™ set, and not the Attendant Console.

If the Sub-Attendant SUPERSET 3™ set is busy at the time of recall, a new call tone is heard, if the set user is busy on a call using the handset.

3.25 SWAP CAMP-ON

Description

This feature is used to place the current call on temporary hold in order to answer the waiting call (the camped-on party). This is done by pressing the SWAP key. For further information regarding Swap Camp-On, refer to Camp-On, Description and Operation.

4. FUNCTIONAL DESCRIPTION

General

4.01 Figure 4-1 shows the SUPERSET 3™ Electronic Telephone Set; the face layout is shown in Figure 4-2. A description of the function of each key and display follows. All keys are noninterlocking.

Line Select/Speed Dial Keys

4.02 There are three Line Select Keys which can be configured (during system programming) to select preassigned lines, to receive or originate calls. In addition, there are 12 Speed Dial keys.

Hold Key

4.03 This key allows the set user to hold any call at the set. The line on which the call is held is indicated by the adjacent Line Status display flashing on and off. The call may be retrieved by pressing the Line Select key.

Feature Keys

4.04 There are seven feature keys. Each key is associated with a specific feature. The user selects the feature or action by pressing the appropriate feature key.

SWAP – The SWAP feature key allows the user to make a Broker's Call between two calls.

TRANS/CONF – This feature key allows the user to put a call on hold, dial a new number and conference the call or transfer the held call to the new number.

REDIAL – This feature key, when pressed, automatically redials the last manually dialed trunk call.

CANCEL – This feature key cancels any dialing which had been performed.

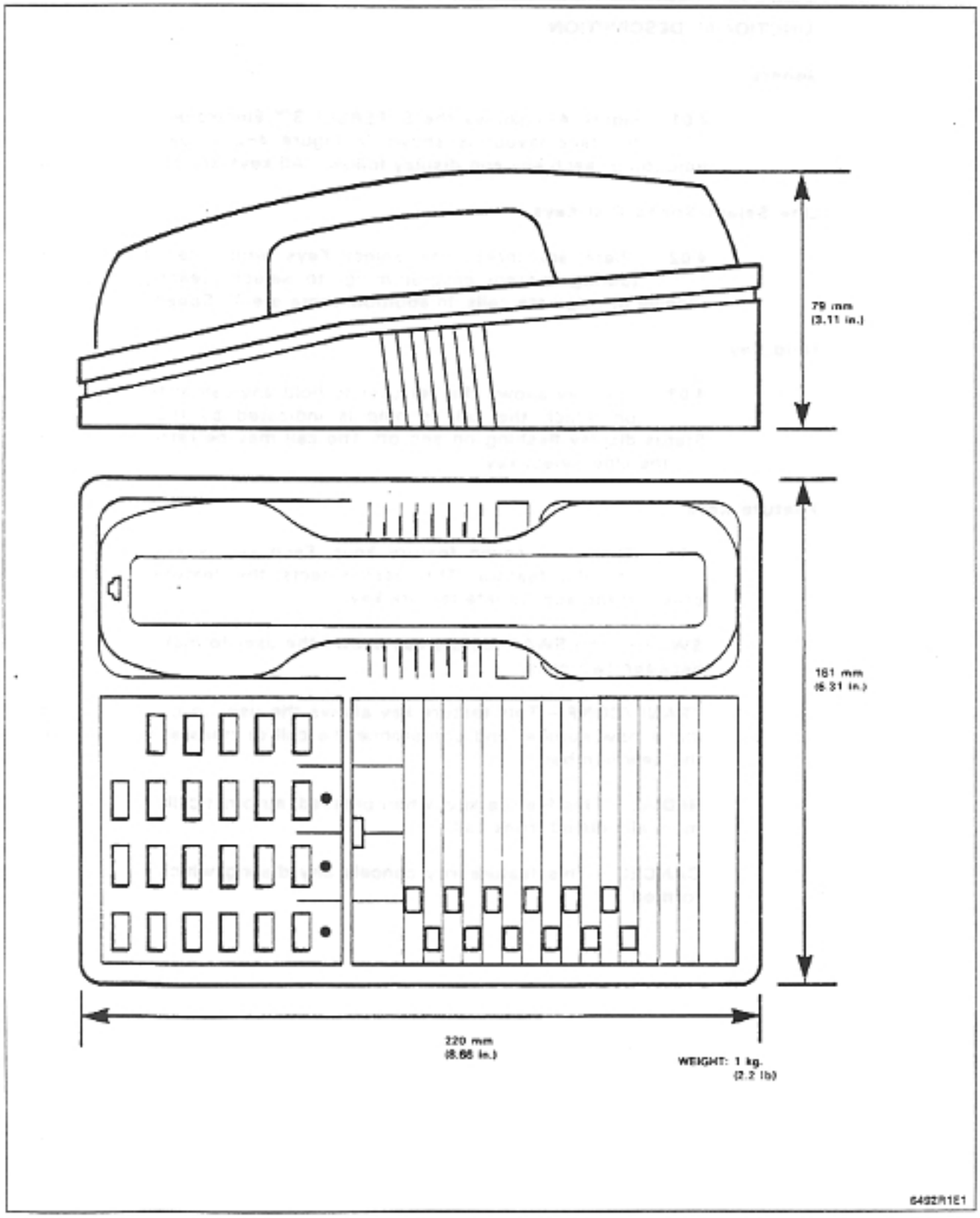

Figure 4-1 SUPERSET 3™ Electronic Telephone Set

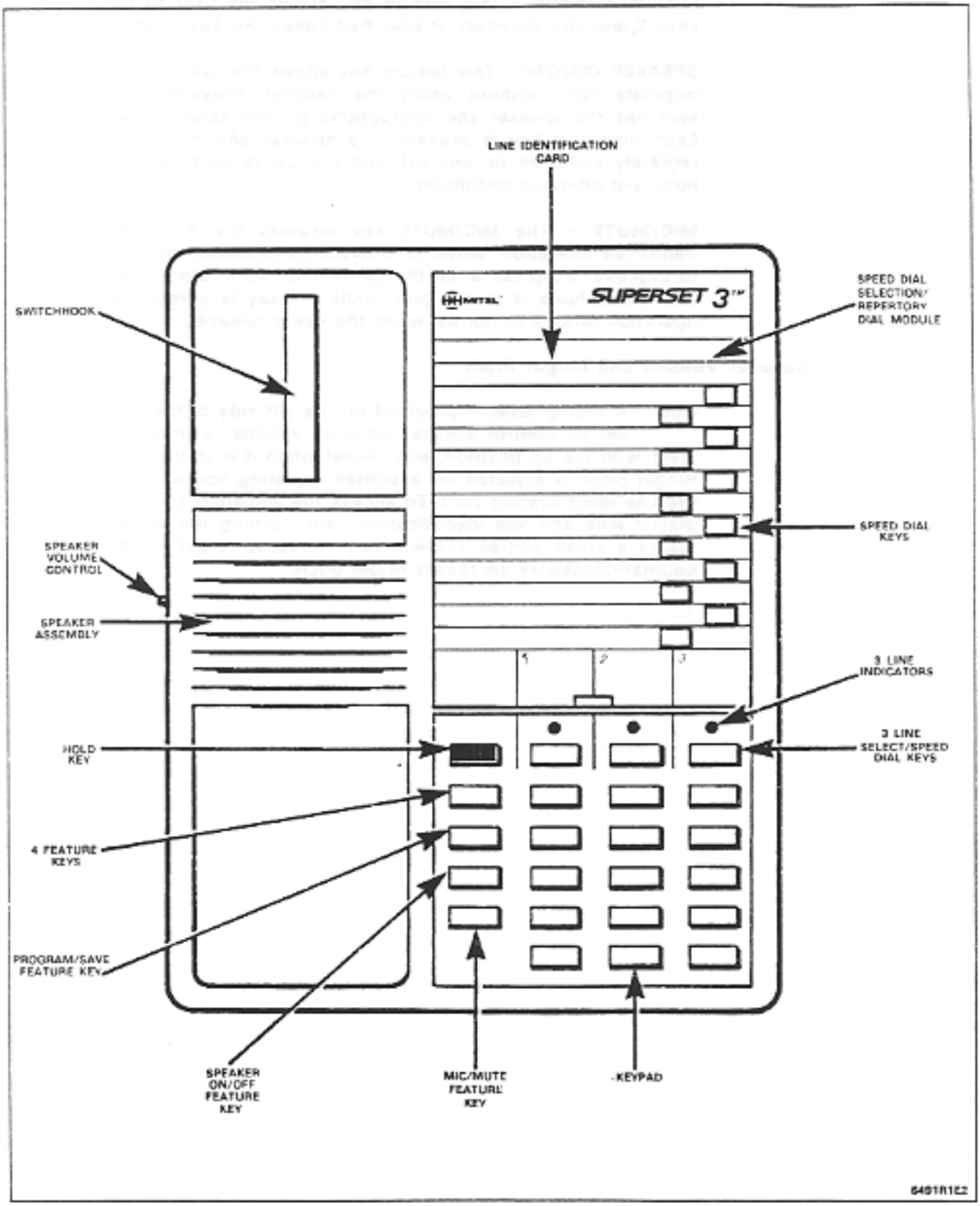

Figure 4-2 SUPERSET 3™ Set Face Layout

PROGRAM/SAVE – This feature key allows the user to program and save Speed Dial numbers at specified Speed Dial key locations.

SPEAKER ON/OFF – This feature key allows the set user to receive or originate calls without using the handset. Pressing the key once switches the speaker and microphone on and selects the prime line. Each time this key is pressed, the speaker and microphone are alternately switched on and off, and the set is switched between on-hook and off-hook conditions.

MIC/MUTE – The MIC/MUTE key disables the microphone during Handsfree operation, either to prevent transmission of local sound or to improve reception when the set is installed in a noisy environment. The microphone is muted only while the key is pressed. Microphone operation returns to normal when the key is released.

Speaker Volume and Ringer Pitch

4.05 A sliding lever is provided on the left side of the SUPERSET 3™ set to control speaker volume. Volume is greatest when the lever is in the up position, and lowest when it is in the down position. Ringer pitch is adjusted via a slotted adjusting screw located beneath the line identification card. To access the adjusting screw, remove the plastic lens and line identification card. Turning the screw clockwise (using a small slotted screwdriver) increases ringer pitch. Turning it counter-clockwise decreases ringer pitch.

5. LINE TYPES AND APPEARANCES

General

5.01 The SUPERSET 3™ set can be programmed with up to three line appearances. This Part describes the different line types available, how they differ functionally, and how they can appear at the SUPERSET 3™ set.

5.02 There are six different line types:

- Prime Line
- Key Line
- Multicall Line
- Direct Trunk Select Line
- Private Line
- Personal Outgoing Line.

5.03 Some of the lines have variants; three variants are available:

Direction: both way, incoming only, outgoing only.

Ring: no ring, delayed ring, immediate ring.

Secretarial: non-secretarial, secretarial. This variant allows a SUPERSET 3™ set user to override the Do Not Disturb feature enabled at another SUPERSET® set when the sets are programmed with multicall lines.

LINE TYPE	VARIANT		
	Direction	Ring	Secretarial
Key	X	X	
Multicall	X	X	X
Direct Trunk Select	X	X	
Private	X	X	

Line Appearances

5.04 A line is said to "appear" at a SUPERSET 3™ set if the line has been assigned to one of the three available positions on the Line Status Display and can therefore be selected or accessed by the set user. A line can be programmed to appear at one set, or at more than one set, or more than once at a particular set. Although a line can appear more than once throughout the system, it is always identified by its unique directory number.

5.05 The appearances of a line do not have to be identical – the line type and its variants can both differ; for example, a line can appear as a Prime Line at one set and as a Key Line (with delayed ring) at another set.

5.06 Although a SUPERSET 3™ set can access up to three lines, it requires only only one pair of wires to connect the set to its equipment number position. The SUPERSET 3™ set sends signals to the PABX which makes the appropriate line connection.

Line Types

5.07 **Prime Line** –Every SUPERSET 3™ set must have one Prime Line. The Prime Line is linked to the set's equipment number and calls to the set's unique extension number appear on this line. Lifting the handset or dialing in Handsfree mode selects the Prime Line for use until another line is selected.

5.08 **Key Line** – A Key Line can be used by only one person at a time regardless of the number of appearances. The line user's set displays a busy symbol for this line and the line appears as busy at another extension on the display of any other appearances of the line; these appearances are prohibited from accessing the line. If a Key Line is put on hold, then any appearance of the line can take the call off hold. A Key Line appearance can be linked to the number of someone's Prime Line or to any other unused number. When the directory number associated with a Key Line appearance is rung, any one of the line appearances of that number can be used to answer the call. But if someone is ringing a directory number with a Key Line appearance, anyone else dialing that number receives busy tone.

5.09 **Multicall Line** – A Multicall Line, unlike a Key Line, can be used by more than one person at a time. A busy indication appears at the set where the line is being used, but the display of every other appearance of the line is clear (unless that appearance of the line is in use also). If a Multicall Line is put on hold, then only the appearance of the line that put the call on hold can take the line off hold – this is the only appearance displaying the hold symbol. As with a Key Line, a Multicall Line appearance can be linked to the number of someone's Prime Line or to any other directory number. Similarly, when the directory number associated with a Multicall Line appearance is rung, all the line appearances can be used to answer the call. Also, there can be as many people dialing a directory number with multiple appearances as there are appearances; the incoming calls are in fact logically queued, one per appearance.

5.10 **Direct Trunk Select Line** – A Direct Trunk Select (DTS) Line operates similarly to a Key Line, except that when a DTS Line is accessed the user is connected to a trunk. Thus DTS access is analogous to accessing a Key Line appearance (of a non-Prime Line number) and dialing a Trunk Access Code. Like a Key Line, only one person can use a DTS Line at a given time. But additionally, since the DTS Line is linked during programming to a specific trunk, if a call on a DTS Line is transferred to another extension, the DTS Line will still be in use (the trunk is not idle) and no one can access the DTS Line. Set users access incoming calls on a DTS Line in the same way as calls into a Key Line.

5.11 **Private Line** – A Private Line is like a DTS Line except that the SUPERSET 3™ set user cannot transfer or conference the outside line. The SUPERSET 3™ set user has direct access to a trunk. Private Lines may be shared with other SUPERSET 3™ sets, however, only one SUPERSET 3™ set can use a Private Line at a time (Call Privacy). Incoming calls ring directly to a SUPERSET 3™ set (DIL Programming).

5.12 **Personal Outgoing Line** – A Personal Outgoing Line provides the SUPERSET 3™ Set user with a second appearance of the set's Prime Line, to be used for outgoing calls only, thus keeping the Prime Line free for incoming calls. A SUPERSET 3™ set can have many appearances of the Personal Outgoing Line so that many outgoing calls can be made. A Personal Outgoing Line is unique to SUPERSET 3™ Sets.

5.13 **Line Programming** – The SUPERSET 3™ set has 15 keys divided into two sets. The first set consists of three keys with corresponding Line Status Display (LEDs) and are intended to be programmed for line appearances. The second set consists of 12 keys without corresponding LEDs and are intended as Speed Dial keys. However, if a key on the second set is programmed as a line appearance (with ring), for example, the user will get audible indication of a call but no corresponding visual indication. When the user goes off-hook (or presses the SPEAKER ON/OFF feature key) the ringing line is automatically selected, if it is a Prime Line or a Private Line. Correspondingly, a key in the first set, if not already programmed as a line appearance, can be used as a Speed Dial key. The leftmost of the three Line Select keys is used as the set's Prime Line.

6. SHIPPING AND RECEIVING

General

6.01 The SUPERSET 3™ set is shipped in a single carton.

6.02 The SUPERSET 3™ set disassembles into main assembly, handset, and handset cord. Additional items include identification cards (for telephone numbers and lines), protective covers for these cards, reference guide, installation guide, and warranty tag.

Delivery Check

6.03 On delivery at the destination, check that all items are present and undamaged. Retain some packaging for reshipment of any damaged or defective items.

7. INSTALLATION

General

7.01 Installers should not use a hand test telephone (butt-in) to check a SUPERSET 3™ set line, because its interface card has no loop detector; set on-hook/off-hook status is signaled by data transmission. Do NOT connect SUPERSET 3™ sets to standard lines, in parallel, or as Power Fail Transfer extensions.

Installation

Note: Before a SUPERSET 3™ set can be connected to a PABX, the PABX must be programmed and equipped to interface with a SUPERSET 3™ set.

7.02 Install a SUPERSET 3™ set as follows:

- Connect the handset cord to the handset and the main assembly.
- Identify the user's telephone number on the telephone number identification card.
- Install the card and protective lens onto the main assembly.
- Identify the user's Prime Line number and other lines appearing at the SUPERSET 3™ set on the Line Identification Card.
- Install the Line Identification Card and protective cover onto the main assembly.
- Connect the line cord to the telephone jack.

8. TEST PROCEDURES

General

8.01 Perform these test procedures as operational tests when installing a SUPERSET 3™ set after initial installation of a system.

8.02 Whenever a SUPERSET 3™ set is connected to an operating system, or the system has just been powered up, the test is run automatically and the following results appear. If any test fails, verify that the system is installed correctly and is powered up.

SUPERSET 3™ SET POWER-ON TEST

TEST	LED1	LED2	LED3	TIMING
1	on	on	on	1 second
2	flashing	off	off	10-15 seconds
3	off	off	off	steady, if set is on-hook
or	on	off	off	steady, if set is off-hook

Note: If all LEDs turn on steady for more than a few seconds there is an error. Check wiring, then try a known good spare.

8.03 If the system is programmed to detect a missing SUPERSET 3™ set, perform the following to verify this feature:

- Disconnect the SUPERSET 3™ set modular plug.
- A minor alarm appears at the console.
- At the console, press the ALARM key; display indicates disconnected set.
- At the console, clear the alarm (refer to Section MITL9108-093-315-NA, Attendant Console Description).
- Reconnect the modular cord to the SUPERSET 3™ set.

SX-200® DIGITAL PRIVATE AUTOMATIC BRANCH EXCHANGE (PABX) SUPERSET 4™ SET INFORMATION

NOTICE

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LIST OF ILLUSTRATIONS

1. INTRODUCTION

General

1.01 This Practice describes the general, physical and electrical characteristics of the SUPERSET 4™ electronic telephone set when used as part of the SX-200® Digital PABX. It also includes a brief description of major features, installation, operation, and maintenance information.

Reason for Reissue

1.02 This Practice is reissued to describe the SUPERSET 4™ set.

2. GENERAL DESCRIPTION

2.01 The SUPERSET 4™ set is an advanced microprocessor-controlled telephone set, employing digitally-controlled integrated circuitry and liquid crystal displays (LCD).

2.02 The SUPERSET 4™ set can be used only with MITEL PABXs fitted with special line cards.

2.03 The SUPERSET 4™ set provides:

(a) Visual features

- Visual line or trunk status indication by means of LCD symbols adjacent to each line select key.
- 16-character alphanumeric display for time-of-day and date (provided by the PABX), digit echoing, speed dialing number, call forward destination number, timed-reminder setting, caller identification, and messages from the system.
- Displayed word prompts signifying all valid call-handling operations at any given time.

(b) Operational features

- Single key feature activation.
- Multiline appearances (installer-programmed) of up to 15 lines including primary line (set directory number). Multiline appearances may be a mixture of PABX lines and trunks, and may also be multi-appearances of the same line.
- Speed Dialing entry at each unassigned line.
- Automatic selection of primary line.
- Key selection of nonprimary line.
- Automatic ringing line selection (PABX programmed option).
- Hold function for any call at the set.
- User programming of timed reminder, call forward destination number, speed call entry and messages.
- Handsfree operation, with switchable microphone.
- Volume controls for ringer and loudspeaker.
- Ringer pitch control.

(c) Installation features

- Turn-key installation. Connection to local area wiring by means of a modular jack.
- Ease of installation. Power, signaling, and voice carried over a single pair. Additional pair required only if Call Announce service is set up.

(d) User Impact

- User confidence in handling incoming or outgoing calls, through application of visual word prompts automatically displayed on an LCD. These prompts signify all valid call-handling options at any given time.
- User capability to make full use of all PABX features in his or her Class of Service, by means of the visual words prompts mentioned above.

3. PHYSICAL DESCRIPTION

General

3.01 The SUPERSET 4™ set body and handset are of plastic construction. The dimensions of the SUPERSET 4™ set, with handset on-hook, are given in Figure 3-1.

3.02 The body and handset are connected together with a modular detachable handset cord, plugged into the side of the body. Line connection to the set is by means of a modular detachable line cord, plugged into the rear of the set.

3.03 An optional rear support can be clipped in position beneath the set. This would be used when the set is likely to be placed some distance from the user (Figure 3-3).

Body

3.04 The body of the SUPERSET 4™ set comprises two parts: a base assembly and a cover assembly (Figure 3-2).

Base Assembly

3.05 The base assembly contains a microphone (for handsfree operation), the switchhook, modular jacks for the handset and line cords, and a speaker assembly (for handsfree operation and tone ringer output). The microphone is mounted in a position which permits it to receive sound passing through an aperture in the front of the base assembly. The speaker is mounted between the handset recesses, and projects sound upwards through a grill beneath the handset.

3.06 A screwdriver slotted control for adjusting ringer pitch is user-accessible from the underside of the base assembly.

Cover Assembly

3.07 The cover assembly houses a volume control assembly, a keypad module, and a line selection/repertory dial module.

Volume Control Assembly

3.08 Two volume controls, one each for speaker and ringer, are mounted in the upper left-hand corner of the cover assembly. The controls are edge-mounted and are identified with a printed card insert. This card also has space for the installation telephone number, and is held in place by a transparent plastic lens that is clipped in position.

Keypad Module

3.09 The keypad module contains a standard 12-key keypad, six softkeys, and four supplementary feature keys.

Line Selection/Repertory Dial Module

3.10 The line selection/repertory dial module contains 15 line select/speed dialing keys, a hold key, an LCD line status display, and an LCD feature display.

3.11 Associated with the keys and the line status display is a line identification card. This card identifies the primary line (extension) and hold keys, and provides space for function identification (i.e., line and speed dialing identities) of the remaining keys. The card is held in place with a transparent plastic lens that is clipped in position.

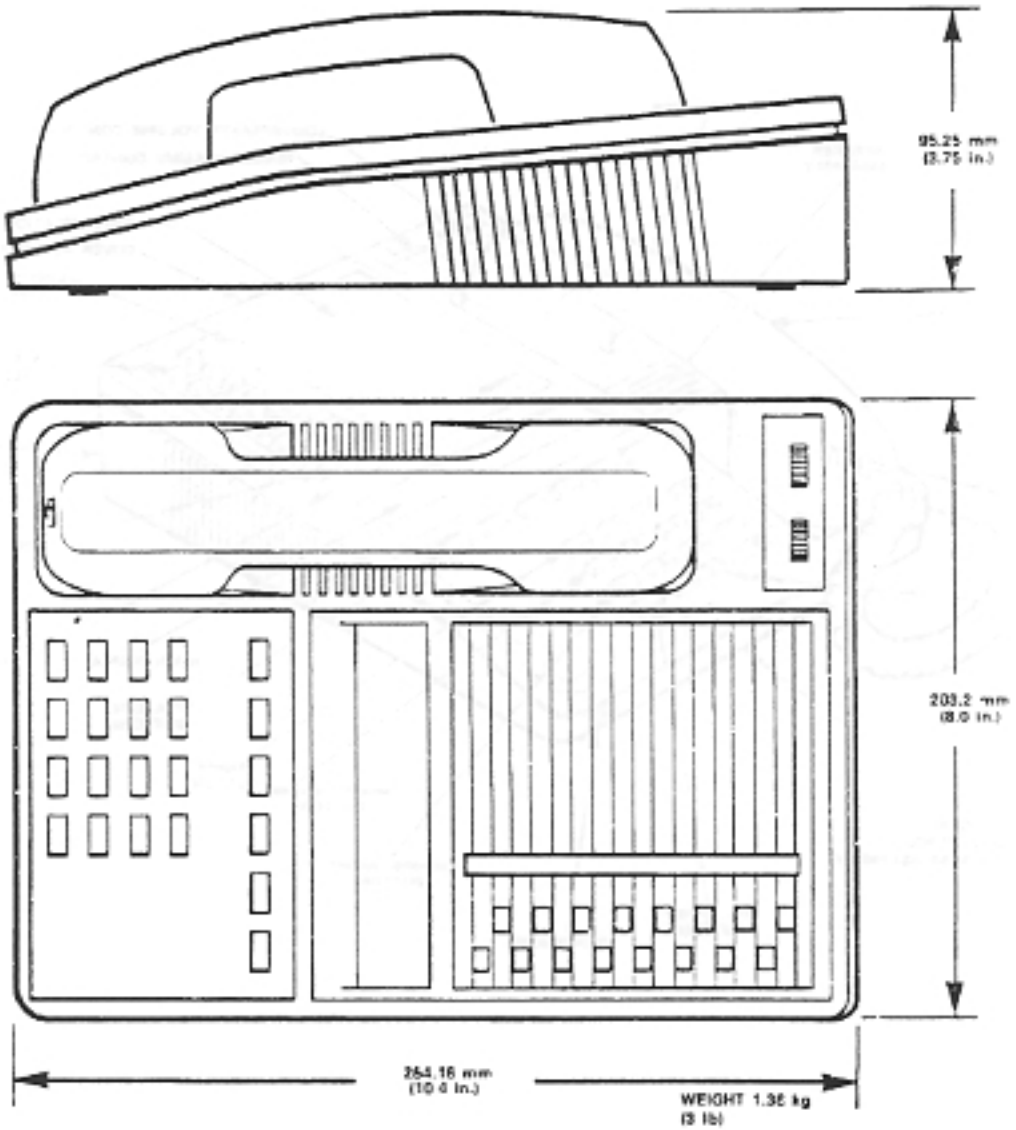

Figure 3-1 SUPERSET 4™ Set Dimensions

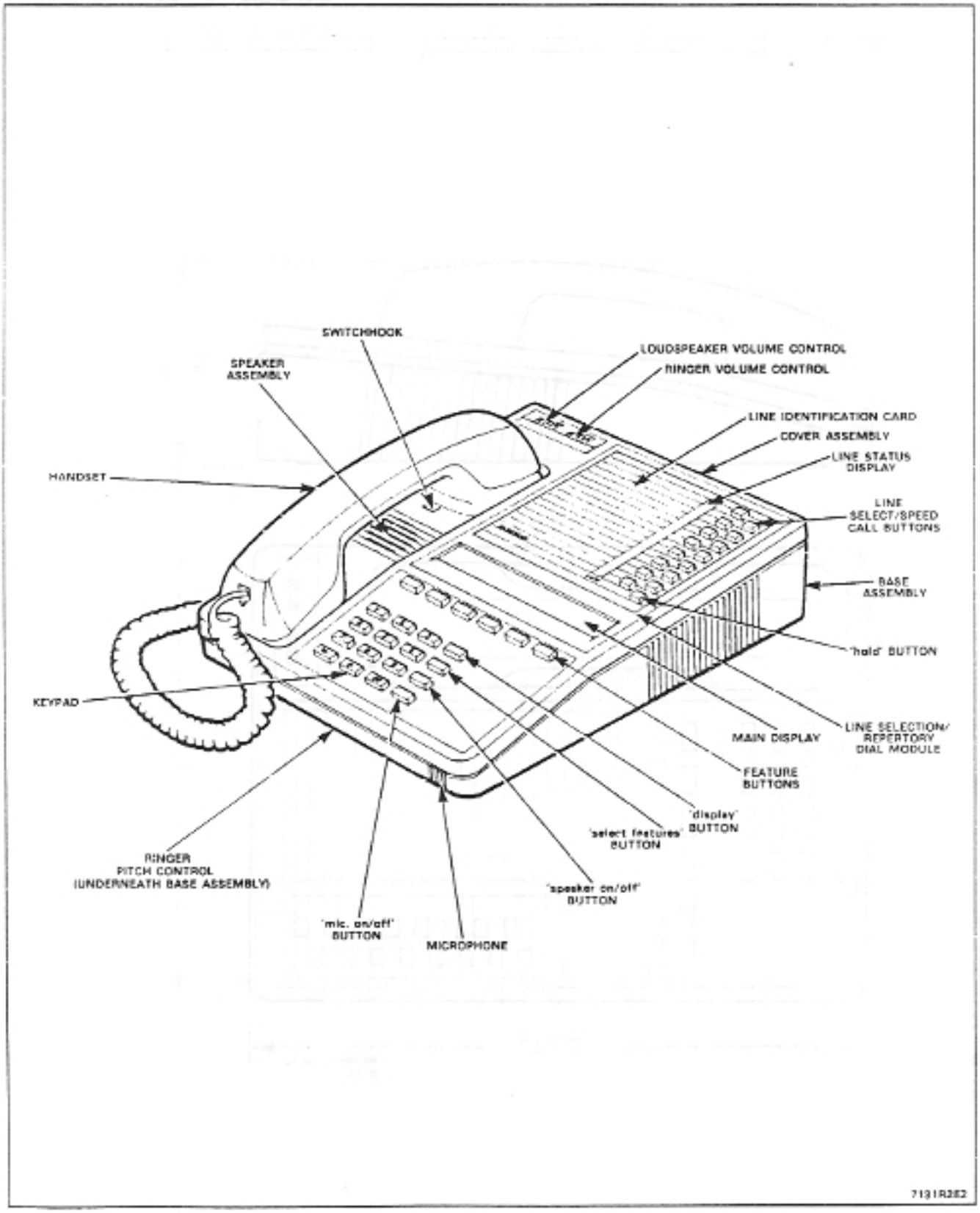

Figure 3-2 SUPERSET 4™ Set

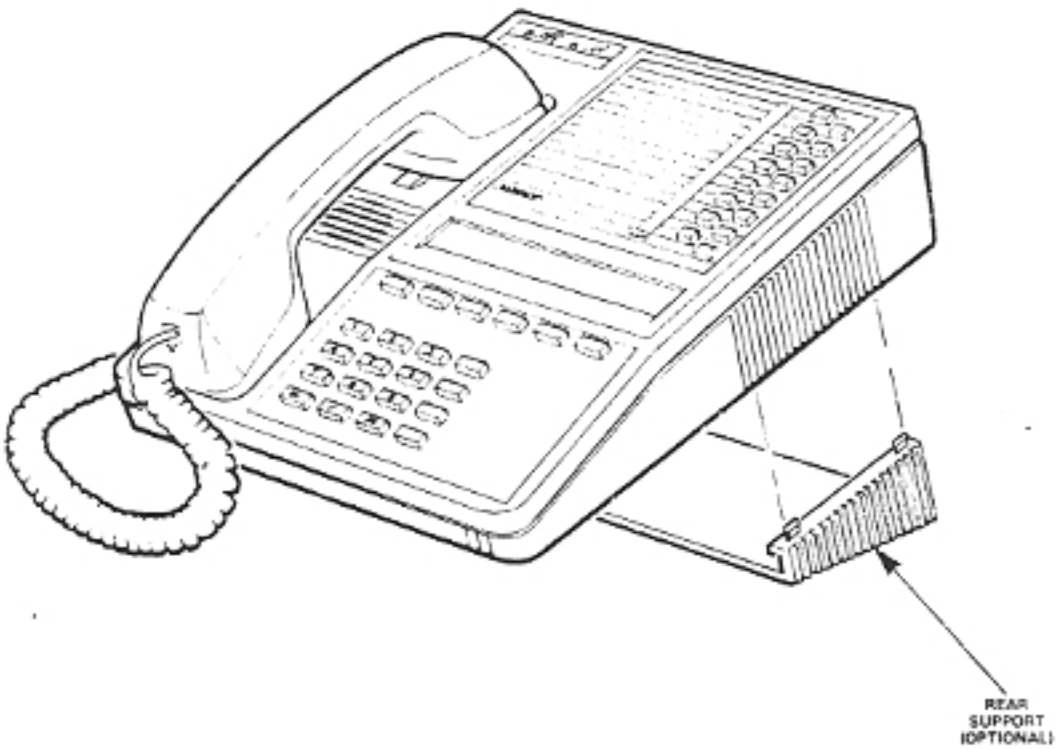

Figure 3-3 SUPERSET 4™ Set and Optional Support

4. FUNCTIONAL DESCRIPTION

General

4.01 The SUPERSET 4™ set face layout is shown in Figure 4-1. The following is a description of the function of each key and display. All keys are noninterlocking.

Line Select/Speed Dial Keys

4.02 There are 15 line select/speed dialing keys which can be configured (at the time of PABX programming) to select preassigned lines, in order to receive or originate calls. These lines can be a mix of a variety of line types (e.g., key, multiple call, direct trunk select, personal outgoing, and private). Those keys not assigned a line are available to the user for storage and later use of speed dial numbers.

Hold Key

4.03 This key allows the set user to hold any call at the set. The line on which the call is held is indicated by the adjacent line status display flashing on and off. When a call is held, the alphanumeric display prompts the user to select another line; only after another line is selected will dial tone be returned. Otherwise, the call is held and can be retrieved by pressing the associated line select key.

Softkeys

4.04. There are six softkeys. Each key is associated with a specific group of word prompts on the features display.

4.05 In operation, the set displays only the word prompts that are valid at that time. In any specific group of prompts, only one prompt can be displayed. The user selects the feature, or PABX action, by pressing the softkey immediately below the prompt that describes that action.

Supplementary Feature Keys

4.06 **DISPLAY:** Allows the user to have displayed on the alphanumeric display:

- user name, if programmed
- identification of lines at the set
- saved numbers for speed dialing ("speed call")
- number saved for redial
- identification of source of incoming calls
- identification of caller camping on
- timed-reminder setting
- call forward destination

4.07 The actual feature to be displayed is selected after the DISPLAY key is pressed, by either pressing a line select/speed dialing key (for line identification, caller identification, or speed dialing num-

ber) or pressing a softkey under the prompt associated with the feature. To clear the display, press the EXIT softkey.

4.08 **SELECT FEATURES.** Features which may be activated at any time, as opposed to those which may be selected only at fixed times, are displayed on the features display when the SELECT FEATURES key is pressed.

4.09 The features which can be selected (e.g., Do Not Disturb) are displayed adjacent to the alphanumeric display. The alphanumeric display instructs the user to "DIAL FEATURE NO.", which is a reference to the number adjacent to the name of the feature in the features display. To select the feature, the user dials this number from the keypad.

4.10 **SPEAKER ON/OFF.** This key allows the set user to receive or originate calls without the use of the handset. Pressing the key once switches the speaker and microphone ON and selects the prime line. Each time this key is pressed, the speaker and microphone are switched alternately ON and OFF, and the set is switched between on-hook and off-hook conditions. While the microphone is ON, a visual reminder (MIC ON) is displayed on the features display.

4.11 **MIC ON/OFF.** This key is used to switch the microphone OFF during handsfree operation, in order to either prevent transmission of local sound, or improve reception when the set is installed in a noisy environment. While the microphone is ON, a visual reminder (MIC ON) is displayed on the features display.

Line Status Display

4.12 This is a liquid crystal display mounted adjacent to the line select keys. The display contains 15 identical symbol groups; the symbols are aligned with the line select/speed dial keys.

4.13 The different states of a symbol group, and the meaning of each state, are shown in Figure 4-2.

Features Display

4.14 This is a liquid crystal display mounted adjacent to the feature keys. The features display is divided into three functional areas, as shown in Figure 4-3.

4.15 **FEATURES DISPLAY AREA.** The words displayed in this area indicate the features that may be selected at any time. Those features which are not in the Class of Service are not displayed. Display of the words is initiated by pressing the DISPLAY FEATURES key.

4.16 The meaning of each feature name is as follows:

1:FWD Call Forward.

This feature is automatically invoked after setting up type and destination. To cancel the feature, the user must press the SELECT FEATURES key, dial '1', and then press the OFF feature key. To reactivate the feature, the user must press the SELECT FEATURES key, dial '1', and then press the ON feature key. When active, the word FWD is displayed as a reminder.

2:NO DIST'B Do Not Disturb.

This feature prevents an incoming call from ringing the user's set. To activate, the user must press the SELECT FEATURES key, dial '2', and then press the ON feature key. To cancel this feature, the user must press the SELECT FEATURES key, dial '2', and then press the OFF feature key. When active, the words NO DIST'B are displayed as a reminder.

3:AUTO ANS Automatic Answer.

Automatic Answer allows a user to answer an incoming call without touching the set. The incoming call signals the user with a burst of tone, and communication follows by means of the speaker and microphone. At the end of the conversation, a burst of tone is heard by the user to indicate the calling party has hung up. The set returns to the auto-answer idle condition. To activate this feature, the user must press the SELECT FEATURES key, dial '3', and then press the ON feature key. To cancel this feature, the user must press the SELECT FEATURES key, dial '3', and then press the OFF feature key. When active, the words AUTO ANS are displayed as a reminder.

4:MSG Messaging.

This feature is used to read system messages during an established call. The word MSG flashing in the display notifies a user that there is a message waiting to be read. To read the message during an established call, the user must press the SELECT FEATURES key and dial '4'. The prompt READ MSG is now displayed, and pressing this feature key brings the message into view in the alphanumeric display. When the message has been read, the user has three choices: CANCEL, NEXT or EXIT. The CANCEL feature key cancels the current message and brings the next message into view. Both NEXT and EXIT leave the current message active. NEXT brings the next message into view. The EXIT feature key exits from the feature and clears the display.

5:ACC CODE Account Code.

It may be necessary for a user to enter an account code before being allowed access to a trunk; or a user may require an SMDR record of an account number against a call. In either case, the user must press the SELECT FEATURES key and dial '5'. The account number can now be dialed from the keypad, and the digits are displayed; no DTMF tones are heard as signaling of the code is a data transfer function. A correct

account code is entered when the user presses the SAVE feature key. The system returns to the call processing display when the code is recorded on the SMDR, or responds with 'PLEASE TRY LATER' when the SMDR recording device is busy. More than one code can be associated with a single call.

4.17 The words MIC ON have an advisory function and, when displayed, remind the user that the microphone is on.

4.18 Alphanumeric display area: This is a 16-character display used for presenting time-of-day, date, digit echoing, speed dialing number, call forward destination, last number dialed, timed-reminder setting, call elapsed time and messages from the system.

4.19 Each character is formed from a 5X7 dot matrix.

Softkey Prompt Display Area

4.20 There are 35 word prompts organized into six groups. Each group relates to one of the six feature select keys. The prompts act as a guide to the set user, and indicate to the user what can be done, and when. To select a function or feature indicated, the user only has to press the softkey below the prompt.

4.21 The prompts are organized such that only one word above any feature key is displayed at any time (except for SWAP CAMP ON feature). Whenever a feature is not in the Class of Service of a particular set, or if the choices of actions are less than six, the area above some feature keys is left blank. Pressing these keys has no effect.

Error Messages

4.22 The data transfer between a SUPERSET 4™ set and the system is monitored continuously. Any problems cause an error message to be displayed by the alphanumeric display as follows:

Message: NO COMMUNICATION

Meaning: This is displayed when data transfer has not occurred for at least 1 second. The set is not operational in this condition, and any set displaying this message should be reported by the user. When the problem has been corrected (refer to appropriate PABX Maintenance Documentation), the error message is cleared, time and date are displayed, and the set becomes operational.

Message: CONSECUTIVE ERRS

Meaning: This is displayed when a series of data transfer errors has been detected by the host PABX. If the error occurs during a call, the audio may be lost, and the features become inoperative. If the error occurs while the set is idle, no calls can be made or received at the set. This error may be transient in nature and may disappear. When the error is cleared (refer to appropriate PABX Maintenance Documentation), time and date are redisplayed and the set becomes operational.

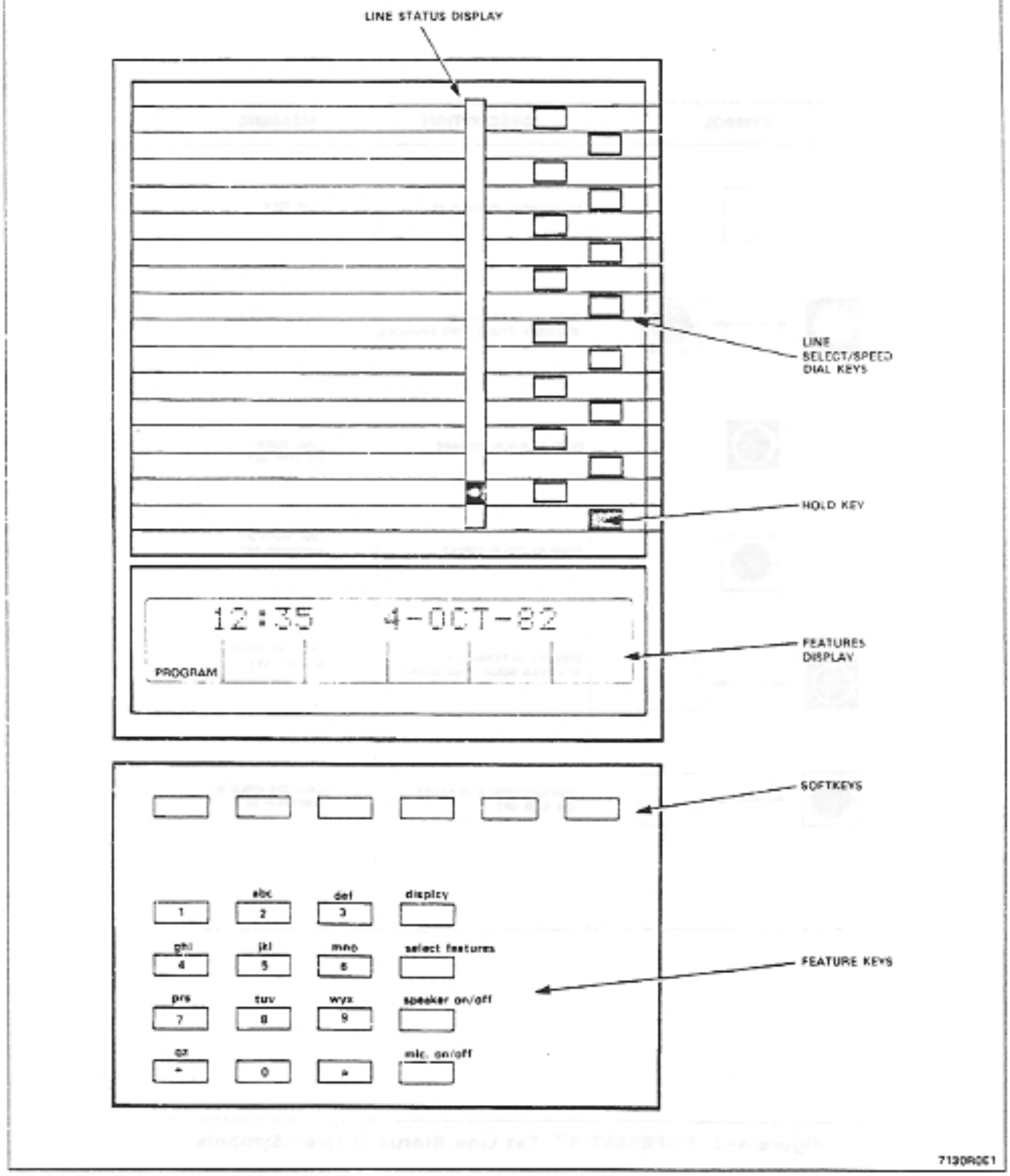

Figure 4-1 SUPERSET 4™ Set Keys and Display

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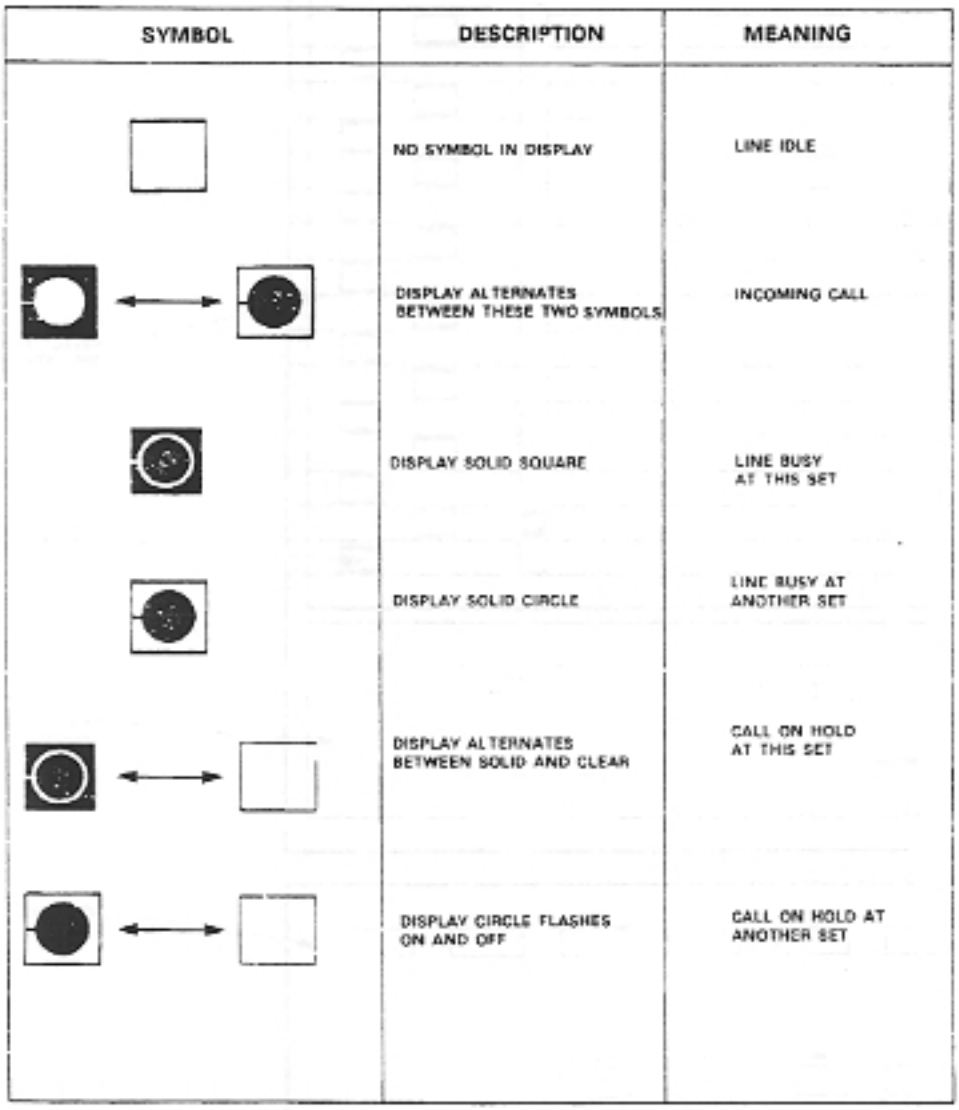

Figure 4-2 SUPERSET 4™ Set Line Status Display Symbols

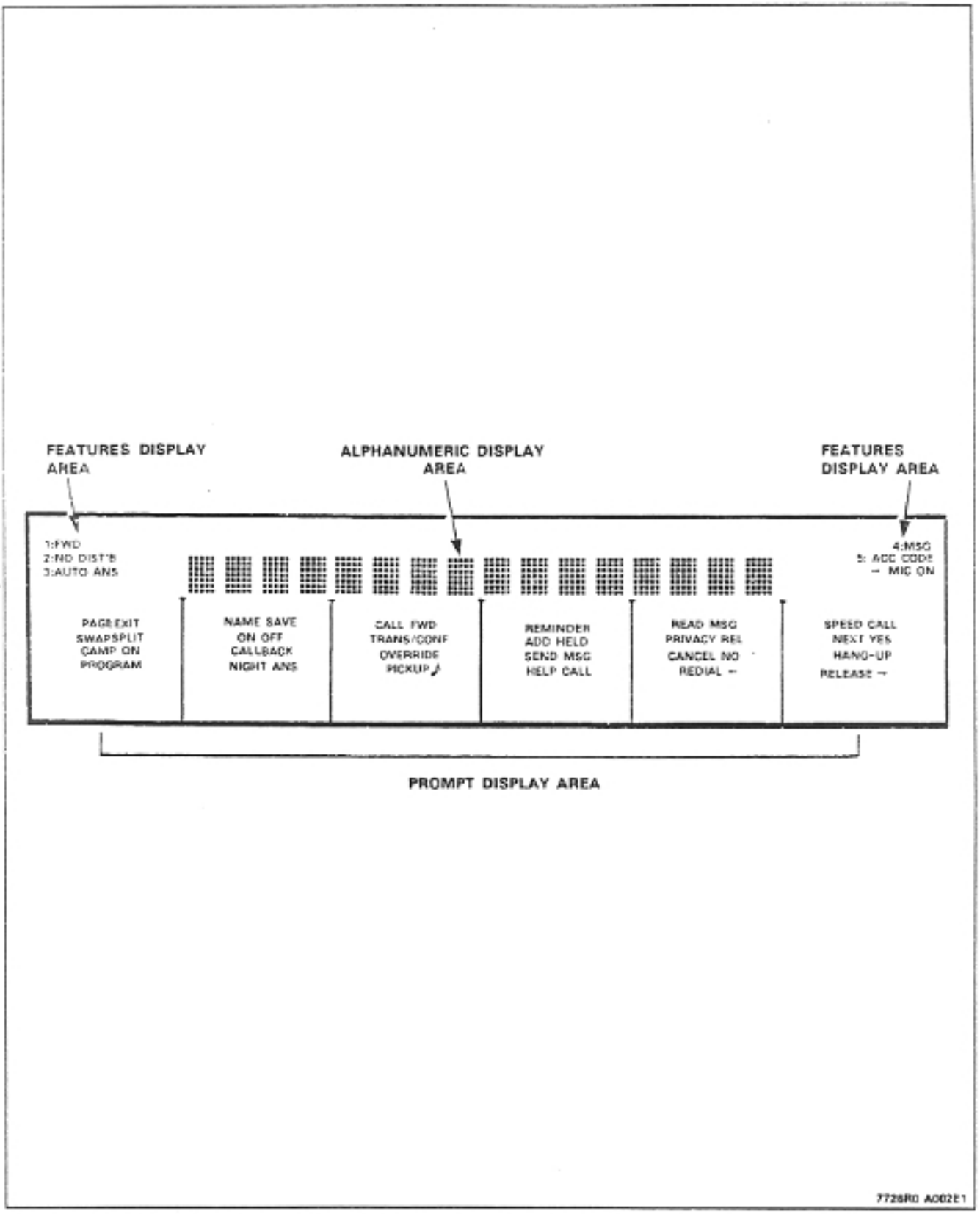

Figure 4–3 SUPERSET 4™ Set Features Display Layout

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5. FEATURES DESCRIPTION

Introduction

5.01 This part contains a description of the features available at a SUPERSET 4™ set. Included here are only those features that are special to SUPERSET 4™ sets, or are activated differently at a SUPERSET 4™ set than at a standard telephone. Each feature description includes one or more of the following sections:

- **Description** – a detailed description of the feature.
- **Conditions** – any special conditions which are required before selecting the feature.
- **Operation** – a brief description of feature operation.

5.02 This part lists all feature descriptions in alphabetical order. The names of the features used refer directly to the text as closely as possible, to allow direct reference from any part of the documentation.

5.03 ACCOUNT CODES

Description

A SUPERSET 4™ set user can enter one or more account codes to authorize a call, or to associate an incoming or outgoing call with one or more account codes. The Account Code may be one to 12 digits in length and will appear on all SMDR records. An Account Code can be entered before dialing or during a call.

Conditions

- Account Code length is selected on the System Options form in CDE programming as four to 12 digits, or as Variable length. The default is six digits.

Operation

- Obtain dial tone (if not on an established call).
- Press the SELECT FEATURES key.
- Dial 5 (feature number 5 is Account Code (5:ACC CODE)).
- Dial account code digits (DTMF tones are not heard).

- If making a trunk call, dial trunk access code, and dial directory numbers – when the originating extension hangs up an SMDR record is printed. This printout includes the time of call, trunk used, duration of call, and Account Code.

- Press the SAVE feature key. The prompt PLEASE TRY LATER occurs if the recording process is busy.

- Press the EXIT feature key. The display reverts to the condition applicable at that time.

There are two ways to correct an entry:

1. Use the "←" feature key to backspace to and clear the incorrect entry.

2. To cancel the entire entry, press the EXIT feature key.

3. If Verifiable Account Codes are used, Account Codes can only be four, six, eight or 12 digits in length (Generic 1001 only).

5.04 ADD HELD

Description

Add Held allows a SUPERSET 4™ set user engaged in an active call to add a call which is on hold to a line which has been accessed.

Conditions

- The SUPERSET 4™ set must have, in addition to its prime line, a key line or multicall line.

Operation

- Establish a call. Press the HOLD feature key to place the call on hold. LCD displays the message: SELECT LINE.
- Press another line select key. Establish another call. The line on hold has a flashing symbol in the Line Status Display; the line in use has a steady symbol.
- Press the TRANS/CONF feature key. Press the ADD HELD feature key. The LCD displays: SELECT HELD LINE.
- Press the line select key associated with the call on hold. The LCD displays the SWAP, CONF, CANCEL and RELEASE feature keys. SWAP allows the user to speak alternately with the two parties. CONF sets up a 3-way conference. CANCEL terminates the call with the current party and connects the user to the other party. RELEASE connects the two parties and exits the SUPERSET 4™ set from the conference.

5.05 ARS MOST EXPENSIVE ROUTE WARNING

Description

If a route is programmed to give an expensive route warning, the user will receive three short warning tones. On SUPERSET 4™ sets, the LCD also displays the message 'EXPENSIVE ROUTE!'. The user has the option of continuing with the call or trying again later when a less expensive route may be available.

Conditions

- Warning Tone (WT) must be programmed in ARS Route Lists in CDE.
- If Callback is activated, the callback is to the least expensive route.

5.06 ASSOCIATED MODEM LINE

Description

This feature provides integrated voice and data for the SX-200® DIGITAL PABX. The operation involves the association of a SUPERSET 4™ set and a standard ONS voice port connected to a personal computer/modem arrangement. Voice only calls are permitted, as are data only calls, simultaneous voice/data calls, and alternating voice/data calls.

Conditions

- This feature is not available in software Generic 1000.
- Select COS Option 607 (Associated Modem Line) for the SUPERSET® set.
- An ONS card must be programmed and installed in the slot number immediately preceding the COV or SUPERSET® card.

Operation

- Voice Data – Voice calls are handled in the normal fashion.
- Data Calls – The personal computer and intelligent modem alone are involved in the placing of data calls. If a '#' character is the last digit dialed, the SUPERSET® set is connected to the called party, and the modem is disconnected.
- Simultaneous Voice and Data Calls – Separate voice and data calls must be initiated. In this case, there is no interaction between the SUPERSET® set and the data port.
- Alternating Voice and Data Calls – When a call is established with a SUPERSET 4™ set via a trunk, a new SWAP key is presented, enabling the user to alternate between voice and data.

5.07 AUTO-ANSWER

Description

The SUPERSET 4™ set may be operated in Auto-Answer or Handsfree mode. Refer to the Handsfree feature description for further information.

5.08 AUTO-HOLD DISABLE

Description

A SUPERSET 4™ set user automatically places a call on hold by pressing another Line Select or Speed Dial key on the set. When this is not desirable, a Class-of-Service option can be programmed which allows a call to be placed on hold only by pressing the HOLD key.

Conditions

- The COS option 601 SUPERSET - Auto-Hold Disable must be disabled for the Auto-Hold feature to function.
- When the COS option SUPERSET - Auto-Hold Disable is enabled, calls can only be placed on hold by pressing the HOLD key.

Operation

- Ensure the COS Option SUPERSET - Auto-Hold Disable is disabled.
- Establish a call.
- Press any Line Select or Speed Dial key. The call is placed on hold.

5.09 BACKGROUND MUSIC

Description

This feature permits a SUPERSET 4™ set user to have background music, provided by the Music On Hold music source, supplied through the SUPERSET 4™ set's speaker.

Conditions

- A music source must be provided.
- Background music is COS option 602. The SUPERSET 4™ set must have this option enabled for its class of service.
- Background music operates on SUPERSET 4™ sets only.

Operation

- Press the softkey associated with the musical note appearing on the LCD softkey prompt display.
- Adjust the SUPERSET 4™ set's speaker volume control as necessary.
- Background music is supplied through the SUPERSET 4™ set's speaker.
- Press the softkey associated with the musical note appearing on the LCD softkey prompt display. The background music will be disabled.
- Background music is automatically disabled when a call is placed or received.

5.10 CALL ANNOUNCE

Description

This feature allows a caller reaching a busy SUPERSET 4™ set to override the busy signal and converse with the called party through that set's speaker and microphone. The call in progress continues through the handset. This feature is similar to the Intercom feature.

Conditions

- COS option 501, Override Announce, must be enabled. The SUPERSET 4™ set must have a Call Announce Port programmed through Customer Data Entry at the SX-200® Digital PABX.
- Call Announce operates only on SUPERSET 4™ sets.
- Call Announce operates on a SUPERSET 4™ set regardless of the type of set originating the call (e.g., another SUPERSET 4™ set, a SUPERSET 3™ set, or the Attendant Console).
- An Executive Busy Override access code must be programmed (option 30) in the Feature Access Codes form of Customer Data Entry.
- No actions may be taken on a Call Announce (e.g., transfer).

Operation

- A SUPERSET 4™ set establishes a call.
- A caller (using either a SUPERSET 4™ set, a SUPERSET 3™ set, or the Attendant Console) attempts to call the first (already busy) SUPERSET 4™ set, and receives busy tone. At the second (calling) set, press the OVERRIDE softkey (or dial the Executive Busy Override feature access code). The second set is connected to the Call Announce Port of the first (busy) set. Conversation now takes place between the second set and the Call Announce Port of the first (busy) set.

  OR

- A SUPERSET 4™ set establishes a call.
- A second SUPERSET 4™ set engaged in a conversation attempts to call the first SUPERSET 4™ set, and receives busy tone. At the second set, press the OVERRIDE softkey (or dial the Executive Busy Override feature access code). The second set is connected to the Call Announce Port of the first SUPERSET 4™ set.
- The second SUPERSET 4™ set goes on-hook. The party connected to the second set is now camped on to the first (still busy) SUPERSET 4™ set (COS Option 301, Camp-on must be enabled). This set may now swap between the calls, or take actions on the calls in the normal way.

5.11 CALL DURATION DISPLAY

Description

When a SUPERSET 4™ set accesses a toll trunk, and establishes a call, the duration of the call is displayed on the SUPERSET 4™ set's LCD.

Conditions

None

Operation

Establish a call on a toll trunk. LCD displays the duration of the call.

5.12 CALL FORWARDING – BUSY; DON'T ANSWER; FOLLOW ME; BUSY/DON'T ANSWER; I'M HERE

Description

Call Forwarding – Busy (When Set's Busy)

This feature allows a SUPERSET 4™ set user to have all calls (which are directed to his/her extension number) forwarded either to the attendant, to another extension number within the system, or to an external number (via the SUPERSET 4™ set Speed Call facility), WHEN THE USER'S EXTENSION IS BUSY. While the feature is active and the extension is idle, calls may be made and received normally.

Call Forwarding – Don't Answer (When No Answer)

This feature allows a SUPERSET 4™ set user to have all calls (which are directed to his/her extension number) that are NOT ANSWERED WITHIN THE SELECTED TIME, forwarded either to the attendant, to another extension number within the system, or to an external number (via the SUPERSET 4™ set Speed Call facility). While the feature is active and the extension is idle, calls may be made and received normally.

Call Forwarding – Busy/Don't Answer (Busy/No Answer)

This feature allows a SUPERSET 4™ set user to have all calls (which are directed to his/her extension number) forwarded either to the attendant, to another extension number within the system, or to an external number (via the SUPERSET 4™ set Speed Call facility), WHEN THE USER'S EXTENSION IS BUSY or NOT ANSWERED WITHIN THE SELECTED TIME. While the feature is active and the extension is idle, calls may be made and received normally.

Call Forwarding – Follow Me (Always Forward)

This feature allows a SUPERSET 4™ set user to have those calls directed to his/her extension number forwarded either to the attendant, to another extension within the system, or to an external number (via the SUPERSET 4™ set Speed Dialing facility). The number to which the calls are forwarded (attendant or another extension only) is the only originating party that may call the forwarding extension while Call Forwarding – Follow Me is active. The forwarding extension may originate calls in the normal manner.

Call Forwarding – I'm Here

This feature allows an extension user to have those calls directed to his/her extension number forwarded to a new SUPERSET 4™ extension from the new extension. The forwarding extension may originate calls in the normal manner.

Conditions

- Call Forwarding must be enabled in the set's Class of Service. The different types of call forwarding are enabled separately:

  Call Forwarding - Busy is option 206
  Call Forwarding - Don't Answer is option 207
  Call Forwarding - External is option 208
  Call Forwarding - Follow Me is option 209.

- Call Forwarding has no effect on callbacks.
- Call Forwarding has no effect on calls directed to an extension via hunting.
- Only one type of Call Forwarding may be active at an extension at any time: if an extension has one type of Call Forwarding active and the user enters a new Call Forwarding type, the first type of Call Forwarding is cancelled.
- Call Forwarding - Don't Answer has no effect if the SUPERSET 4™ set is operated in the auto-answer (handsfree) mode.
- If an invalid number is selected as a forwarding number, the alphanumeric display indicates this fact.
- Call Forwarding does not apply if the calling extension is the party to which the call would be forwarded.
- The current Call Forwarding type and destination can be displayed on the alphanumeric display by pressing the DISPLAY and CALL FWD feature keys in that order.

Operation

To Set Up or Modify Call Forwarding:

- With the handset on-hook, press the PROGRAM feature key.
- Press the CALL FWD feature key.
- The alphanumeric display shows a Call Forwarding type. If the displayed type is required, press the YES feature key. If the type is not required, press the NO feature key; another Call Forwarding type is then displayed.
- If the call is to be forwarded to another extension or the attendant, dial the Call Forwarding destination. If the call is to be forwarded to an outside number, press the Speed Call (line select) key associated with that number.
- Check your Call Forwarding destination as displayed on the alphanumeric display. If correct, press the SAVE feature key. The Call Forwarding type and destination are now stored.

- Call Forwarding is now active, and the word FWD is displayed as a reminder.

There are two ways to correct a programming error before the SAVE feature key is pressed:

1. Use the "←" feature key to backspace to and clear the incorrect entry.

2. To cancel the entire current entry, press the EXIT feature key.

To Cancel Call Forwarding:

- Press the SELECT FEATURES key.
- Dial '1' (feature number 1 is Call Forwarding (1:FWD)).
- Press the OFF feature key.

To Reactivate Call Forwarding:

- Press the SELECT FEATURES key.
- Dial '1' (feature number 1 is Call Forwarding (1:FWD)).
- Press the ON feature key.

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5.13 CALL HOLD

Description

Call Hold allows a SUPERSET 4™ set user engaged in an active call, to place the call on hold, then to replace the handset or use the extension for other calls. All features normally active on the extension may be selected while the call is held. A held call may be retrieved locally or at another SUPERSET 4™ set that has an appearance of the line the call is held on. A call held on a line other than a line on which a conference has been organized may be added to that conference. All calls appearing at a SUPERSET 4™ set may be put on hold.

Conditions

- COS option 211, Call Hold and Retrieve Access must be enabled in the set's Class of Service.
- An Attendant cannot be put on hold.

Operation

To Place a Call on Hold:

- Inform the caller, then press the red HOLD key.
- The call is held and the caller hears music, if provided by the system. The holding extension may select another line to make calls or to access features in the normal manner, or hang up.
- The line status display associated with the call on hold flashes as a reminder.

To Retrieve the Call Locally (at the holding extension):

- Press the line select key associated with the call on hold. The call is returned to the holding extension.

To Retrieve the Call Remotely (at another SUPERSET 4™ set that has an appearance of the line the call is held on):

- Press the line select key associated with the call on hold. The call is connected to the remote SUPERSET 4™ set.

To Add a Call on Hold to Another Line Which has Been Accessed:

- While hearing dial tone or during a conversation, press the ADD HELD feature key, then the line select key associated with the call on hold.
- This feature can be used to move an established call from one line to another. Refer to Add Held – Description and Operation.

5.14 CALL PICKUP

Description

This feature allows a SUPERSET 4™ set user to answer any call to another extension in a pickup group of which the SUPERSET 4™ set is a member. Calls to numbers in the pickup group that also appear at a SUPERSET 4™ set may be answered by selecting the line on which the call is ringing.

Conditions

This feature operates only for extensions within the same pickup group. Pickup groups are programmed in the Pickup Groups form of CDE.

Operation

- Lift the handset – dial tone returned.
- Press the PICKUP feature key – the call is connected.

5.15 CALL SPLIT

Description

Call Split allows a SUPERSET 4™ set user, engaged in a conference call, to split the call between the conferees. Once active, swapping can take place between the calls, or conference can be re-established.

Conditions

- Conference must be active.
- Call Split is only effective for 3-party calls.
- Any one of the three parties may initiate Call Split.
- The party initiating Call Split must press the CONF feature key to re-establish 3-way conversation.

Operation

- Third party is added to an established call.
- First party puts second party on hold by pressing the SPLIT feature key. First and third party are connected.
- First party presses the SWAP feature key, connecting the first and second caller and places the third party on hold.
- The conference is re-established when the first party presses the CONF feature key.

5.16 CALL SWAP

Description

This feature permits a SUPERSET 4™ set user, originating a conference call, to alternate between the conferees. When active, Call Swap places one of the conferees on hold while the call continues with the other conferee. Call Swap is also used to swap between called or calling parties (as in a broker's call), placing one party on hold while busy with the other.

Conditions

A conference call or call transfer must be established for Call Swap to operate.

Operation

- Establish a conference call.
- Press the SPLIT feature key. Conference is now split.
- Press the SWAP feature key. The second called or calling party is placed on hold, and the call continues with the first called or calling party.
- Press the SWAP feature key. The first called or calling party is placed on hold, and the call continues with the second called or calling party.

OR

- Establish a call.
- Press the TRANS/CONF feature key. The established call is placed on hold.
- Establish a second call.
- Press the SWAP feature key. The second call is placed on hold, and the call resumes with the first call.
- Pressing SWAP repeatedly alternately places one call on hold and connects the other call to the SUPERSET 4™ set.

5.17 CALLBACK - BUSY AND - DON'T ANSWER

Description

Callback - Busy allows a SUPERSET 4™ set user, upon encountering a busy extension or trunk group, to have the call completed when the extension or trunk group becomes idle. After the feature has been activated, the system continuously monitors the originating extension, and the called number. When both are idle, the system rings the originating extension, and when that extension goes off-hook, rings the called extension or accesses the trunk. If more than one callback request is active on any number, the requests are queued and serviced on a first-in, first-out basis.

Callback - Don't Answer allows a user, after dialing an extension which does not answer, to have the call completed after the called extension has gone off-hook and on-hook. After the feature has been activated, the system continuously monitors the originating extension and the required number. After the called extension goes off-hook, the callback will be handled in the same way as Callback - Busy. If more than one callback request is active on any extension, the requests are queued and serviced on a first-in, first-out basis.

Conditions

- A callback always rings the prime line of the originating extension. Call forwarding and call pickup have no effect. Key line appearances are set U-Busy Multiline appearances remain unchanged.
- Callback may be activated on extension numbers, hunt group access codes, and trunk group access codes.
- Up to 100 Callback requests may be active within the system at any time.
- If the two parties involved in a callback hold a telephone conversation (not a conference) before the callback is honoured, the callback is canceled automatically.
- Any internal callback outstanding for more than 8 hours is canceled automatically. Any external callback outstanding for more than 1 hour is cancelled.
- Duplicate callback requests on internal calls are ignored (the original callback request is canceled). Duplicate callback requests on trunk calls are placed in the callback queue, until the queue is full.
- The callback feature must be selected within 10 seconds of receiving busy tone.
- If a callback is not answered by the originating extension within six rings, it is automatically canceled.

- If the called party becomes busy before the originating party answers the callback, the originating party hears busy tone and the callback is canceled.

Operation

To Set Up a Callback – Busy:

- Dial the required extension number or trunk access code – busy tone is heard.
- Press the CALLBACK feature key – dial tone is returned and the SUPERSET 4™ set is available for normal use.

To Answer a Callback – Busy:

- The SUPERSET 4™ set rings.
- Lift the handset – either audible ringing tone is returned and the called number rings, or CO dial tone is heard.
- If busy tone is heard on lifting the handset, the callback must be reactivated.

To Set Up a Callback – Don't Answer:

- Dial the required extension number – the extension does not answer.
- Press the CALLBACK feature key and replace the handset – the SUPERSET 4™ set is available for normal use.

To Answer a Callback – Don't Answer:

- The SUPERSET 4™ set rings.
- Lift the handset – audible ringing tone is returned and the called number rings.
- If busy tone is heard on lifting the handset, the callback must be reactivated.

5.18 CAMP-ON

Description

A SUPERSET 4™ set user with Camp-On feature is able to indicate to a called but busy party that communication is desired, or is able to make a continuing request for a trunk when the trunk group is busy, and be connected to a trunk when one becomes free.

At this time music is received, and the called (camped-on) party hears a Camp-On tone (single burst of 440 Hz) if that party is not dialing or listening to a tone. If the camped-on extension is another SUPERSET 4™ set, its features display also indicates that it has been camped onto.

When the busy extension hangs up, the calling extension receives audible ringing tone and the formerly busy extension is rung. If the busy extension is another SUPERSET 4™ set, and its user selects the SWAP CAMP ON feature, the camped-on caller is connected directly to the extension. If the busy extension is another SUPERSET 4™ set, and its user elects to divert the call waiting, the camped-on caller is connected to a call forwarding destination.

Conditions

- Camp-On feature is not selected automatically.
- Camp-On tone is not supplied to trunks, or extensions using paging equipment.
- Paging equipment cannot be camped onto.
- An extension with COS option 216, Data Security in its class of service can be camped onto, but Camp-On tone is not supplied.
- An extension on hold can receive Camp-On tone.
- If the called extension is on hold, and music on hold is provided, the music is suppressed while Camp-On tone is supplied.
- To divert the call waiting to a call forwarding destination, call forwarding feature need not be active. This feature is available for only 10 seconds after Camp-On.

Operation

To Camp On to a Busy Party:

- While receiving special busy tone, press the CAMP ON feature key. Remain off-hook.
- Music is returned, and the called party hears Camp-On tone: In the case of another SUPERSET 4™ set, the SWAP CAMP ON feature name is displayed.

- The busy extension hangs up, the camped-on extension user hears audible ringing tone, and the called extension rings.

  OR

- The busy SUPERSET 4™ set SWAP CAMP ON feature is selected and the calling party is connected.

  OR

- The busy SUPERSET 4™ set CALL FWD feature is selected, and the calling party is diverted to the call forwarding destination.

To Answer a Camp-On Call:

- Camp-On tone is heard, and the SWAP CAMP ON feature name is displayed. The LCD display identifies the camped-on party (e.g., T015 CAMPED ON).

- CALL FWD feature name is displayed for 10 seconds if a call forwarding destination (extension) has been programmed, and is not busy.

- Inform your current called party and press the SWAP CAMP ON feature key. The current call is held, and the camped-on call is connected to the SUPERSET 4™ set.

  OR

- Press the CALL FWD feature key. The camped-on call is connected to the call forwarding extension.

- To return to the original caller (if SWAP CAMP ON was selected), press the CANCEL feature key.

5.19 CANCEL

Description

Cancel is used to clear some selected features (e.g. Swap Camp-On, Call Me Back Messages) and to exit from some types of calls.

Conditions

Cancel is only active for selected features and certain types of calls.

Operation

Operation of the Cancel feature is detailed in the features operations which employ it.

5.20 DATE/TIME DISPLAY

Description

When a SUPERSET 4™ set is idle, the LCD continuously displays date and time.

Conditions

Date and time are programmed at the SX-200® Digital PABX; the information is used in SMDR records.

Operation

None

5.21 DELAY RING LINE APPEARANCES

Description

An appearance that is programmed "delay ring" will audibly ring the SUPERSET 4™ set after a programmed time delay. The SUPERSET 4 set will not ring when the set is in use.

Conditions

System programming identifies which lines will have a delayed ring appearance at a particular SUPERSET 4™ set.

Delayed ring cannot be programmed for the set's prime line.

Operation

A delayed ring call will ring at a designated set (after a specified delay) if the call is not answered at its first appearance.

5.22 DIRECT TRUNK SELECT

Description

This feature allows the user to directly access an outside trunk for both incoming and outgoing calls without the need of trunk access codes. The trunk is assigned to a line appearance of the set through system programing. SUPERSET 4™ sets having the Direct Trunk Select feature can be programmed for ring, delayed ring, or no ring.

Direct Trunk Select calls bypass the system's Automatic Route Selection feature and are therefore unaffected by class of restriction (toll control). Account codes are also ineffective as they only serve as a record for call accounting purposes.

Conditions

- Direct Trunk Select line appearances can be Key System lines or Private lines. They must not be Multicall or Prime lines.
- Only Central Office, E&M, and loop tie trunks can be programmed in a Direct Trunk Select configuration. Incoming-only trunks are not compatible.
- Incoming Direct Trunk Select calls will not follow the call forwarding as programmed on the set.
- Do Not Disturb is overridden by an incoming Direct Trunk Select call.
- Direct Trunk Select trunks which are shared by a key system group can only be accessed by one member of the group at any one time, except in a conference application. The latter is permissible through the Privacy Release feature.

Operation

To access Direct Trunk Select:

- Lift the handset. PABX dial tone is heard.
- Press a Direct Trunk Select line key. Central Office dial tone is returned.
- Dial the external number.

To answer an incoming Direct Trunk Select call:

- Lift the handset and press the Direct Trunk Select line key, when the set rings or the line appearance flashes or both.

Note: The above examples can be completed in the handsfree mode.

5.23 DISPLAY

Description

This feature allows a SUPERSET 4™ set user to display on the set's alphanumeric display:

- speed dialing ("speed call") numbers
- identities of lines appearing at the SUPERSET 4™ set
- last external number dialed manually
- reminder setting
- call forwarding type and destination
- identity of calling party, and
- name associated with a SUPERSET 4™ set.

Conditions

To display a name, reminder or Call Forward, the SUPERSET 4™ set must have a programmed name, reminder or Call Forward.

Operation

- Press the DISPLAY key
- Press either the:
- line select key, for saved Speed Dial number, line, or calling party identification
- REDIAL feature key, for last external number dialed
- REMINDER feature key, for current Reminder setting
- CALL FWD feature key, for current Call Forwarding type and destination
- NAME feature key, for name associated with the set.

To clear the display, press the EXIT feature key. The display reverts to time of day and date or current call message.

5.24 DO NOT DISTURB

Description

The Do Not Disturb feature allows a SUPERSET 4™ set user to inhibit all incoming calls to the extension. Extension users calling a SUPERSET® set with Do Not Disturb activated receive reorder tone if there is no other appearance of the called extension on another set. If there is another line appearance, the called set line appearance indication flashes. The attendant may override the feature. Other features (e.g., Hunting, Call Forwarding) work as if the extension is busy. Calls originating from an extension with this feature active are not affected in any way.

Conditions

- COS option 220, Do Not Disturb must be enabled in the set's Class of Service.
- Reminder overrides Do Not Disturb.
- Executive Busy Override is not effective on Do Not Disturb.

Operation

To Set Do Not Disturb:

- Press the SELECT FEATURES key.
- Dial '2' (feature number 2 is Do Not Disturb (2:NO DIST'B)).
- Press the ON feature key.

The words NO DIST'B are displayed as a reminder while Do Not Disturb is in effect.

To Cancel Do Not Disturb:

- Press the SELECT FEATURES key.
- Dial '2'.
- Press the OFF feature key.

5.25 END-TO-END SIGNALING

Description

End-to-end signaling allows a SUPERSET 4™ set user to send digits into a distant switch to directly access extensions or other features.

Conditions

None

Operation

None

5.26 EXECUTIVE BUSY OVERRIDE

Description

This feature allows a SUPERSET 4™ set user who encounters a busy extension to enter the conversation. Before override voice contact is established, both parties in the original conversation receive a warning tone (440 Hz for 800 ms). The tone continues for 200 ms after override is established. A 200 ms burst of 440 Hz tone is repeated every 6 seconds for the duration of the override. If the overridden extension flashes the switchhook or goes on-hook, the overriding extension is dropped and receives reorder tone.

Conditions

- The overriding extension cannot manipulate the original connection in any way.
- Any extension speaking to the attendant, dialing, or receiving supervisory tone cannot be overridden.
- An extension on hold cannot be overridden.
- An extension with Data Security or Override Security in its Class of Service cannot be overridden.
- A consultee cannot be overridden.
- If extensions involved in a conversation have multiline appearances, an override will only occur if all appearances are busy. Otherwise, the calling extension will receive ringing and the idle multiline appearance will ring if programmed to do so.

Operation

- Dial the busy extension number – busy tone is returned.
- Press the OVERRIDE feature key. After the warning tone the SUPERSET 4™ set is connected to the call.

5.27 EXTERNAL CALL FORWARDING

Description

This feature allows a SUPERSET 4™ set user to set up call forwarding to a number external to the PABX. This is accomplished by storing the external number as an speed dialing entry, and using the entry as the number to which the caller is forwarded.

Conditions

The extension must have one of the call forwarding options enabled and also have the capability of storing one or more speed dialing numbers.

Operation

Setting Up External Call Forwarding:

- Set up the required external number as a speed call entry (refer to Speed Dialing ("Speed Call^)).
- Set up Call Forwarding to the speed call location (refer to Call Forwarding – Busy; Don't Answer; Follow Me; Busy/Don't Answer; I'm Here).

5.28 HANDSFREE OPERATION

Description

Handsfree operation allows a SUPERSET 4™ set user to speak with a caller or called party by means of the set speaker and microphone (the handset is left on-hook).

There are two different modes of operation which are independently selected as either Auto-Answer, or SPEAKER ON/OFF features.

The Auto-Answer feature, when selected, permits an incoming call to the SUPERSET 4™ set (prime directory number) to be answered automatically and connected to the SUPERSET 4™ set speaker and microphone. No action is necessary by the extension user. The caller receives 1 second of audible ringing tone and is then connected to the extension. The extension user hears a single ring as an indication of the incoming call. The station user can originate calls normally.

The SPEAKER ON/OFF feature allows a SUPERSET 4™ set user to receive and make calls without lifting the handset. This feature can be activated during a call, or prior to making or answering a call, and can be used on any of the lines appearing at the set. The SUPERSET 4™ set user can also dial from keypad, or use Speed Dialing or redial features, without previously lifting the handset, selecting a line, or obtaining dial tone.

Conditions

- If Auto-Answer is desired, COS option 600, SUPERSET - Auto-Answer must be enabled in the set's Class of Service.
- Call Forwarding - Don't Answer has no effect if the SUPERSET 4 set is operated in the auto-answer mode.
- A callback cannot be honoured if the originating SUPERSET 4™ set is operated in the auto-answer mode.
- A Loop Start Trunk cannot call or be transferred to a SUPERSET 4™ set which is being operated in the auto-answer mode.

Operation

To Operate a SUPERSET 4™ set in the Auto-Answer Mode:

- Press the SELECT FEATURES key.
- Dial '3' (feature number 3 is auto-answer (3:AUTO ANS)).
- Press the ON feature key. With the handset on-hook, any incoming call to the SUPERSET 4™ set extension number will give a burst of ringback tone via the speaker.
- On completion of the call, when the caller hangs up, the called SUPERSET 4™ set receives a burst of miscellaneous tone and the line becomes idle. (If the called SUPERSET 4™ set goes to an on-hook condition first, no tone is received.)

To Disable the Auto-Answer Feature:

- Press the SELECT FEATURES key.
- Dial '3'.
- Press the OFF feature key.

To Use Handsfree Feature to Make or Receive Calls:

- Select the line required to originate or answer a call. If originating a call, dial tone is heard from the speaker. If answering a call, communication with the caller can be carried out by means of the speaker and microphone.

On Completion of a Call:

- Press the HANG-UP feature key.

The microphone can be turned off (e.g., when required to consult privately with another person near the SUPERSET 4™ set), by pressing the MIC ON/OFF key. The advisory words MIC ON will disappear from the main display.

At any time, the conversation can be made private by using the handset. Lifting the handset disables the speaker and microphone. To return to handsfree mode, whether or not the auto-answer feature was used originally, press the SPEAKER ON/OFF key and replace the handset.

Speaker volume can be adjusted by means of the speaker volume control located in the top left corner of the SUPERSET 4™ set body.

5.29 HELP FUNCTION

Description

The HELP function is active during name, message, and speed call (speed dialing) programming. When one of these three features is selected, a HELP prompt appears on the LCD display. Selecting HELP by pressing the softkey associated with the prompt results in further prompting on the display for the type of information required by the SUPERSET 4™ set, and the format in which it is to appear.

Conditions

- PROGRAM must be selected.
- HELP is active only for name, message, and Speed Dial programming.

Operation

- Press the PROGRAM softkey. LCD display prompts for feature to be programmed.
- Select feature to be programmed (name, message, speed call). HELP prompt appears on LCD.
- Press HELP softkey. Information format required is displayed. Example: if NAME is to be programmed, the display shows "3=D, 33=E, 333=F"; i.e., to program the letter "D", "3" is dialed; to program the letter "E", "33" is dialed, and so on.

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5.30 I-BUSY/U-BUSY AND I-HOLD/U-HOLD INDICATION

Description

The line status display of the SUPERSET 4™ set is capable of showing busy and held conditions of both the called or calling party and the SUPERSET 4™ set itself. For further information, refer to Part 4 of this practice.

Conditions

None

Operation

- I-BUSY - The line is busy at the SUPERSET 4™ set. The line status display shows a solid box.
- U-BUSY - When a shared line appearance is busy at another set, the SUPERSET 4™ set line status display shows a steady-on circle.
- I-HOLD - The SUPERSET 4™ set places a call on hold. The call on hold appears on the line status display as a flashing box.
- U-HOLD - When a shared line appearance is on hold at another set, the SUPERSET 4™ set line status display shows a flashing circle.

5.31 IMMEDIATE LINE SELECTION

Description

This feature permits the user to dial while on-hook. The SUPERSET 4™ set goes off-hook (handsfree) and selects the prime line immediately after the user presses one of the keypad keys. If the prime line is busy and there is another line available at the set, it is selected.

If immediate line selection is not enabled, the user must press the SPEAKER ON/OFF key or a programmed line select key, or lift the handset before attempting a call.

Conditions

- Only SUPERSET® sets may use this feature.
- COS option 604, SUPERSET – Immediate Line Select must be enabled in the set's class of service.

Operation

It is not necessary to lift the handset or operate the SPEAKER ON/OFF key to go off-hook. This occurs automatically when the first digit is dialed.

5.32 IMMEDIATE RING LINE APPEARANCES

Description

An appearance that is programmed "immediate ring" will audibly ring the SUPERSET 4™ set at the same time the LCD Line Status Display flashes. This is typical telephone operation on incoming calls.

Conditions

Immediate Ring must be programmed in the nested Expand Set form within the Stations/Superset Sets form of Customer Data Entry.

Operation

When an incoming call appears at a SUPERSET 4™ set on a line programmed as immediate ring, the set will ring at the same time the call appears on the LCD Line Status Display.

5.33 INTERCOM

Description

Line select keys on a SUPERSET 4™ set that are not used for lines or Speed Dial may be used as intercom connections. These keys have an internal number programmed as a Speed Dial number and are terminated with a * 5 as an indication that this key is to be treated as an intercom key. Whenever a SUPERSET 4™ set user presses an intercom key, the system will access the SUPERSET 4™ set programmed to that intercom key and the caller will be connected to the called SUPERSET 4™ set's speaker or the Call Announce Port if the SUPERSET 4™ set is busy.

Conditions

The SUPERSET 4™ set receiving the intercom call must be equipped with a Call Announce Port.

Operation

To access an intercom number from a SUPERSET 4™ set:

- Press the appropriate key – the calling SUPERSET 4™ set will be connected as an intercom call to the called SUPERSET 4™ set's speaker or the Call Announce Port if the SUPERSET 4™ set is busy.

Note: The caller will hear only one short ringback tone and the called party receives only a short warning tone before the connection is made. If the called SUPERSET 4™ set does not have an Announce Port and is busy the caller will receive busy tone.

5.34 LAST NUMBER REDIAL

Description

This feature allows a SUPERSET 4™ set user to automatically redial the last external telephone number dialed from the keypad by pressing a single key.

Conditions

- System option 29, SUPERSET Set Last Number Redial must be enabled in the System Options/System Timers form of Customer Data Entry.
- Only the last external telephone number dialed manually from the SUPERSET 4™ keypad is stored automatically.

Operation

- Press the REDIAL feature key. The last manually dialed external telephone number is dialed automatically.
- The last external number dialed may be displayed on the alphanumeric display by pressing the DISPLAY and REDIAL feature keys in that order.

5.35 LOOP TEST

Description

The loop test feature of the SUPERSET 4™ set is a self-test feature activated by a loop test access code. Activation of the feature prompts for a series of tests to ensure all keys and LCD prompts function properly. For further information, refer to Part 9 of this practice.

Conditions

An access code must be programmed for option 26 in the Feature Access Codes form of Customer Data Entry.

5.36 MESSAGE WAITING INDICATION

Description

When a message is received by a SUPERSET 4™ set, the message waiting indication is activated, and appears as the word MSG flashing on the liquid crystal display. The indication occurs regardless of the status of the set receiving the message (idle or busy). For further information regarding message waiting indication, refer to Messaging.

5.37 MESSAGING – ADVISORY AND CALL ME BACK

Description

Advisory Messages

This feature allows a SUPERSET 4™ set user to create short (up to 13 characters) advisory visual systemwide messages that can be read at other SUPERSET 4™ sets when other SUPERSET 4™ set users call the message originator.

Up to 15 advisory messages can be created by the set user (numbered 01 through 15). Messages 01 through 08 are preprogrammed but may be overwritten by the user. These are:

Message Number	Default Message
01	IN A MEETING
02	OUT OF TOWN
03	ON VACATION
04	OUT ON A CALL
05	OUT TO LUNCH
06	GONE FOR DAY
07	GONE HOME
08	IN TOMORROW
09–15	(BLANK)

Call Me Back Messages

This feature allows a SUPERSET 4™ set user to send a visual message to a SUPERSET 4™ set that is busy or is not answered, requesting the called party to call the message sender.

The messages requesting another SUPERSET 4™ set user to call the message sender is of the form:

CALL (NAME) AT (NUMBER)/(TIME)

where (NAME) is the user's name associated with the sending SUPERSET 4™ set (if the user's name has been saved; see Personal Identification), (NUMBER) is the extension number of the sending SUPERSET 4™ set, and (TIME) refers to when the message was sent.

If user's name has not been saved, the message format is as follows:

CALL (NUMBER)/(TIME)

where (NUMBER) is the extension number of the sending SUPERSET 4™ set, and (TIME) refers to when the message was sent.

Messages can be read at any time (i.e., when the set is idle or during a call).

Conditions

Advisory Messages

- COS Option 605 SUPERSET – Message Program must be enabled for a SUPERSET 4™ set to be able to create or alter an advisory message.

Call Me Back Messages

- A message is canceled automatically if the sender and receiver have a telephone conversation before the message is read.
- Messages are canceled after 24 hours.

Operation

Advisory Messages

To Set Up Advisory Messages:

- Press the PROGRAM feature key.
- Press the MSG feature key.
- In response to display DIAL IN MSG. NUM., dial message number (between 01 and 15 inclusive).

Messages 01 through 08 are preprogrammed as described. Selecting a message number in this group causes the existing message to be overwritten.

In response to display NOW ENTER MSG, dial in the message as follows:

- Both numeric and alpha characters can be used in a message.

Keys 2 through 9 and * on the keypad are identified with alpha characters. Press the key associated with the first character in the message, and a character is displayed in the alphanumeric display. If this character is not correct, repeated presses on the key cycle the display through all the characters for that key. When the displayed character is correct, press the NEXT feature key.

Repeat the above step for remaining characters in the message. For spaces, press the NEXT feature key again.

There are two ways to correct a programming error:

1. Use the "←" feature key to backspace to and clear an incorrect entry.
2. To cancel the entire procedure before the message has been saved, press the EXIT feature key.

When the message is complete, press the SAVE feature key. The message is now saved.

To Activate an Advisory Message:

- Press the MSG feature key.
- If displayed message is inappropriate, press the NEXT feature key repeatedly to cycle through the repertoire of messages, or dial message number (01 to 15) if known.
- Press the ON feature key. The selected message is now effective. Any other SUPERSET® user dialing a SUPERSET 4™ set with a message in effect sees the message displayed.

To Cancel an Advisory Message:

- Repeat procedure for activating a message, except press the OFF feature key.

To Receive an Advisory Message:

- When a SUPERSET 4™ set with a message in effect is rung from another SUPERSET 4™ set, the calling SUPERSET 4™ set displays the number dialed, then its display gives the message. Other actions such as ringing or busy continue as normal.

Call Me Back Messages

To Send a Call Me Back Message:

- If the number dialed (another SUPERSET 4™ set) is busy or isn't answered, press the SEND MSG feature key.

- The message, in the format described above, is sent to the called party, whose SUPERSET 4™ set then displays the flashing word MSG.

To Cancel a Call Me Back Message:

- Call the extension (another SUPERSET 4™ set) again.
- Press the MSG key.
- The called party's flashing message indicator clears and the call is terminated.

To Receive a Call Me Back Message:

- A message requesting a callback is indicated on the receiving SUPERSET 4™ set by the word MSG flashing on and off.

If the receiving SUPERSET 4™ set is idle, the message can be read as follows:

- Press the MSG feature key. The display indicates the number of messages to be read.

- Press the READ MSG feature key. The message is displayed.
- If there are more messages to be read, the NEXT prompt is activated.

To read additional messages, press the NEXT feature key.

- To clear a message once it has been read, press the CANCEL feature key.
- To respond to the request, press the CALL feature key, and the returned call is made automatically.

If the message to the receiving SUPERSET 4™ set is to be read during a call, proceed as follows:

- Press the SELECT FEATURES key.
- Dial '4' (feature number 4 is message (4:MSG)).
- Press the READ MSG feature key. The message is displayed.
- If there are more messages to be read, the NEXT prompt is activated. To read additional messages, press the NEXT feature key.

To clear a message once it has been read, press the CANCEL feature key.

5.38 MICROPHONE ON/OFF

Description

The MIC ON/OFF switch permits the switching off of the microphone during handsfree and auto-answer operation in order to either prevent transmission of local sound, or improve reception when the set is installed in a noisy environment (that is, to prevent caller's background noise from being presented to the caller through the SUPERSET 4™ set speaker).

Conditions

While the microphone is ON, a visual reminder (MIC ON) is displayed on the feature display.

Operation

- Press SPEAKER ON/OFF once. The handsfree feature is now active, and dial tone is heard. MIC ON is displayed on the features display.
- Press MIC ON/OFF once. The microphone is now switched off. The MIC ON indication is deleted from the features display.
- Press MIC ON/OFF again. The SUPERSET 4™ set is now returned to full handsfree operation.

5.39 MULTILINE APPEARANCE (KEY LINE/MULTICALL LINE)

Description

The SUPERSET 4™ set may have up to 15 multiline appearances of key and/or multiple call (multicall) lines.

Key lines are extension numbers of single line sets, SUPERSET 4™ set prime lines, or other key lines. The key lines may be shared and appear on several SUPERSET 4™ sets. Even though these key lines may appear on several SUPERSET 4™ sets there is complete privacy. A SUPERSET 4™ set with a key line appearance of another set's prime line will be able to answer calls destined for that set. When the line is in use, all other appearances of that line on other sets become busy and cannot be accessed. For another party to access a busy key line the call must be either on hold or the line user activates the privacy release feature on his SUPERSET 4™ set. Incoming calls may ring at the SUPERSET 4™ set immediately, after a delay (set by the system) or not at all. The key line can also be controlled in the direction of calling; i.e., allow incoming calls only, outgoing calls only, or both ways as a regular line.

Multicall lines are similar to key lines. They are extension numbers of single line sets, SUPERSET 4™ set prime lines, or multicall lines. The user has automatic call privacy on multicall lines. When someone is using a multicall line, anyone else with a similar multicall line may access the line and originate a call. If a multicall line is placed on hold, no one else with an appearance can take the line off hold. A SUPERSET 4™ set may have several multicall lines. All other appearances of the line are free when some multicall lines are busy. Incoming calls may ring at the SUPERSET 4™ set immediately, after a delay (Call Forward – Don't Answer Time-Out), or not at all. The multicall line can also be controlled in the direction of calling, allowing incoming calls only, outgoing calls only, or both directions as required.

Conditons

- A key line can never be an appearance of a multiple call line.
- Only one set can use a key line appearance at one time.
- A multicall line can never be an appearance of a key line.

Operation

Pressing the associated line select key selects the multicall or key lines in the same manner that prime line or Speed Dial numbers are selected. Incoming calls are handled in the same way (handset is lifted and/or line select key pressed).

5.40 MUSIC ON CAMP-ON

Description

A music source may be connected to the system via the cross-connect field for use with Camp-On and Hold features. If music is not provided, calls that are held or camped on will hear nothing.

Conditions

- The music source must be between 50 and 500 mVrms.
- Input to the system is 600 ohms AC transformer coupled. A DC voltage must not be applied to this input.

Operation

None

5.41 NEW CALL TONE

Description

When a SUPERSET 4™ set is programmed with multiple line appearances, the set user is alerted to the presence of a new incoming call (while already engaged in a call) by a single burst of ringing tone, in addition to the flashing indication on the line status display.

Conditions

- The SUPERSET 4™ set must be programmed to handle multiple line appearances.
- Each time a new call is received at the SUPERSET 4™ set, the new call tone is heard.
- The new call tone is not heard if the SUPERSET 4™ set is operating in the Handsfree mode.

Operation

None

5.42 NO RING LINE APPEARANCE

Description

An appearance that is programmed "No Ring" will never audibly ring the SUPERSET 4™ set. Only the LCD display will indicate the appearance.

Conditions

A No Ring Line Appearance must be programmed in the nested Expand Set form within the Stations/Superset Sets form of Customer Data Entry.

Operation

An incoming call causes a flashing indication on the SUPERSET 4™ set LCD. No ringing tone is heard.

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5.43 PAGING ACCESS

Description

A SUPERSET 4™ set with this feature permits a user with the proper Class of Service to access the system paging equipment. If an extension tries to access busy paging equipment, busy tone is returned.

Conditions

- Camp-On or Callback - Busy may not be activated on busy paging equipment.
- Any paging announcement may be overridden by the attendant.
- If the attendant overrides an extension, the extension receives busy tone.

Operation

- The SUPERSET 4™ set goes off-hook.
- Press and hold down the PAGE feature key - the user hears a short pulse of tone, is then connected to the paging system, and may make the required announcement.

5.44 PERSONAL IDENTIFICATION – CALLED PARTY; CALLING PARTY; OVERRIDING PARTY; CAMPED-ON PARTY

Description

This feature allows a SUPERSET 4™ set user to enter and save his or her name, and to use this SUPERSET 4™ set user association in messaging applications. When programmed, the name will appear at another SUPERSET 4™ set when that set is called, identifying the calling party. As well, when a SUPERSET 4™ set makes a call to another SUPERSET 4™ set which has a name programmed, the name of the called party will appear on the calling SUPERSET 4™ set. When names are not programmed, the called and calling parties are identified on the SUPERSET 4™ sets by extension number. Personal identification also identifies an overriding party, or a camped-on party.

Note: To check the name saved at a SUPERSET 4™ set, press the DISPLAY key, then the NAME feature key. The currently saved name is displayed on the alphanumeric display.

Conditions

None

Operation

To Set Up or Modify a Name:

- Press the PROGRAM feature key.
- Press the NAME feature key.
- In response to display DIAL IN NAME, dial in the name as follows:
- Keys 2 through 9 and * on the keypad are identified with alpha characters. Press the key associated with the first character in the name, and a character is displayed in the alphanumeric display. If this character is not correct, repeated presses on the key cycle the display through all the characters for that key (see also Help Function). When the displayed character is correct, press the NEXT feature key.

- Repeat above step for remaining characters in the name. For spaces, press the NEXT feature key again.

There are two ways to correct a programming error:

1. Use the "–" feature key to backspace to and clear an incorrect entry.

2. To cancel the entire procedure before the name has been saved, press the EXIT feature key.

When the name is complete, press the SAVE feature key. The name is now saved.

5.45 PRIVACY/PRIVACY RELEASE

Description

A SUPERSET 4™ set user may have appearances of key lines at his set that are shared with other SUPERSET 4™ set users. Unless otherwise selected, privacy is automatic; i.e., another SUPERSET 4™ set with an appearance of the line a SUPERSET 4™ set has accessed cannot break into the conversation. If so desired, the SUPERSET 4™ set user can permit the intrusion by activating the Privacy Release feature.

Conditions

- Privacy and Privacy Release are effective only against appearances on other SUPERSET 4™ sets. It has no effect on Executive Busy Override.

Operation

- During an established call, press the PRIVACY REL feature key. Another SUPERSET 4™ set user with an appearance of the same line can now enter the conversation by pressing the appropriate line select key.

5.46 REMINDER (AUTOMATIC WAKE-UP, ALARM CALL)

Description

This feature allows a SUPERSET 4™ set user to set up a timed reminder, such as an appointment reminder that rings the extension once at a prearranged time. When the system rings a SUPERSET 4™ set at the prearranged time, the alphanumeric display reads DISPLAY REMINDER to assist the user in acknowledging the reminder.

After a timed reminder is answered, the SUPERSET 4™ set reverts to idle condition.

Conditions

- An extension with "Do Not Disturb" is overridden and rung at the requested time.
- The SUPERSET 4™ set must have COS Option 202, Alarm Call, enabled in its Class of Service.
- The current alarm call setting can be displayed in the alphanumeric display by pressing the DISPLAY and REMINDER feature keys in that order.

Operation

To Set or Modify a Timed Reminder:

- With the handset on-hook, press the PROGRAM feature key.
- Press the REMINDER feature key.
- Dial the alarm time in 24-hour clock format. The time is indicated on the SUPERSET 4™ set's alphanumeric display.

There are two ways to correct a programming error before the SAVE feature key is pressed:

1. Use the "–" feature key to backspace to and clear the incorrect entry.
2. To cancel the entire current entry, press the EXIT feature key. The system is now set to ring the originating extension at the programmed time.

To Cancel a Timed Reminder:

- With the handset on-hook, press the PROGRAM feature key.
- Press the REMINDER feature key.
- Press the CANCEL feature key.

To Acknowledge a Timed Reminder:

- The SUPERSET 4™ set rings once and the word REMINDER flashes in the LCD prompt display area.

- Press the REMINDER feature softkey.
- The word ACKNOWLEDGED appears on the LCD.

5.47 ROOM STATUS – HOTEL/MOTEL

Description

The "Room Status Display" feature allows a SUPERSET 4™ set user to view the status of a room as set by the attendant. (Refer to Room Status, Attendant Features) Accessing the "Maid in Room" feature permits the user to set or change the following conditions:

- maid is in room
- no maid in room
- room clean, maid not in room.

Conditions

- This feature is not available in Generic 1000.
- Class of Service option number 244 (Room Status Applies), is enabled.
- Enable System Option 33 (Room Status).
- Assign access codes to System Features 34 (Maid in Room) and 35 (Room Status Display).

Operation

To view Room Status:

- Dial the "Room Status Display" access code.
- Dial the extension number of the associated room.

To change the "Maid in Room" condition:

- Dial the "Maid in Room" access code.
- Dial one of 1, 2, or 3: 1–maid is in room
  2–no maid in room
  3–room clean, maid not in room.

5.48 SECRETARIAL FEATURE

Description

This feature allows the SUPERSET 4™ set user to override the Do Not Disturb feature enabled at another SUPERSET® set when the sets are programmed with multicall lines.

Conditions

- The secretarial feature must be enabled through Customer Data Entry programming of SUPERSET® sets.
- The feature is operational only when two or more SUPERSET® sets are programmed with multiple appearances of the same line.
- The SUPERSET® set's prime line cannot be programmed as a multicall line, and therefore the secretarial feature cannot be enabled on the set's prime line.

Operation

- Ensure two SUPERSET® sets are programmed with multiple appearances of the same line during Customer Data Entry.
- On one of the sets, enable Do Not Disturb.
- Ensure the other set is programmed as SECRETARIAL for the multicall line.
- When a call is made to the secretarial SUPERSET® set's multicall line, place the call on hold by pressing TRANS/CONF, and dial the multicall number. The SUPERSET® set with Do Not Disturb enabled will ring.

5.49 SPEAKER ON/OFF

Description

This feature allows the SUPERSET 4™ set user to originate or receive calls without the use of the handset.

Conditions

- The SUPERSET 4™ set built-in microphone is activated when the speaker is ON.
- Each time SPEAKER ON/OFF is pressed the speaker and microphone are switched alternately ON and OFF.
- Each time SPEAKER ON/OFF is pressed the SUPERSET 4™ set is switched between on-hook and off-hook conditions.
- MIC ON is displayed on the features display when the feature is active.

Operation

To Switch to Speaker and Microphone Operation:

- Press SPEAKER ON/OFF once. The feature is now active, and the prime line is selected.

To Return to Handset Operation from Speaker Operation:

- Press SPEAKER ON/OFF again. The feature is deactivated, and the set is returned to an on-hook condition.

5.50 SPEED DIAL

Description

This feature allows a SUPERSET 4™ set user to save frequently dialed telephone numbers and to access these numbers by pressing a single key. The quantity of Speed Dial numbers available to a SUPERSET 4™ set user is dependent on the number of lines programmed to appear at the set. Only unused (unassigned) line select keys can be used to save Speed Dial numbers.

To check saved numbers, press the DISPLAY key, then the required line select key. The currently saved Speed Dial number is displayed on the alphanumeric display. Up to 16 digits can be displayed at once. If the saved number is greater in length, an arrow (→) is displayed. Press the "→" feature key to view the remaining characters. Feature access codes for Directed Call Pickup, Remote Call Hold Retrieve and Call Forwarding may be programmed into Speed Dial numbers.

Conditions

Only unassigned lines may be programmed with speed dial numbers. Only unassigned line select keys can be used to program feature access codes.

Operation

To Set Up or Modify a Speed Dial Number:

- With the handset on-hook, press the PROGRAM feature key.
- Press the SPEED CALL feature key.
- If the REDIAL softkey is displayed, pressing it before selecting a Speed Dial key will cause the numbers in the Last Number Redial buffer to be stored under that Speed Dial key.
- Press an unused Speed Dial key.
- Dial the number to be stored.
- Insert into the dialing sequence * 3 - where, during the automatic dialing sequence, dialing is suspended while other digits are dialed manually; e.g., the general number for directory assistance is 1+(area code)+555-1212; the area code is to be dialed manually. The * 3 must be followed by a 2-digit number signifying the quantity (between 01 and 14) of digits to be dialed. In the directory assistance example, the number to be stored would be:
  91 * 3035551212

  where 9 is a trunk access code.

- Dial * 5 - at the end of a number which is to be used for intercom calls.
- Check the Speed Dial number to be saved as displayed on the alphanumeric display. If correct, press the SAVE feature key. The

Speed Dial number is now saved.

To Set Up a Feature Access Code:

- With the handset on-hook, press the PROGRAM feature key.
- Press the SPEED CALL feature key.
- Press an unused Speed Dial key.
- Dial the Feature Access code and the extension number of the set to which the feature applies.
- Press the SAVE feature key.

To access the feature:

- Press the programmed speed dial key with the set on-hook.
- Press softkey prompt "hang-up" or the speaker on/off.

To cancel the feature:

- Press Select Feature key.
- Dial the appropriate number (appearing in the upper left corner of the LCD display).
- Press the "off" feature key.

To cancel all features, the user can dial the Clear all Features access code.

There are two ways to correct a programming error before the SAVE feature key is pressed:

1. Use the "←" feature key to backspace to and clear the incorrect entry.
2. To cancel the entire current entry, press the EXIT feature key.

5.51 STATION CONFERENCE

Description

This feature allows a SUPERSET 4™ set user to set up a conference with up to four conferees (plus the originating extension), without the assistance of the attendant. The conferees may be any combination of extensions and trunks. To originate the conference a SUPERSET 4™ set user establishes a 2-party call and then adds on the remaining conferees. Any extension in the conference (with the appropriate Class of Service) may add additional parties, to a maximum of five. If the originator encounters a busy or unanswered extension, he may return to the conference. If a CO trunk is to be added to the conference and the number dialed is incorrect, busy, or unanswered, the SUPERSET 4™ set user can cancel that action, and will be automatically returned to the conference.

Conditions

- The maximum number of parties involved in a conference is five (the SUPERSET 4™ set and four other extensions).
- COS Option 302, Flash-in Conference must be enabled in the set's class of service.

Operation

To Establish a Conference:

- Establish a 2-party call.
- Press the TRANS/CONF feature key - transfer dial tone is returned.
- Dial the number of the next conferee - ringing tone is returned. When the conferee answers, press the CONF feature key. A 3-party conference exists.
- Any extension in the conference may add additional conferees to the conference.
- If the next conferee is busy or does not answer, press the CANCEL feature key - the SUPERSET 4™ set is returned to the conference. If the next conferee is to be accessed via a CO trunk and the number dialed is incorrect, busy, or unanswered, press the CANCEL feature key - the SUPERSET 4™ set is returned to the conference.

5.52 STATION TRANSFER, CONSULTATION HOLD/ADD-ON, TRANSFER WITH PRIVACY

Description

This feature allows a SUPERSET 4™ set user on an established call to hold the call, add a third party to the call, transfer the original call to a third party, or speak privately with either of the called parties.

Conditions

- Calls may not be transferred to the paging circuit.

Operation

On an Established Call:

- Press the TRANS/CONF feature key - transfer dial tone is returned, the called party is held and hears music, if provided.
- Dial the number of the required extension. If the number is busy or does not answer, press the CANCEL feature key to return to the held call.
- After the called party answers, private conversation with this party exists.
- To establish a 3-party call, press the CONF feature key.

  OR

- To connect held party with third party and to leave the conversation, press the RELEASE feature key - dial tone is returned.

  OR

- To speak privately with only one party in a 3-party call, press the SPLIT feature key. The other party is put on hold. To alternate between held and spoken parties, press the SWAP feature key.
- To leave the conversation, the SUPERSET 4™ set goes on hook, leaving the other parties connected to one another.

5.53 SUBATTENDANT

Description

A SUPERSET 4™ set may be used as a Subattendant position for recalls. An incoming trunk call directed to an extension, will recall to the Subattendant SUPERSET 4™ extension and not to the Attendant Console under recall conditions. If the Subattendant is busy on another call at the time of recall, a 'new call tone' of 0.5 second burst of ringing is received (only if a multicall appearance of the prime line exists on this SUPERSET 4™ set). The 'new call tone' is not heard if the Subattendant is using the speaker system.

The Subattendant can send a message to a station or to another SUPERSET 4™ set. The message lamp, if it exists, will flash to indicate that a message is waiting. The message waiting bell, if it exists, will give three 125 ms bursts. When a Subattendant dials a station or a SUPERSET 4™ set, and a message already exists between the two parties, the MSG prompt will be ON. If the Subattendant presses the MSG key, the message will be cancelled.

The Subattendant feature may also perform night switching to NIGHT1. Pressing the SELECT FEATURES key causes the NIGHT ANS prompt to be displayed, activating night switching. The set displays "NIGHT SERVICE" as long as it is in the night switching mode. When night switching is disengaged, "DAY SERVICE" is displayed on the features display for 2 seconds.

A message set up on a station or a SUPERSET 4™ set is automatically canceled when that set calls and is answered by any SUPERSET 4™ Subattendant.

Conditions

- The SUPERSET 4™ set must have the SUPERSET® Subattendant Option 606 enabled in its Class of Service.
- The SUPERSET 4™ set must be programmed on CDE Form 19, Alternate Recall Point, as the recall point.
- The SUPERSET 4™ set to be used as a Subattendant position should be programmed in its own Class-of-Service.
- A DIL Trunk must be programmed to recall to the Subattendant SUPERSET 4™ set after the No Answer time-out, otherwise it will automatically recall to the Attendant Console.

Operation

- A trunk call is directed to an extension.
- The trunk call is connected to the extension. Under recall conditions, the SUPERSET 4™ Subattendant will be rung, and the trunk call will be connected to the SUPERSET 4™ set.

5.54 SWAP CAMP-ON

Description

This feature key is used to place the current call on temporary hold in order to answer the waiting call (the camped-on party). Refer to Camp-On, Description and Operation for further information regarding Swap Camp-On.

5.55 TRUNK ANSWER FROM ANY STATION (TAFAS)

Description

TAFAS allows incoming trunk calls to ring common alerting device(s) when selected by the attendant, and to have the incoming call answered at a SUPERSET 4™ set with the appropriate Class of Service. The answering extension may exercise any feature associated with incoming calls that is normally available at the extension.

Conditions

- TAFAS Access must be enabled in the set's Class of Service:

  TAFAS any Access is option 246
  TAFAS Access Tenant is option 247
  TAFAS Access During Day Service is option 248

- If a call is picked up by TAFAS, then transferred to an extension which does not answer, it recalls to the original extension.

- An incoming CO trunk call causes a common alerting device and the console bell to ring (if handset is plugged in).

Operation

- At the SUPERSET 4™ set, lift handset – dial tone is returned.

- Press the NIGHT ANS feature key, and converse with the caller on the incoming trunk.

6. LINE TYPES AND APPEARANCES

General

6.01 The SUPERSET 4™ set can be programmed to have up to 15 line appearances. This Part describes the different line types available, how they are functionally different, and how they can appear at the SUPERSET 4™ set.

6.02 There are six line types:

Prime Line
Key Line
Multiple Call Line
Direct Trunk Select Line
Private Line
Personal Outgoing Line.

6.03 Some of the lines can have the three following variants:

Direction: both way, incoming only, outgoing only.

Ring: no ring, delayed ring, ring.

Secretarial: non-secretarial, secretarial.

The variants for the line types involved are:

LINE TYPE	VARIANT		
	Direction	Ring	Secretarial
Key	X	X	
Multiple Call	X	X	X
Direct Trunk Select	X	X	
Private	X	X	

Line Appearances

6.04 A line is said to "appear" at a SUPERSET 4™ Set if the line has been assigned to one of the available positions on the line status display and can therefore be selected or accessed by the Set user. A line can be programmed to appear at one set, at more than one set, or more than once at a particular set. Although a line can appear more than once throughout the system, it is always identified by its unique directory number.

6.05 The appearances of a line do not have to be identical - the line type and its variants can both differ; for example, a line can appear as a prime line at one set and as a key line (with delayed ring) at another set.

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6.06 Although a SUPERSET 4™ set can access up to 15 lines, it only requires one pair of wires to connect the set to its equipment number position. The SUPERSET 4™ set sends signals to the system which makes the appropriate line connection.

Line Types

6.07 Prime Key – It is the primary line on the SUPERSET 4™ set. This extension number is the SUPERSET 4™ set's identity.

6.08 Personal Outgoing Line – Used for outgoing calls only. It separates the prime line into outgoing and incoming parts. Allows an outgoing call without making the prime line busy to incoming calls. It shares programming information with the prime line.

6.09 Key Line – This is a line that has an extension number that may or may not be a SUPERSET 4™ set prime line. It may appear on one SUPERSET 4™ set or on several. All appearances will light up together. Variants can be programmed independently. If busy on one set, it is busy on all sets. Privacy release is needed to allow a second set to connect to this line.

6.10 Multicall Line – Dial the number assigned to the key and any set with an appearance may answer. Only sets programmed to ring will ring. Immediately after answer, it is available for an incoming call to all remaining appearances. The number of simultaneous incoming calls is the same as the number of appearances. An incoming call lights all idle appearances of the line. Once answered, only the line status display on the set answering stays lit. Outgoing, all sets not using the line for an incoming call may make simultaneous outgoing calls with independent line status appearances. Incoming and outgoing usage is subject to variant programming that is independent for all sets.

6.11 Direct Trunk Select Line – A DTS line is like a key line that accesses a CO trunk directly. It can be used for incoming and outgoing calls, subject to variant programming. Calls can appear on several SUPERSET 4™ sets, and can be transferred to both SUPERSET 4™ sets and regular sets.

6.12 Private Line – A key line that can access a CO trunk directly. SUPERSET 4™ sets are registered multifunctional (MF) to accommodate this type of operation where the operating TELCO provides a less expensive line rate for key sets. The DTS information applies except for being able to transfer to other sets. It can only be used by sets having a key line assigned to the private line. Several sets can use it simultaneously with the operation of the privacy release key.

7. PACKAGING

7.01 The SUPERSET 4™ set is shipped in a single carton, as shown in Figure 7-1.

7.02 On delivery at the destination, carefully unpack the SUPERSET 4™ set carton and check that all items are present and undamaged. Retain some packaging for reshipment of any damaged items.

7.03 The SUPERSET 4™ set consists of a main assembly, handset, and handset cord. Additional items include identification cards (for telephone numbers and lines), protective covers for these cards, reference guide, installation guide, and warranty tag.

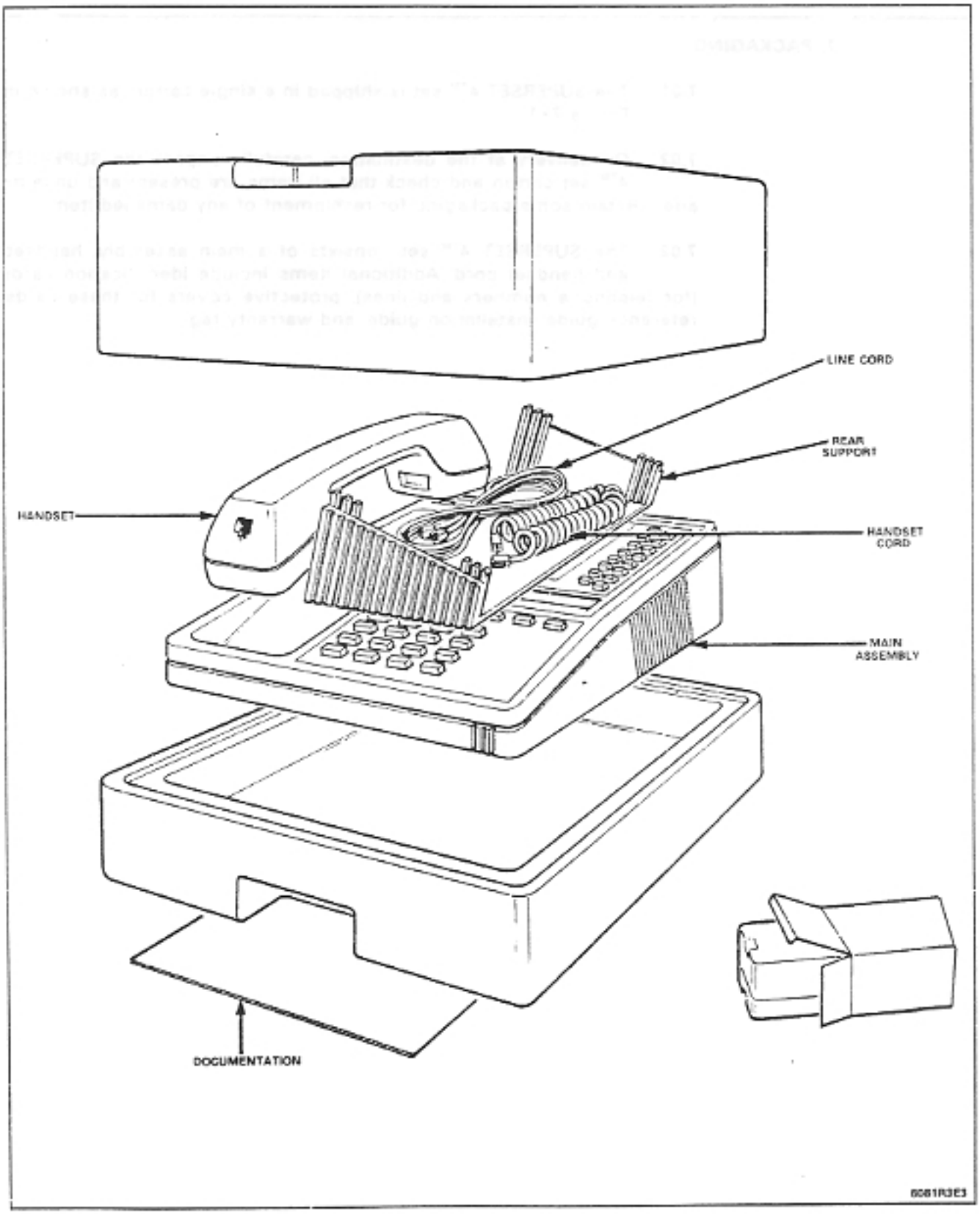

Figure 7-1 SUPERSET 4™ Set and Packaging

8. INSTALLATION AND MAINTENANCE

Note: Installers should not attempt to use a hand test telephone (butt in) to check SUPERSET 4™ set lines, because there is no loop detector installed in the PABX SUPERSET 4™ set line card/interface: set on-/off-hook status is signaled using data transmission. SUPERSET 4™ sets must not be connected:

a) to standard lines;
b) in parallel; or
c) as Power Fail Transfer extensions.

Installation

8.01 Installation of a SUPERSET 4™ set is simplified because of the following:

- Handset and line cords are modular-connector-ended.
- No local power supply is required; power is provided by the system and distributed through the line.
- Only nonessential user programming is performed at the set; i.e., speed dialing ("speed call") entry, call forward destination, name, and timed reminder.
- Installer can use set display feature to identify lines programmed to appear at the set.
- Initialization of the SUPERSET 4™ set occurs automatically when the set is connected to the system.

Note: Before a SUPERSET 4™ set can be connected to a PABX system, the PABX must be programmed and equipped to interface with a SUPERSET 4™ set.

8.02 Figure 8-1 shows a SUPERSET 4™ set assembly. Install a SUPERSET 4™ set as follows:

- Connect the handset cord to the handset and the main assembly.
- Identify the user's telephone number on the telephone number identification card.
- Install the card and protective lens onto the main assembly.
- Identify the user's extension number and other lines appearing at the SUPERSET 4™ set on the line identification card.
- Install the line identification card and protective cover onto the main assembly.
- Connect the line cord to the telephone jack.

8.03 Installation of a SUPERSET 4™ set into a powered-up system consists of:

- Ensuring local modular telephone outlet is connected to a SUPERSET 4™ set line card or interface.
- Connection of handset, handset cord, line cord, and main body of the SUPERSET 4™ set.
- Connection of line cord to local modular jack.
- Verifying automatic initialization procedures have been executed; this should take 10 to 20 seconds.
- When procedures are complete, time and date are displayed.
- Identification of customer telephone number and lines appearing at the set.
- Performance of installer loop test procedures as specified in Part 9 of this Practice. This verifies transmission and reception paths and key and display operation.

Environmental Specifications

8.04 Operating Environment:

- Ambient Temperature: 0 to 50°C (32 to 122°F).
- Ambient Humidity: 10 to 90% RH, noncondensing.

8.05 Storage/Shipping Environment:

- Ambient Temperature: -20 to 50°C (-4 to 122°F).
- Ambient Humidity: 10 to 90% RH, noncondensing.

Maintenance

8.06 No regular or scheduled maintenance is required. The installer loop test procedure can be performed at any time to check set operation. The installer loop test procedure, performed at the SUPERSET 4™ set after dialing the loop test access code, confirms correct key operation, liquid crystal display activation, hookswitch functioning, and ringer (speaker) output. Refer to Chart 9-1 for the detailed procedure.

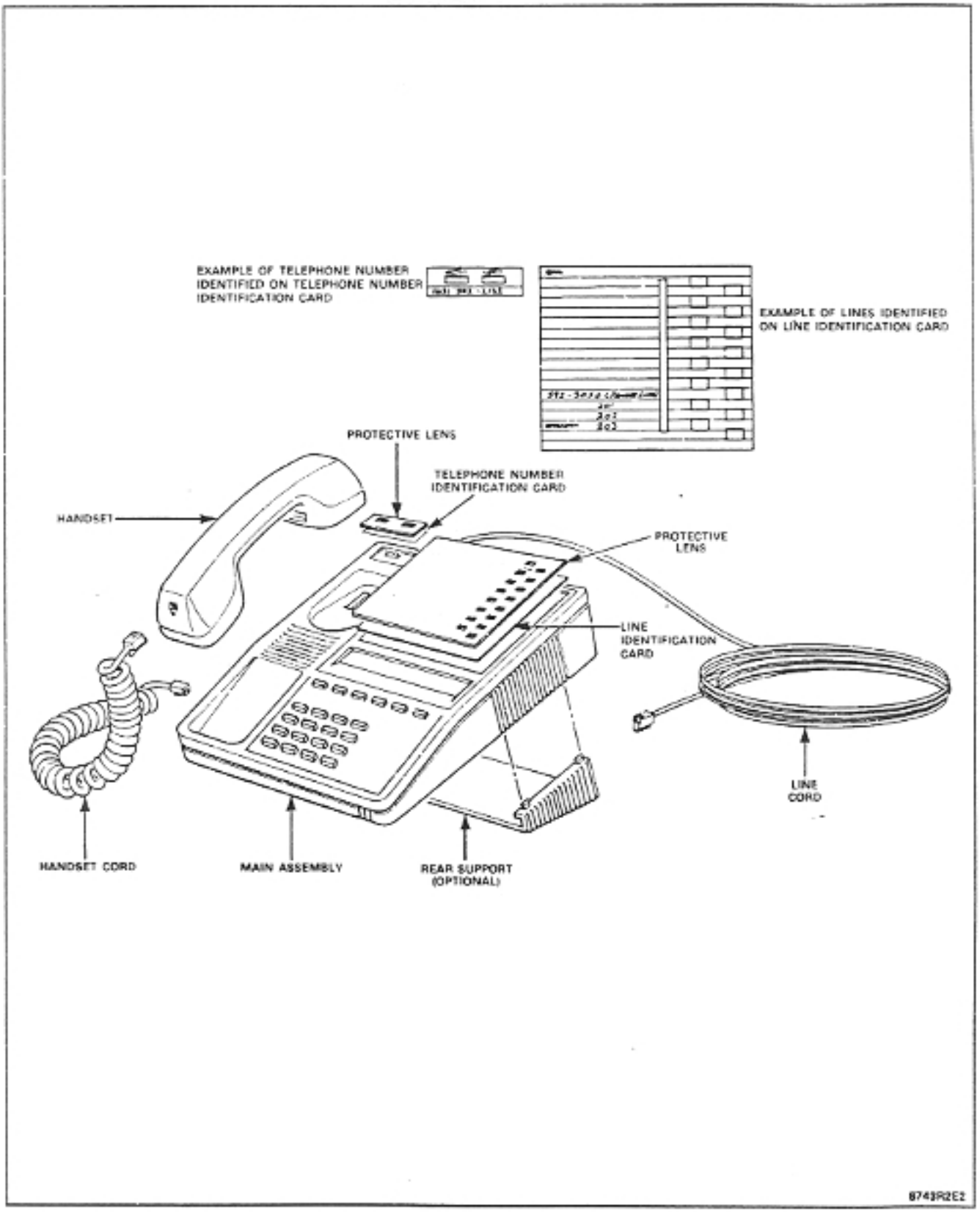

Figure 8-1 SUPERSET 4™ Set Assembly

9. SUPERSET 4™ SET TEST PROCEDURES

9.01 Perform these test procedures as operational tests when installing a SUPERSET 4™ set after initial installation of a system.

9.02 Whenever a SUPERSET 4™ set is connected to an operating system, or the system has just been powered up, this test is run automatically. A message in the following format appears on the SUPERSET 4™ set LCD: ":SS4 VXX.XX.XX:", for approximately 30 seconds. Time and date are then displayed. If the test fails, verify that the system is installed correctly and is powered up. Refer to the appropriate MITEL practices for system installation instructions.

9.03 Satisfactory completion of the test procedures listed in Chart 9-1 confirms correct key operation, liquid crystal display activation, hookswitch functioning, and speaker output, and checks that the set has been installed correctly.

9.04 Perform the tests listed in Chart 9-1 at each SUPERSET 4™ set. If any test fails, verify that the system is installed correctly and is powered up.

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CHART 9-1
INSTALLER LOOP TEST ROUTINES

Step	Action	Verification	Notes
Accessing Test Routines			
1.	Go off-hook (handset or handsfree).	Dial tone returned. Line status display indicates line busy at this set.	1
2.	Dial Loop Test Access Code.	"TEST! PRESS KEYS" displayed.	2, 3
Keypad Test			
3.	Press keys 1-9, *, 0, and # in turn.	DTMF tones are heard through handset or speaker. A 2-digit number is displayed as follows: Key Pressed → Number Displayed 1 → 01 2 → 02 3 → 03 4 → 04 5 → 05 6 → 06 7 → 07 8 → 08 9 → 09 * → 10 0 → 00 # → 11	
Supplementary Feature Keys Test			
4.	Press the "display", "select features", "speaker on/off", and "mic. on/off" keys in turn.	A 2-digit number is displayed as follows: Key Pressed → Number Displayed display → 12 select features → 13 speaker on/off → 14 mic. on/off → 15	 4 5 6

CHART 9-1 (CONT'D)
INSTALLER LOOP TEST ROUTINES

Step	Action	Verification	Notes
Feature Select Keys and Features Display Test			
5.	Press each of the feature select (unmarked) keys in turn.	The prompts above each key are activated, and a 2-digit number is displayed (see Figure 9-1).	7
6.	Press the "select features" key.	Supplementary feature names are activated (see Figure 9-1).	8
Line Select Keys, Hold Key, Line Status Display, and Tone Ringer Test			
7.	Press the red hold key and each line select key in turn.	The line status display next to each key (except hold) is activated to indicate an incoming call (alternating square/circle format). A 2-digit number is displayed, as follows: hold key = 30 to upper line select key = 45 The tone ringer sounds when the upper line select key is pressed.	
Hookswitch Test			
8.	(a) If the tests are run with the handset on-hook, lift the handset.	"HANDSET UP" displayed.	
	(b) Press the "speaker on/off" key, and replace the handset.	Number 14 displayed, then "HANDSET DOWN" displayed.	
9.	(a) If the tests are run with the handset off-hook, press the "speaker on/off" key. Replace the handset.	"HANDSET DOWN" displayed.	
	(b) Lift handset.	"HANDSET UP" displayed.	
Terminating Test Routines			
10.	If the tests are run with the handset on-hook, press the "speaker on/off" key, or if the tests are run with the handset off-hook, replace the handset.	Set becomes idle; time and date are displayed.	

Notes:

1. If test is run in handsfree mode, 'MIC ON' is displayed.
2. Access code is found in the CDE Form: Feature Access Codes.
3. All prompts and line status displays are cleared. 'MIC ON' remains if test is run in the handsfree mode.
4. Supplementary feature names are also displayed.
5. Do not press this key if test is run in handsfree mode, as it will cause the test to be terminated.
6. If test is run in handsfree mode, "MIC ON" prompt is turned on or off each time this key is pressed.
7. Prompts remain displayed after key is released to allow error patterns to be detected.
8. Supplementary feature names remain displayed until another key is pressed.

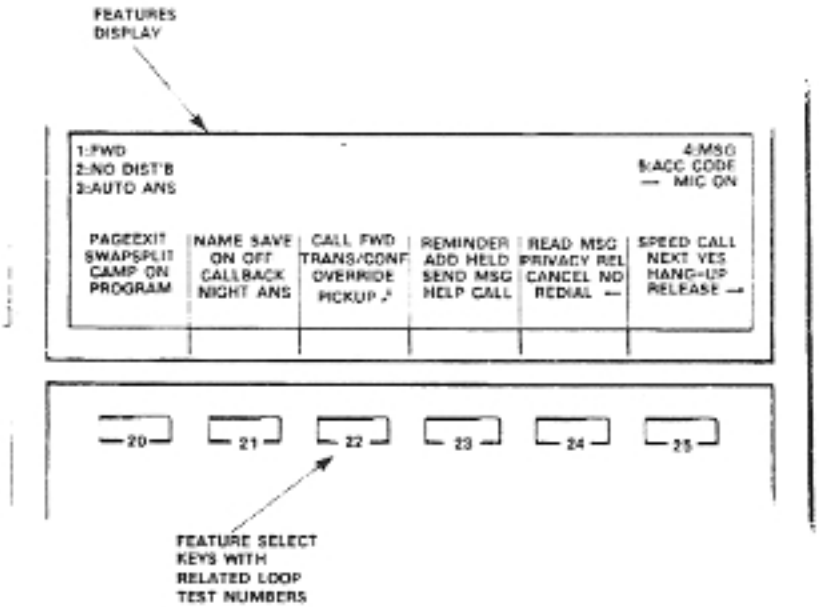

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Figure 9–1 Feature Select Keys and Feature Display Test

SX-200® DIGITAL PRIVATE AUTOMATIC BRANCH EXCHANGE (PABX) CIRCUIT CARD DESCRIPTIONS

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CONTENTS (CONT'D) PAGE

LIST OF ILLUSTRATIONS

FIGURE TITLE PAGE

LIST OF TABLES

1. INTRODUCTION

General

1.01 This Section describes the digital cards in the SX-200® DIGITAL PABX. Figure 1-1 shows the front faces of some of these digital cards.

Reason for Reissue

1.02 This section is reissued to provide a general description of the digital circuit cards in the SX-200® DIGITAL PABX.

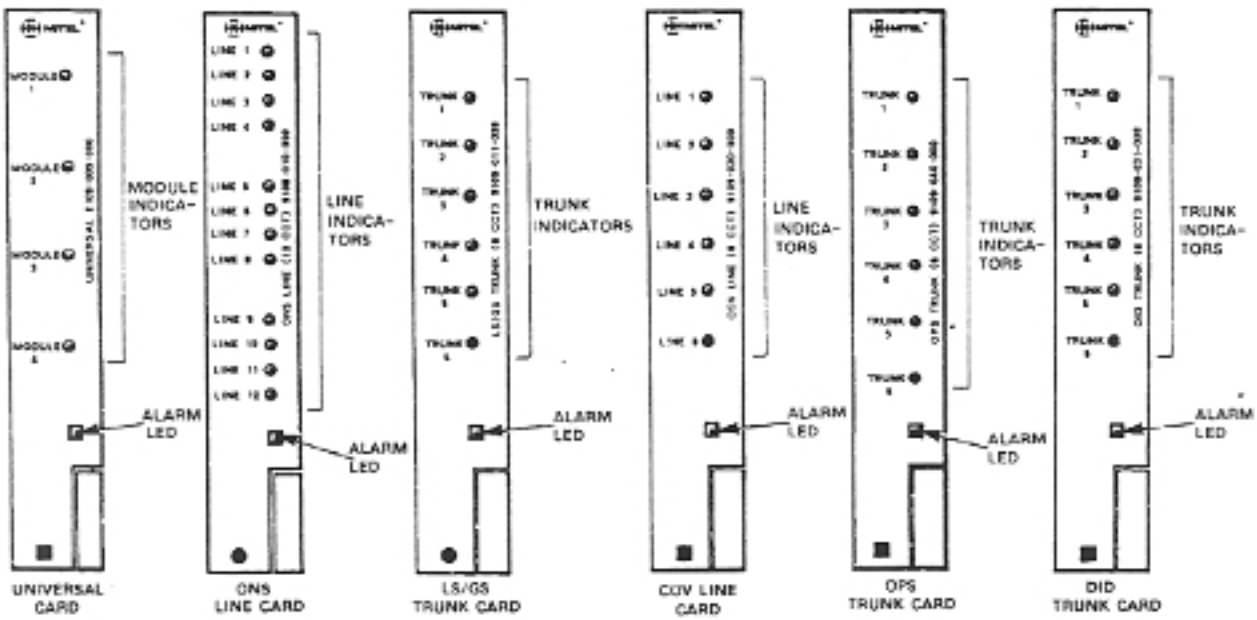

Figure 1-1 Digital Card Faces

2. MAIN CONTROL CARD

Description

2.01 The Main Control card performs all call processing and peripheral control operations for Bays 1 and 2. For the rest of the system, it maintains overall control through communication with the Bay Control card or Peripheral Control Card in each bay. The Main Control card must not be inserted or removed with the power on.

2.02 **Facilities**

Facilities for the Main Control Card are:

- HDLC link for high speed bulk data transfers to peripheral processors or Bay Control cards and SUPERSET® line cards
- Two RS-232 communication ports (one printer, one modem)
- Floppy Disk Control including data separation and write precompensation
- DMA controller for dynamic RAM refresh, data transfer to floppy disk and HDLC
- Real Time Clock for time of day and interrupt generation
- System PCM Clock Generation
- Memory: Dynamic RAM (on RAM Module) with parity detection, CMOS RAM, EPROM
- Digital signal processor to generate and detect progress and ringing tones and to provide conferencing
- RAM Module for program storage and process work areas
- DX Module (digital time/space crosspoint switch) for circuit and message switching
- Decryption Module to enable use of protected software
- Fault detection hardware to monitor PCM clock and processor sanity (watchdog)
- System Reset switch (front panel).

Operation

2.03 The Main Control Card (MCC) must not be inserted or removed with the power on. Damage to onboard circuits may result.

2.04 The correct Decryption Module must be installed, or the disk software will not run.

2.05 At power-up the Main Control Card is held reset for about 1 second after the power supply voltages reach their normal levels. After reset, the processor first runs the software contained in its EPROM. This consists of tests for the RAM memory, the CPU and the DMA controller. A routine to load the system software into RAM from disk is run only after all preliminary tests have been passed.

2.06 The Main Control Card may also be reset via the pushbutton switch behind the front panel of the card near the top. Reset invokes Power Fail Transfer, which remains in effect until the system software has been loaded from disk.

2.07 Parts 7, 8 and 9 describe the modules that plug into the MCC.

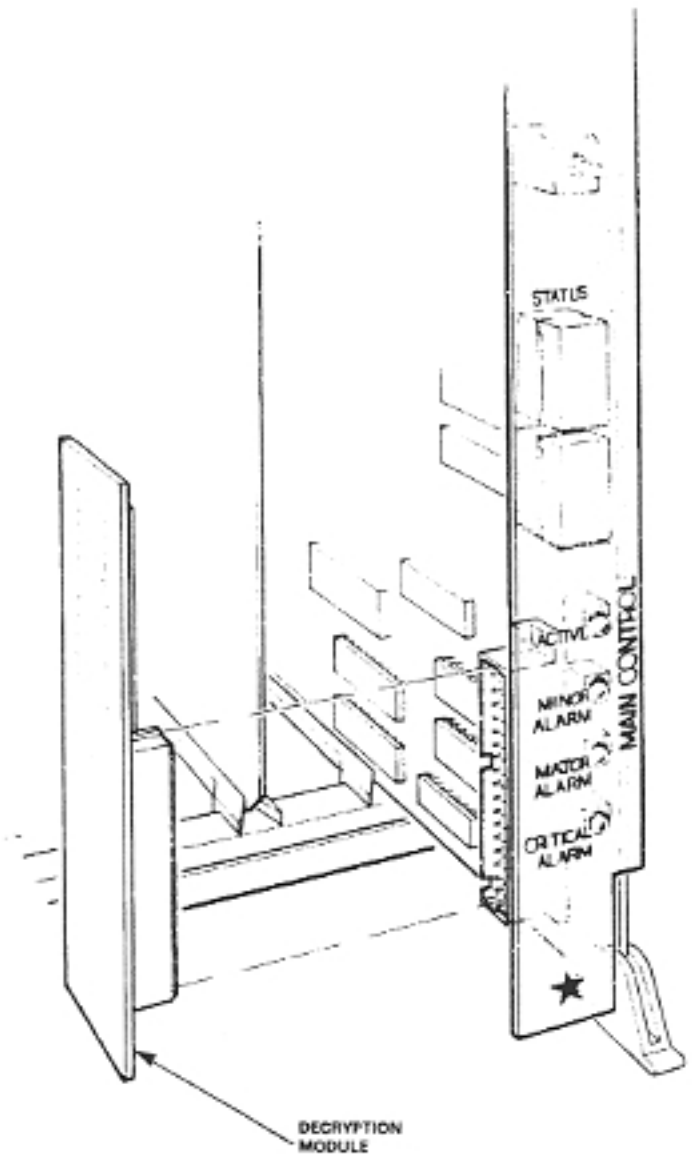

Figure 2-1 Main Control Card and Decryption Module

3. DECRYPTION MODULE

Brief Description

3.01 The Decryption Module plugs into the lower front corner of the Main Control Card. The Decryption Module must be present during power-up and system operation. Its main component is a Programmable Array Logic (PAL) integrated circuit. Figure 6-1 shows the location of the Decryption Module on the Main Control Card. There are three different Decryption Modules and are as follows:

- Generic 1000 - 480 ports
- Generic 1001 - 480 ports
- Generic 1001 - 336 ports.

Operation

3.02 The Decryption Module is written to and read from constantly by the system software. If there is a mismatch between the module and the software, the software will not run.

3.03 The Decryption Module is labelled as follows:

Software	Label
Generic 1000	RELEASE 1
Generic 1001/480 Port	RELEASE 2
Generic 1001/336 Port	COMBO B.

4. RAM MODULE

Brief Description

4.01 The RAM Module carries the dynamic memory required for program storage and call processing work areas. It plugs into a 96-pin DIN connector on the lower part of the Main Control Card. Mechanical support is provided by a standoff. The board measures 25.9 mm x 14.5 mm high (10.6 in. x 5.7 in.).

4.02 Parity is checked on all read and refresh cycles by circuitry on the Main Control Card. If the parity logic detects an error, it logs it in CMOS RAM and invokes a system reset via software.

5. DX MODULE

Brief Description

5.01 The DX Module plugs into the upper back corner of the Main Control Card, using the two 96-pin DIN connectors.

5.02 **Facilities**

Facilities for the DX Module include:

- Main DX Matrix
- Peripheral DX Matrix
- Ringing Signal generator
- Dial Tone filter
- Bay Emulation logic.

Electrical Description

5.03 The Main DX Matrix consists of four Mitel 8980 DX chips arranged in a non-blocking 16 x 16 links. The matrix is capable of connecting any one of the 32 channels on any one of the 16 incoming 2.048 MHz links to any one of the 32 channels on any of the 16 outgoing links.

5.04 The Peripheral DX Array consists of three Mitel 8980 DX chips. It forms 8 x 24 concentrating/expanding links between the Main DX matrix and the 14 peripheral cards. Eighteen links go to and from the combo backplane.

5.05 The Ringing Generator receives PCM data for the ringing signal from a 7720 Signal Processor on the Main Control Card. It is converted to an analog signal by a Mitel 8960 Codec. This signal is filtered to remove fast rise time transients and passed through the backplane connector to the ringing power amplifier in the power supply.

5.06 The Dial Tone Filter consists of a codec and an analog filter circuit. The PCM dial tone is converted to an analog signal, filtered, and reconverted to PCM.

6. BAY CONTROL CARD

General

6.01 The Bay Control Card is installed in the lower rightmost slot of digital bays 3 and 4. This card must not be inserted or removed with the power on. The card measures 158 mm x 368 mm (6.2 in. x 14.5 in.).

6.02 **Functions**

- Control of operations within the Bay
- Monitoring of lines, trunks and other circuits within the bay; reports are sent to the Main Control Card via HDLC message links
- Ringing signal conversion. (The waveform comes from the Main Control Card as a PCM signal).

6.03 **Indicators**

- Alarm LED
- Tx (transmit) and Rx (receive) indicators for HDLC message link.

Electrical Description

6.04 Electrical connection between the Bay Control and the circuit cards is through the peripheral backplane. Connection to the Main Control Card is via PCM cables. The PCM cable connector is on the rear of the backplane, behind the Bay Control location. There is room for two more cables for future applications.

6.05 There are two pairs of switches on the card. See Figure 10-1. All four switches must be closed for normal operation.

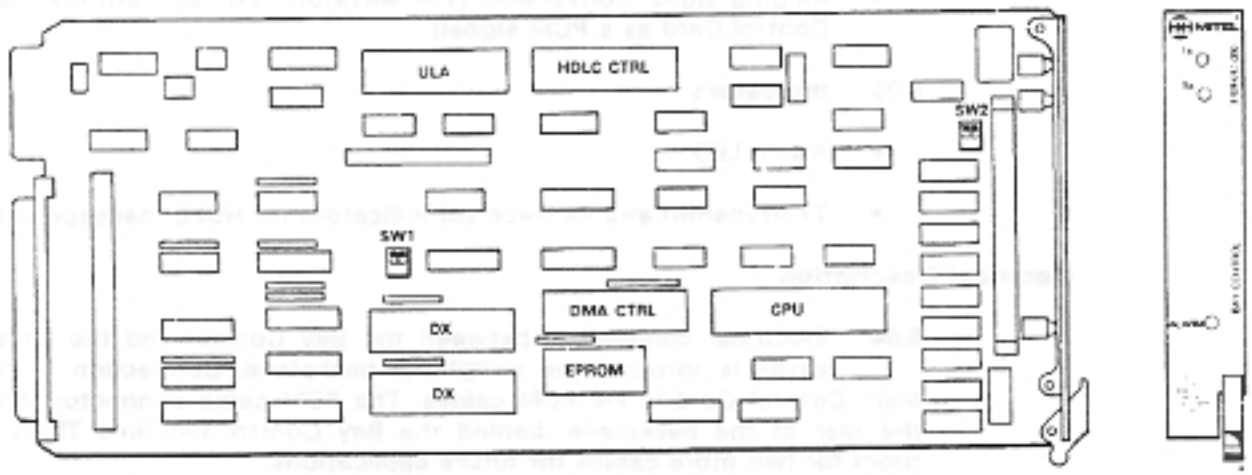

Figure 6–1 Bay Control Card

7. PERIPHERAL CONTROL CARD

Brief Description

7.01 The Peripheral Control Card is located in slot 20 of an analog peripheral shelf. It controls the analog cards on instructions from the Main Control Card. Figure 13-1 shows the front faces of the Peripheral Control Card, the Scanner and Digital Interface cards and the Main Control Card.

7.02 Major Components

Major components provided by the Peripheral Control Card include:

- 6809 microprocessor running at 1.33 MHz
- Memory: 8K EPROM, 32K RAM
- Peripheral Clock Oscillator.

7.03 Facilities

Facilities for the Peripheral Control Card include:

- System Timing Generator
- Peripheral Address Decoder
- FIRQ Interrupt Timer/Generator
- Power Fail Monitor: a master reset is generated if any power rail drops below 95% of its nominal level.
- Status Flag Buffer.

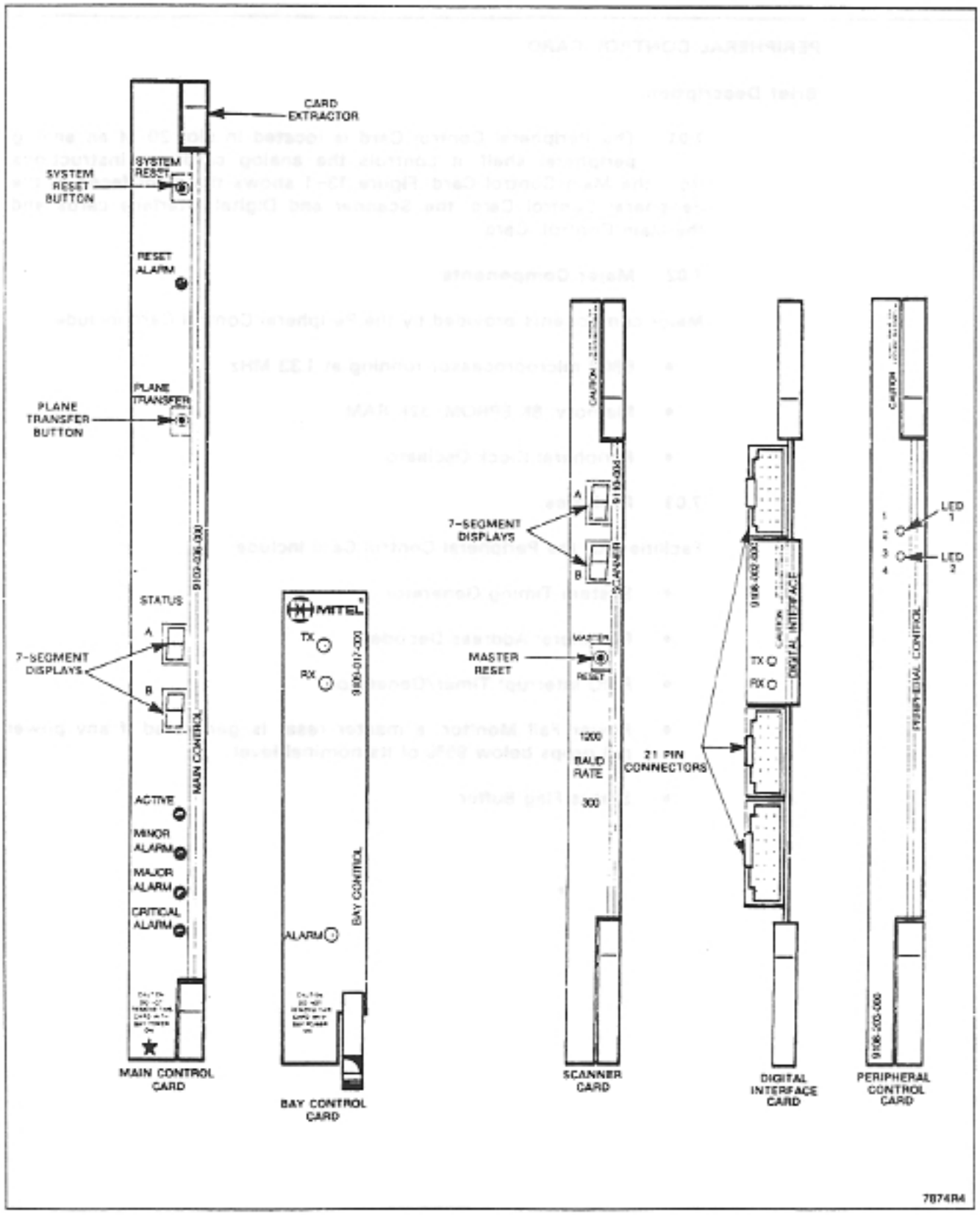

Figure 7-1 Main Control Card and Interface Cards for Analog Shelf

8. DIGITAL INTERFACE CARD

Brief Description

8.01 The Digital Interface Card is installed in slot 18 of an analog peripheral shelf. It interfaces the analog shelf to the Main Control Card. The card is illustrated in Figure 3-1.

8.02 Facilities

Facilities for the Digital Interface Card include:

- analog/digital and digital/analog conversions between the analog junctors and the Master Control Card via the PCM cable.
- enables dial pulse detection by the Peripheral Control Card. Dial pulses cannot be encoded in PCM.
- provides a message channel between the Main Control Card and the Peripheral Control Card via the PCM cable.

Connections

8.03 The Digital Interface Card is installed in slot 18 of an analog peripheral shelf. It must not be inserted or removed from the system with the power on. The card front panel contains three 21-pin male DSUB connectors and two LEDs. A PCM cable from the Main Control is plugged into J2.

8.04 A 2-shelf peripheral cabinet may have a Digital Interface Card installed in both the top and bottom shelves. In this case, the cable from the Main Control Card plugs into J2 of the lower DIC. An intershelf jumper cable connects J1 of the lower DIC to J3 of the upper shelf DIC. The upper shelf card performs only the analog/digital interface and dial pulse detection functions. When connected this way, the cards automatically identify their location to the main processor.

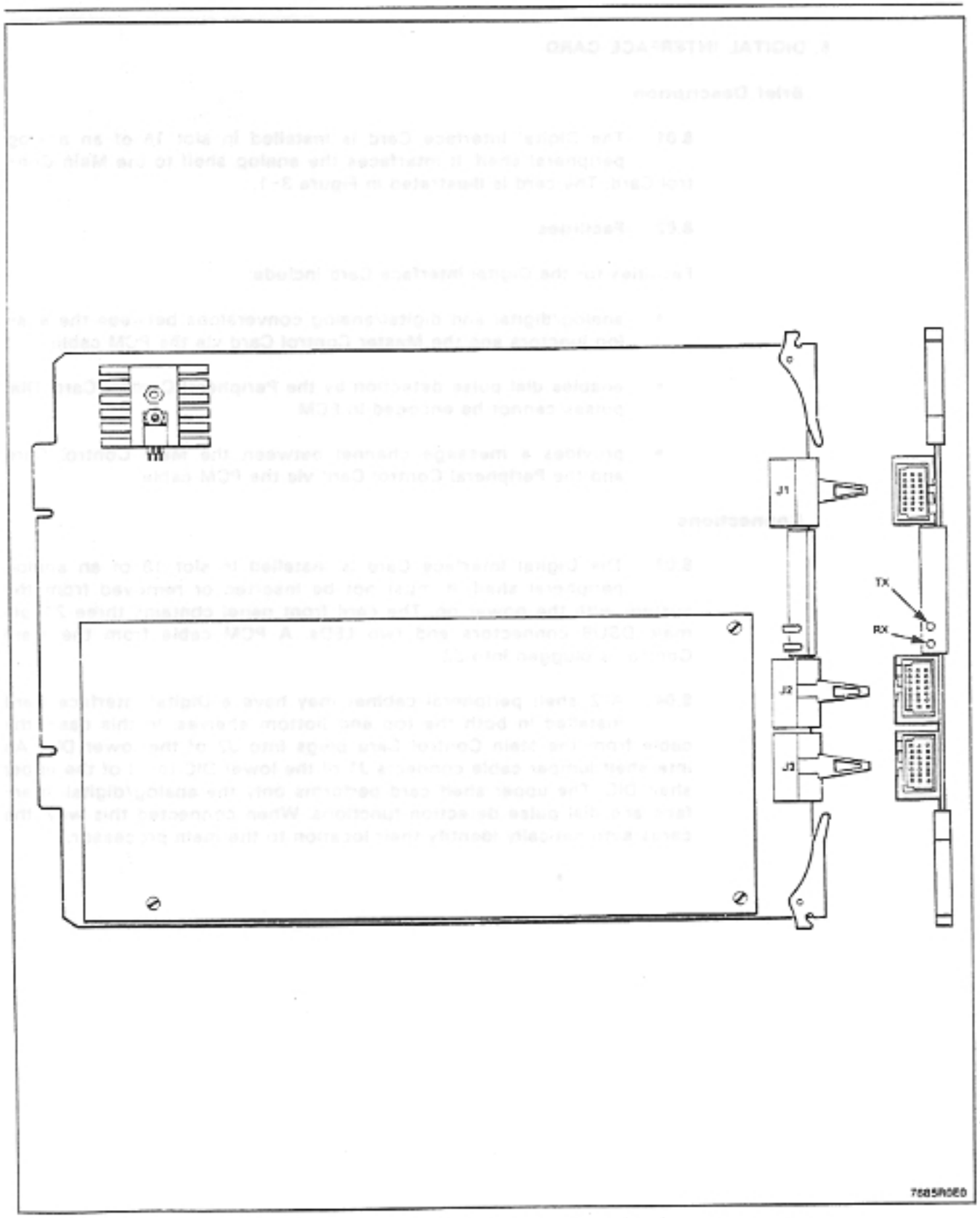

Figure 8-1 Digital Interface Card

9. UNIVERSAL CARD

Brief Description

9.01 The Universal card interfaces up to four modules to the backplane in any of the digital peripheral bays. The card and three of the available modules are illustrated in Figure 9-1. Parts 15 through 18 describe the available modules.

9.02 Facilities

Facilities provided by the Universal Card include:

- module mounting positions (four)
- module activity LEDs (four)
- software-controlled failure alarm LED.

Physical Description

9.03 Each module has two vertical 32-pin female DIN connectors which mate to male connectors on the Universal card. Mechanical connection to the Universal Card is assisted by a standoff.

9.04 Up to four modules may be mounted on a Universal Card, subject to electrical power limitations. See the Electrical Description paragraph.

9.05 Module size is 145 mm x 83 mm (5.7 in. x 3.25 in.).

Electrical Description

9.06 The combination of modules on a Universal Card is limited by the power available from the card. Each module has a power rating number. The total of these numbers must not exceed 10. The Universal Card can be mounted only in a high power (upper) card slot of a digital bay.

9.07 Each of the four module positions are assigned Universal Card tip and ring connections as shown below.

Module Position	Module Tip/Ring		
	T1/R1	T2/R2	T3/R3
1	T1/R1	T2/R2	T3/R3
2	T4/R4	T5/R5	T6/R6
3	T7/R7	T8/R8	T9/R9
4	T10/R10	T11/R11	T12/R12

See Table 9-1 for the backplane tip and ring connections. These depend on the Universal Card's position in the system.

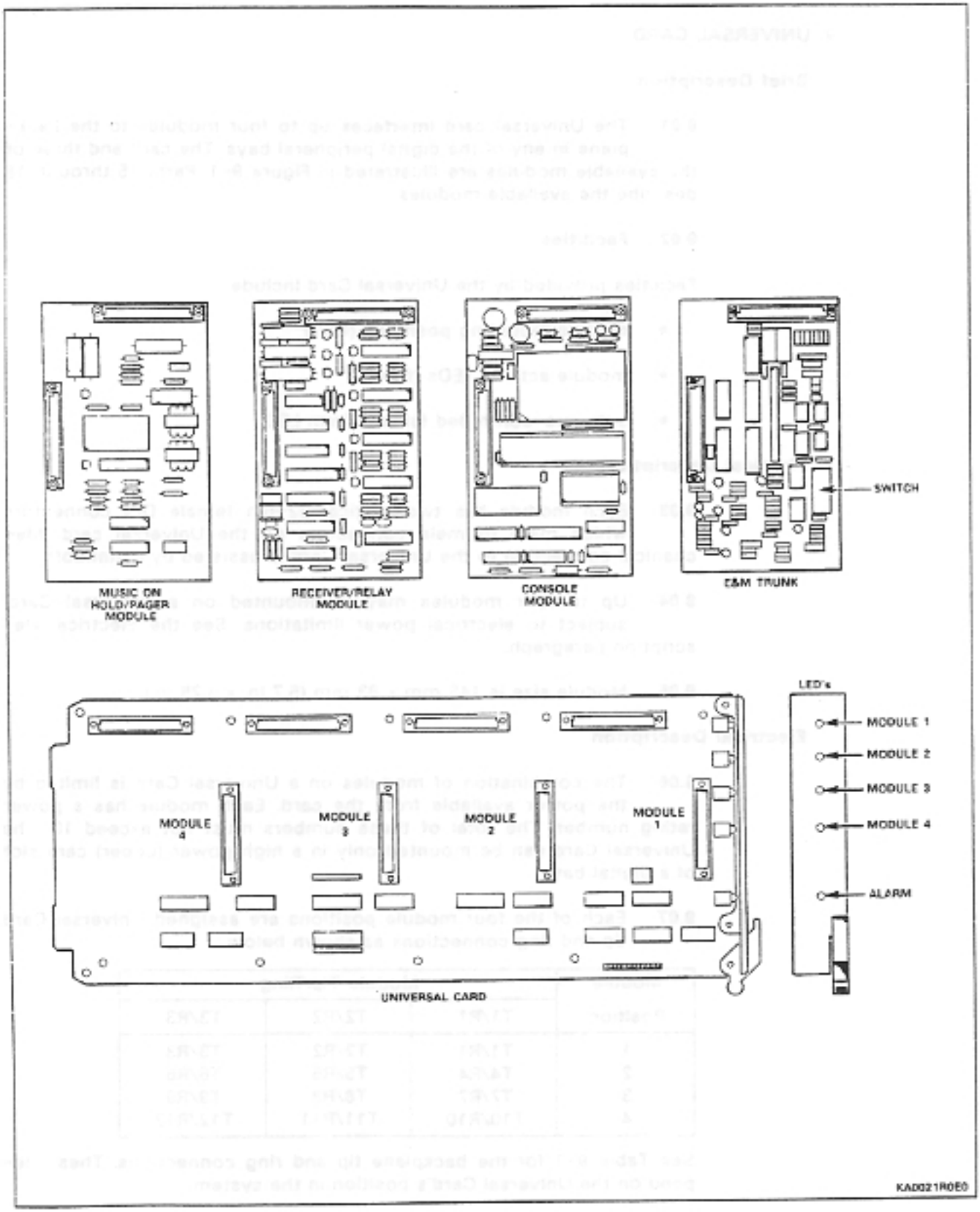

Figure 9–1 Universal Card and Modules

TABLE 9-1
BACKPLANE TIP/RING CONNECTIONS FOR UNIVERSAL CARD

Universal Card		Slots: Bays 1, 3 and 4				Slots: Bay 2	
		5	6	7	8	3	4
Module	Tip/Ring	J5 Pins		J9 Pins		J25 Pins	
	T1/R1	39/14	26/1	39/14	26/1	39/14	26/1
1	T2/R2	40/15	27/2	40/15	27/2	40/15	27/2
	T3/R3	41/16	28/3	41/16	28/3	41/16	28/3
	T4/R4	42/17	29/4	42/17	29/4	42/17	29/4
2	T5/R5	43/18	30/5	43/18	30/5	43/18	30/5
	T6/R6	44/19	31/6	44/19	31/6	44/19	31/6
	T7/R7	45/20	32/7	45/20	32/7	45/20	32/7
3	T8/R8	46/21	33/8	46/21	33/8	46/21	33/8
	T9/R9	47/22	34/9	47/22	34/9	47/22	34/9
	T10/R10	48/23	35/10	48/23	35/10	48/23	35/10
4	T11/R11	49/24	36/11	49/24	36/11	49/24	36/11
	T12/R12	50/25	37/12	50/25	37/12	50/25	37/12

9.08 Module Power Ratings:

Module Type	Power Rating
Empty module position	0
DTMF REC/Relay	2
Music on Hold/Paging	1
Console Interface Module	5
E&M Trunk	3

10. CONSOLE MODULE

Brief Description

10.01 The Console Module plugs into the Universal Card and provides the interface between the console and the main and bay processors.

Electrical Description

10.02 There are four channels of data to the console, multiplexed into a 256 kb/s PCM line. One channel is for voice data and one is for communication of operations information between the console, processor and the bay processor via the console module processor. The remaining two channels are reserved for future use.

10.03 The Console Interface Module feeds -48 Vdc to the console. Current is limited to about 120 mA.

10.04 The Console Interface Module is in power consumption category 5.

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11. DTMF RECEIVER/RELAY MODULE

Brief Description

11.01 The DTMF Receiver/Relay Module facilitates the reception and decoding of DTMF dialing.

11.02 Main Components

Major components of the DTMF Receiver Module are:

- Mitel filter/codec (four)
- Mitel 8870 DTMF receiver (four)
- Parallel bus interface
- Guard time circuit (four)
- General Purpose relays (two).

11.03 Facilities

Facilities provided by the DTMF Receiver Module include:

- Early line split
- Guard time circuit
- Presents digits on parallel bus with Data Valid signal
- Two general purpose relays.

Circuit Description

11.04 There are four receivers on the DTMF module. Each receiver takes its input from the incoming serial PCM audio stream and repeats this data to the outgoing serial PCM stream approximately 125 µsec later. A filter/codec converts the data to analog audio which is monitored by a DTMF Receiver chip. When DTMF tones are detected, the loopback of the data to the PCM output stream is disabled. (Early Line Split).

11.05 DTMF Codes

DTMF Digit	Data Output D3	D2	D1	D0
1	1	1	1	0
2	1	1	0	1
3	1	1	0	0
4	1	0	1	1
5	1	0	1	0
6	1	0	0	1
7	1	0	0	0
8	0	1	1	1
9	0	1	1	0
0	0	1	0	1
*	0	1	0	0
#	0	0	1	1

11.06 Relays

There are two general purpose relays. When each relay closes, it connects a tip and ring pair as follows:

Relay	Connection
RLY1	T2 to R2
RLY2	T3 to R3

See Table 9-1 for the Universal Card Tip/Ring connections which these represent to the system. This depends on the module position on the Universal Card and the Universal Card position in the system.

The relay contacts are rated as follows:

maximum switching voltage: 90 V
maximum carrying current: 0.5 A

Note: This relay contact may be connected only to a secondary circuit that has no direct connection to a primary circuit, and receives its power from a transformer, converter, or equivalent isolation device situated within the equipment.

12. E&M TRUNK MODULE

Brief Description

12.01 The E&M Trunk Module plugs into the Universal Card. It provides interface to Types 1 or 5 E&M trunks.

12.02 The module has a power consumption category of 3. Because of this, a maximum of three of these modules can be used per Universal Card.

12.03 Facilities

Facilities provided by the E&M Trunk Module include:

- selectable Type 1 or Type 5 signaling
- selectable gain/loss plan for normal or satellite working trunks
- selectable 600 ohm or AT&T Complex Balance Network (350 ohms + 1000 ohms in parallel with 0.21 μF)
- selectable 2- or 4-wire transmission
- on board filter/codec for analog/digital and digital/analog conversions (μlaw).

Operation

12.04 The E&M Trunk Module is set for the type of trunk in use by a set of eight DIL switches. The settings are as follows:

Function	Switches 1 2 3 4 5 6 7 8
PABX to Line Gain	
3 dB	0 x x x x x x x
-13 dB	1 x x x x x x x
Line to PABX Gain	
-4 dB	x 0 x x x x x x
-11 dB	x 1 x x x x x x
Balance	
600 ohm	x x 1 0 x x x x
Complex	x x 0 1 x x x x
Transmission	
2-wire	x x x x 1 x x x
4-wire	x x x x 0 x x x
Signaling	
Type 1	x x x x x 1 x x
Type 5	x x x x x 0 x x

0= open, 1= closed, x= not applicable
Default setting for North America is 00101100.

Trunk Types

12.05 The E&M trunk module applies signals to the M lead and monitors the E lead. Types 1 and 5 E&M trunks differ in the signals applied to the M lead. In the on-hook condition, the Type 1 interface grounds the M lead; the Type 5 interface leaves the M lead open. On both types, an open is presented to the E, E lead indicates idle, a ground an incoming call. In the off-hook condition, the Type 1 interface applies -48 volts to the M lead; the Type 5 interface grounds the M lead; both types expect a ground to be sent to the E lead to indicate an incoming seizure.

13. MUSIC ON HOLD/PAGING MODULE

Brief Description

13.01 The Music/Paging module provides an input for music on hold, a paging output and a relay to switch an external paging amplifier. The module plugs into the Universal card.

13.02 Major Components

Major components of the Music on Hold/Paging Module include:

- audio filter/amplitude limiter
- Mitel 8961 filter/codec
- paging driver amplifier
- paging control relay.

Electrical Description

13.03 The music input is isolated by a transformer and has an impedance of 600 ohms. The signal should be between 50 and 500 mVrms. High frequencies are attenuated and amplitude limiting is applied as required by FCC rules part 68. Amplitude limiting is applied when the signal exceeds approximately 390 mVrms.

13.04 The paging output is isolated by a transformer and has an impedance of less than 200 ohms. The output level into a 600 ohm load is typically -6 dBm (388 mVrms).

13.05 The control relay contacts are rated as follows:

maximum switching voltage	90 Vrms
maximum carrying current	0.4 Arms

Note: This relay contact may be connected only to a secondary circuit that has no direct connection to a primary circuit, and receives its power from a transformer, converter, or equivalent isolation device situated within the equipment.

14. DID TRUNK CARD

Brief Description

14.01 The DID trunk card contains six 1-way Direct Inward Dial circuits. It plugs into the Control shelf backplane. One-Way Direct Inward Dialing (DID) provides for direct access to PABX subscriber lines from the public telephone network.

14.02 DID trunk cards can be used in any peripheral bay high power (upper) slot. The maximum number of these cards is four per bay. This provides a maximum of 24 ports per peripheral bay.

14.03 The card is 157.5 mm (6.2 in.) high and 366.4 mm (14.4 in.) long.

14.04 Major Components

Major components in the DID Trunk Card are:

- Mitel 8962 Filter/Codec (one per trunk circuit)
- Feed Reversal relay (one per trunk circuit)
- Busy-out relay (one per trunk circuit)
- Alarm LED.

14.05 Facilities

The facilities provided by each trunk circuit are:

- Trunk activity LED
- Line protection
- Busy-out capability
- 2-wire / 4-wire conversion (external to internal)
- Analog-to-Digital / Digital-to-Analog conversion (μlaw)
- Immediate, Delay Dial or Wink Start supervision
- Direct Inward Dialing access to PABX subscriber lines
- Conformity with the EIA loss level plan for μlaw-compatible PABXs in North America.

Operation

14.06 A trunk is idle if the resistance across Tip and Ring is 4000 ohms or more. In idle condition the PABX provides forward battery feed to the line. The Tip is grounded and the Ring is at -48 Volts.

14.07 The CO initiates a call to the PABX by terminating Tip and Ring. The supervision circuitry detects the flow of loop current and alerts the system software. The PABX signals it is ready to receive dialing by briefly applying a battery reversal to the line. Ring is grounded and Tip is at −48 Volts. There are two types of controlled address signaling: Delay Dial and Wink Start.

14.08 A Delay Dial signal must start no later than 150 ms after trunk seizure. It is held until the PABX is ready to receive dialing. The minimum hold time is 140 ms.

14.09 A Wink Start signal must start at least 100 ms after trunk seizure. It is sent when the PABX is ready to receive dialing and can be held a maximum of 290 ms.

14.10 Where the CO does not provide controlled address signaling, the PABX must be prepared to receive dialing 65 ms after trunk seizure.

14.11 When called station or PABX attendant answers, the PABX places battery reversal on the line for the duration of the call. The trunk then returns to the idle state.

14.12 A trunk may be busied out by the system software. This presents an open circuit to the Tip and Ring of both the trunk and trunk card circuit. The trunks default to the busy-out state if system power fails.

14.13 Each circuit has a LED on the front panel which lights to indicate the trunk is in use. A seventh LED at the bottom of the panel lights to indicate a failure on the card.

Electrical Description

14.14 Line protection comprises high voltage varistors to energy dump ground from Tip and Ring and fusible links incorporated in the battery feed resistors. EMI is controlled by inductors in series with Tip and Ring.

14.15 The maximum loop resistance is 1800 ohms. The maximum loop length is 5850 m (19,200 ft) when using 26 AWG wire, 15,240 m (50,000 ft) when using 22 AWG wire.

14.16 The card circuitry performs 2-wire to 4-wire conversion, splitting the signal on the trunk into outgoing and incoming speech paths. The analog signal coming from the trunk is converted to Pulse Code Modulation (PCM); the signal to be sent to the trunk is converted from PCM to analog audio. These conversions are performed by a Mitel Codec chip.

14.17 Battery Feed Reversal and Busy-out for each trunk are controlled by relays, as shown below.

Condition	Relay 1	Relay 2
Forward Feed (Idle)	ON	OFF
Reverse Feed (Talk)	ON	ON
Busy-out	OFF	OFF

15. LS/GS TRUNK CARD

Brief Description

15.01 The Loop Start/Ground Start trunk card mounts in Bay 1 or 2 and interfaces six trunk circuits to the system. The card is 158 mm high x 368 mm long (6.2 in. x 14.5 in.). Figure 15-1 illustrates the card and the LS/GS jumper.

15.02 Facilities

Facilities provided by the LS/GS Trunk Card include:

- Loop Start or Ground Start selectable by jumper
- M and MM signaling leads available
- Trunk activity indicated by LED (one per trunk)
- Transient suppression on Tip, Ring, and signaling leads
- Alarm LED.

Electrical Description

15.03 The Loop Start/Ground Start trunk card mounts in Bay 1 or 2 and interfaces six trunk circuits to the system. Each trunk circuit is programmed as loop start or ground start by a jumper clip prior to installation.

15.04 Each trunk has Tip and Ring leads and M and MM leads for additional signaling, if required. All leads are protected by varistors against transients between line and ground. There are also varistors between Tip and Ring and between M and MM. Each lead is in series with an inductor near the edge connector to reduce electromagnetic interference (EMI).

15.05 Each trunk has an LED on the front faceplate of the card that lights to indicate the circuit is busy. An LED at the bottom of the faceplate lights to indicate a failure on the card.

Operation – Loop Start

15.06 To place an outgoing call, the trunk card places a termination across tip and ring. The CO detects the current flow and responds with dial tone. Now the user may begin to dial.

15.07 The Trunk card recognizes an incoming call when it receives ringing voltage or battery reversal from the CO. The Trunk card will respond by placing a termination across Tip and Ring. The trunk is released when the loop current is broken. This happens when the near party goes on-hook or the line is physically broken.

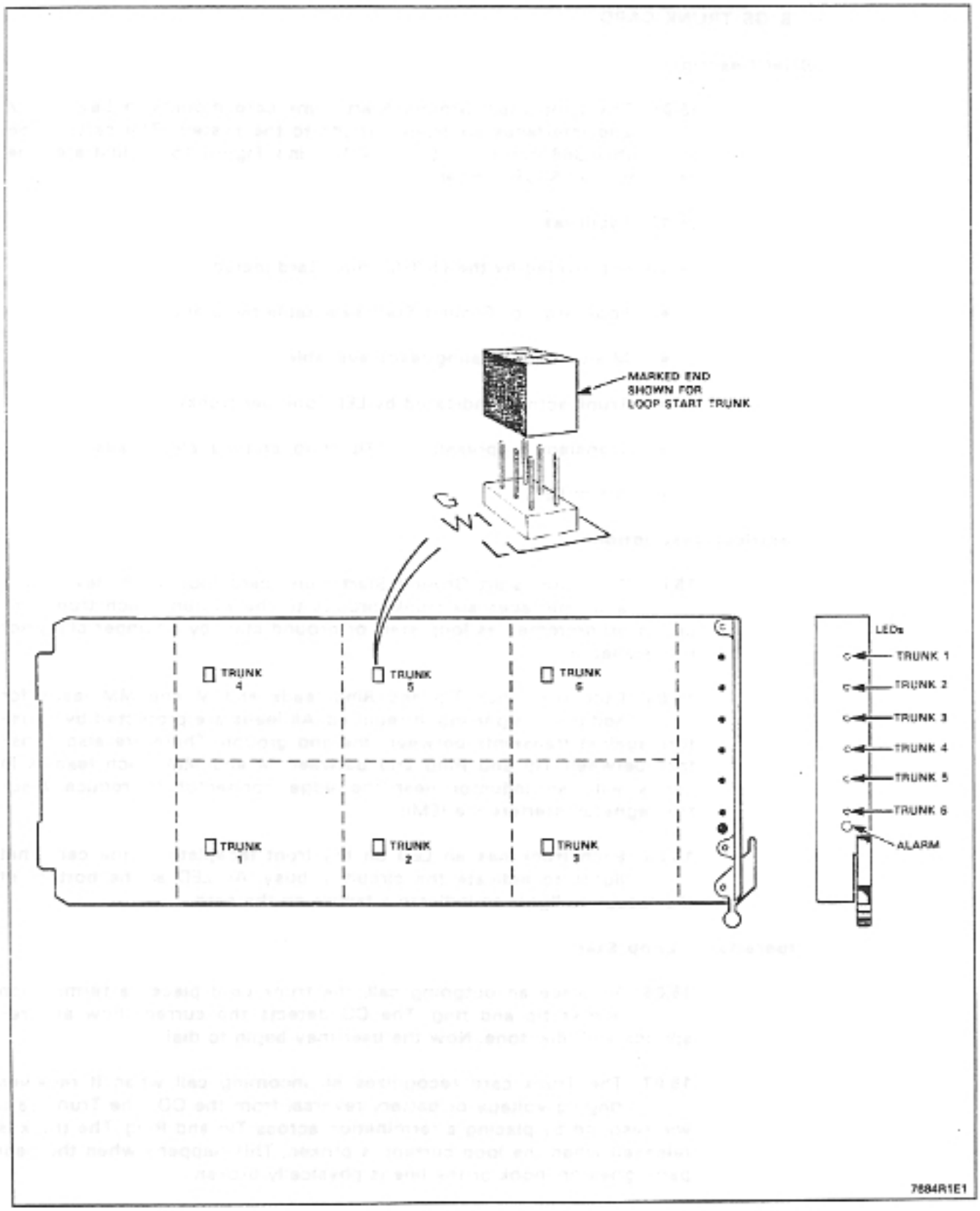

Figure 15–1 Loop Start/Ground Start Card and Jumper Location

Operation – Ground Start

15.08 To place an outgoing call, the Trunk card grounds the Ring lead. The CO responds by grounding the Tip lead. The Trunk then places a termination across Tip and Ring and ungrounds the Ring lead. The CO then sends dial tone, indicating that it is ready to receive dialing.

15.09 The Trunk card recognizes an incoming call when the CO grounds the Tip lead. The CO may also send ringing voltage. The Trunk card will respond by placing a termination across Tip and Ring. The trunk is released when the loop current is broken. This happens when either party goes on-hook or the line is physically broken.

16. ONS LINE CARD

General Description

16.01 The On-Premises (ONS) Line card interfaces standard subscriber telephone sets to a PABX in the same building. It contains 12 line circuits and plugs into the Control shelf backplane.

16.02 The card is 158 mm high x 368 mm long (6.2 in. x 14.5 in.).

16.03 There are 13 LEDs on the front face of the card. The top 12 are each connected to a line circuit and light to show that the circuit is in use. The LED at the bottom of the panel lights to indicate an alarm (failure) condition.

16.04 Facilities

Each line circuit provides the following facilities:

- Line protection
- Analog-to-Digital / Digital-to-Analog conversion (μlaw)
- Line circuit status monitoring
- signaling (ringing, message waiting).

Electrical Description

16.05 The following description applies to each line circuit.

16.06 Tip and Ring are each protected against transients by a 200 volt varistor to ground. A bridge rectifier provides four protection diodes for the line circuit transistors. The -28 volt line is protected by a 35 volt transzorb.

16.07 The line circuit performs 2-wire to 4-wire conversion, splitting the signal on the line into outgoing and incoming speech paths. The analog signal coming from the telephone is converted to Pulse Code Modulation (PCM); the signal to be sent to the telephone is converted from PCM to analog audio. These conversions are performed by a Mitel Codec chip.

16.08 When the telephone is off-hook, the line circuit status LED on the front panel lights. The line circuit maintains a constant 26 mA current to the telephone while the set is off-hook. Loop length is maximum 600 Ω including the telephone set.

16.09 The ONS line card supports the Message Waiting feature. A high voltage (-140 Vdc) is applied to the Ring terminal of the line, lighting a neon lamp on the subscriber's set.

Operation

16.10 When a telephone goes off-hook, the line circuit detects the flow of loop current and signals the Main Processor. The processor responds by connecting a DTMF receiver to the line and sending dial tone to the set. (If the telephone uses pulse dialing the processor detects the pulses by monitoring the loop current). The user can then dial the desired number.

16.11 When a call is directed to an extension, the system applies ringing voltage to the appropriate line and monitors the loop current for an off-hook condition. When the telephone is answered, the ringing voltage is removed.

16.12 When a call is ended by one of the sets going on-hook, the call is disconnected and the line returns to its idle state.

17. OPS LINE CARD

Brief Description

17.01 The OPS Line Card contains six Off-Premises line circuits. It plugs into the Control shelf backplane. An Off-Premises (OPS) Line circuit is used where the line goes outside the building housing the PABX and may be exposed to extraneous high voltages or induced currents (e.g., lightning).

17.02 The OPS Line card can be used in any peripheral bay high power (upper) slot. The maximum number of these cards is four per bay. This provides a maximum of 24 ports per peripheral bay.

17.03 The card is 157.5 mm high x 366.4 mm long (6.2 in. x 14.4 in.).

17.04 **Major Components**

Major components for the OPS Line Card are:

- Mitel 8962 Filter/Codec (six)
- 2-wire / 4-wire converter (six)
- Message Waiting relay (one per circuit)
- Ringing relay (one per circuit).

17.05 **Facilities**

Each line circuit provides the following facilities:

- Flashes Message Waiting lamp on equipped sets
- Line activity LED
- Alarm LED
- Line protection
- Analog-to-Digital / Digital-to-Analog conversion (μlaw)
- signaling (ringing, message waiting).

Operation

17.06 Each circuit has a LED on the front panel which lights to indicate the line is in use. A seventh LED at the bottom of the panel lights to indicate a failure on the card.

17.07 When the Message Waiting feature is activated, the line circuit flashes a neon lamp on the appropriate telephone set.

Page 17-1

17.08 The line circuit applies Forward Battery Feed to the line. The Tip is grounded and the Ring is at -48 volts. When the set goes off-hook to place a call, the PABX detects the loop current and responds with dial tone. Dialing may be DTMF or pulses. Dial pulses are debounced to assure reliable performance.

17.09 When a call is directed to the set, a relay closes, sending ringing voltage to the set. The ringing relay drops out when loop current flow indicates that the telephone has been answered. (Off-hook condition).

Electrical Description

17.10 Line protection comprises high voltage varistors to energy dump ground from Tip and Ring and fusible links incorporated in the battery feed resistors. EMI is controlled by inductors in series with Tip and Ring.

17.11 The maximum loop resistance is 1800 ohms. The maximum loop length is 5850 m (19,200 ft) when using 26 AWG wire, 15,240 m (50,000 ft) when using 22 AWG wire.

17.12 The card circuitry performs 2-wire to 4-wire conversion, splitting the signal on the line into outgoing and incoming speech paths. The analog signal coming from the line is converted to Pulse Code Modulation (PCM); the signal to be sent to the line is converted from PCM to analog audio. These conversions are performed by a Mitel Codec chip.

17.13 The line circuit applies ringing voltage to the appropriate line through a relay and removes it when the telephone is answered. This is determined by monitoring the loop current.

17.14 Loop current is provided through a pair of 200 ohm resistors. Below 500 ohms loop resistance, active current limiting circuitry limits line power to less than 2 watts.

17.15 When the Message Waiting feature is activated, a relay applies a pulsing -140 Vdc signal to the Ring lead of the appropriate line. This flashes a neon lamp on the telephone set. The voltage is derived by rectifying the ringing voltage. The pulsing rate is about once per second and is provided by a software-controlled electronic switch.

17.16 Ringing and Message Waiting for each line are performed by two relays, as shown below.

Condition	Relay 1	Relay 2
Idle or Talk	OFF	OFF
Ringing	OFF	ON
Message Waiting	ON	ON

18. COV LINE CARD

General

18.01 The COV Card is installed in a digital peripheral bay to interface up to six SUPERSET 3™ or SUPERSET 4™ sets to the bay processor. The card measures 158 mm x 368 mm (6.2 in. x 14.5 in.). It has a profiled edge connector that allows it to be safely inserted or removed from the system with the power on.

18.02 The COV Card can be mounted only in a high power (upper) card slot of a digital bay.

18.03 Major Components

The major components of the COV line card are:

- Subscriber line interface circuit (SLIC) hybrid (one per line)
- Backplane interface
- PCM Timer
- 6402 UART
- 8840 Modem
- Line protection circuits
- Line status LEDs (one per line)
- Card status LED (one).

18.04 Facilities

Facilities provided by the COV line card include:

- Amplitude Shift Keyed communication with SUPERSET 3™ or SUPERSET 4™ sets
- Analog/Digital and Digital/Analog conversions (μlaw)
- Battery Feed to power sets.

Electrical Description

18.05 Control information from the backplane is converted to a 32 kHz amplitude shift-keyed (ASK) data stream. The audio information is taken from the 2 Mb/s data link, converted to analog audio and combined with the control information for transmission to the set. Conversely, the audio and ASK data signals from the set are separated and converted. The ASK data is demodulated and sent to the bay processor. The audio is digitized and transmitted on the data link.

18.06 There is only one UART and one modem on the card. The six lines are time-division-multiplexed to the communication circuit. Transmission and reception are simultaneous, but the card receives data from the set to which it last transmitted. For example, if the card is transmitting to set 2, it is receiving from set 1. In the next time slot, it will transmit to set 3 and receive from set 2.

18.07 The COV card has seven indicators on the front panel. There is an activity LED for each subscriber line. The LED at the bottom of the panel is an alarm indicator for the entire card.

18.08 The maximum loop lengths for COV circuits are:

Wire Gauge (AWG)	Max. Loop length
26	1000 m (3300 ft)
24	1500 m (5000 ft)
22	2000 m (6600 ft)

19. POWER FAIL TRANSFER CARD (6 circuit)

Brief Description

19.01 The Power Fail Transfer card allows six telephones, defined by the customer, to place and receive outside calls while the system is inoperative due to a power failure or other major fault.

19.02 Power Fail Transfer cards mount on the right wall of the cabinet, as seen from the rear door. Each card contains six circuits. There can be up to three cards per system, allowing a maximum of 18 PFT circuits. The card is 165 mm high x 267 mm long (6.5 in. x 10.5 in.). See Figure 19-1.

Connections

19.03 The connections to the Power Fail Transfer card are made through a 25-pair amphenol connector, two 9 pin DSUB connectors, a 14-pin berg strip connector and a four terminal barrier strip.

19.04 The amphenol connector provides all the tip and ring connections from the cross-connect field. The two DSUB connectors provide control signals, power supply and ground connections. They are in parallel. One is connected by cable to the Common Control Shelf; the other cable goes to the next Power Fail Transfer card. The berg strip connector is for the optional Loop-to-Ground Start Converter module. The terminal strip is for an external alarm connection.

Electrical Description

19.05 The Power Fail Transfer card connects six extension lines to the PABX. Under System Fail condition it connects each of these extensions to a CO trunk, as defined by the customer. This allows these extensions to place and receive outside calls. When the system is restored, the extensions revert to their normal connection. If a call is in progress at this time, the affected extension's return to normal service is delayed until the call is completed.

19.06 If the CO Trunks to be used for PFT service are of the ground start type, a Loop-to-Ground Start Converter must be connected to the PFT card.

19.07 Extensions to be used for PFT service cannot be SUPERSET® sets. They can be pulse dialing or DTMF sets, depending on which types of dialing the CO trunks accept.

Operation

19.08 Power Fail Transfer occurs under any of the following conditions:

- failure of the commercial AC power supply
- operation of the force transfer switch

- failure of the -28 V power supply to the Main Control Card
- loss of sanity (malfunction) in the Main Control Card.

19.09 Normal operation is restored when the condition that caused it is rectified: power is restored, controller sanity is re-established, transfer switch is set to Normal.

19.10 If a call is in progress under system fail operation, the transfer to normal operation for that circuit is delayed until the call is completed (CO trunk on-hook for at least 1.8 seconds). This prevents the call from being dropped during return to normal operation.

19.11 Power Fail Transfer Plug and Jack Connections

Circuit	Ring		Tip	
	Pin	Colour	Pin	Colour
TRUNK 1	26	W-BL	1	BL-W
TRUNK 2	27	W-O	2	O-W
TRUNK 3	28	W-G	3	G-W
TRUNK 4	29	W-BR	4	BR-W
TRUNK 5	30	W-S	5	S-W
TRUNK 6	31	R-BL	6	BL-R
TRUNK CARD 1	32	R-O	7	O-R
TRUNK CARD 2	33	R-G	8	G-R
TRUNK CARD 3	34	R-BR	9	BR-R
TRUNK CARD 4	35	R-S	10	S-R
TRUNK CARD 5	36	BK-BL	11	BL-BK
TRUNK CARD 6	37	BK-O	12	O-BK
Empty	38	BK-G	13	G-BK
LINE CARD 1	39	BK-BR	14	BR-BK
LINE CARD 2	40	BK-S	15	S-BK
LINE CARD 3	41	Y-BL	16	BL-Y
LINE CARD 4	42	Y-O	17	O-Y
LINE CARD 5	43	Y-G	18	G-Y
LINE CARD 6	44	Y-BR	19	BR-Y
PHONE 1	45	Y-S	20	S-Y
PHONE 2	46	V-BL	21	BL-V
PHONE 3	47	V-O	22	O-V
PHONE 4	48	V-G	23	G-V
PHONE 5	49	V-BR	24	BR-V
PHONE 6	50	V-S	25	S-V

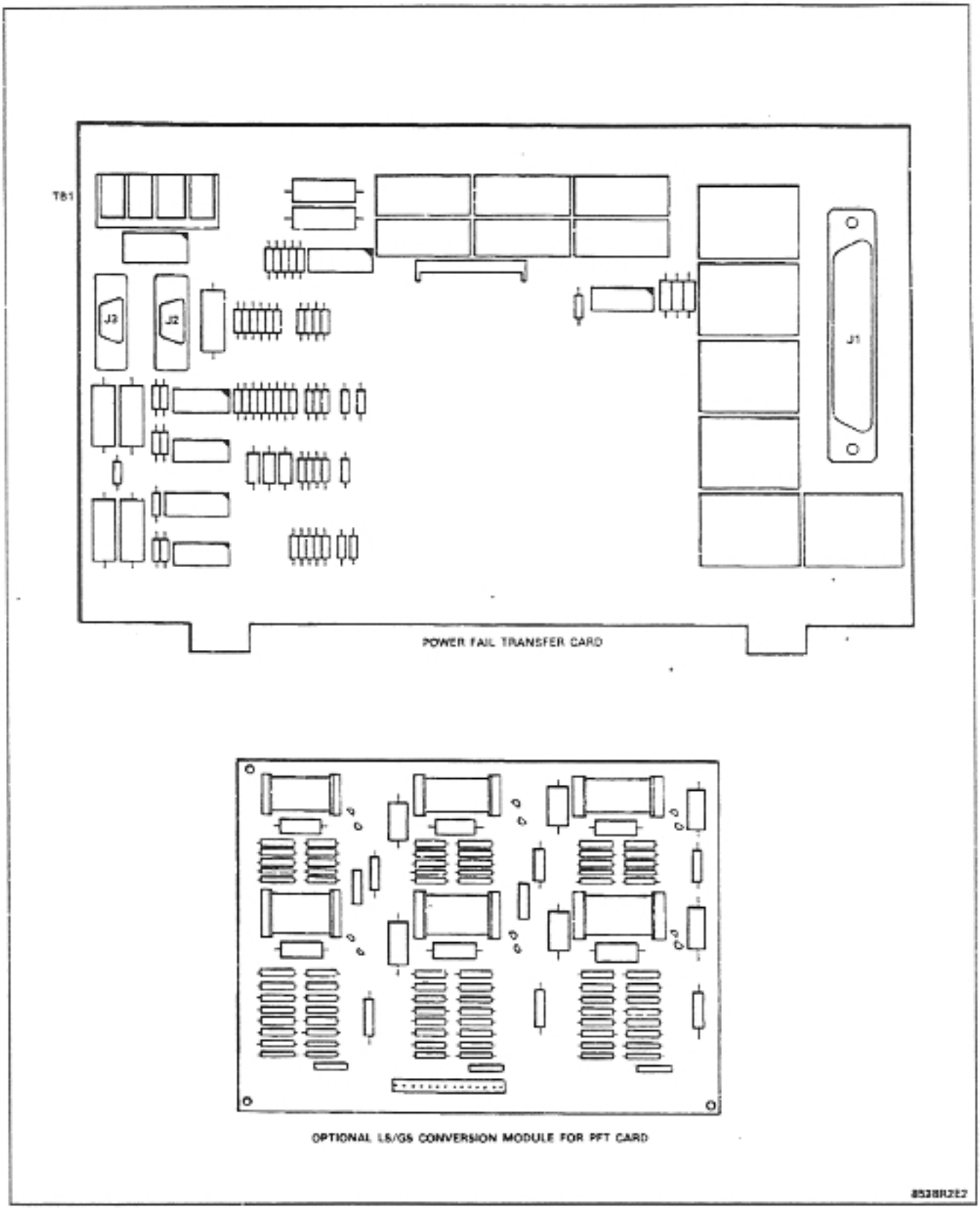

Figure 19-1 Power Fail Transfer Card

SX-200® DIGITAL
PRIVATE AUTOMATIC BRANCH EXCHANGE (PABX)
ATTENDANT CONSOLE DESCRIPTION

NOTICE

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1. INTRODUCTION

General

1.01 This Section describes the Attendant call handling functions of the SX-200® DIGITAL PABX console. It contains a brief description of each fixed key and softkey function. The SX-200® DIGITAL PABX Console incorporates those features described in Section MITL9108-093-105-NA and uses an alphanumeric Liquid Crystal Display (LCD) which simplifies Call Handling, Customer Data Entry (refer to Section MITL9108-093-210-NA) and Maintenance (refer to Section MITL9108-093-353-NA).

Reason for Reissue

1.02 This Section has been reissued to describe the Attendant Console used with an SX-200® DIGITAL Private Automatic Branch Exchange (PABX), in a 336-port configuration and a 480-port configuration.

2. PHYSICAL DESCRIPTION

2.01 The Attendant Console housing measures 39.4 cm (15.5 inches) long, 10.2 cm (4.0 inches) high, and 22.9 cm (9.0 inches) deep. The Attendant Console is shown in Figure 2-1: SX-200® DIGITAL PABX Attendant Console. The weight of the console is 2.27 kg (5.0 lb) and consists of two major assemblies: an upper and lower assembly.

Upper Assembly

2.02 The upper assembly consists of the following parts:

Keyboard Printed Circuit Assembly: A printed circuit board assembly with 32 keys, a dial pad (12 keys) and a cable harness. The cable harness plugs into the Console Printed Circuit Assembly.

Housing Top: The plastic moulded top of the Attendant Console housing which encloses and protects the console circuitry.

Static Protection Panel: An aluminum plate made to fit under the top cover provides a path to ground for static discharge.

Alphanumeric Liquid Crystal Display: A 4-line x 80-character LCD which facilitates Attendant Console operation. Each character consists of a 5 X 7 dot matrix display.

Keyboard Designation Cover: A transparent cover with silkscreened key designations.

Keyboard Layout

2.03 The console keyboard consists of a standard 12 key keypad, 10 Display Associative Keys (softkeys), 4 cursor control keys, 2 volume control keys, 2 contrast control keys, and 14 fixed keys, seven of which have associated LED indicators. The status of the indicator displays the condition of the key:

- Indicator flashing - the system expects a response from the associated key.
- Indicator solid - the feature associated with the key is active.
- Indicator off - the feature is not active.

Lower Assembly

2.04 The lower assembly consists of the following parts:

Console Printed Circuit Assembly: A printed circuit board (PCB), which holds the main console circuits, power supply circuitry and processor. Slots are provided into which the keyboard assembly, speaker and handset jack leads are plugged.

Housing Bottom: The moulded plastic bottom of the Attendant Console housing.

Housing Shield: An aluminum plate made to fit in the housing bottom, which connects to the top shield and provides a path to ground for static discharge.

Harness Assembly: Two pairs of handset jacks are connected to the Console Printed Circuit Assembly via a wiring harness. The phone jacks are mounted on the card guides which are channeled into the housing bottom.

LCD Adjustment: The contrast is controlled by applying an external voltage to the LCD module between Vc and ground.

Hand/Headset: The removable hand/headset may be connected to either side of the Attendant Console.

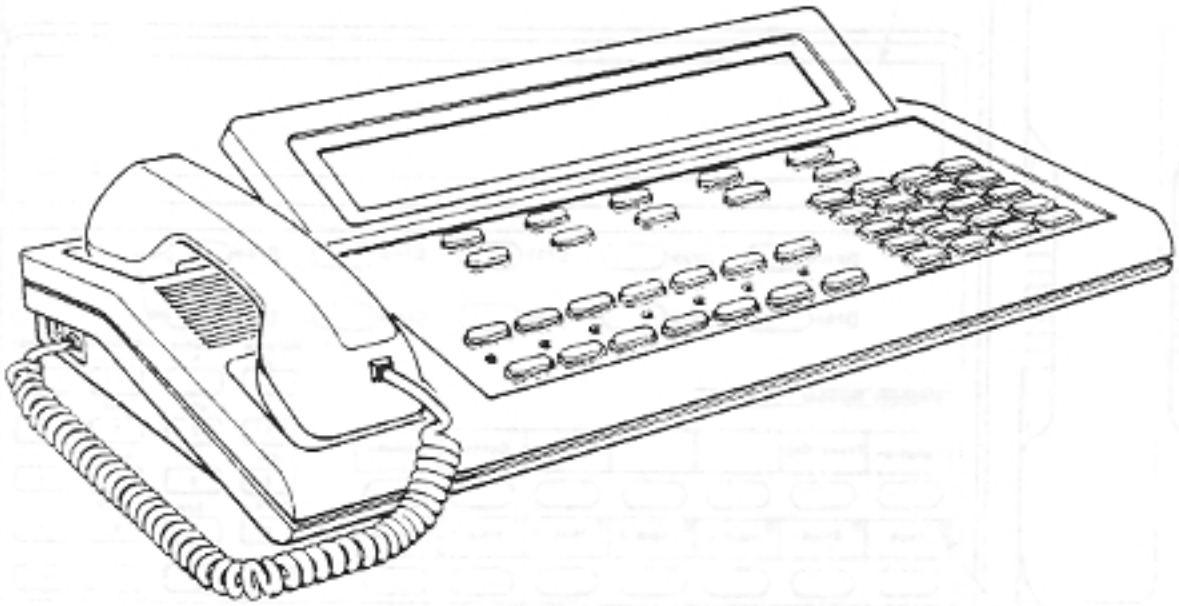

Figure 2-1 SX-200® DIGITAL PABX Attendant Console

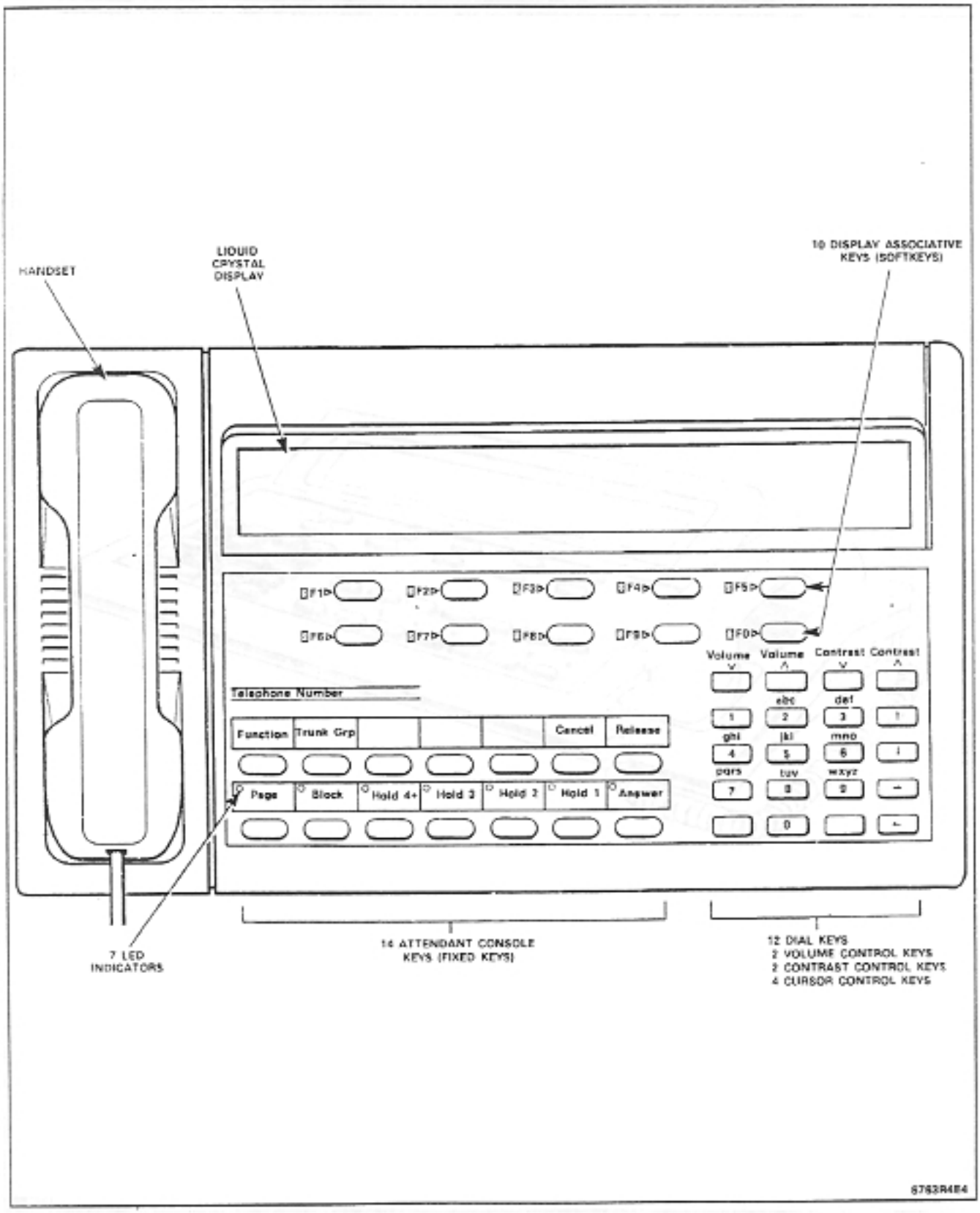

Figure 2-2 Attendant Console Keyboard Layout

3. FUNCTIONAL DESCRIPTION

General

3.01 The Attendant Console Keyboard layout (refer to Figure 2-2), provides the standard Call Handling keys.

Attendant Function Keys (Fixed Keys)

3.02 The following paragraphs describe the operation of the 14 fixed keys in Call Processing mode.

FUNCTION KEY: This key enables the attendant to access the following softkey functions:

- SET TIME
- APPLICATION
- SET DATE
- CANCEL CALL FORWARD
- STATION FEATURES
- CANCEL CALLBACK
- TRUNKS
- DISA SET UP
- ABBREVIATED DIALING
- FLEXIBLE NIGHT SERVICE
- SYSTEM IDENTITY

TRUNK STAT. KEY: This key permits the Attendant to display the status of Trunk Groups. It may be used when the console is idle, or when a call is being handled. For more information, refer to the feature description, Trunk Group Busy Indication, in this Part.

CANCEL KEY: This key enables the Attendant to cancel a misdialed call or a call directed to a busy number. The console display will revert to the previous display when this key is pressed.

RELEASE KEY: The Attendant is capable of releasing a call from the Attendant Console. The call may be released in the busy state, ringing state or after a connection has been made.

PAGE KEY: The Attendant can access up to nine paging zones. If the PAGE key is used, the programmed default zones will be accessed. To access a given zone or all nine zones, the Attendant must dial the appropriate access code.

CALL BLOCK KEY: This key permits the Attendant to bar extensions from calling one another. It is used in hotel/motel applications. Pressing CALL BLOCK activates the feature, and causes the LED above the key to light. Pressing the key again removes call block.

HOLD 1, 2, 3 AND 4 KEYS: These keys allow the Attendant to hold up to eight independent calls at the Attendant Console. When a call is placed on hold the associated LED of the pressed key will be ON. HOLD key 4 is an overflow key. When this key is activated softkey displays F6

to F0 will give the status of HOLD slots 4 through 8.

ANSWER KEY: This key allows the Attendant to answer any incoming calls to the Attendant Console. When an incoming call is routed to the Attendant Console the ANSWER LED is flashing and the appropriate softkey display is ON. The ANSWER key is used to answer calls in the order in which they arrived at the Attendant Console. At this time the ANSWER LED is ON continuously. To answer a specific call the Attendant must press the appropriate softkey.

Display Associative Keys (Softkeys)

3.03 The 10 Display Associative Keys (F1 to F0) are located directly below the alphanumeric LCD. Each key is assigned 12 character positions on the third row (F1 to F5) and fourth row (F6 to F0) of the LCD. Softkey prompts indicate the function of these keys on the alphanumeric LCD. The function of these keys varies according to system status at a given time. Figure 3-1 gives the list of characters used on the LCD. The paragraphs that follow describe the appearance of the Liquid Crystal Display and the operational aspects of the Attendant Console for the following conditions:

- Idle Console
- Incoming Calls
- Placing a Call on Hold
- Dialing a Destination
- Busy/No Answer Recall
- Attendant Intercept
- Set up and cancel Do Not Disturb
- Set up and cancel Message Waiting
- Paging
- Customer Data Entry/Maintenance Application
- Additional Attendant Functions.

```
0123456789:;<>?ABCDEFGHIJKLMNOPQRSTUVW
XYZ/,.-_'abcdefghijklmnopqrstuvwxyz
```

Figure 3-1 Alphanumeric LCD Characters

Idle Console

3.04 When the console is in the idle condition the LCD is as shown in Figure 3-2. The first line displays the date, time and number of calls waiting (C/W). Line 2 is blank and lines 3 and 4 display the softkey numbers (F1 to F0). Softkey F9 will display REDIAL; this enables the Attendant to automatically redial the last external number manually dialed from the Attendant Console by pressing softkey F9. All other softkeys; i.e., F1 to F8 and F0 are disabled in the idle condition.

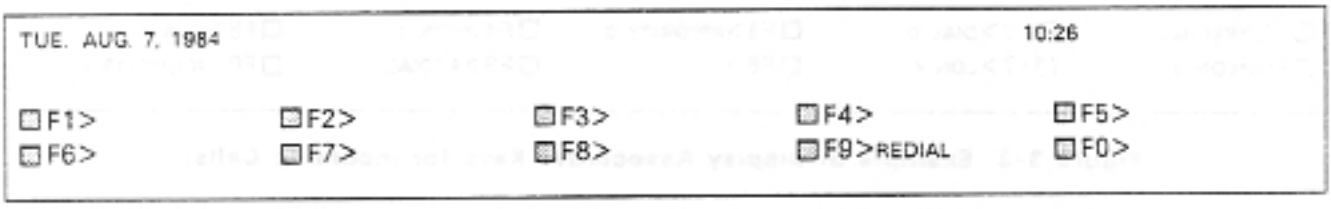

Figure 3-2 Attendant Console Display in the Idle Condition

Incoming Calls

3.05 When a call is routed to the Attendant Console, line 1 of the display will indicate the date, time and total number of calls waiting. Line 2 is blank and lines 3 and 4 display the available softkey functions. Refer to Figure 3-3.

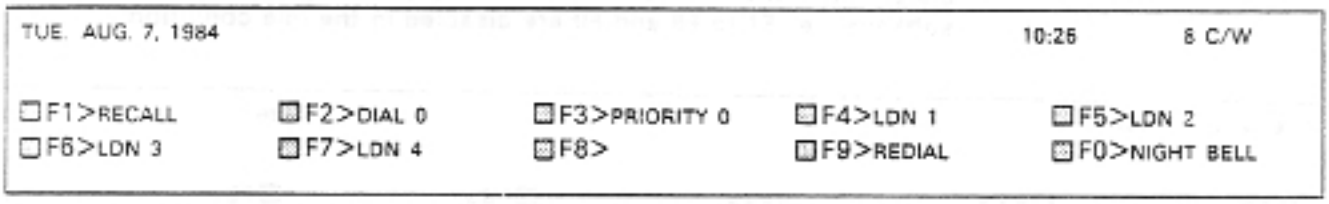

Figure 3-3 Example of Display Associative Keys for Incoming Calls

3.06 The console alerts the Attendant of an incoming call in three ways: ANSWER key LED is flashing, the appropriate softkey display is ON, and the tone warbler (if enabled) is active. To answer the calls in the order in which they arrived at the console, the Attendant simply presses the ANSWER key.

3.07 To answer a specific call, the Attendant must activate the appropriate softkey. In the above example of Figure 3-3 a total of eight calls are waiting; One RECALL, one DIAL '0', one PRIORITY DIAL '0', four LDN (Listed Directory Number) and one NIGHT ANS call. The following paragraphs describe the softkey functions for incoming calls.

RECALL: When a call is not answered within the time-out period, it is returned to the console; the RECALL prompt lights on the Alphanumeric LCD. The RECALL prompt cues the Attendant for the proper response. Pressing this key connects the Attendant to the recalled call.

DIAL '0' and PRIORITY DIAL '0': Internal calls or intercepts directed to the Attendant or intercepts will appear at the Attendant Console as DIAL '0' calls. Priority Dial '0' calls will only be available for extensions with the appropriate Class-Of-Service (COS) option enabled in their COS. The DIAL '0' and PRIORITY DIAL '0' labels must be programmed in CDE (refer to Section MITL9108-093-210-NA, Customer Data Entry).

LDN 1, LDN 2, LDN 3, LDN 4: When an outside call arrives at the Attendant Console, the prompt associated with the LDN 1, LDN 2, LDN 3 or LDN 4 key on the alphanumeric LCD is ON. Pressing the LDN 1 (F4), LDN 2 (F5) or LDN 3 (F6) softkey answers the incoming call to the customer's Listed Directory Number.

NIGHT BELL: If the Attendant has access to any calls which are currently routed to night bells, softkey F0 (NIGHT BELL) will be active. The Attendant may answer the call by pressing softkey F0.

3.08 When a given call is answered the ANSWER LED will stop flashing and will be ON continuously. The display will change to provide the Attendant with information about the source (line 1) and the available functions which may be selected (softkeys). Figure 3-4 gives an example of an answered DIAL '0' call.

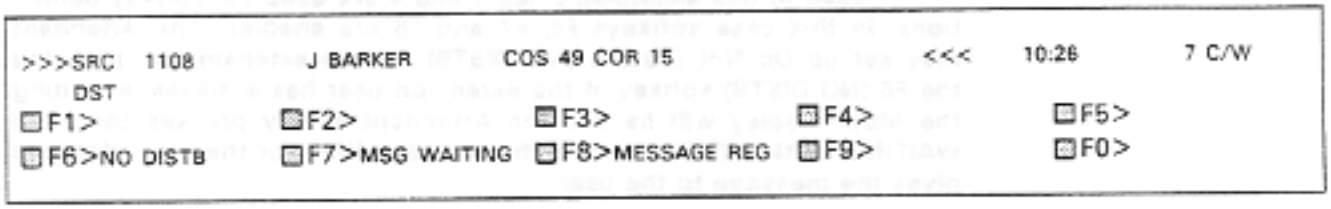

Figure 3-4 Answering a DIAL '0' Call

Internal Call

3.09 Line 1 of the display (Figure 3-4) gives a description of the caller. SRC (source) indicates that the call is incoming, 1108 is the extension number, J. BARKER is the caller's name, COS 49 is the Class Of Service of the caller and COR 15 is his Class Of Restriction. The delimiters (>>><<<) point to the actual caller the Attendant is on-line with (SRC or DST).

3.10 Line 2 in this case is reserved for a destination (DST) party (not used in this example). Lines 3 and 4 are used for softkey definitions; in this case softkeys F6, F7 and F8 are enabled. The Attendant may set up Do Not Disturb (NO DISTB) for the extension by pressing the F6 (NO DISTB) softkey. If the extension user has a message waiting the MSW display will be on. The Attendant simply presses the MSG WAITING softkey (F7) to cancel the Message Wait for the extension and gives the message to the user.

External Call

3.11 Figure 3-5 gives an example of an answered trunk call. Line 1 displays SRC (source) since it is an incoming call, TRUNK indicates that it is a trunk call, 76 is the equipment number of the trunk, COS 15 is the Class Of Service of the trunk and COR 5 is the Class Of Restriction of the Trunk. Line 2 in this example is not used and is reserved for a destination (DST) party if required. Softkeys 4 (FLASH) and 5 (SERIAL CALL) are enabled.

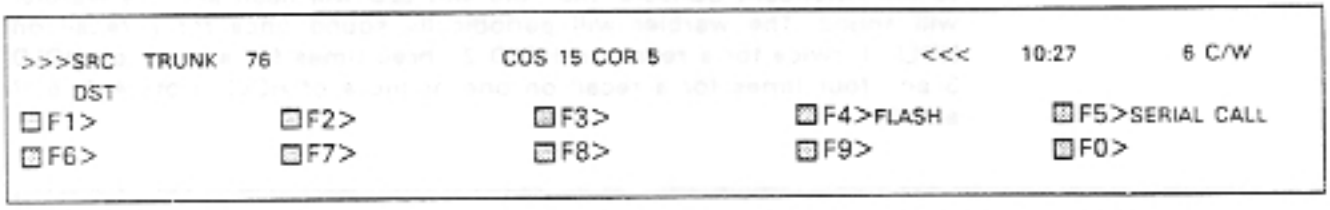

Figure 3-5 Answering a Trunk Call

FLASH: This softkey function enables the Attendant to generate a "Flash" back to the CO to signal the long distance operator.

SERIAL CALL: The Attendant may force the trunk call to automatically return to the console after the call is routed to a station, and the call is completed.

Placing a Call on HOLD

3.12 An incoming call may be placed in one of eight hold slots. Hold slots 1, 2 and 3 are provided via fixed keys on the Attendant Console. When a call is placed on hold using hold slots 1, 2 or 3 the Attendant must press one of the three hold keys. The associated LED will be ON. If the three first hold slots are being used, the attendant must press the HOLD 4 (overflow) fixed key. The LCD will display the remaining five hold slots as softkeys F6 to F0 as shown in Figure 3-6. The status of the slots will also be shown. If a party has been on HOLD for a period exceeding the programmed time-out it will RECALL back to the Attendant Console, the hold slot LED will flash and the warbler will sound. The warbler will periodically sound once for a recall on HOLD 1, twice for a recall on HOLD 2, three times for a recall on HOLD 3 and four times for a recall on one or more of HOLD slots 4, 5, 6, 7 and 8.

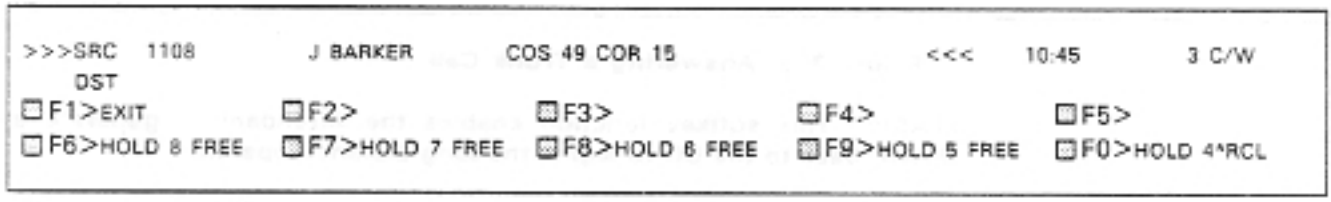

Figure 3-6 Placing a Call on Hold (Overflow)

3.13 The EXIT softkey function enables the Attendant to exit from the overflow hold status (HOLD 4 to 8) and return to the previous display (pressing any console fixed key allows the Attendant to exit from overflow held status).

Dialing a Destination

3.14 In order to call a party the Attendant must dial the number from the dial keypad. Figure 3-7 gives an example of the appearance of the display while the Attendant is dialing a destination. Line 1 is reserved for the source. Line 2 is reserved for the destination and will contain information pertaining to the destination when the complete number has been dialed; refer to Figure 3-8. The Attendant may cancel the call at any time by pressing the CANCEL fixed key. The Attendant Console will then revert to the previous state.

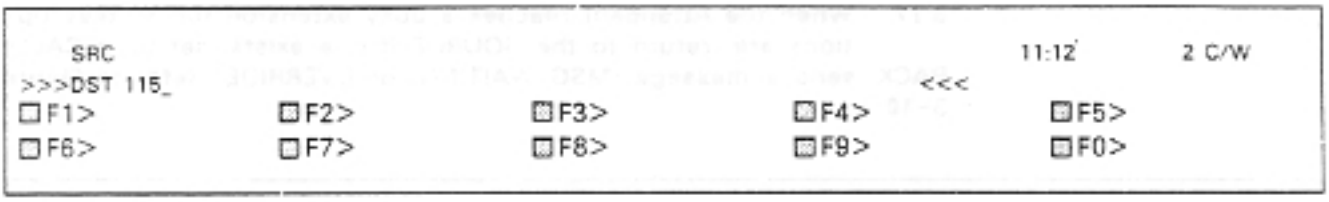

Figure 3-7 Dialing a Destination

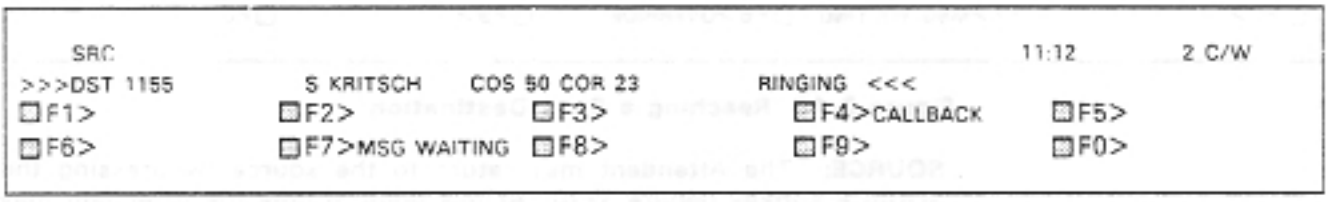

Figure 3-8 Calling a Destination

3.15 The Attendant will receive ringback tone if the extension is idle and line 2 of the LCD will display RINGING. The available softkey functions are CALLBACK and MSG WAITING.

CALLBACK: If the extension user does not answer, the Attendant may press the CALLBACK key and have the extension call back the Attendant Console. For a No Answer Callback the extension will call back to the Attendant Console after going off- and on-hook once. For a Busy Callback the Attendant Console will be called back once the extension goes on-hook.

MSG WAITING: The Attendant may send a message to an extension user. For DTMF and rotary sets the message waiting indication can be provided by ringing the extension at regular time intervals or by setting the message waiting lamp (if equipped) ON. For SUPERSET 4™ sets a message of the type "CALL ME BACK" will be displayed on the SUPERSET 4™ set LCD, and the "MSG" prompt on the LCD display will flash.

3.16 If the user has a SUPERSET 4™ set, the set may respond back to the Console with a systemwide message such as "IN A MEETING" when called. Refer to Figure 3-9.

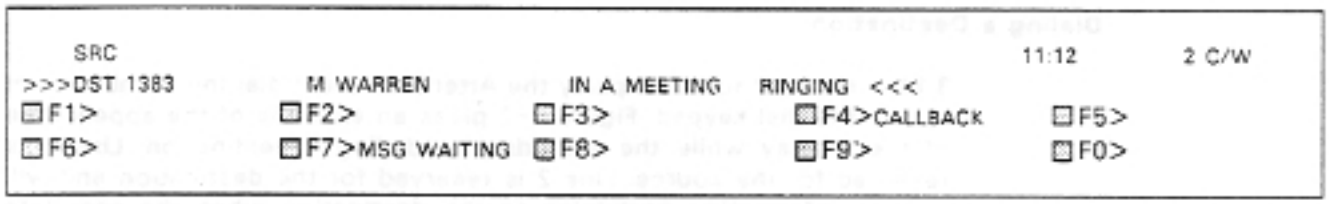

Figure 3-9 Calling a SUPERSET 4™ Set

3.17 When the Attendant reaches a busy extension the softkey options are: return to the SOURCE if one exists, set up a CALLBACK, send a message (MSG WAITING) or OVERRIDE. Refer to Figure 3-10.

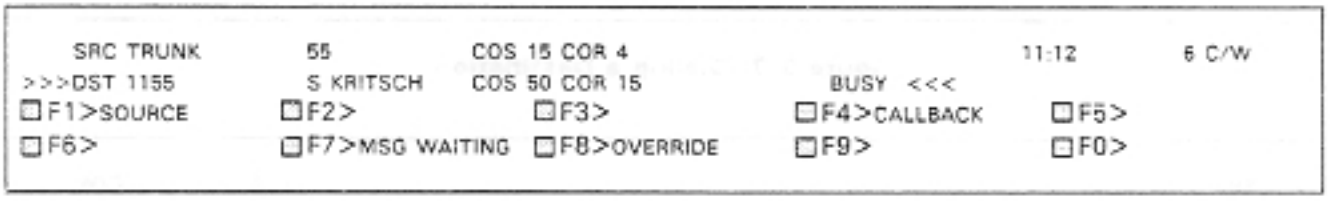

Figure 3-10 Reaching a Busy Destination

SOURCE: The Attendant may return to the source by pressing the SOURCE softkey (Figure 3-10). At this point in time the Attendant may camp the source onto the busy extension (destination) by pressing the fixed RELEASE key.

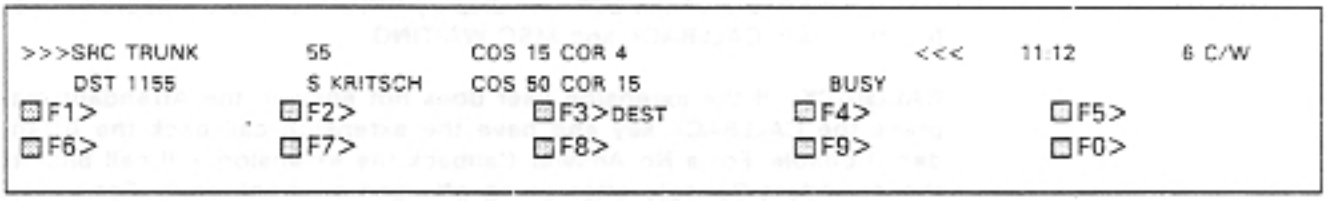

Figure 3-11 Returning to the Source

CALLBACK: Upon reaching a busy extension the Attendant may set up a Callback Busy by pressing the CALLBACK softkey. The extension will automatically call back to the Attendant Console after going on-hook.

MSG WAITING: The attendant may set up a message waiting for the extension as described above.

OVERRIDE: The Attendant may override the extension by pressing AND HOLDING DOWN the OVERRIDE softkey. The Attendant will barge in the conversation. Busy tone will be returned when the OVERRIDE softkey is released.

3.18 If the Attendant reaches a party with Do Not Disturb (DND), line 2 (DST) will display DND (Do Not Disturb); refer to Figure 3-12. The Attendant may switch back to the source (SOURCE), send a message (MSG WAITING) or override the DND (OVERRIDE).

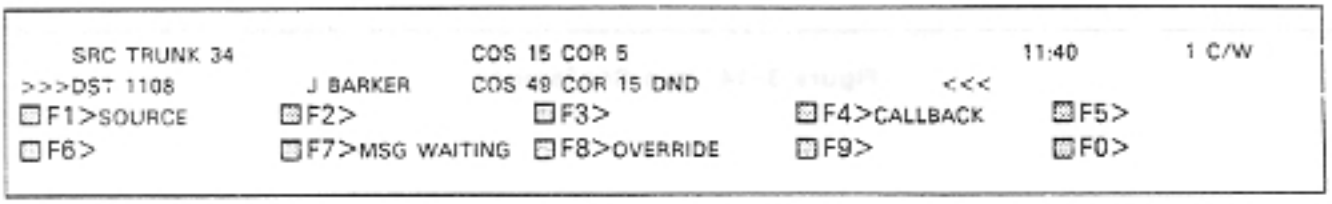

Figure 3-12 Calling an Extension with Do Not Disturb (DND)

3.19 To return to the source the Attendant can either press the SOURCE softkey or the fixed CANCEL key.

3.20 If the Attendant has a source party and reaches a destination party, the Attendant may return to the source (SOURCE), connect the source party with the destination party (fixed RELEASE key), or form a 3-way conference (CONF). Refer to Figures 3-13 and 3-13a. The fixed CANCEL key may be used to return to the source party.

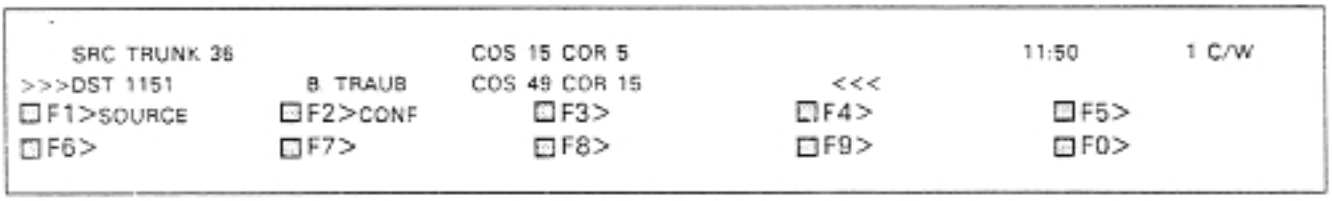

Figure 3-13 Connecting a Source and Destination or Forming a 3-Way Conference

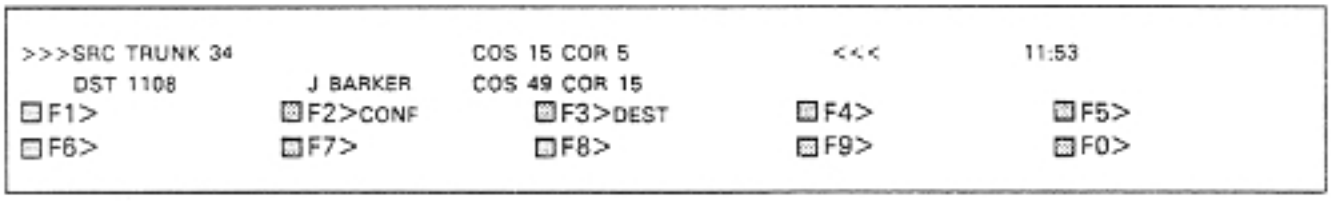

Figure 3-13a Connecting a Destination and a Source or Forming a 3-Way Conference

3.21 If the Attendant selected the conference option the LCD will appear as in Figure 3-14. The Attendant has the option of call splitting; i.e., talk to the source party alone or talk to the destination party alone.

Figure 3-14 In a Conference

Busy/No Answer Recall

3.22 If the Attendant has released a source call to a destination and the destination party does not answer within the programmed time-out the source call will recall to the Attendant Console. When the Attendant answers the recall the LCD will be as in Figure 3-15. Line 2 will indicate that the destination party did not answer (NO ANSR) and the RING AGAIN prompt will be ON.

>>>SRC TRUNK 34		COS 15 COR 5		<<< 12:00	1 C/W
DST 1108	J BARKER	COS 49 COR 15 NO ANSR			
☐F1>	☐F2>	☐F3>	☐F4>	☐F5>	
☐F6>	☐F7>	☐F8>RING AGAIN	☐F9>	☐F0>	

Figure 3-15 Answering a No Answer Recall

3.23 The Attendant may ring the destination party again by pressing softkey F8 (RING AGAIN). If at that time the extension is busy then the LCD will display the available functions for a busy destination (SOURCE, CALLBACK, MSG WAITING AND OVERRIDE). The Attendant may also camp the source onto the destination by releasing the call. If the extension does not answer the camp-on then the source party will recall to the Attendant Console; refer to Figure 3-16. The Attendant at this point may switch back to the destination and override the call.

>>>SRC TRUNK 34		COS 15 COR 5		<<< 12:00	1 C/W
DST 1108	J BARKER	COS 49 COR 15 BUSY			
☐F1>	☐F2>	☐F3>DEST	☐F4>	☐F5>	
☐F6>	☐F7>	☐F8>	☐F9>	☐F0>	

Figure 3-16 Answering a Busy Recall

Attendant Intercept

3.24 An intercept to the Attendant is displayed as INT; refer to Figure 3-17. The delimiter (>>><<<) display also indicates that the Attendant is presently connected to the source.

```
>>>SRC 1108        T. KITTLE     COS 19 COR 14  INT          <<<  12:00     4 C/W
    DST
☐F1>               ☐F2>          ☐F3>           ☐F4>         ☐F5>
☐F6>NO DISTB       ☐F7>MSG WAITING ☐F8>         ☐F9>         ☐F0>
```

Figure 3-17 Answering an Attendant Intercept

3.25 If the console has a trunk as a source or a destination the FLASH prompt will appear at softkey position 4 as shown in Figure 3-18.

```
>>>SRC 4612        R. MILNE      COS 48 COR 12                <<<  12:00     4 C/W
    DST TRUNK      76            COS 16 COR 3
☐F1>               ☐F2>CONF      ☐F3>DEST       ☐F4>FLASH    ☐F5>
☐F6>               ☐F7>          ☐F8>           ☐F9>         ☐F0>
```

Figure 3-18 Flashing on a Trunk Call

Do Not Disturb - Setup and Cancel

3.26 When the Attendant Console is connected to an extension the displayed prompts are as shown in Figure 3-19. To set up Do Not Disturb (DND) the Attendant must press softkey F6 (NO DISTB). Line 2 of the display will indicate that the feature is active with the DND prompt after the COS and COR numbers. To cancel Do Not Disturb the Attendant simply presses softkey F6 again. The DND status flag on line 2 will disappear.

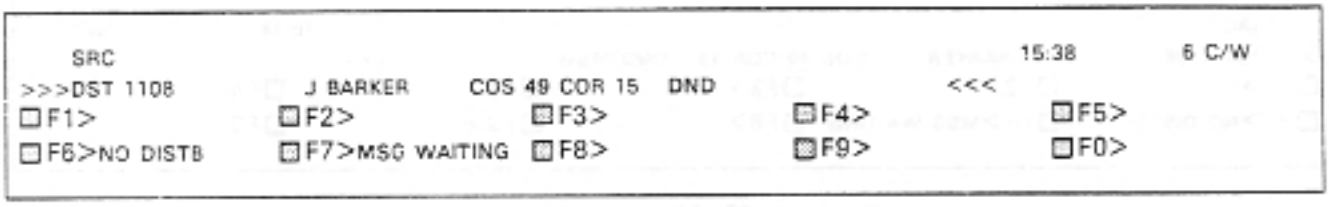

Figure 3-19 Do Not Disturb (DND)

Message Waiting - Setup and Cancel

3.27 The Attendant may set up or cancel the Message Waiting (MSW) feature for the extension. Softkey 7 is used to set up and cancel MSW. In Figure 3-20 the Attendant Console display indicates at line 2 that the Attendant is connected to an extension user with Do Not Disturb (DND) and Message Waiting (MSW) set up. To cancel MSG WAITING the Attendant must press softkey 7 (MSG WAITING). This will clear the MSW prompt on line 2.

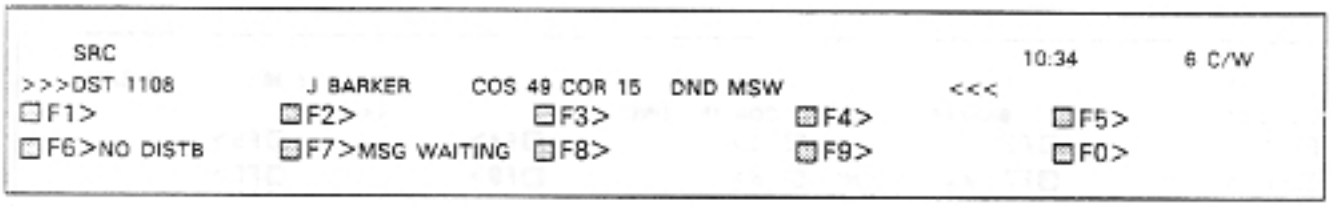

Figure 3-20 Message Waiting

Paging

3.28 The Attendant can access paging equipment using the PAGE fixed key on the Attendant Console. By using this key the Attendant can access a default paging zone(s) which has been programmed in Customer Data Entry (CDE). To access a given paging zone or all paging zones the Attendant must dial the appropriate access code. If the Attendant has a call on hold for an extension user, the hold pickup access code must be given to enable the extension user to pick up the call. The hold slot access code has three fields as shown in this example: the feature access code (66), the Attendant Console number (05) and the hold slot number (1 to 8); refer to Figure 3-21.

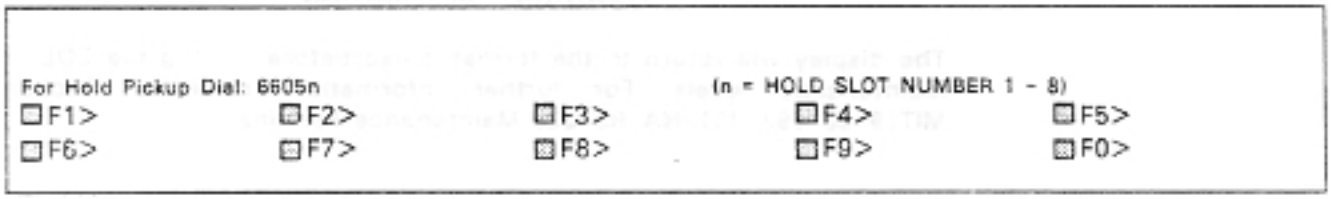

Figure 3-21 Station Hold Slot Access

Customer Data Entry/Maintenance Application

3.29 By selecting FUNCTION and the APPLICATION softkey the Attendant Console may be used as a Customer Data Entry or Maintenance Terminal. The display will prompt for the application desired, and the access level and password. The password may only consist of numeric characters. If a password has been programmed from the Maintenance Terminal which contains alphabetic characters, Customer Data Entry and Maintenance applications will not be accessible from the Attendant Console. A new, numeric password must be set from the Maintenance Terminal before these Applications become accessible from the Attendant Console. At any time during Customer Data Entry or Maintenance, pressing any hard key will return the Attendant Console to the call handling mode and display. To resume CDE or Maintenance, press:

FUNCTION + APPLICATION

The display will return to the format it had before leaving the CDE or Maintenance levels. For further information, refer to Section MITL9108-093-351-NA, RS-232 Maintenance Terminal.

Tone Signaling

3.30 This feature allows the Attendant to send DTMF tones during a trunk call. COS Option 119 – Attendant Tone Signaling On Trunks must be enabled. When enabled, this option results in the TONES ON softkey being displayed whenever the Attendant is talking on a Trunk. Pressing TONES ON enables the tones generated by the dial keypad. Pressing TONES ON also causes the softkey label to toggle to TONES OFF. Tones dialed using this feature are ignored by the PABX, and are transmitted out onto the trunk. Pressing TONES OFF disables Tone Signaling.

Trunk Group Busy Indication

3.31 This feature is used to display the status of Trunk Groups. Trunk Group Status may be displayed when the console is idle, or when a call is in progress. When used when the console is idle, the display is updated every 5 seconds. To use the feature press the TRUNK STAT fixed key. The first 19 Trunk Groups will be displayed. Press the MORE softkey to see the next 20 Trunk Groups, and press it once more to see the last 11 Trunk Groups. After the last 11 groups are displayed, pressing MORE will re-display the first 19 groups. The solid block beneath the Trunk Group number indicates that group is busy. To exit the feature, press the EXIT softkey.

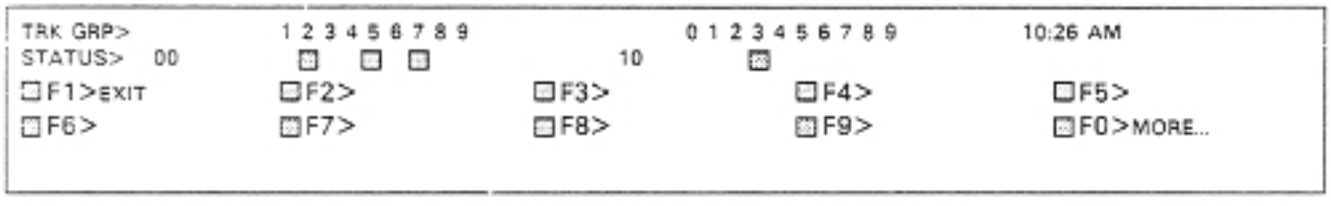

Figure 3-22 Trunk Group Busy Indication

Additional Attendant Functions

3.32 Additional Attendant functions are accessed by the use of fixed key and softkey functions. The fixed FUNCTION key must be pressed to access the softkey functions. Figure 3-23 gives the appearance of the Attendant Console display after the fixed FUNCTION key has been pressed.

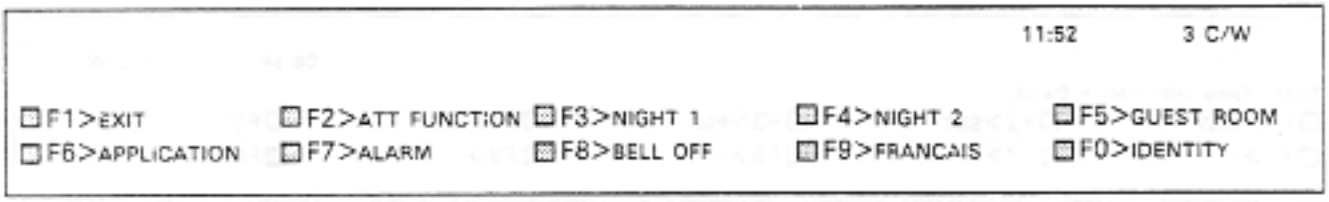

Figure 3-23 Additional Functions

EXIT: Softkey F1 (EXIT) allows the Attendant to return to the previous display; i.e., to exit the function mode.

ATT FUNCTION: Softkey F2 (ATT FUNCTION) when pressed will display prompts as shown in Figure 3-24. These functions allow the Attendant to do the following:

Figure 3-24 Additional Attendant Functions

EXIT: Softkey F1 (EXIT) allows the Attendant to return to the previous display; i.e., to exit the ATT FUNCTION mode.

SET TIME: Softkey F2 (SET TIME) when pressed will display prompts as shown in Figure 3-25. The Attendant must dial in the time in a 4-digit string, 2-digit hours (HH) and 2-digit minutes (MM). If the entry is correct (refer to Figure 3-25a) the display area for softkey F3 will show 'PM'. The Attendant may select AM by pressing softkey F2 (SET) or select PM by pressing softkey F3 (PM). The 12- or 24-hour clock mode is preselected during CDE. If the entry is incorrect the Attendant Console will not display SET. The "←" key can be used to back up and clear the incorrect entry, or the EXIT softkey can be pressed to exit the SET TIME function.

Figure 3-25 Setting Time of Day

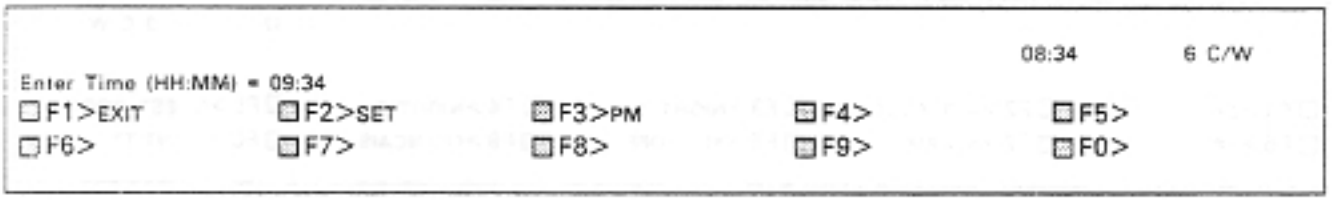

Figure 3-25a Setting Time of Day

SET DATE: Softkey F3 when pressed will display prompts as shown in Figure 3-26. The Attendant must dial in the 6-digit string representing the date; i.e., 2-digit day (DD), 2-digit month (MM) and 2-digit year (YY). If the entry is correct the prompts will be as in Figure 3-26a. If softkey F2 (SET) is pressed the date will be entered; if softkey F1 is pressed the Attendant Console will revert to the previous state and the entered date will not register.

Figure 3-26 Setting the Date

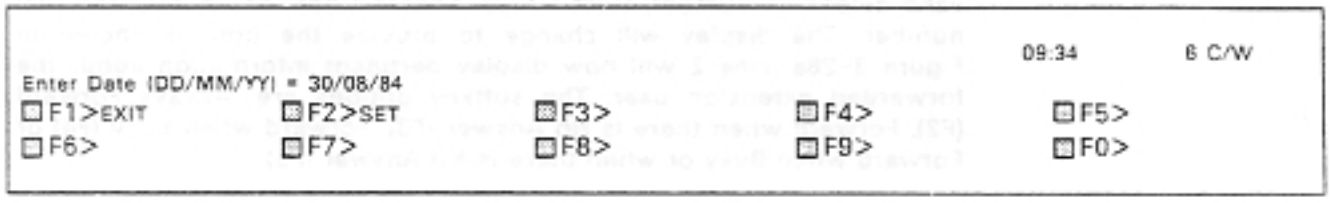

Figure 3-26a Setting the Date

STATIONS: This key enables the Attendant to enter an extension number in order to set up Call Forwarding, busy out the station or set up Message Waiting without calling the extension user. As shown in Figure 3-27 the Attendant simply has to enter the extension number. The CALL FWD and BUSY OUT prompts will appear as shown in Figure 3-27a; SET UP MSG prompt appears only for a SUPERSET 4™ set.

Figure 3-27 Setting Extension Features

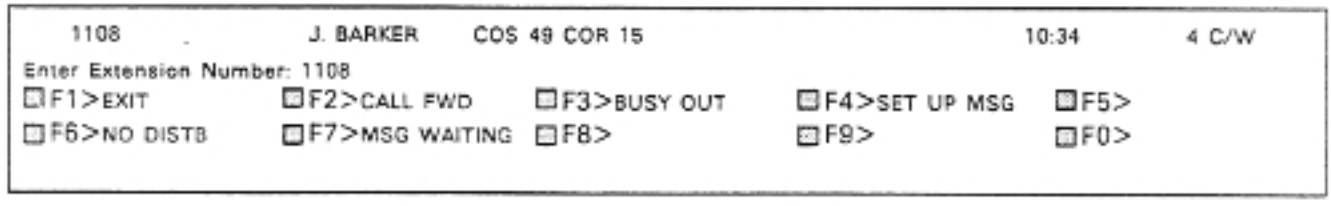

Figure 3-27a Setting Extension Features

EXIT: The Attendant may return to the previous state by pressing softkey F1 (EXIT).

CALL FWD: To view or to set up Call Forwarding for the extension press softkey F2 (CALL FWD). Line 1 will redisplay information pertinent to the dialed extension number. Line 2 will provide the Call Forwarding status for the extension as shown in Figure 3-28.

Figure 3-28 Setting Call Forwarding

To forward the calls to another destination the Attendant must enter a valid extension number, Hunt Group Access Code, or Abbreviated Dial number. The display will change to provide the options shown in Figure 3-28a. Line 2 will now display pertinent information about the forwarded extension user. The softkey options are: Always Forward (F2), Forward when there is No Answer (F3), Forward when Busy (F4) or Forward when Busy or when there is No Answer (F5).

CANCEL: The Attendant may cancel Call Forwarding for the extension by pressing this key.

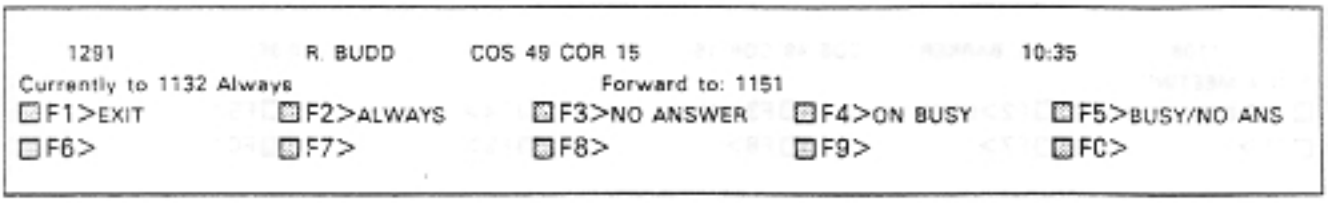

Figure 3-28a Setting Call Forwarding

BUSY OUT: This feature enables the Attendant to busy out a station or SUPERSET® set. The BUSY OUT prompt will appear after the Attendant has entered the following key sequence:

FUNCTION + ATT. FUNCTION + STATIONS + EXTENSION NUMBER + BUSY OUT

The display will be as shown in Figure 3-29. Line 1 will display pertinent information about the entered extension number; i.e., extension number, user name, COS and extension status (BUSY or IDLE).

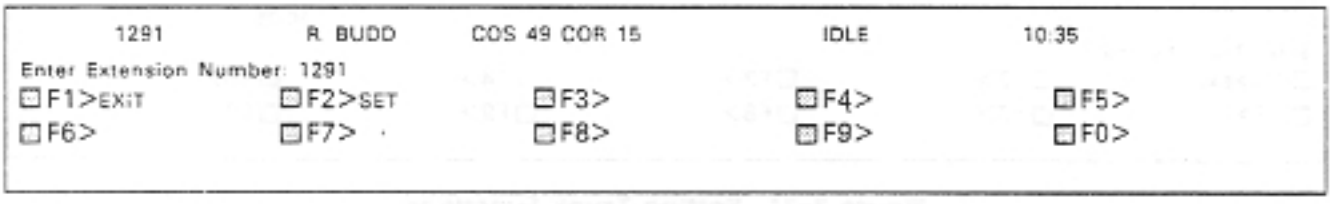

Figure 3-29 .Setting Busy-Out

The Attendant may busy out the extension by pressing the SET key (F2). If the extension is idle as in Figure 3-29, the extension will immediately be busied-out and the display will change from IDLE to BSY OUT (Busied-Out). If the extension is busy the Attendant may still set the busy-out condition. The extension will only become busied-out when the extension becomes idle.

When an Attendant calls an extension which has been busied-out, the BSY OUT prompt will appear and the Attendant may cancel the busied-out condition by pressing softkey F2 (CLEAR).

SET UP MSG: This feature enables the Attendant to set up systemwide SUPERSET® set messages by the following key sequence:

FUNCTION + ATT. FUNCTION + STATIONS + EXTENSION NUMBER + SET UP MSG

After the above key sequence has been entered the display will be as shown in Figure 3-30. The Attendant may EXIT (F1), view the next available message by pressing the NEXT softkey (F2) or set up the message displayed on line 2 for the SUPERSET® set. When the message is set up, softkey F3 will display OFF to enable the Attendant to disable the systemwide message for that set.

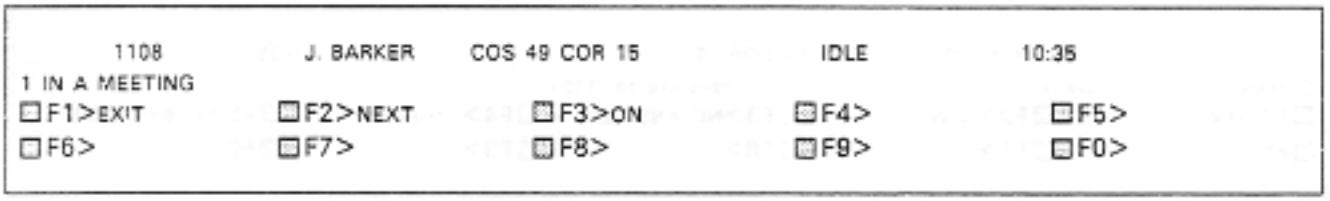

Figure 3-30 Setting Systemwide Messaging for SUPERSET® Sets

TRUNKS: This feature enables the Attendant to access trunk hardware control functions by entering the following key sequence:

FUNCTION + ATT. FUNCTION + TRUNKS

The Attendant Console display will be as shown in Figure 3-31. The Attendant must enter a trunk number. The display will change as shown in Figure 3-31a. The Attendant may request trunk status, restrict trunk access or busy out the trunk.

Figure 3-31 Setting Trunk Functions

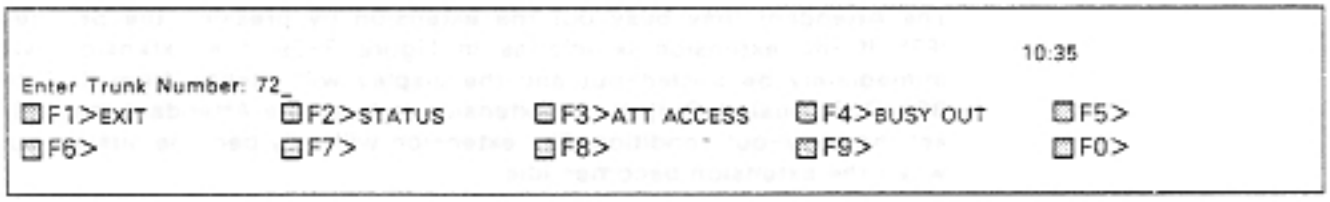

Figure 3-31a Setting Trunk Functions

STATUS: The Attendant may view trunk status by pressing this key. The display will have the format shown in Figure 3-32.

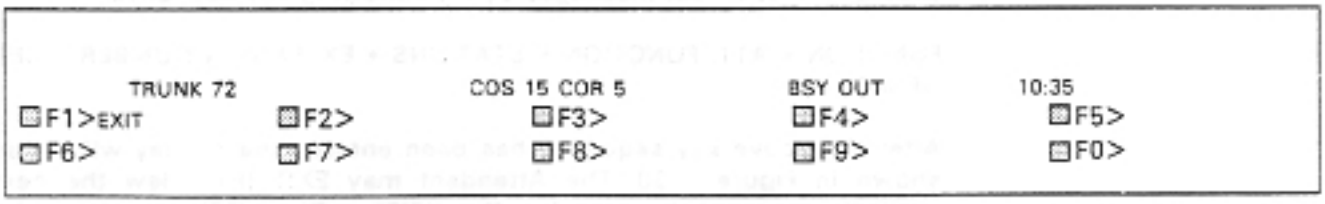

Figure 3-32 Trunk Status Display

ATT. ACCESS: This feature permits the Attendant to select a specific trunk. After a trunk number has been entered (see Figure 3-31) the LCD will change as shown in Figure 3-31a. Pressing ATT. ACCESS results in the trunk being seized by the attendant.

BUSY OUT: Pressing this key results in information concerning the trunk being displayed. Two softkey options are presented: EXIT and SET (if the selected trunk is idle) or CLEAR (if the trunk is busied out). Pressing SET causes the trunk to be busied out and causes the display to revert to call processing mode. Pressing CLEAR returns the trunk to idle and causes the display to revert to call processing mode.

NIGHT SWITCHING: The NIGHT1 and NIGHT2 keys are used to place the areas of the system controlled by a given Attendant Console into night service. In multi-tenant applications, each tenant may locally switch into night service without affecting any other tenant, unless programmed to do so. Pressing the NIGHT1 or NIGHT2 softkey results in the night service status being displayed on the Attendant Consoles affected. If night service is in effect, the display will show the softkey DAY SERVICE. Pressing this key will result in a return to day service.

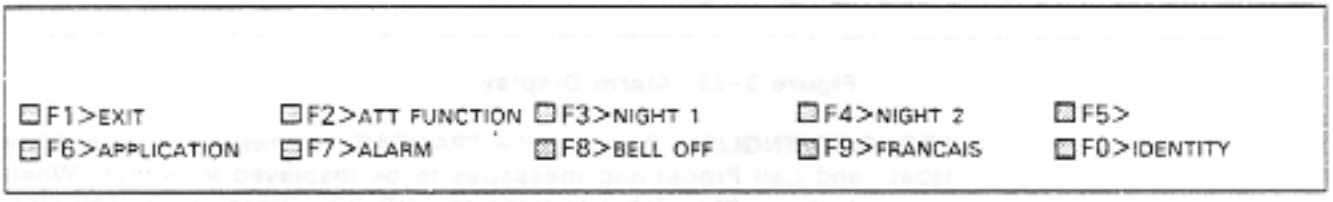

Figure 3-33 Night Switching

Figure 3-34 Night Service 2 in Effect

ALARM RESET: When the system generates a minor alarm due to a detected fault by the system's diagnostics routines, a new alarm flag will automatically be displayed on Attendant Consoles programmed to receive minor alarms. This will appear on the destination line as shown in Figure 3-35. The ringing alarm may be reset, and the cause of the alarm displayed, by pressing:

FUNCTION + ALARM:

Pressing the CANCEL softkey will clear the alarm message currently being read and return the console to call processing mode. Pressing MORE permits reading additional alarm messages. The flashing ALARM message will continue until all alarm messages have been read, or canceled. Alarms cannot be read while the console is performing Maintenance or CDE functions.

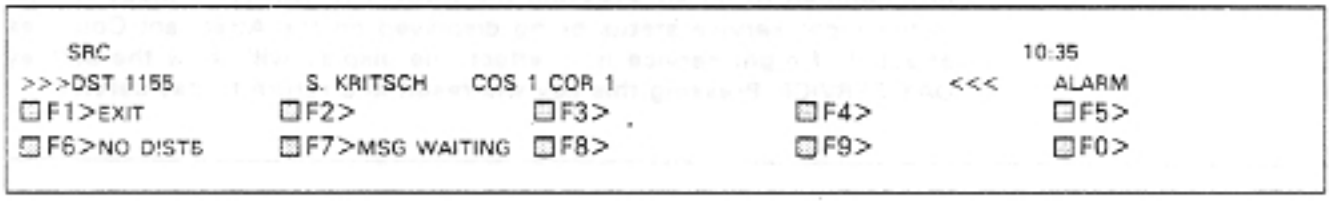

Figure 3-35 Alarm Display

FRANCAIS/ENGLISH: Pressing the FRANCAIS key results in all softkey labels and Call Processing messages to be displayed in French. When pressed, the softkey label toggles to ENGLISH. Pressing the ENGLISH softkey returns the display messages to ENGLISH.

IDENTITY: Pressing the IDENTITY softkey causes the display to show the Attendant Console's identity, as well as the software release and revision number in which the system is currently operating.

ABBR. DIAL: Attendant Abbreviated Dial functions are accessed via the key sequence:

FUNCTION + ATT. FUNCTION + ABBR DIAL

The Abbreviated Dial digits to be dialed are prompted for by the words "ENTER INDEX NUMBER". A number of up to three digits can then be entered. Pressing the ENTER key results in the display changing to that shown in Figure 3-36. The number the system is to dial when this index number is selected is then entered. If a digit string is already assigned to that index number, the digit string will be displayed against the index number. A new number can then be entered against this index number, replacing the previous one, if desired, or the Abbreviated Dial function can be exited, or the current index number entry sequence canceled. Once a digit string has been entered, the SET softkey is displayed. Pressing SET will result in the digit string being saved in the system memory. Each time that index number is keyed, the system will then dial the entered digit string.

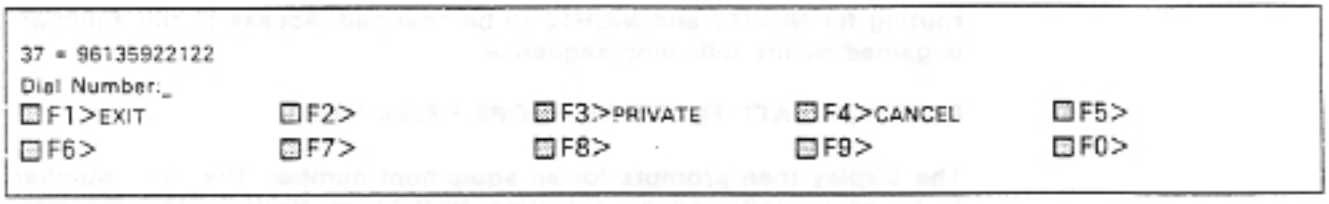

Figure 3-36 Abbreviated Dialing Functions

SYSTEM IDENTIFIER: Selecting this softkey causes the display to show the current system identifier, and to prompt for the desired identifier. A number consisting of from one to three digits may be entered.

CANCEL ALL CALL FORWARDING/CALLBACK: The CANCEL ALL CALL FORWARDING and CANCEL ALL CALLBACK functions are accessed by the following key sequence:

FUNCTION + ATT. FUNCTION + MORE + CAN. ALL FWD (or CAN. ALL CBK)

Pressing CAN. ALL FWD will clear all call forwarding; pressing CAN. ALL CBK will clear all callbacks.

DISA: The DISA softkey allows the Attendant to redefine the Access Code required for a call originating outside the PABX to access the PABX's features (Direct Inward System Access). The DISA code is set up by the following sequence:

FUNCTION + ATT. FUNCTION + MORE + DISA CODE

The display then prompts for the DISA Access Code, and the softkeys SET and EXIT are displayed. Pressing SET enters the new Access Code into the system. Pressing EXIT returns the display to its normal call handling mode.

FLEXIBLE NIGHT SERVICE: Flexible night service allows the Attendant to redefine the inward routing of non-dial-in trunks. This permits the routing for NIGHT1 and NIGHT2 to be changed. Access to this function is gained by the following sequence:

FUNCTION + ATT. FUNCTION + MORE + FLEX NIGHT

The display then prompts for an equipment number. The trunk number is keyed in, followed by selecting NIGHT1 or NIGHT2, and the new destination. Pressing the SET key will cause the routing to be changed. The routing destination may be a SUPERSET® set, a SUPERSET® line, an Attendant Console LDN or an LDN appearance on an Attendant Console. It may also be a night bell directory number.

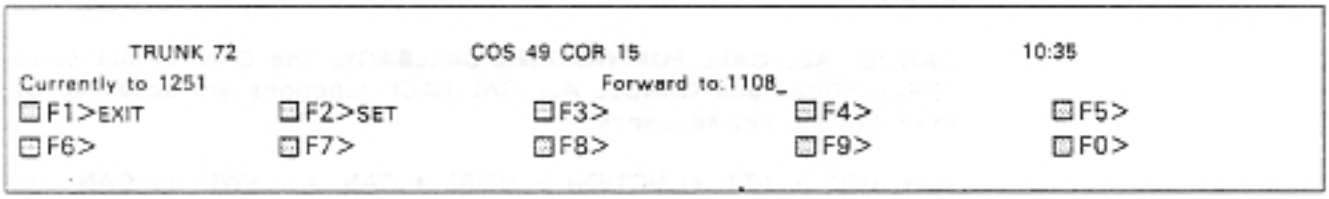

Figure 3-37 Flexible Night Service Setup

4. HOTEL/MOTEL FEATURES

General

4.01 The standard Attendant Console features described in Part 4, may be supplemented by additional features related specifically to hotel/motel PABX installations. When enabled, most of these features are accessed from the Call Processing mode of the Attendant Console by pressing the FUNCTION key and the GUEST ROOM softkey (F5). The exception to this is the Call Block feature, which is accessed by pressing the CALL BLOCK fixed key (next to the PAGE key). The following paragraphs describe the way these features are accessed from the Attendant Console.

Call Block/Room-to-room Restriction

4.02 This feature permits the Attendant to prevent extensions from calling one another. (Refer to Section MITL9108-093-105-NA, Features Description, for a description of the operation of this feature.) Call Block is implemented by pressing the CALL BLOCK key. The LED associated with this key lights when Call Block is active. Pressing the key a second time removes Call Block.

Guest Room

4.03 Pressing FUNCTION, then the GUEST ROOM softkey gives the Attendant the ability to do any of the following:

- Display the Message Register
- Clear the Message Register
- Set up and cancel an Automatic Wake-up Call
- Change the status of a room
- Set up and cancel Do Not Disturb for a room
- Set up and cancel Message Waiting for a room
- Set up and cancel Outgoing Call Restriction
- Generate printouts of Room Status, Wake-Up calls and Message Registers.

The GUEST ROOM function can be accessed regardless of whether the Attendant Console is idle or in the process of handling a call. When handling a call, after the FUNCTION and GUEST ROOM keys are pressed the Attendant Console display will show information regarding the source on the top line of the display, room functions on the second line, and the softkeys on the remaining two lines. Refer to Figure 4-1.

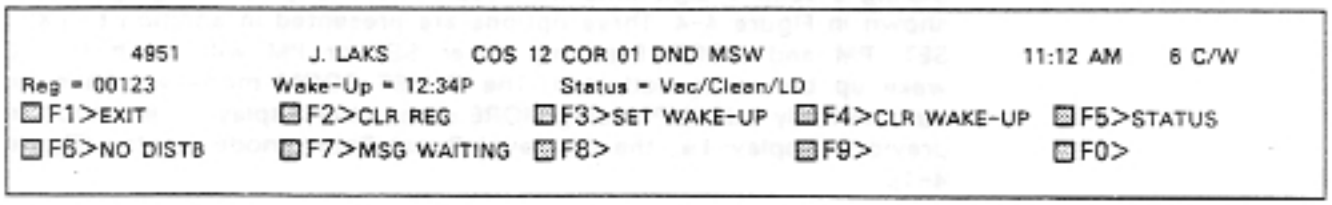

Figure 4-1 GUEST ROOM Display During a Call

Pressing GUEST ROOM while the Attendant Console is not engaged in a call will produce the display shown in Figure 4-2.

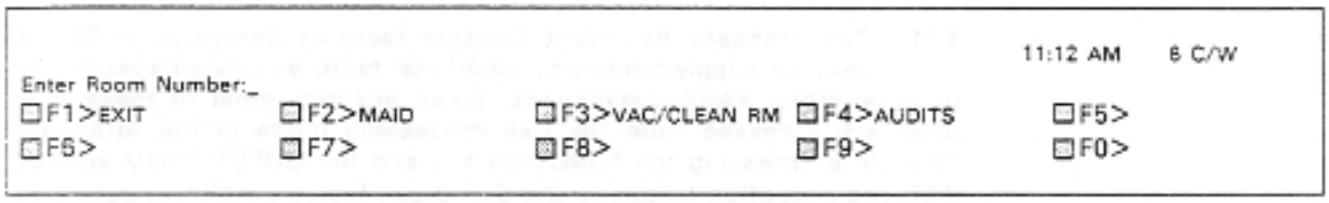

Figure 4-2 GUEST ROOM Display with Idle Console

Once a room number (extension number) has been entered, the display will change to the format shown in Figure 4-1 with a ROOM NUMBER softkey displayed in the F0 position. Pressing EXIT at any time returns the Attendant Console to its prior state (e.g., idle or busy call processing). The functions of the various softkeys shown above are as follows:

CLR REG: The CLR REG softkey (Clear Register) is used to reset the Message Register to zero. Pressing this key will clear the register, and return the Attendant Console to Call Processing mode. Clearing the register may result in a 1-line report being printed.

SET WAKE-UP and CLR WAKE-UP: The SET WAKE-UP softkey is used by an Attendant to set or change, a wake-up call for a room. SET WAKE-UP appears when the FUNCTION key and the GUEST ROOM softkeys are pressed. If a wake-up time is set against a room, pressing CLR WAKE-UP will cancel the wake-up, then return the Attendant Console display to its previous Call Processing display. Figure 4-3 shows the Attendant Console display after the SET WAKE-UP softkey is pressed. To set a wake-up time, the Attendant enters a room number after GUEST ROOM is pressed (if the console is idle); if the console is engaged in a call to a room, the room information is displayed.

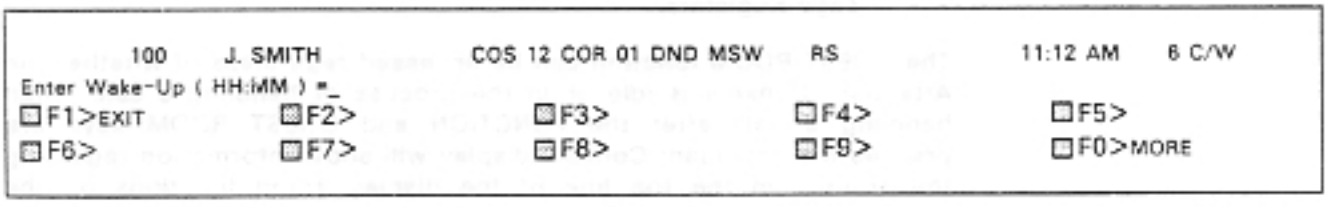

Figure 4-3 Setting Automatic Wake-Up

Dialing a valid 4-digit time will result in the display changing to that shown in Figure 4-4. Three options are presented in addition to EXIT: SET, PM and MORE. Pressing either SET or PM will result in the wake-up becoming activated. The GUEST ROOM mode will then be automatically exited. Pressing MORE causes the display to revert to the previous display; i.e., the top-level Guest Room mode display (Figure 4-1).

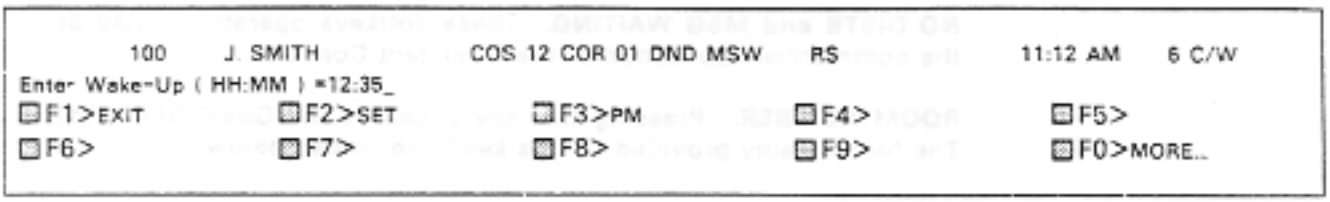

Figure 4-4 Automatic Wake-Up

Setting, changing, cancelling, and honoring an Automatic Wake-Up will result in a printed record of the event, if the System Option "Automatic Wake-up Print" is enabled. Wake-ups may also be set up without involving the Attendant, from a room extension. In this case, an access code is dialed from the extension, and the time entered in 24-hour format. Dialing the Access Code and "9999" will clear the Automatic Wake-Up from the station.

STATUS: The STATUS softkey permits the Attendant to display and change the status of a room. The Attendant presses FUNCTION, GUEST ROOM, and the room number (if not engaged in a call), then presses the STATUS softkey. The display changes to that shown in Figure 4-5.

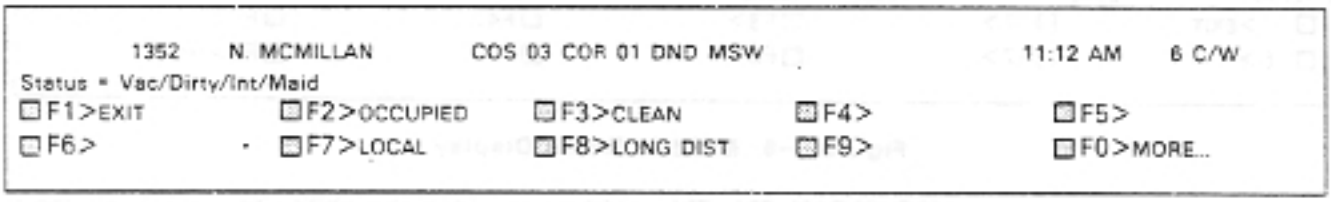

Figure 4-5 Room Status Display

Pressing the OCCUPIED softkey toggles the status display from "Vac" (vacant) to "Occ" (occupied), and the OCCUPIED softkey changes to VACANT. Similarly, pressing the CLEAN softkey toggles the status from "Dirty" to "Clean", and changes the CLEAN softkey to DIRTY. Pressing the LOCAL softkey will toggle the status from "Int" to "Loc", and change the softkey from LOCAL to INTERNAL. Pressing the LONG DIST softkey changes the status to "LD" and toggles the LONG DIST key to LOCAL. The "Maid" portion of the status display is activated from the room by dialing a "MAID IN ROOM" access code plus a single digit (1, 2, or 3). "1" indicates a maid is in the room; "2" indicates there is no maid in the room; "3" indicates the room is clean, and the maid is not in the room.

Room status can also be converted automatically if System Options "Auto Room Status Conversion/Auto Wake-Up Print" and "Auto Room Status Conversion/Auto Wake-Up Print Timer" are enabled. Once the timer is programmed, the system will automatically change the status of all occupied and clean rooms to occupied and dirty. At this programmable time, an audit is also performed on all automatic wake-up calls.

Pressing the MORE softkey returns the console to the previous level, leaving it in Guest Room mode.

NO DISTB and MSG WAITING: These softkeys operate as they do in the commercial application of the Attendant Console.

ROOM NUMBER: Pressing this key accesses the Guest Room mode. The functionality provided by this key is described below.

Guest Room Functions

4.04 When the FUNCTION and GUEST ROOM keys are pressed, the display changes to that shown in Figure 4-2. Four softkeys are then shown: EXIT, MAID, VAC/CLEAN RM, and AUDITS. Pressing EXIT will return the Attendant Console to its previous display. The functions of the remaining softkeys are described below:

MAID: This softkey provides the ability to display all rooms in which there is a maid. Pressing this softkey changes the display to that shown in Figure 4-6. The MORE softkey will be displayed if more than 10 rooms have the status of "Maid in Room".

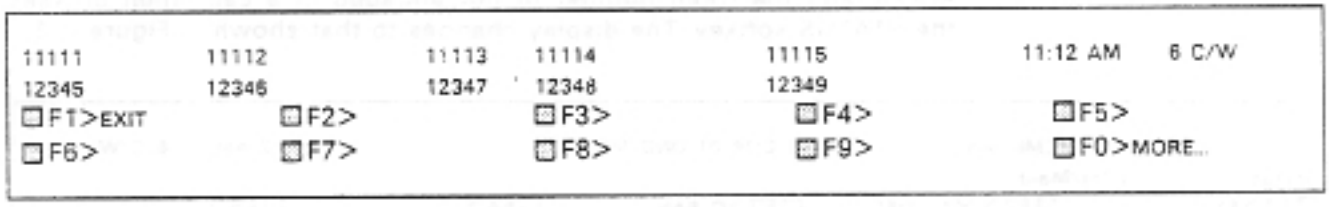

Figure 4-6 Maid In Room Display

VAC/CLEAN RM: This softkey provides the ability to display all room numbers which have a status of "Vac/Clean Room". Pressing this softkey changes the display to that shown in Figure 4-7. The MORE softkey will be displayed if more than 10 rooms have the "Vac/Clean Room" status.

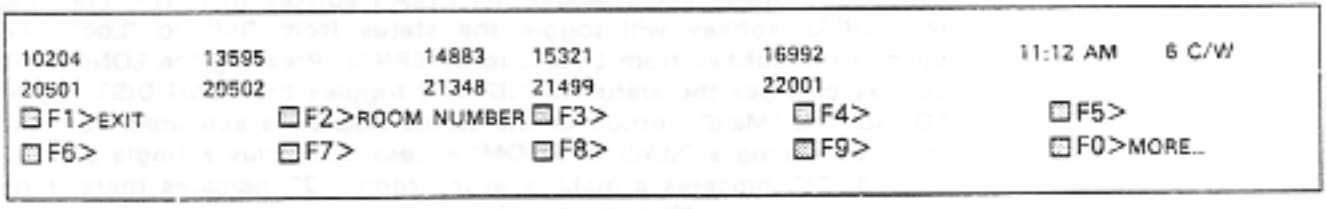

Figure 4-7 Vacant/Clean Room Status Display

If the ROOM NUMBER softkey is pressed, the display changes to that shown in Figure 4-8. Entering a valid room number results in the 10 rooms following the entered number to be displayed. The display of the "Vac/Clean Room" status thus starts at the entered room number.

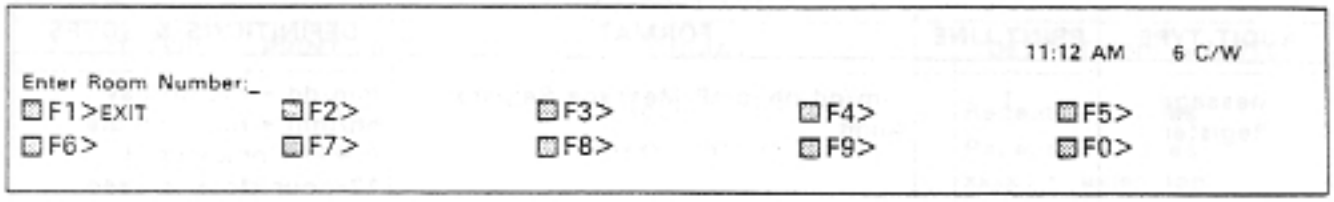

Figure 4-8 Vacant Room Status Display

AUDITS: This softkey permits the Attendant to perform three types of room audits: Message Register Audits, Room Status Audits, and Automatic Wake-Up Audits. Each is described below.

1. Message Register Audits: When selected, this type of audit results in a printout being made of all message registers which do not have a value of zero. When System Option "Zero Message Register After Audit" is enabled, all message registers will be cleared once the printout is completed.

2. Room Status Audits: When selected, this type of audit results in a printout which shows the status of all extensions which have the COS Option "Room Status" enabled. The report generates two sections, one for Vacant rooms, and one for Occupied rooms.

3. Automatic Wake-Up Audits: When selected, this type of audit produces a printout showing the wake-up times for all extensions with active wake-up calls. This audit can also be done automatically at a pre-set time (determined by a System Timer).

In order to perform audits, the Attendant Console must not be active on a call. Audits are performed by pressing the following keys in sequence:

FUNCTION + GUEST ROOM + AUDITS + (audit type)

The display will change to that shown in Figure 4-9. After selecting the desired audit type, the Attendant Console will return to its idle mode display. The printout is routed to the printer specified in the CDE printout assignment form.

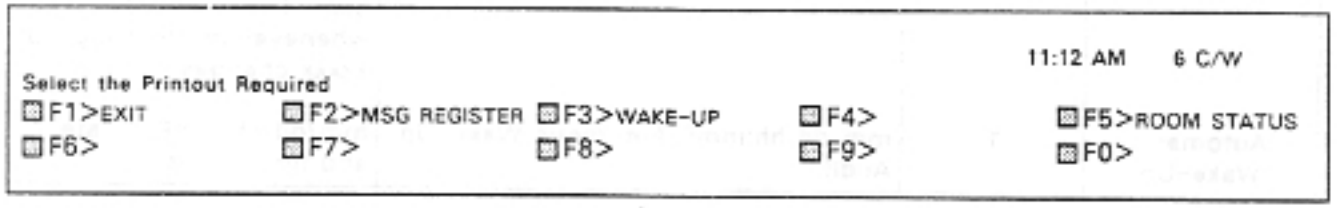

Figure 4-9 Audits

The formats of the printouts of the various types of audits are shown in Table 4-1. Examples of audit printouts are shown in Figure 4-10.

automatic wake-up report is given below:

12345 01/23 11:20P WU 7:00 SET BY ROOM

MESSAGE REGISTRATION: Message registration single-line reports have only one type of printout suffix. This suffix is generated whenever a room's message register is cleared from the Attendant Console. The register count field is five digits in length, and all leading zeros are displayed. The format of the suffix is:

REG. CLEARED AT nnnnn.

nnnnn represents the register contents prior to being cleared. A sample message registration report is given below:

12345 01/23 11:40P REG. CLEARED AT 00012

MESSAGE WAITING: Two types of suffixes are available for Message Waiting single-line report printouts. One is generated when Message Waiting is turned on for an extension; the other is generated when it is turned off. The format of the suffixes is:

MESSAGE WAITING ON

or

MESSAGE WAITING OFF

A sample message waiting report is given below:
12345 01/23 11:45P MESSAGE WAITING ON

TABLE 4-2
AUTOMATIC WAKE-UP SINGLE-LINE REPORT SUFFIXES

OPERATION TYPE	SUFFIX	DEFINITIONS & NOTES
Console Operations	WU hh:mmP SET BY CONS	WU = Wake-Up hh:mmP = time and PM indicator SET BY CONS = Set by Attendant Console
	WU hh:mmP CHG BY CONS	CHG BY CONS = Changed by Attendant Console
	WU hh:mmP CAN BY CONS	CAN BY CONS = Canceled by Attendant Console
Room Operations	WU hh:mmP aaa BY ROOM	aaa = either : SET, CHG, or CAN
Wake-Up Attempts	WU hh:mmP aaaaaaa	aaaaaaa = either: ANSWERED, NO ANS 1, NO ANS 2, NO ANS 3 **, BUSY 1, BUSY 2, BUSY 3 **. Note: Third attempt failures for NO ANS and BUSY generate 3 CTRL G characters separated by seven nulls, along with the asterisks. A CTRL G character rings bell.