SUPERSET 4™

Standard Practice

9174-518-001-NA

MITEL®

SUPERSET 4

Standard
Practice

SUPERSET 4™
DOCUMENT LIST

SECTION	TITLE	LOCATOR
MITL9174-518-100-NA	General Description and Ordering Information	
MITL9174-518-105-NA	Features and Services Description	
MITL9174-518-180-NA	Engineering Information	
MITL9174-518-200-NA	Shipping, Receiving, and Installation Procedures	
MITL9174-518-290-NA	Installation Instructions	
MITL9174-518-320-NA	Test Procedures	

SUPERSET 4™
GENERAL DESCRIPTION
AND ORDERING INFORMATION

CONTENTS PAGE

1. INTRODUCTION

General

1.01 This Section describes the general, physical and electrical characteristics of the SUPERSET 4. Also included are a brief description of the major features, installation and maintenance considerations, and replaceable parts ordering information. Other details are included in the MITEL Practices listed in Table 1-1.

Reason for Issue

1.02 This Section is issued to incorporate the description of the SUPERSET 4 when used with SX-100˚and SX-200˚ PABXs.

2. GENERAL DESCRIPTION

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

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

2.03 The SUPERSET 4 provides:

(a) Visual features

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

TABLE 1-1
RELATED MITEL PRACTICES

SECTION NO.	TITLE
MITL9174-518-105-NA	Features and Services Description
MITL9174-518-180-NA	Engineering Information
MITL9174-518-200-NA	Shipping, Receiving, and Installation Procedures
MITL9174-518-290-NA	Installation Instructions
MITL9174-518-320-NA	Test Procedures

(b) Operational features

- Single button feature activation.
- Multi-line appearances (installer programmed) of up to 15 lines including primary line (set directory number). Multi-line appearances may be a mixture of PABX lines and trunks, and may also be multi-appearances of same line.
- Speed call entry at each unassigned line.
- Automatic selection of primary line.
- Pushbutton 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.
- Hands-free 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 the fullest use of all PABX features in his Class of Service, by means of the visual word prompts mentioned above.

3. PHYSICAL DESCRIPTION

General

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

3.02 The body and handset are interconnected via a modular detachable handset cord, plugged into the side of the body. Line connection to the set is by means of a modular

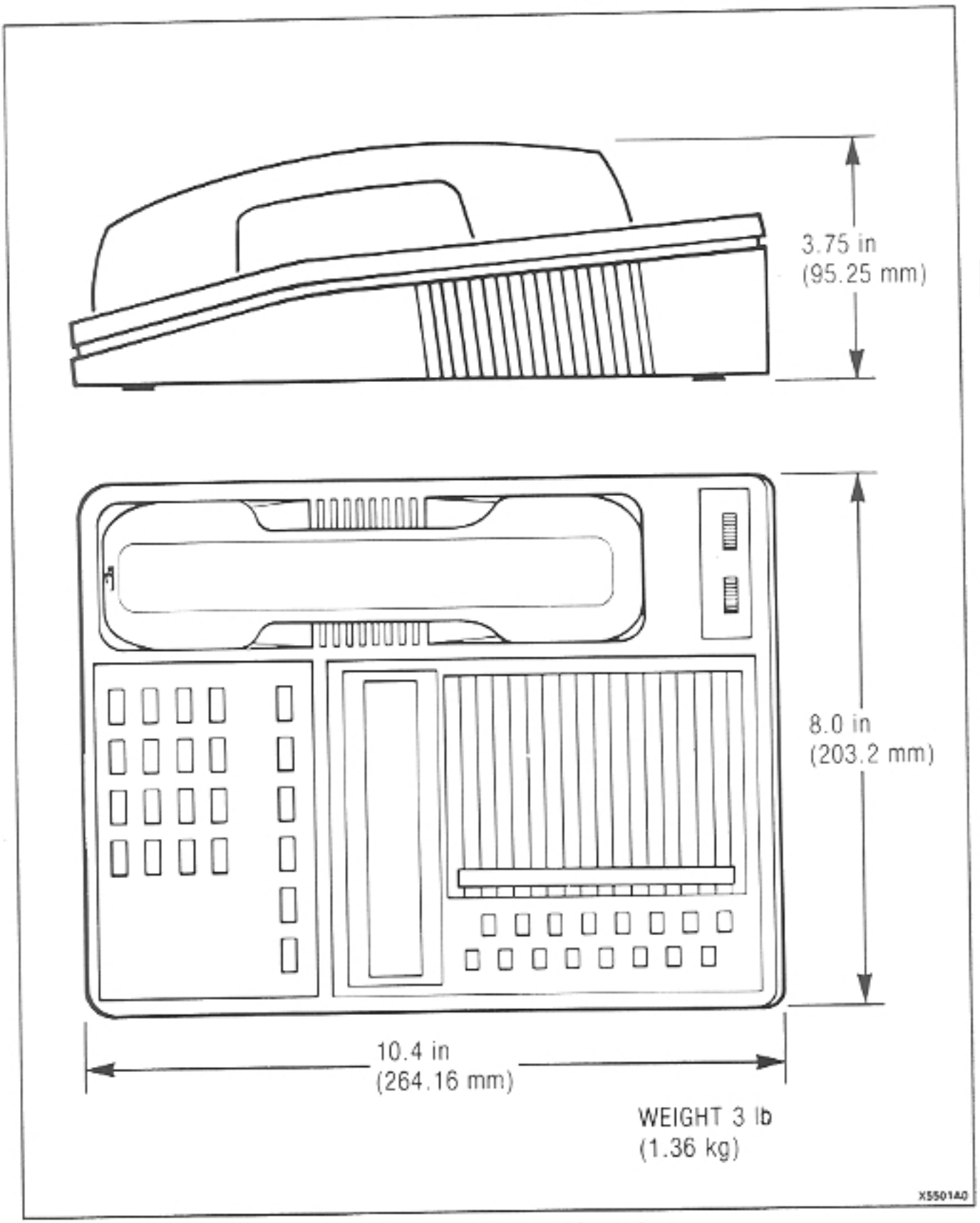


Figure 3-1 SUPERSET 4 Dimensions

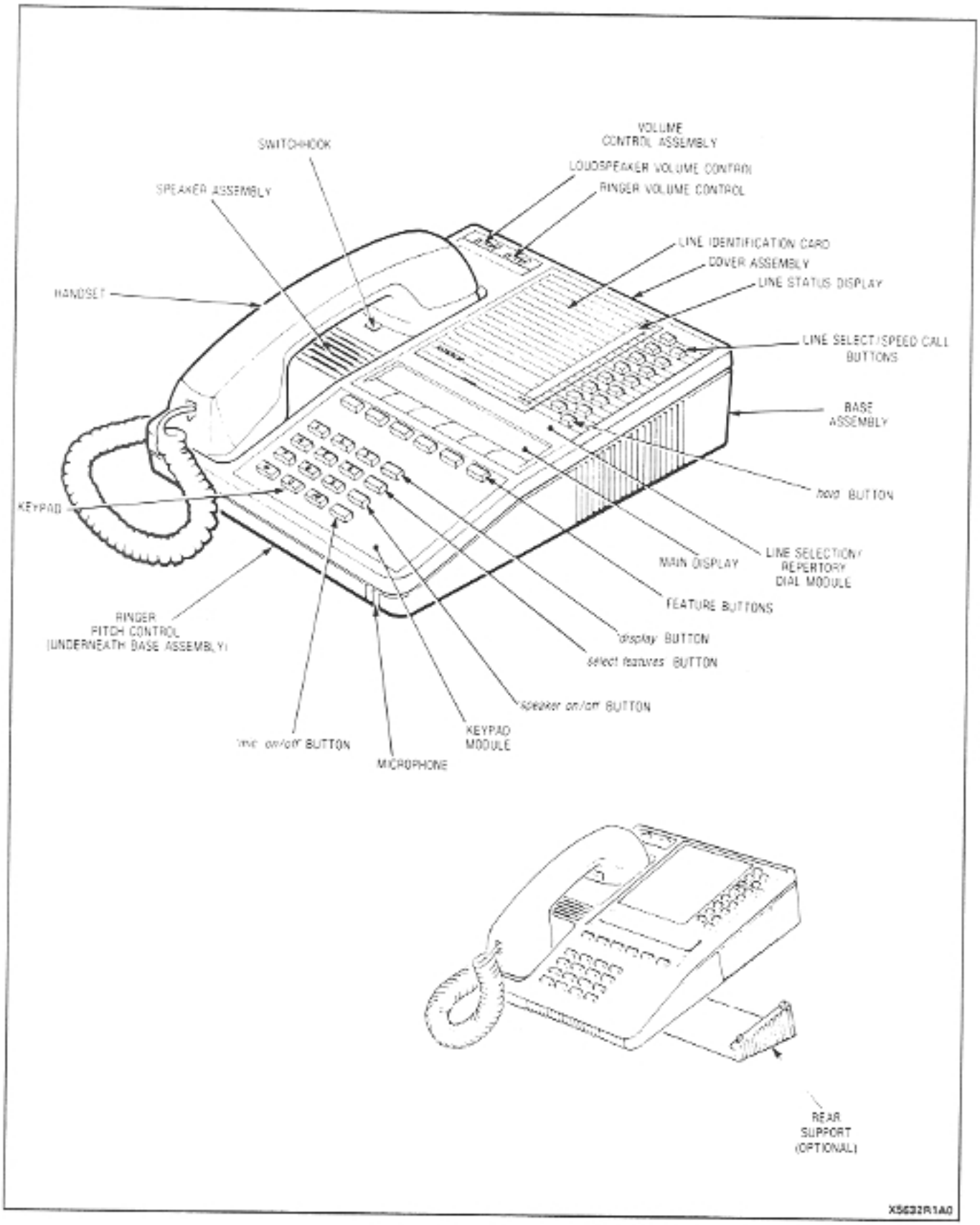


Figure 3-2 SUPERSET 4

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.

Body

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

Base Assembly

3.05 The base assembly contains a microphone (for hands-free operation), the switchhook, modular jacks for the handset and line cords, and a speaker assembly (for hands-free operation and tone ringer output). The microphone is mounted in a position permitting 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 underneath 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-button keypad, six feature buttons, and four supplementary feature buttons.

Line Selection/Repertory Dial Module

3.10 The line selection repertory dial module contains 15 line select/speed call buttons, a hold button, an LCD line status display, and an LCD feature display.

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

4. FUNCTIONAL DESCRIPTION

General

4.01 The SUPERSET 4 face layout is shown in Figure 4-1. The following text describes the function of each button and display. All buttons are noninterlocking.

Line Select/Speed Call Buttons

4.02 There are 15 line select/speed call buttons 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 buttons not assigned a line are available to the user for storage and later use of speed call numbers.

Hold Button

4.03 This button 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 button.

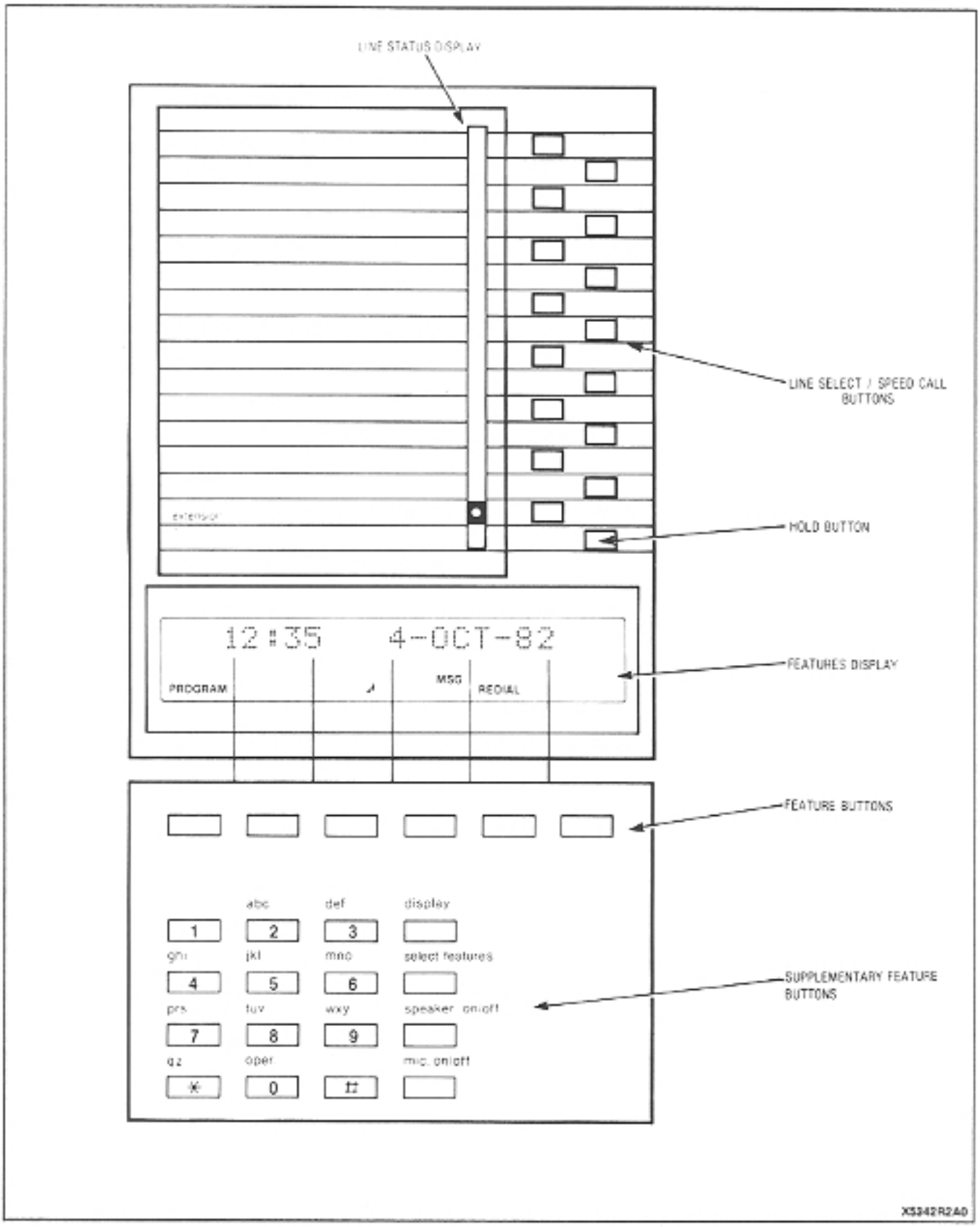


Figure 4-1 SUPERSET 4 Buttons and Displays

Feature Buttons

4.04 There are six feature buttons. Each button 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 button immediately below the prompt that describes that action.

Supplementary Feature Buttons

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

- identification of lines at the set
- saved numbers for 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 item to be displayed is selected after the **display** button is pressed, by either pressing a line select/speed call button (for line identification, caller identification, or speed call number) or pressing a feature button under the prompt associated with the item. To clear the display, the EXIT feature button is pressed.

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** button 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 button allows the set user to receive or originate calls without use of the handset. Pressing the button once switches the speaker and microphone on and selects the prime line. Each time this button is pressed, the speaker and microphone are switched alternately on and off, and the set is switched between on- 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 button is used to switch the microphone off during hands-free 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 buttons. The display contains 15 identical symbol groups: the symbols are aligned with the line select/speed call buttons.

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

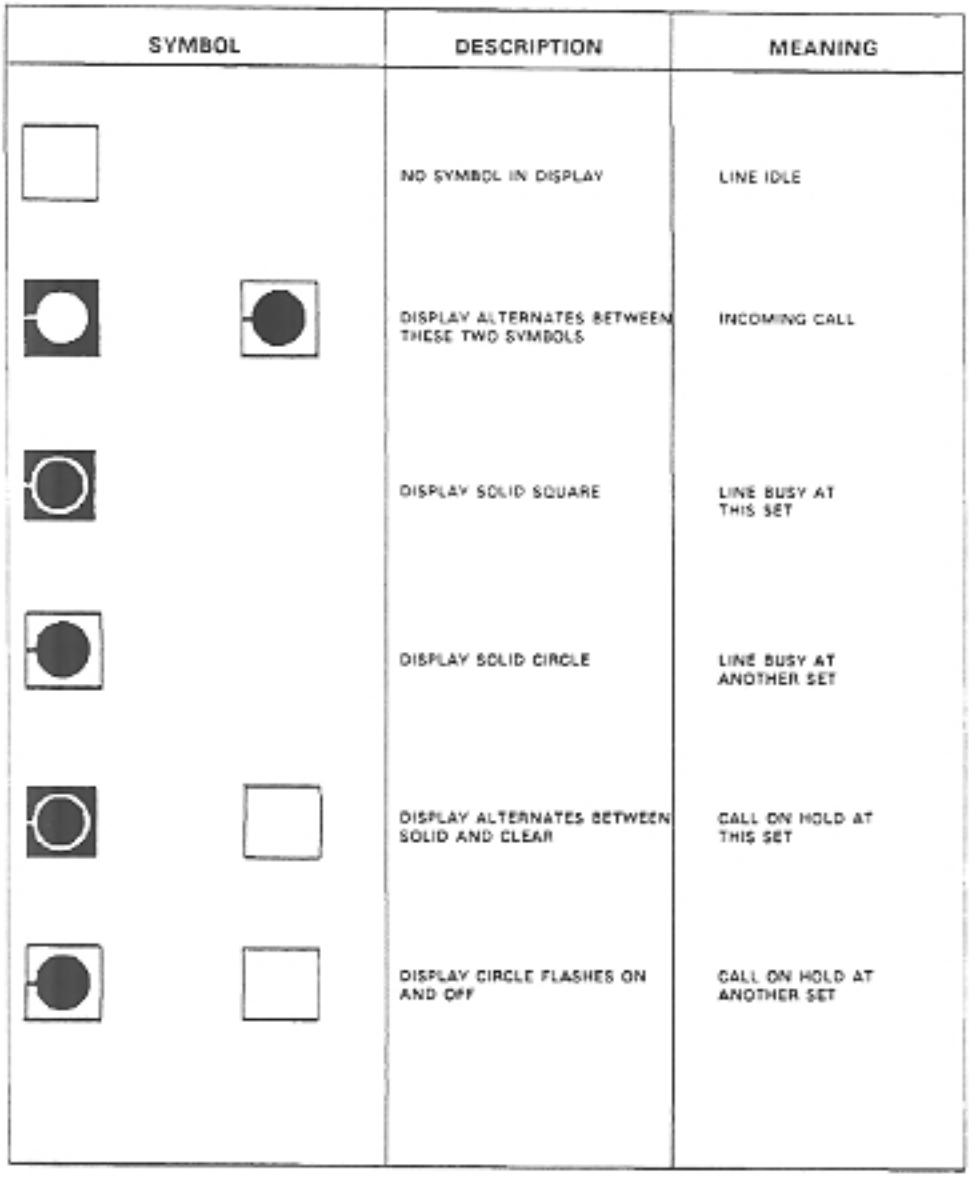
Features Display

4.14 This is a liquid crystal display mounted adjacent to the feature buttons. 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 call forwarding type and destination. To cancel the feature, the user must press the select features button, dial '1', and then press the OFF feature button. To reactivate the



SYMBOL	DESCRIPTION	MEANING
	NO SYMBOL IN DISPLAY	LINE IDLE
	DISPLAY ALTERNATES BETWEEN THESE TWO SYMBOLS	INCOMING CALL
	DISPLAY SOLID SQUARE	LINE BUSY AT THIS SET
	DISPLAY SOLID CIRCLE	LINE BUSY AT ANOTHER SET
	DISPLAY ALTERNATES BETWEEN SOLID AND CLEAR	CALL ON HOLD AT THIS SET
	DISPLAY CIRCLE FLASHES ON AND OFF	CALL ON HOLD AT ANOTHER SET

X5034A0

Figure 4-2 Line Status Display Symbols

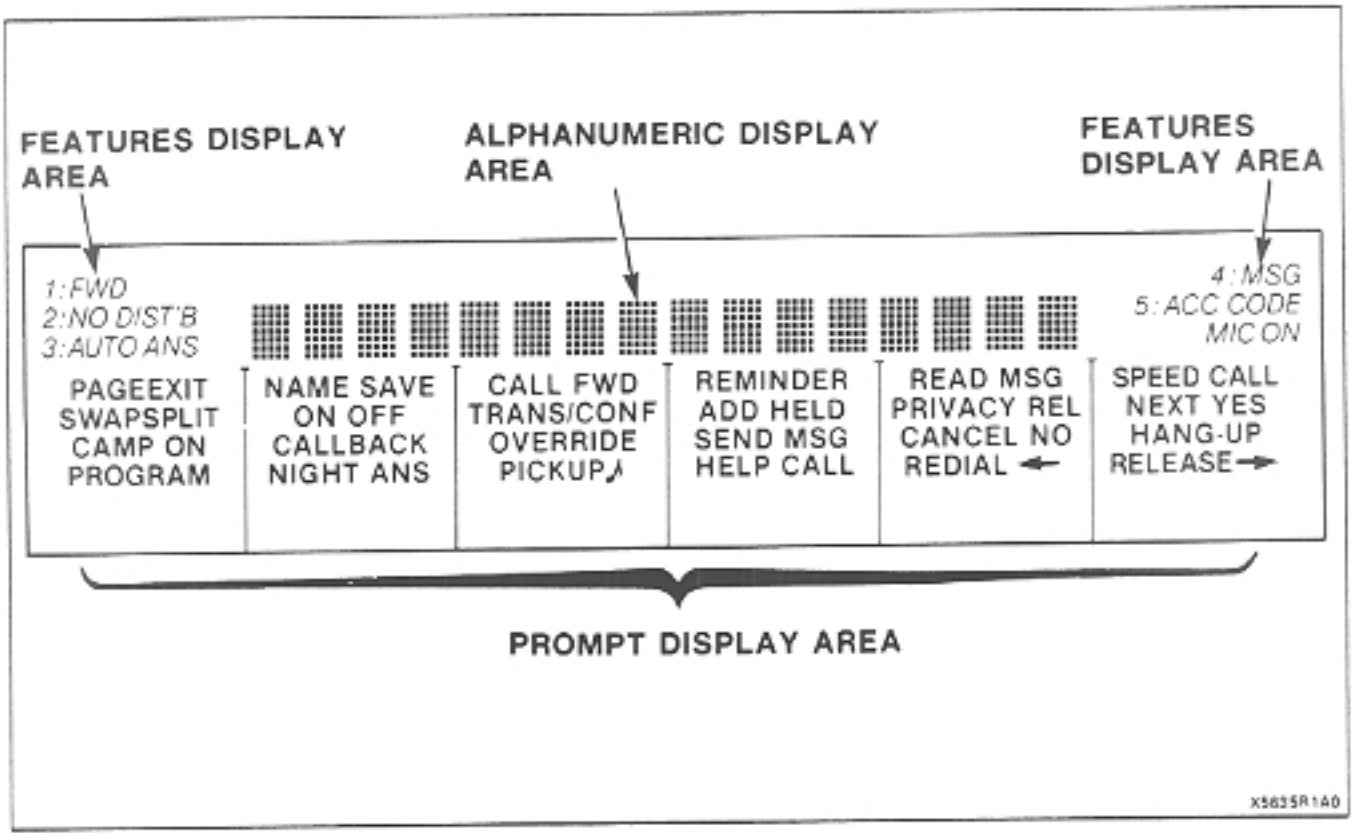


Figure 4-3 Features Display Layout

feature, the user must press the select features button, dial '1', and then press the ON feature button. When active, the word FWD is displayed as a reminder.

2: NO DIST'B **Do Not Disturb.** Prevents an incoming call from ringing the user's set. To activate this feature, the user must press the select features button, dial '2', and then press the ON feature button. To cancel this feature, the user must press the select features button, dial '2', and then press the OFF feature button. When active, the words NO DIST'B are displayed as a reminder.

3:AUTO ANS **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 button, dial '3', and then press the ON feature button. To cancel this feature, the user must press the select features button, dial '3', and then press the OFF feature button. When active, the words AUTO ANS are displayed as a reminder.

4:MSG **Messaging.** 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 button and dial '4'. The prompt READ MSG is now displayed, and pressing this feature button brings the message into view in the alphanumeric display. When the message has been read, the user must either press the EXIT feature button to clear the display and leave the message active, or press the CANCEL feature button to clear the display and cancel the message. If there are other messages to be read, the user must press the NEXT feature button to bring the next message into view.

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 button 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 button. The system responds with the display 'ACKNOWLEDGED' when the code is recorded on the SMDR, or 'PLEASE TRY LATER' when the SMDR recording device is busy. More than one code can be associated with a single call.

4.17 The word MIC ON has an advisory function and, when displayed, reminds 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 call 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.

4.20 **Prompt display area:** There are 35 word prompts organized into six groups. Each group relates to one of the six feature select buttons. 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 feature select button beneath the prompt.

4.21 The prompts are organized such that only one word above any feature button is displayed at any time (except for SWAP CAMP ON feature). Whenever the 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 buttons is left blank. Pressing these buttons has no effect.

Error Messages

4.22 The data transfer between a SUPERSET 4 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 s. 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 ERRORS
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 Documenta-

tion), time and date are redisplayed and the set becomes operational.

5. INSTALLATION AND MAINTENANCE CONSIDERATIONS

Caution: **Installers should not attempt to use a hand test telephone (buttinski) to check SUPERSET lines, because there is no loop detector installed in the PABX SUPERSET 4 line card/interface: set on-/off-hook status is signaled using data transmission. SUPERSETs must not be connected: a) to standard lines; b) in parallel; or c) as Power Fail Transfer extensions.**

Installation

5.01 Installation of the SUPERSET 4 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 required, i.e. 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 occurs automatically when power is applied to the set.

5.02 Installation of a SUPERSET 4 into a powered-up system consists of:

- Ensuring local modular telephone outlet is connected to a SUPERSET 4 line card or interface.
- Connection of handset, handset cord, line cord, and main body of the SUPERSET 4.
- Connection of line cord to local modular jack.
- Verifying automatic initialization procedures have been executed: this should take 10 to 20 s. 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 MITEL Practice MITL9174-518-320-NA: This verifies transmission and reception paths and key and display operation.

Environmental Specifications

5.03 Operating Environment:

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

5.04 Storage/Shipping Environment:

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

Maintenance

5.05 No regular or scheduled maintenance is required. Performance of the installer loop test procedure (MITEL Practice MITL9174-518-320-NA) can be carried out at any time to check out set operation.

5.06 The installer loop test procedure, performed at the SUPERSET 4 after dialing the loop test access code, confirms correct key operation, liquid-crystal display activation, hookswitch functioning, and ringer (speaker) output.

6. ORDERING INFORMATION

6.01 This information is provided to ease the ordering of replaceable parts for the SUPERSET 4. Table 6-1 lists all replaceable parts, and Table 6-2 lists applicable documentation.

TABLE 6-1
REPLACEABLE PARTS

DESCRIPTION	ORDER NUMBER
Handset	9170-048-001-NA
Handset Cord	9170-048-000-NA
Rear Support Stand	9174-001-000-NA
SUPERSET 4 Label Kit (consisting of a package of Telephone Number and Line Identification labels)	9174-002-001-NA
SUPERSET 4 Lens Kit (consisting of protective lenses for the SUPERSET 4 labels)	9174-002-000-NA

TABLE 6-2
DOCUMENTATION

TITLE	ORDER NUMBER
SUPERSET 4 Complete Documentation (bound volume containing the following titles)	9174-518-000-NA
SUPERSET 4 General Description and Ordering Information	
SUPERSET 4 Features and Services Description	
SUPERSET 4 Engineering Information	
SUPERSET 4 Shipping, Receiving, and Installation Procedures	
SUPERSET 4 Installation Instructions	
SUPERSET 4 Test Procedures	
SUPERSET 4 Reference Guide	9174-953-001-NA

SUPERSET 4™

FEATURES AND SERVICES DESCRIPTION

CONTENTS PAGE

1. INTRODUCTION

Reason for Issue

1.01 This Section is issued to include the features and services of the SUPERSET 4 when used with SX-100* and SX-200* PABXs.

General Information

1.02 This Section contains a description of the features and services provided by the SUPERSET 4.

1.03 The features and services available are determined by the MITEL PABX the SUPERSET 4 is used with.

1.04 The SUPERSET 4 can be used only with MITEL PABXs fitted with special line cards or interfaces, for example, SX-100/200 (Generic 217).

1.05 Detailed instructions for the programming of each feature and service are given in the following MITEL Practices:

- SX-100/SX-200
  - MITL9105/9110-096-105-NA, Features and Services Description
  - MITL9105/9110-906-210-NA, System Programming.

2. FEATURES AND SERVICES DESCRIPTION

Introduction

2.01 This Part contains a description of the features and services available at a SUPERSET 4. Only those features and services that are special to SUPERSET 4 users, or are activated at a SUPERSET 4 in a way different to the method used by a standard telephone instrument user, are described. Other features and services of the PABX that are also available to standard telephone instrument users are not described (refer to the Features and Services Description practice for the appropriate PABX). Each description contains:

- **Description** - a detailed description of the feature or service.
- **Conditions** - any special conditions which should be taken into account before selecting the feature or service.

  Note: As feature selection is a response to displayed prompts, no attempt can be made by a user to select a feature that is not available. When a prompt is displayed, the conditions applicable are as stated in this Section. Otherwise, the conditions are as described in the applicable PABX documentation.
- **Operation** - a brief description of feature or service operation.

Note: For further information, and for programming details, refer to the Features and Services Description practice, Section MITL9105/9110-096-105-NA.

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

Account Codes

Description

A SUPERSET 4 user can enter one or more account codes:

- To authorize a call (verifiable account codes), or
- To associate an incoming or outgoing call with one or more account codes.

The Account Code may be 1 to 12 digits in length and appears on all SMDR records.

Conditions

None

Operation

An Account Code can be entered before dialing or during a call.

- Obtain dial tone (if not on an established call).
- Press 'select features' button.
- 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 a SMDR record is printed. This printout includes the time of call, trunk used, duration of call, and Account Code.
- Press SAVE feature button. The prompt ACKNOWLEDGED or PLEASE TRY LATER is displayed. PLEASE TRY LATER occurs if the recording process is busy.
- Press EXIT feature button. The display reverts to the condition applicable at that time.

Note: There are two ways to correct an entry:

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

Automatic Callback - Busy

Description

Automatic Callback - Busy allows a SUPERSET 4 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.

Conditions

- A callback cannot be cancelled at an extension.
- A callback always rings the originating extension; call forwarding has no effect.
- Automatic Callback - Busy may be activated on extension numbers, hunt group access codes, and trunk group access codes.
- If the two parties involved in a callback hold a telephone conversation (not a conference) before the callback is honoured, the callback is cancelled automatically.
- Any callback outstanding for more than 8 hours is cancelled automatically.
- Duplicate callback requests are ignored (the original callback request is cancelled).
- If a callback is not answered by the originating extension within 6 rings, it is automatically cancelled.
- If the called party becomes busy before the originating party answers the callback, the originating party hears busy tone and the callback is cancelled.
- All callback requests are lost in the event of a power failure.

Operation

To set up an Automatic Callback - Busy:

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

To answer an Automatic Callback - Busy:

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

Automatic Callback – Don't Answer

Description

This feature allows SUPERSET 4 user, upon encountering an extension which does not answer, to have the call completed after the called extension has gone off- and then 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- and then on-hook, the callback is handled in the same way as an Automatic 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

- An individual callback cannot be cancelled at an extension.
- A callback always rings the originating extension; call forwarding has no effect.
- Automatic Callback – Don't Answer may be activated on extension numbers and hunt group access codes.
- If the two parties involved in a callback hold a telephone conversation (not a conference) before the callback is honoured, the callback is cancelled automatically.
- Duplicate callback requests are ignored (the original callback request is cancelled).
- If a callback is not answered by the originating extension within 6 rings, it is automatically cancelled.
- If the called party becomes busy before the originating party answers the callback, the originating party hears busy tone and the callback is cancelled.
- All callback requests are lost in the event of a power failure.

Operation

To set up an Automatic Callback – Don't Answer:

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

To answer an Automatic Callback – Don't Answer:

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

Broker's Call

Description

The Broker's Call allows a SUPERSET 4 user, while engaged in a call, to hold the first call and originate a new call. Once the new call has been established, the originating extension may alternate between the calls, and carry on a PRIVATE conversation with either party. If the extension originating the Broker's Call hangs up with a party on hold, the extension is rung back by the held party. (See also Station Transfer Consultation Hold/Add-On, Transfer with Privacy.)

Conditions

- The originating extension and only one of the other parties may be in the talking connection at any time.
- Broker's Call takes preference over transfer with privacy.

Operation

- After establishing a call, press the TRANS/CONF feature button – transfer dial tone is returned, and the original called party is placed on hold.
- Dial the number of the next party – when this party answers there can be a two-way private conversation.
- If the dialed party is busy or doesn't answer, press the CANCEL feature button – the original called party is now taken off hold.
- To alternate between calls, press the SWAP feature button.

Call Forwarding – Busy; Don't Answer; Follow Me; Busy/Don't Answer

Description

Call Forwarding – Busy (When Set's Busy)

This feature allows a SUPERSET 4 user to have all calls (which are directed to his extension number) forwarded either to the attendant, to another extension number within the system, or to an external number (via the SUPERSET 4 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 user to have all calls (which are directed to his 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 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 user to have all calls (which are directed to his extension number) forwarded either to the attendant, to another extension number within the system, or to an external number (via the SUPERSET 4 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 user to have all calls (which are directed to his extension number) forwarded either to the attendant, to another extension within the system, or to an external number (via the SUPERSET 4 Speed Call 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.

Conditions

- 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 is operated in the auto-answer (hands-free) mode.
- If an invalid number is selected as a forwarding number, reorder tone is returned, and 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.
- Calls cannot be forwarded to a hunt group.
- All call forwarding requests are lost in the event of a power failure.

Operation

Note: The current Call Forwarding type and destination can be displayed on the alphanumeric display by pressing the display and CALL FWD feature buttons in that order.

To set up or modify Call Forwarding:

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

Note: There are two ways to correct a programming error before SAVE is pressed:

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

To cancel Call Forwarding:

- Press the select features button.
- Dial '1' (feature number 1 is Call Forwarding (1:FWD)).
- Press the OFF feature button.

To reactivate Call Forwarding:

- Press the 'select features' button.
- Dial '1' (feature number 1 is Call Forwarding (1:FWD)).
- Press the ON feature button.

Call Hold

Description

Call Hold allows a SUPERSET 4 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 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 may be put on hold.

Conditions

- An attendant cannot be put on hold.

Operation

To place a call on Hold:

- Inform the caller, then press the red (hold) button. The call is held and the caller hears music, if provided. The holding extension may select another line to make or receive calls or 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 button associated with the call on hold.
- The call is returned to the holding extension.

To retrieve the call remotely (at another SUPERSET 4 that has an appearance of the line the call is held on):

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

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 button, then the line select button associated with the call on hold.

Call Pickup

Description

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

Conditions

None

Operation

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

Camp-On

Description

A SUPERSET 4 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 a camp-on (special busy) tone (350/440 Hz interrupted at 60 ipm) 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, 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, 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, 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 a COS that includes Data Security 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 busy tone, press the CAMP ON feature select button. Remain off-hook.
- Camp-on (special busy) tone is returned, and the called party hears camp-on tone: in the case of another SUPERSET 4, 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 SWAP CAMP ON feature is selected and the calling party is connected.

  OR

- The busy SUPERSET 4 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.
- CALL FWD feature name is displayed for 10 seconds if a call forwarding destination (extension) has been programmed, and if that extension is not busy.
- Inform your current called party and press the SWAP CAMP ON feature button. The current call is held, and the camped-on call is connected to the SUPERSET.

  OR

- Press the CALL FWD feature button. 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 button.
- To identify the camped-on party before answering, press the display then SWAP CAMP ON feature buttons. If required, press EXIT then SWAP CAMP ON or CALL FWD feature buttons to answer the call.

Controlled Station Restriction (Do Not Disturb)

Description

The Do Not Disturb feature allows a SUPERSET 4 user to inhibit all incoming calls to the extension. Extension users calling a SUPERSET with Do Not Disturb activated receive order tone. 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

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

Display

Description

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

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

Conditions

None

Operation

- Press the 'display' button
- Press either the:
  - line select button, for saved speed call number, line or calling party identification,
  - REDIAL feature button, for last external number dialed,
  - REMINDER feature button, for current Reminder setting,
  - CALL FWD feature button, for current Call Forwarding type and destination,
  - NAME feature button, for Name associated with the set.
- To clear the display, press the EXIT feature button. The display reverts to time of day and date.

Executive Busy Override

Description

This feature allows a SUPERSET 4 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 s 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 a parked or held call cannot be overridden.

Operation

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

External Call Forwarding

Description

This feature allows a SUPERSET 4 user to set up call forwarding to a number external to the PABX. This is accomplished by storing the external number as a speed call 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 call numbers.

Operation

Setting up External Call Forwarding:

- Set up the required external number as a speed call entry (refer to 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).

Hands-Free Operation

Description

Hands-free operation allows a SUPERSET 4 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 differing 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 extension (prime directory) number to be answered automatically and connected to the SUPERSET 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 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 user can also dial from keypad, or use speed call or redial features, without previously lifting the handset, selecting a line, or obtaining dial tone.

Conditions

- Call Forwarding - Don't Answer has no effect if the SUPERSET 4 is operated in the auto-answer mode.
- A callback cannot be honoured if the originating SUPERSET 4 is operated in the auto-answer mode.

Operation

To operate a SUPERSET 4 in the auto-answer mode:

- Press the 'select features' button.
- Dial '3' (feature number 3 is auto-answer (3:AUTO ANS)).
- Press the ON feature button. With the handset on-hook, any incoming call to the SUPERSET extension number rings the set ringer once, and is then connected to the speaker and microphone.
- On completion of the call, when the call hangs up, the SUPERSET is rung once and the line becomes idle.

To disable the auto-answer feature:

- Press the 'select features' button.
- Dial '3'.
- Press the OFF feature button.

To use hands-free 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, the caller can be communicated with by means of the speaker and microphone.

On completion of a call:

- Press the HANG-UP feature button.

Note: The microphone can be turned off, e.g., when required to consult privately with another person near the SUPERSET 4, by pressing the 'mic. on/off' button. The advisory words MIC.ON appear in 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 hands free mode, whether or not the auto-answer feature was used originally, press the 'speaker on/off' button and replace the handset.

Speaker volume can be adjusted by means of a speaker volume control.

Messaging

Description

This feature allows a SUPERSET 4 user to either:

1. Create short (up to 13 characters) advisory visual system-wide messages that can be read at other SUPERSETs when other SUPERSET users call the message originator; or

2. Send a visual message to a SUPERSET that is busy or isn't answered, requesting the called party to call the message sender.

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)

The messages requesting another SUPERSET 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 (if saved, see Personal Identification), (NUMBER) is the extension number of the sending SUPERSET, 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, 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

- A message is cancelled automatically if the sender and receiver have a telephone conversation before the message is read.
- Messages are cancelled after 24 hours.
- System-wide messages can be created or altered only from a SUPERSET 4 with the appropriate Class of Service.

Operation

To set up advisory messages:

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

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

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

  Note: Both number and alpha characters can be used in a message.

  - Buttons 2 through 9 and * on the keypad are identified with alpha characters. Press the button 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 button cycle the display through the character for that button. When the displayed character is correct, press the NEXT feature button.
  - Repeat the above step for remaining characters in the message. For spaces, press the NEXT feature button again.

Note: There are two ways to correct a programming error:

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

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

Activating an advisory message:

- Press MSG feature button.
- If displayed message is inappropriate, press the NEXT feature button repeatedly to cycle through the repertoire of messages, or dial message number (01 to 15) if known.

- Press ON feature button. The selected message is now effective. Any other SUPERSET user dialing a SUPERSET with a message in effect sees the message displayed.

Cancelling an advisory message:

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

Receiving an advisory message:

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

Sending a message requesting a callback:

- If the number dialed (another SUPERSET) is busy or isn't answered, press the SEND MSG feature button. The message, in the format described above, is sent to the called party, whose SUPERSET then displays the flashing word 'MSG'.

Receiving a message requesting a callback:

- A message requesting a callback is indicated on the receiving SUPERSET by the word 'MSG' flashing on and off.
- If the receiving SUPERSET is idle, the message can be read as follows:

  - Press MSG feature button. The display indicates the number of messages to be read.
  - Press READ MSG feature button. 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 button.
  - To clear a message once it has been read, press CANCEL feature button.
  - To respond to the request, press CALL feature button, and the returned call is made automatically.

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

  - Press 'select features' button.
  - Dial '4' (feature number 4 is message (4:MSG)).
  - Press READ MSG feature button. 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 button.
  - To clear a message once it has been read, press CANCEL feature button.

Music (Local)

Description

A SUPERSET 4 user can choose to hear music (generated from the same source as music on hold - if provided) via the set speaker.

Conditions

- Music on hold must be included as a system option.
- Music is generated from customer-supplied equipment.

Operation

- With the set idle, press the ♪ feature button. Loudness of the music is adjusted by means of the set speaker volume control.

Paging Access

Description

A SUPERSET 4 user with this feature is permitted access to the system paging equipment. If an extension tries to access busy paging equipment, busy tone is returned.

Conditions

- Camp-On or Automatic 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

- Press and hold down the PAGE feature button - the user hears a short pulse of tone, is then connected to the paging system, and may make the required announcement.

Personal Identification

Description

This feature allows a SUPERSET 4 user to enter and save his name, and to use this SUPERSET/user association in messaging applications.

Conditions

None

Operation

Note: To check the name saved at a SUPERSET, press the 'display' button, then the NAME feature button. The currently saved name is displayed on the alphanumeric display.

To set up or modify a name:

- Press PROGRAM feature button.
- Press NAME feature button.
- In response to display 'DIAL IN NAME', dial in the name as follows:
  - Buttons 2 through 9 and * on the keypad are identified with alpha characters. Press the button 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 button cycle the display through the character for that button. When the displayed character is correct, press the NEXT feature button.
  - Repeat above step for remaining characters in the name. For spaces, press the NEXT feature button again.

Note: There are two ways to correct a programming error:

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

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

Privacy/Privacy Release

Description

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

Conditions

- Privacy and Privacy Release are effective only against stations with an appearance of line(s) the SUPERSET 4 user has. It has no effect on Executive Busy Override.

Operation

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

Redial

Description

This feature allows a SUPERSET 4 user to redial automatically by pressing a single button, the last external telephone number dialed from the keyboard at that set.

Conditions

- Only the last external telephone number dialed manually is stored automatically.

Operation

- Press the REDIAL feature button. The last external telephone number is dialed automatically.
- The last external number dialed may be displayed on the alpha-numeric display by pressing the 'display' and REDIAL feature buttons in that order.

Reminder (Automatic Wake-Up, Alarm Call)

Description

This feature allows a SUPERSET 4 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 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 reverts to idle condition.

Conditions

- An extension with "Do Not Disturb" is overridden and rung at the requested time.

Operation

Note: The current alarm call setting can be displayed in the alphanumeric display by pressing the 'display' and REMINDER feature buttons in that order.

To set or modify a timed reminder:

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

Note: There are two ways to correct a programming error before SAVE is pressed:

1. Use the – feature button to backspace to and clear the incorrect entry.
2. To cancel the entire current entry, press the EXIT feature button.

- Press the SAVE feature button. 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 button.
- Press the REMINDER feature button.
- Press the CANCEL feature button.

To acknowledge a timed reminder:

- The SUPERSET 4 rings once and the words DISPLAY REMINDER are displayed.
- Press the 'display' button.
- Press the REMINDER feature button.

Speed Call

Description

This feature allows a SUPERSET 4 user to save frequently dialed telephone numbers and to access these numbers by pressing a single button. The quantity of speed call numbers available to a SUPERSET 4 user is dependent on the number of lines programmed to appear at the set. Any unused (unassigned) line select buttons can be used to save speed call numbers.

Conditions

None

Operation

Note: To check saved numbers, press the 'display' button, then the required line select button. The currently saved speed call 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 button to view the remaining characters.

To set up or modify a Speed Call Number:

- With the handset on-hook, press the PROGRAM feature button.
- Press the SPEED CALL feature button.
- Press an unused speed call button.
- Dial the number to be stored.

Note: Insert into the dialing sequence:
*1 - Where a pause is required.
*2 - Where a wait for dial tone is required.
*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 has to be followed by a 2-digit number signifying the quantity of digits to be dialed. This number is between 01 and 16. In the directory assistance example, the number to be stored would be:

91*3035551212

where 9 is a trunk access code.

- Check the speed call number to be saved as displayed on the alphanumeric display. If correct, press the SAVE feature button. The speed call number is now saved.

Note: There are two ways to correct a programming error before SAVE is pressed:

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

Station Conference

Description

This feature allows a SUPERSET 4 user to set up a conference with up to six conferees (plus the originating extension), without the assistance of the attendant. The conferees may be any combination of extensions and trunks. To originate a conference a SUPERSET user first establishes a two-party call, then adds on the remaining conferees. Any extension in the conference with an appropriate Class-of-Service may add additional parties to the conference, to a maximum of seven. If the originator encounters a busy or unanswered extension number, he may return to the conference. If after placing the conferees on hold, the SUPERSET user hangs up, the SUPERSET is automatically recalled 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 user can cancel that action, and the SUPERSET is automatically recalled to the conference.

Conditions

- A call cannot be held or transferred by an extension in a conference.

Operation

To establish a Conference:

- Establish a two-party call.
- Press the TRANS/CONF feature button - transfer dial tone is returned.
- Dial the number of the next conferee - ringing tone is returned. When the conferee answers, press the CONF feature button. Three-party conference exists.
- Any extension in the conference may add additional conferees to the conference.

Note: If the next conferee is busy or doesn't answer, press the CANCEL feature button - the SUPERSET 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 button - the SUPERSET is returned to the conference.

Station Transfer Consultation Hold/Add-On, Transfer with Privacy

Description

This feature allows a SUPERSET 4 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 button – transfer dial tone is returned, the called party is held and hears music if provided.
- Dial the number of the required extension.

  Note: If the number is busy or doesn't answer, press the CANCEL feature button 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 button.

  OR

- To connect held party with third party and to back out of conversation, press the RELEASE feature button – dial tone is returned.

  OR

- To speak privately with only one party in a 3-party call, press the SPLIT feature button. The other party is put on hold. To alternate held and spoken to parties, press the SWAP feature button.

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 with the appropriate Class-of-Service. The answering extension may exercise any feature associated with incoming calls that are normally available at the extension.

Conditions

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

Operation

- An incoming CO trunk call, causes a common alerting device and the console (if handset is plugged in) bell to ring.
- At the SUPERSET, lift handset – dial tone is returned.
- Press the NIGHT ANS feature button, and converse with the caller on the incoming trunk.

SUPERSET 4™

ENGINEERING INFORMATION©

CONTENTS PAGE

1. GENERAL

1.01 This Section provides engineering information on the SUPERSET 4 telephone set. Included are technical descriptions of the SUPERSET 4 modules and a description of operation.

Reason for Issue

1.02 This is the first release of this Practice.

1.03 For an introduction to the SUPERSET 4, refer to Section MITL9174-518-100-NA, General Description.

2. GENERAL DESCRIPTION

2.01 The SUPERSET 4 is a microprocessor controlled telephone set that interconnects with a MITEL PABX (SX-10, SX-20, SX-100, SX-200, or SX-2000). It provides multiline appearances as well as PABX feature prompting. This is achieved by providing visual prompts on a Liquid Crystal Display (LCD) panel.

2.02 Special interfacing is required in the PABX. In the SX-100 and SX-200, an interface card is used that is capable of interfacing up to eight SUPERSET 4 telephone sets. The SX-10 and SX-20 must be fitted with a Universal Subscriber Line Interface Circuit (SLIC) which connects either 500/2500 telephone sets or SUPERSET 4's. The SX-2000 SLIC connects twelve SUPERSET 4's per card.

2.03 The Superset 4 derives all power requirement from the PABX and sends all signalling and voice information to and from the PABX on the Red/Green leads (Tip/Ring).

3. FEATURES

3.01 The features of the SUPERSET 4 are described in detail in Section MITL9174-518-105-NA, Features and Services Description. They include:

- Time and Date display
- Hands-free answering
- Auto-answering
- Messaging
- Conferencing
- Last number redial
- Speed dialing

4. ELECTRICAL CHARACTERISTICS

4.01 The SUPERSET 4 is electrically compatible with MITEL PABXs SX-10, SX-20, SX-100, and SX-200, and derives its power direct from the associated PABX. The set requires 23 mA in the quiescent condition.

5. TECHNICAL DESCRIPTION

5.01 The following descriptions relate to the block diagrams, Figure 5-1, Line Interface Board, Analog section; Figure 5-2, Line Interface Board, Digital section; and Figure 5-3, LCD Board and Keyboard.

LINE INTERFACE BOARD, ANALOG SECTION (Figure 5-1)

Polarity Correction & A.C. Impedance Match

5.02 The Polarity Correction and A.C. Impedance Match circuit acts as Tip-Ring termination. The circuit guards the polarity of Tip and Ring, and provides 600 ohm impedance for audio frequencies and a nominal impedance of 200 ohms for the 32 KHz digital carrier.

Line Interface & Start-up

5.03 When power is first applied to the SUPERSET 4, the Start-up circuitry regulates the analog rail voltage to approximately 8 volts. The Line Interface circuit reacts to any modulation on Tip or from the Summing Amplifier. The voltage output varies at the signal rate and is applied to Tip and Ring or as audio to the Low Pass Amplifier via the Receiver Enable (ERx).

Summing Amplifier

5.04 The Summing Amplifier places various signals onto Tip-Ring by modulating the DC current of the Line Interface circuit. The signals that can be added to Tip-Ring are:

- DTMF
- MIC Audio (handset)
- MIC Audio (handsfree)
- 32 KHz digital data

Peak Limit & Low Pass Circuit

5.05 The Peak Limit and Low Pass circuit interfaces the handset microphone (MIC) with the Summing Amplifier through filtering and DC isolation as well as peak to peak signal limiting. The MIC is turned on by control signal EM1 (Enable Mic) from the CPU when the handset is lifted from its cradle. The MIC is muted by control signal $\overline{\text{AKD}}$ from the Touch Tone Generator when DTMF signals are generated. This muting prevents distortion of the DTMF signals.

DTMF Generator

5.06 Each DTMF signal is generated by the DTMF Generator circuit from data sent from the microprocessor. A 3.58 MHz signal from the microprocessor reference oscillator provides the Tone Dialer reference frequency. The DTMF signal is coupled to the Summing Amplifier through a filter network and to the Low Pass Amplifier for sidetone input to the earpiece. DTMF signals are produced whenever a button is depressed on the SUPERSET 4, to produce audible feedback to the handset ear piece (or handsfree speaker) and to provide through signalling to the DTMF CO's.

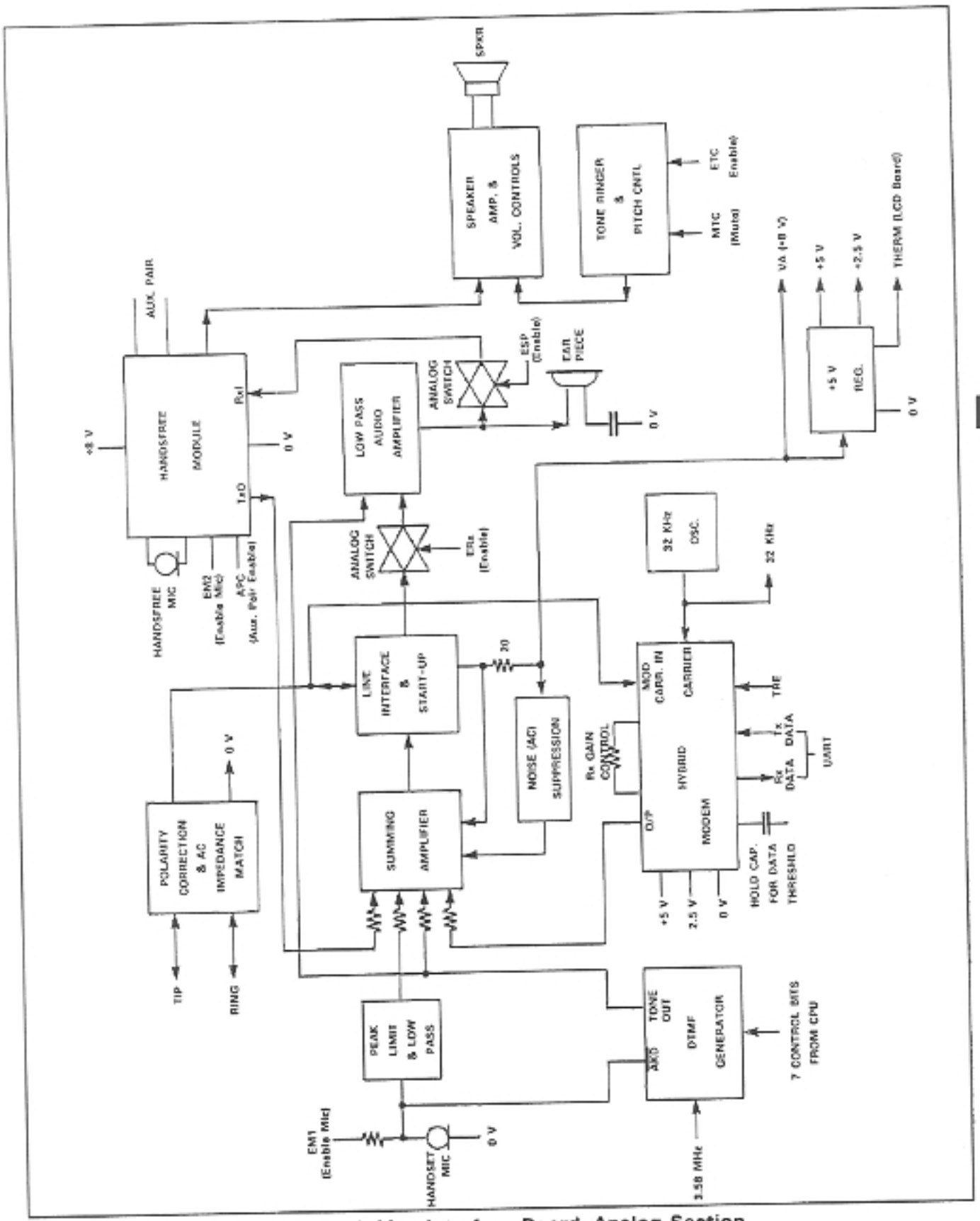


Figure 5-1. Line Interface Board, Analog Section

+5 Volt Regulator

5.07 The +5 V Regulator takes +8 V from the analog rail and regulates it to +5 V. The output can be calibrated. A +2.5 V reference voltage is also provided.

5.08 Since the Liquid Crystal Displays (LCD) are sensitive to ambient temperature, a 10K thermistor mounted near the LCDs provides a temperature-dependent reference to adjust the +5 V rail as the ambient temperature changes. The thermistor provides an 8.0 mV/°C change.

Low Pass Audio Amplifier

5.09 The Low Pass Audio Amplifier is configured as an AC differential amplifier which prevents high signal levels from adversely modulating the analog rail. The output of the Low Pass Audio Amplifier is applied to the handset earpiece. The audio signal to be amplified is fed from the Line Interface circuit via an Analog Switch when the switch is enabled by control signal ERx. When the DTMF generator produces dialing signals, these are applied to the Low Pass Amplifier and are heard at a low level in the handset earpiece.

Speaker Amplifier

5.10 The audio signal from the Low Pass Amplifier is fed to the Speaker Amplifier if the Handsfree mode is selected. Selection of the Handsfree mode creates the Enable Speaker (ESP) control signal which sets the analog switch in the Handsfree Module audio input (RxI). The audio output (RxO) is then applied to the Speaker Amplifier input. This amplifier is a push-pull and adds the audio to the analog rail voltage, in this way effectively increasing the amplifier output. The DTMF signals are also fed to the Speaker Amplifier via the audio input when the SUPERSET 4 is in Handsfree mode.

5.11 The Speaker and Ringer volume controls are associated with the Speaker Amplifier circuit and are mounted on the front panel of the SUPERSET 4 above the handset. They independently adjust the speaker and ringer volumes. The speaker is mounted under the handset position.

Tone Ringer & Pitch Control

5.12 The Tone Ringer circuit uses a differential Comparator as a dual tone oscillator. One oscillator produces a frequency which controls an analog gate. This gate determines the warble frequency of the second oscillator. Pitch control of the second oscillator is achieved by a screwdriver adjusted potentiometer mounted under the base of the set. When the telephone set is used with the handset off hook, a Mute Tone Caller (MTC) control signal to the circuit mutes the Tone Ringer. When an incoming call is received, an Enable Tone Caller (ETC) control signal is generated and applied to the Tone Ringer. The tone ringer output is applied to the Speaker Amplifier.

Handsfree Module

5.13 The Handsfree Module circuitry is required to prevent accoustic feedback by ensuring that the microphone (outgoing audio) and the speaker (incoming audio) are never fully turned on simultaneously. This is achieved by using a current controlled operational transconductance amplifier (OTA). Both the microphone line and the speaker line are monitored for the presence of audio to determine which line is turned on or off.

5.14 The current to the microphone is typically 0.5 mA. Whenever the Enable Microphone (EM2) control signal is high, the microphone audio is enabled. The microphone gain stage provides additional high frequency rejection. The microphone gain stage uses a current-controlled OTA configured as a non-inverting amplifer. A Darlington follower is provided after the OTA to reduce the AC loading of the OTA. This follower is integral with the OTA IC package. A highpass filter is incorporated for rejection of 60 Hz components from the transmitted audio and to improve tonal quality. This is a second order high pass filter with unity gain and a pole at 475 Hz.

5.15 A resistor network divides the incoming audio by ten before being coupled to the non-inverting current controlled OTA. This

prevents exceeding the amplifier input limits. High frequency oscillations within the amplifier are filtered out. The operation of this amplifier is similar to that of the microphone gain stage.

5.16 When the Auxiliary Pair Enable (APC) control signal is a logic high, the audio out (TxO) and the audio in (RxI) are disabled. This function is used by the Override feature to provide off-hook 'call announce'.

Hybrid Modem

5.17 The Modem uses an analog switch to control the input of the 32 KHz carrier. The analog switch is enabled and disabled by the Serial Data Output (TRO) control signal from the UART. The 32 KHz carrier, being turned off and on, is applied to a voltage follower and thence to a 32 KHz band pass filter with a bandwidth of ±4 KHz. This filter provides an envelope to reduce unwanted harmonics. Each '0' bit has sixteen cycles of 32 KHz carrier. The output of this filter is fed to the data input of the line SLIC at the PABX.

5.18 Input to the Modem receiver from the line SLIC is controlled by an analog switch. The switch is enabled by the Rx Enable (TRE) control signal from the UART. Using TRE ensures that the receiver is disabled during transmission so as not to disrupt the receiver threshold circuit. An Op-Amp is used as a two stage bandpass filter which cleans the signal prior to envelope detection. The bandwidth of this filter is 32 KHz ± 4 KHz.

5.19 An Op-Amp is used as an envelope detector. The output is applied to another Op-Amp which buffers the detector from the following stage and provides a gain of -0.5. The following stage is a half-peak detector whose peak threshold is held by an external timing capacitor. This capacitor gives a long time constant and is selected to provide for varying line length from the PABX which will result in varying amplitude signal levels to the half-peak detector. Thus, a small signal will establish a lower threshold than a larger signal. The half-peak detector output is coupled to a comparator to translate the analog signal levels into a digital signal. This digital signal is applied to the Rx Data output to the UART.

LINE INTERFACE BOARD, DIGITAL SECTION (Figure 5-2)

The UART

5.20 The Universal Asynchronous Receive and Transmit (UART) circuit converts data from serial to parallel and from parallel to serial for transmission between the SUPERSET 4 and the PABX and between the PABX and the SUPERSET 4. The circuit is clocked from the 32 Khz Modem oscillator, and the UART (type 6402) baud rate is one-sixteenth of the clock rate, which produces a baud rate to each SUPERSET 4 of about 200 to 300. This rate is dependent upon the number of sets being polled by the line card.

32 KHz ÷ 16 = 2K Baud ÷ 8 sets max. = 250 Baud

5.21 When data is received (Rx Data) at the RRI input, the UART sends a Data Ready signal IRQ to the microprocessor. The UART status is read onto the Data Bus via a tristate inverting buffer by the CPU sending a Status Flag Enable ($\overline{SFE}$) control signal to the buffer. Since the UART is in a fixed simplex mode of operation, the various control lines are hard wired to either 0 V or +5 V by means of pull-up or pull-down resistors.

5.22 Serial data TRO being transmitted from the UART is inverted to $\overline{TRO}$ before being fed to the Modem. Parallel data in and out is via the Data Bus. The UART can be reset by control signal UMR being applied to input MR. This clears the UART status register (Parity Error, Overrun Error, Framing Error, and Data Ready). However, MR does not clear the receiver buffer register.

Microprocessor and Support

5.23 The Microprocessor is a Motorola 146805E2 (CMOS). The lower 8 bits of the Address Bus are multiplexed on the 8-bit Data bus and applied to the EPROM via the Lower 8-bit Address Latch when the latch is enabled by the Address Strobe. The high-order address lines A8-A11 are not multiplexed. They are fed directly to the EPROM. The Read Only Memory

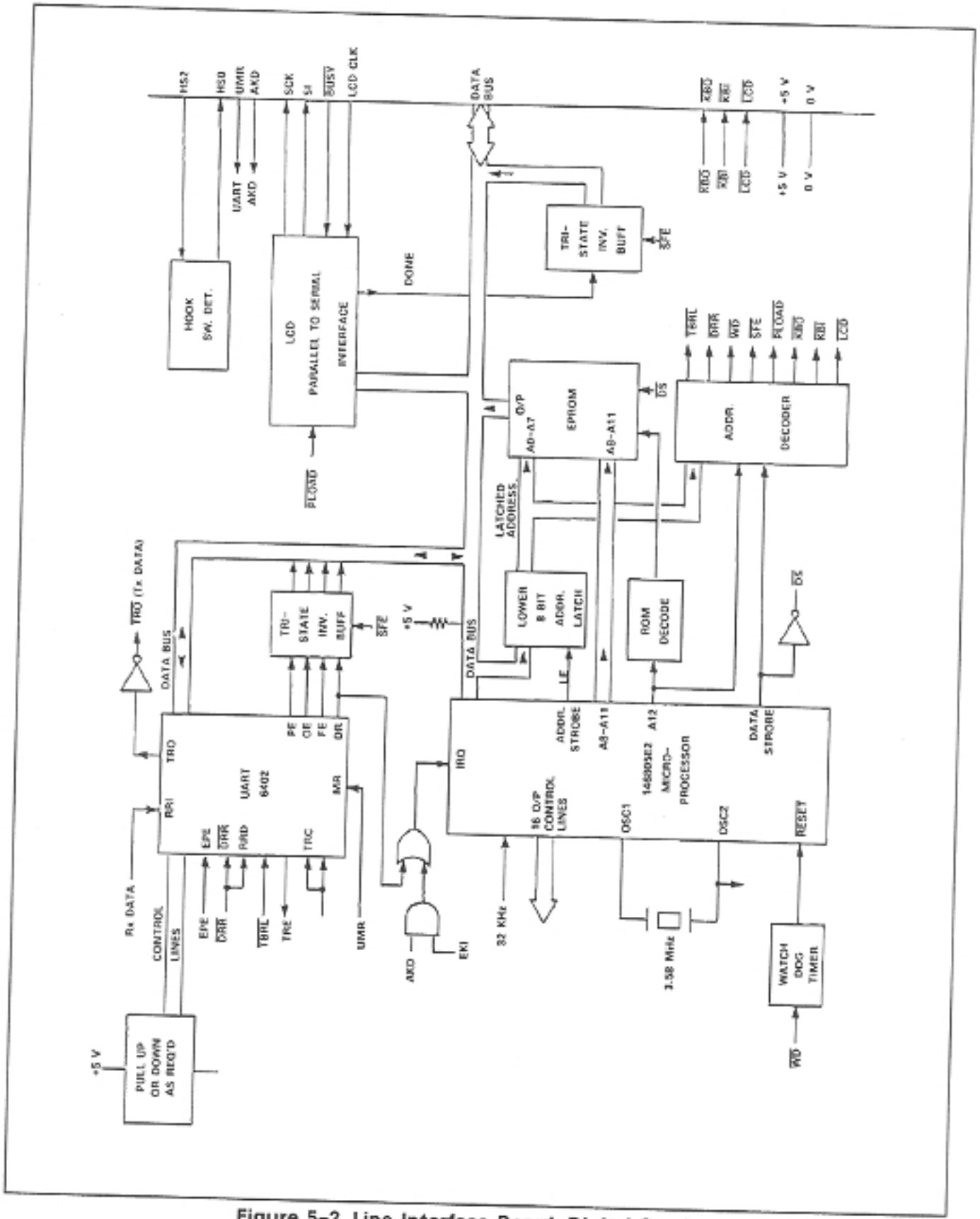


Figure 5-2. Line Interface Board, Digital Section

(ROM) control signal from A12 is inverted by the ROM Decode and applied to the EPROM as an enable signal.

5.24 A 3.58 MHz crystal oscillator generates the CPU system clock pulses. A Timer input from the Modem 32 KHz oscillator provides the access signal for on-chip counting circuits and establishes the flash rate for the Line Status LCD.

5.25 Sixteen output lines carry various control signals. Seven of these are applied to the DTMF Generator (see Paragraph 5.06). The remaining nine control signals and circuit applications are:

- ERx — Low Pass Audio Amplifier analog switch (Enable Rx)
- APC — Handsfree Module (Aux. Pair Connect)
- EPE — UART (Enable Parity Error)
- EM1 — Peak Limit circuit (Enable handset MIC)
- EM2 — Handsfree Module (Enable handsfree MIC)
- EKI — CPU (Enable Keyboard Interrupt)
- ESP — Speaker Amplifier analog switch (Enable Speaker)
- ETC — Tone Ringer circuit (Enable Tone)
- MTC — Tone Ringer circuit (Mute Tone)

5.26 A Data Ready signal is generated by the UART when data is received from the PABX and applied to a NAND gate. The output of this gate is applied to the CPU as an Interrupt Request (IRQ). The other input to the NAND gate is generated from the AND-ed Any Key Down (AKD) and Enable Keyboard Interrupt (EKI) signals. EKI comes from the CPU and AKD from the SUPERSET 4 keyboard.

Watch Dog Timer

5.27 The Watch Dog Timer circuit comprises two exclusive-OR gates, one tied to ground, one to +5 V. The circuit is arranged so that if the Watch Dog signal ($\overline{WD}$) from the Address Decode circuit is not received for over one second, a Reset signal ($\overline{RS}$) is applied to the CPU and the SUPERSET 4 is reset to a known starting point.

Address Latch

5.28 The lower 8 bit Address Latch circuit uses an Octal Latch to interface the lower eight address lines from the BUS to the EPROM. The Latch Enable (LE) is provided by the Address Strobe from the microprocessor, and controls the data flow into the octal latch.

Address Decode

5.29 The Address Decode circuit uses an Octal Decoder to generate the following control signals:

- $\overline{TBRL}$ — Load UART Data
- $\overline{DRR}$ — Read UART Data
- $\overline{WD}$ — Watch Dog
- $\overline{SFE}$ — Read Status
- $\overline{PLOAD}$ — Parallel Load
- $\overline{KBO}$ — Read Keyboard
- $\overline{KBI}$ — Write Keyboard
- $\overline{LCD}$ — Write LCD

5.30 A Data Strobe, derived from the CPU, indicates to the Address Decoder when data is on the bus instead of an address. When an address is on the bus, a ROM signal from the CPU informs the Address Decoder.

The EPROM

5.31 The EPROM stores the SUPERSET 4 software. It is configured as 4K x 8 Bits and uses a single +5 V supply. Addresses come from the Address Latch circuit and the EPROM is selected by the ROM Decode circuit which is an Inverting Buffer producing $\overline{ROM}$. The Data Strobe signal from the CPU is inverted ($\overline{DS}$) and applied to the EPROM as an enabling signal when data is on the bus.

Hookswitch Detect

5.32 The Hookswitch Detect circuit uses an exclusive-OR (XOR) circuit to inform the CPU of any change in status of the Hookswitch. Since the SUPERSET 4 is always drawing some current from Tip and Ring, a current/no current method of detecting off-hook cannot be used. Instead, the Hookswitch Detect circuit checks on a hookswitch status change as described here. In the idle state (on-hook), HS2 is low which makes HS0 high. When the hookswitch goes off-hook (opens), HS0 goes low and cause an Interrupt Request (IRQ). After 220 milliseconds, the CPU writes a high to HS2 which switches HS0 high again, making it ready to detect an on-hook condition. Now, when the hookswitch goes on-hook (closed), HS0 goes low. After 220 milliseconds the CPU writes a low to HS2 to bring HS0 high again.

LCD Parallel to Serial Interface

5.33 The LCD Parallel to Serial Interface is divided into two sections: a parallel to serial shift register, and timing logic. The parallel to serial shift register changes an 8 Bit parallel word into a serial Bit stream. When $\overline{PLOAD}$ goes low, the 8 Bit parallel word is loaded into the input registers of the Parallel to Serial Interface from the Data Bus. On each low to high transition of the LCD clock pulse (LCD CLK) input, one Bit is sent to the LCD Controllers. This is the Serial In (SI) signal. The information in SI is either controller commands or display data.

5.34 Three inputs are applied to the timing logic of the LCD Parallel to Serial Interface. $\overline{BUSY}$ is generated by the LCD Controllers to indicate when data may be sent. Data is sent when $\overline{BUSY}$ is at a logic high level, while a low indicates that 8 Bits of data have been received by the LCD Controllers. $\overline{PLOAD}$ is generated by the Address Decoder to latch the 8 Bit parallel word from the Bus into the Parallel to Serial Interface and to reset the timing logic of that circuit. LCD CLK is generated by the LCD Controllers and has a frequency of about 125 KHz.

5.35 The LCD Parallel to Serial Interface generates two control signals, DONE, and SCK. DONE signals the CPU, via a Tristate Inverter Buffer, on a READ signal, that serial data (one byte) is completed to the LCD Controllers. SCK is used to clock serial data into the LCD Controllers.

LCD BOARD AND KEYBOARD (Figure 5-3)

8-Input NAND

5.36 The 8-Input NAND circuit generates the Any Key Down (AKD) signal whenever a key is depressed. The AKD signal causes an interrupt to the CPU.

2x8 Switch Matrix and 6x6 Keyboard Switch Matrix

5.37 The 2x8 Switch Matrix is used by the 15 Line Select Buttons and the HOLD Button. The 6x6 Switch Matrix is used by the 3x4 Keyboard, the Display, Select Features, Speaker On/Off, Mic On/Off, and the six Program Buttons. The spare switch contacts on the 6x6 Matrix are not used.

5.38 The Switch Matrix circuitry uses a Tristate Inverting Buffer, a Tristate Octal Latch and nine Isolating Diodes. Any key closure generate the AKD signal through the 8-Input NAND which in turn causes a CPU Interrupt. The AKD signal is generated because all key rows are set low through the Isolating Diodes by the 8-bit Latch whose outputs are set low. The CPU now enables AKD (by ignoring interrupts) and sets the 8-bit Latch outputs high, and then sequentially scans each row with a low while reading the Tristate Inverting Buffer to establish which column is pulled low. Thus the known row which pulls a known column low establishes the key position.

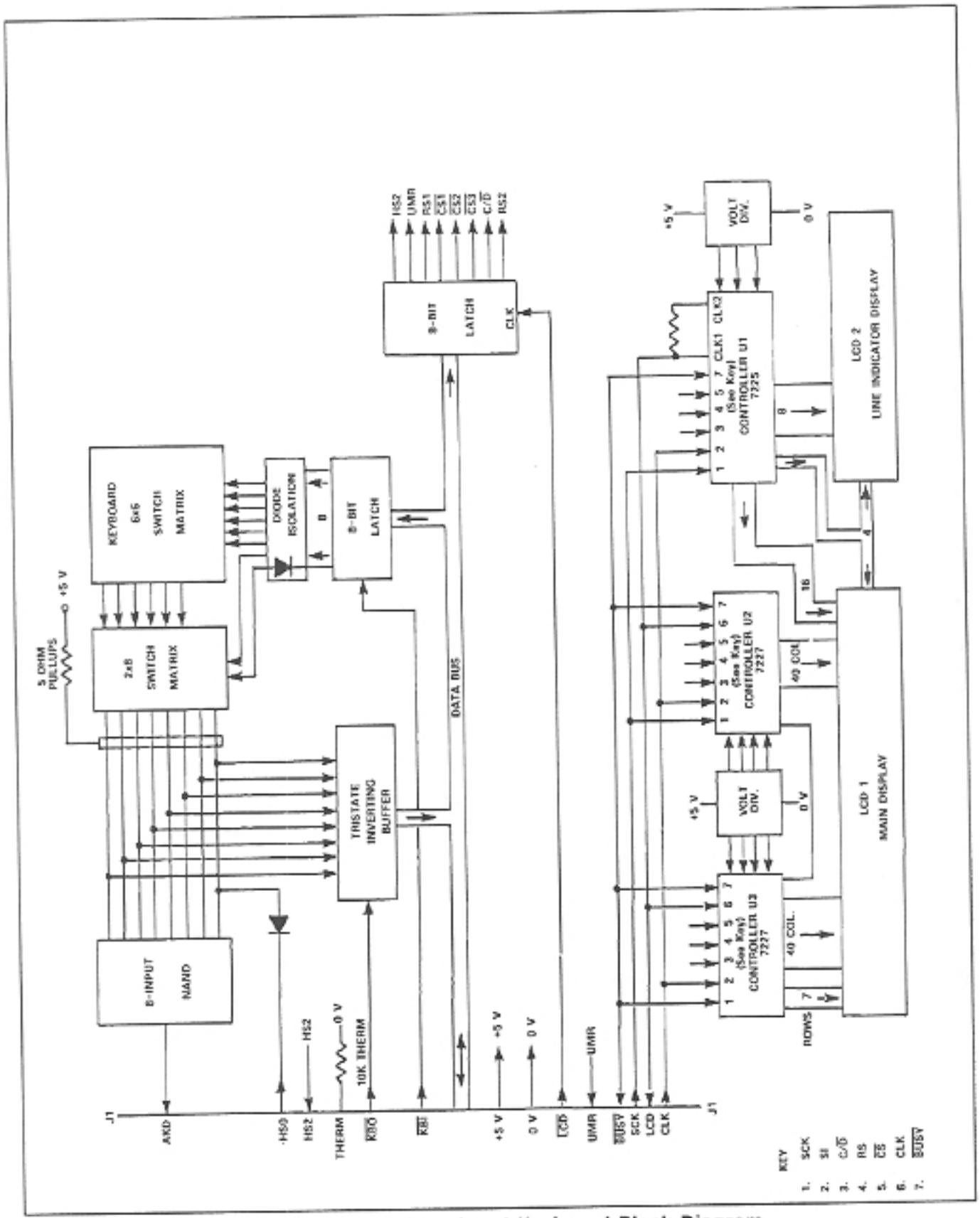


Figure 5-3. LCD Board and Keyboard Block Diagram

LCD Controller Interface

5.39 The LCD Controller Interface is an 8-Bit Latch which interfaces the Data Bus with the LCD Controllers U1, U2, and U3. The LCD Controller Interface circuit generates the following control signals:

- HS2 To Hookswitch Detect
- UMR UART Master Reset
- RS1 To LCD Controllers
- $\overline{CS1}$ To LCD Controller U1
- $\overline{CS2}$ To LCD Controller U2
- $\overline{CS3}$ To LCD Controller U3
- C/$\overline{D}$ To LCD Controllers
- RS2 To LCD Controllers

LCD Controllers

5.40 Three backplane reference voltages for LCD Controller U1 are provided by a Voltage Divider circuit.Four backplane reference voltages required by U2 and U3 are provided by another Voltage Divider circuit. The three Controllers send a handshake signal $\overline{BUSY}$ to the LCD Parallel to Serial Interface data timing circuitry to control data flow. A display sequence would be as follows:

(a) U1, U2, and U3 are Reset.

(b) Controller Select signal $\overline{CS}$ selects which Controller will be written to.

(c) A Command/Data (C/$\overline{D}$ control signal determines if a Command or Data is being sent.

(d) Data or Command information is then sent serially to the appropriate Controller register.

(e) $\overline{CS}$ deselects the active Controller by going high.

(f) The Display selected now turns on.

LCD Displays

5.41 LCD 1 is the Main Display and LCD 2 is the Line Select Display. The major display area of LCD 1 comprises sixteen 5x7 Dot Matrix areas. Auxiliary display areas within the Main Display are used to display the additional features of the SUPERSET 4. The 80 columns (5x16) in the major display area are energized by inputs from Display Controllers U2 and U3. The seven rows of the sixteen Dot Matrices are energized by inputs from U3. The Additional Features displays are energized from U1.

5.42 The type of LCD used in the SUPERSET 4 is a Field Effect LCD which is voltage operated. It functions on the principle that Liquid Crystal (LC) materials contain long molecules which, when they come into contact with properly treated glass surfaces, can align in certain orientations. The LCD consists of sandwich of polarized glass with LC material in the middle. The top glass plate always keeps the LC molecules near it rotated 90° with respect to those near the lower plate.When a voltage is applied to electrodes placed across such a cell, the LC material's molecules line up between the electrodes. Because of the material's purity, only a small leakage current (20 nA) keeps them positioned this way. The polarized glass and the oriented molecules present a dark-on-light display.

5.43 The LCD operating speed can be affected by temperature, LC viscosity, and by the working voltage. High temperatures are most critical, with 80°C being about the maximum operation temperature. An increase in viscosity slows down display response time, while high voltage gives a faster turn-on time but a longer turn-off time.

NOTE:

LCDs are manufactured using a hard glass which will fracture if subjected to shock or uneven surfaces.

Printed in Canada

SUPERSET 4™

SHIPPING, RECEIVING, AND INSTALLATION PROCEDURES

CONTENTS PAGE

1. INTRODUCTION

General

1.01 This Section provides general identification, installation, shipping, and receiving procedures for the SUPERSET 4, an advanced microprocessor-controlled telephone set employing digitally controlled integrated circuitry and liquid crystal displays.

Caution: Liquid crystal displays are fragile. Do not drop the SUPERSET 4 or subject it to any other abnormal shock. Do not apply pressure to the surface of either liquid crystal display.

Reason for Issue

1.02 This Section is issued to include the shipping, receiving, and installation procedures for the SUPERSET 4, when used with SX-100* and SX-200* PABXs.

2. IDENTIFICATION

General

2.01 The SUPERSET 4 is constructed from plastic. The dimensions of the SUPERSET 4 , with handset on-hook, are given in Figure 2-1.

2.02 The handset and main assembly are interconnected via a modular detachable handset cord, plugged into the side of the main assembly. Line connection to the set is by means of a modular detachable line cord, plugged into the rear of the set.

2.03 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.

TABLE 1-1
RELATED MITEL PRACTICES

SECTION NO.	TITLE
MITL9174-518-100-NA	General Description and Ordering Information
MITL9174-518-105-NA	Features and Services Description
MITL9174-518-180-NA	Engineering Information
MITL9174-518-290-NA	Installation Instructions
MITL9174-518-320-NA	Test Procedures

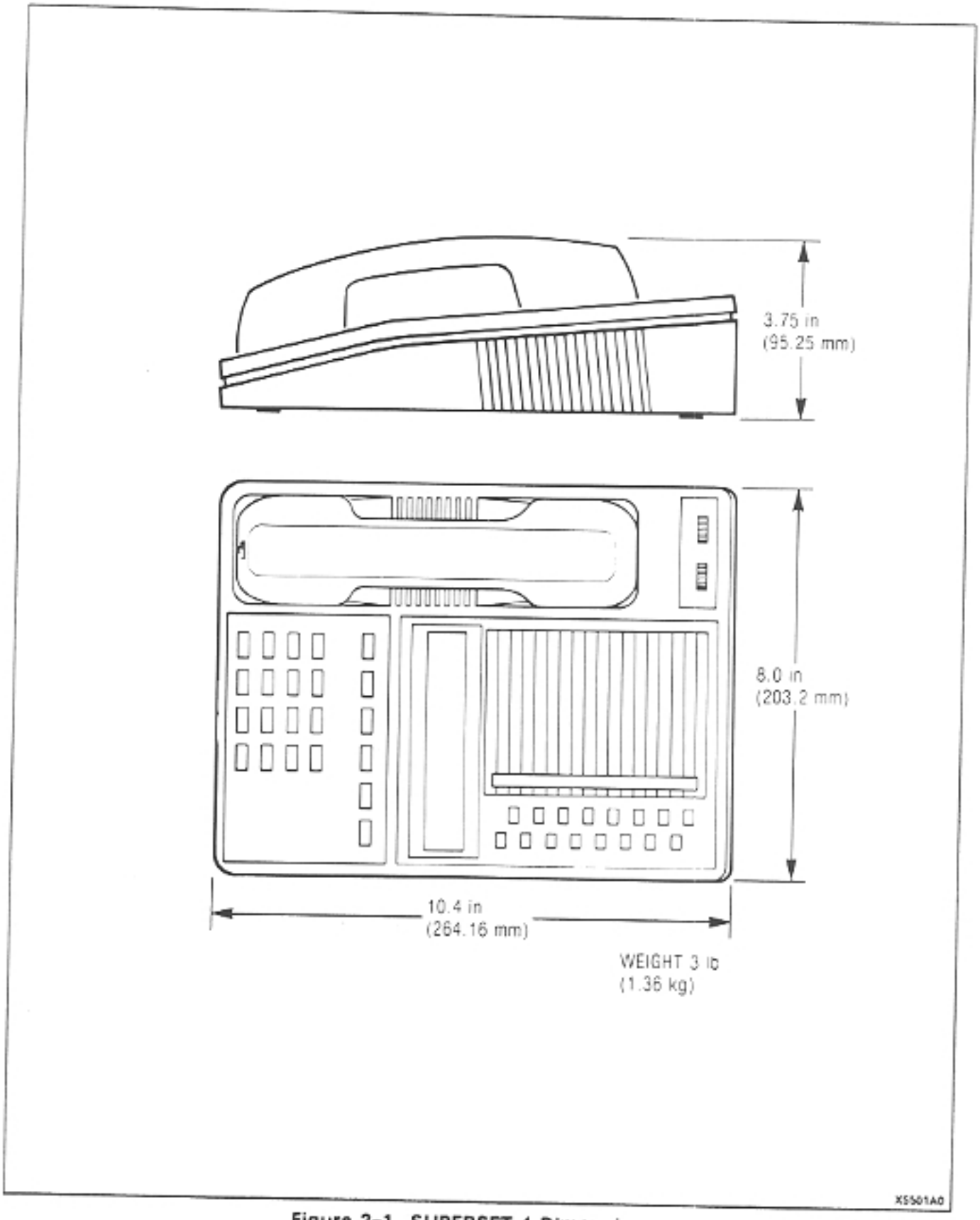


Figure 2-1 SUPERSET 4 Dimensions

3. SHIPPING AND RECEIVING

General

3.01 The SUPERSET 4 is shipped in a single carton (Figure 3-1) which contains the SUPERSET 4 disassembled into main assembly, handset, handset cord, line cord, and rear support. Additional items in the carton are identification cards (for telephone number and lines) and protective lenses for these cards, reference guide, installation guide, and warranty tag.

4. DELIVERY CHECK

General

4.01 On arrival at the point of installation, all items must be checked against this practice. Any discrepancies must be reported immediately. Keep some packing containers on hand for reshipment and so on.

5. INSTALLATION

Caution: Installers should not attempt to use a hand test telephone (buttinski) to check SUPERSET lines, because there is no loop detector installed in the PABX SUPERSET 4 line card; set on-/off-hook status is signaled using data transmission. SUPERSETs must not be connected: a) to standard lines; b) in parallel; or c) as Power Fail Transfer extensions.

5.01 Refer to Figure 5-1. Assemble the rear support to the SUPERSET (if required) by engaging the support mounting lugs in the SUPERSET base mounting holes, and press the two parts together.

5.02 Connect the handset cord to the handset and main assembly.

5.03 Connect the line cord to the main assembly.

5.04 Identify the user's company telephone number on the telephone number identification card.

5.05 Install the telephone number identification card and protective lens on the main assembly.

5.06 Identify the user's extension number and other lines appearing at the SUPERSET 4 on the line identification card. The user's extension number is to be written on the line marked 'extension'.

5.07 Install the line identification card and protective lens on the main assembly.

5.08 Connect the line cord to the telephone wall jack. The SUPERSET 4 is activated automatically and after approximately 10 to 20 seconds, time of day and date are displayed, provided: the rest of the system installation is complete; the PABX is installed with the appropriate generic; and the system is fully programmed and powered-up.

5.09 Perform the Installers Loop Test Procedures as detailed in MITEL Practice Section MITL9174-518-320-NA, provided Feature No. 48, SUPERSET 4 Loopback Test, has been activated.

INSTALLATION NOTES

1. Do not connect SUPERSETs to standard lines.
2. Do not connect SUPERSETs in parallel.
3. Do not connect SUPERSETs as Power Fail Transfer extensions.
4. Do not use a hand test telephone (buttinski) to check SUPERSET lines.

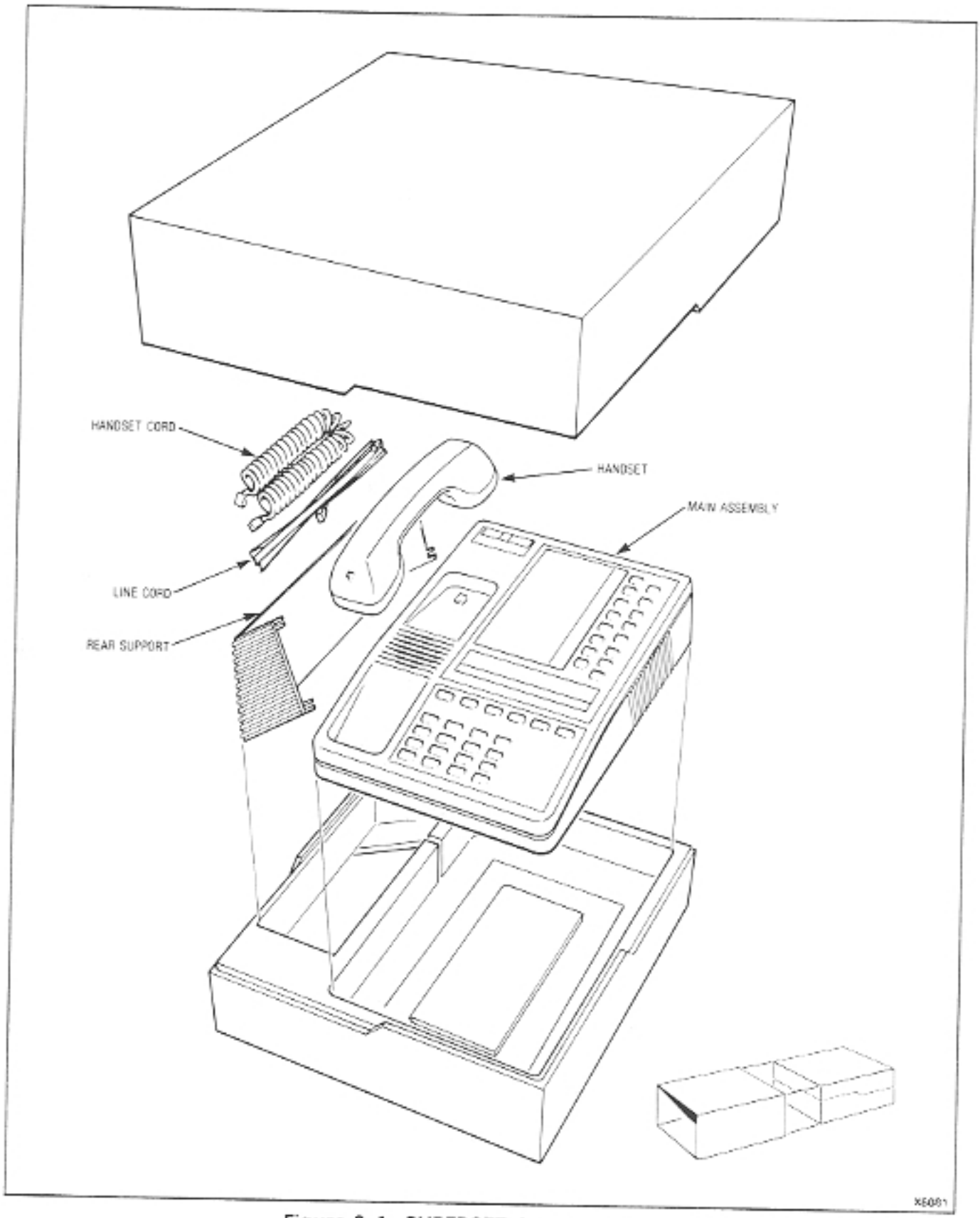


Figure 3-1 SUPERSET 4 and Packaging

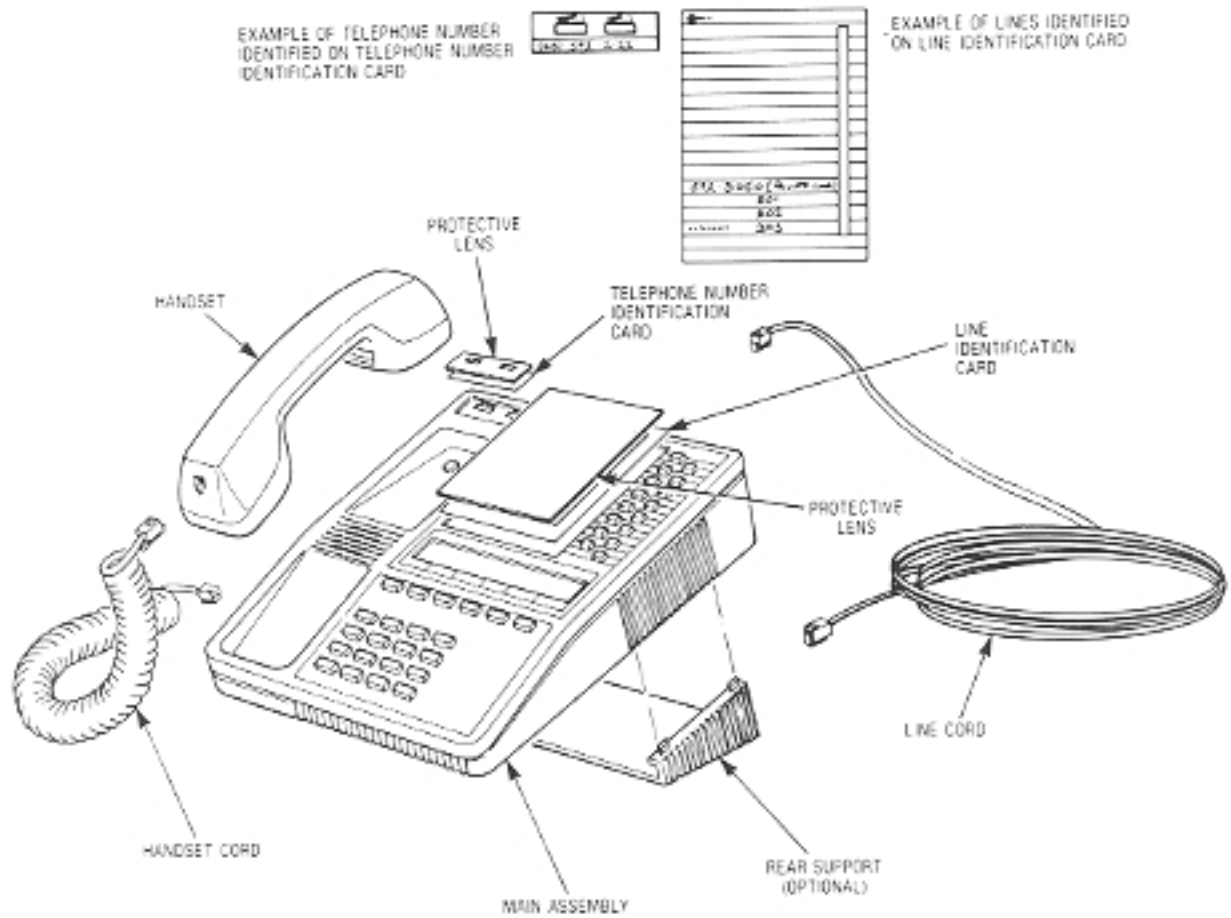


Figure 5-1 SUPERSET 4 Assembly

SUPERSET 4™

INSTALLATION INSTRUCTIONS

1. Refer to Fig 1-1. Assemble the rear support to the SUPERSET (if required) by engaging the support mounting lugs in the SUPERSET base mounting holes, and press the two parts together.

2. Connect the handset cord to the handset and main assembly.

3. Connect the line cord to the main assembly.

4. Identify the user's company telephone number on the telephone number identification card.

5. Install the telephone number identification card and protective lens on the main assembly.

6. Identify the user's extension number and other lines appearing at the SUPERSET 4 on the line identification card. The user's extension number is to be written on the line marked 'extension'.

7. Install the line identification card and protective lens on the main assembly.

8. Connect the line cord to the telephone wall jack. The SUPERSET 4 is activated automatically and after approximately 1 minute, time of day and date is displayed, provided: the rest of the system installation is complete; the PABX is installed with the appropriate generic; and the system is fully programmed and powered-up.

9. Perform the Installers Loop Test Procedures as detailed in MITEL Practice Section MITL9174-518-320-NA, provided Feature No. 48, SUPERSET 4 Loopback Test, has been activated.

INSTALLATION NOTES

1. Do not connect SUPERSETs to standard lines.
2. Do not connect SUPERSETs in parallel.
3. Do not connect SUPERSETs as Power Fail Transfer extensions.
4. Do not use a hand test telephone (buttinski) to check SUPERSET lines.

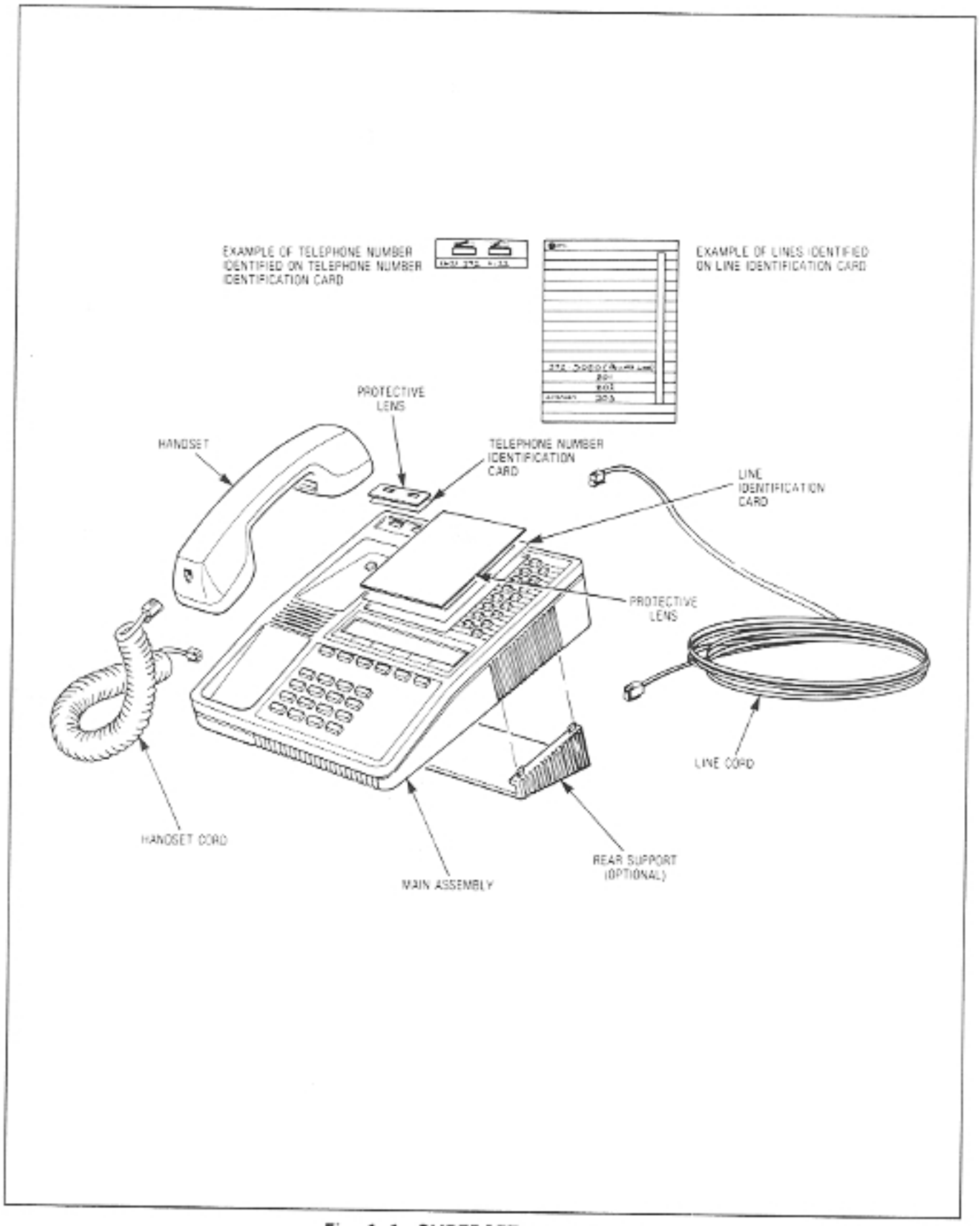


Fig. 1-1 SUPERSET 4 Assembly

SUPERSET 4™

TEST PROCEDURES

CONTENTS PAGE

1. GENERAL

1.01 This Section describes the test procedures for the SUPERSET 4. These procedures should be performed as operational tests upon installation of a SUPERSET 4, after the initial system installation. Refer to the appropriate MITEL practices for system installation instructions.

Reason for Issue

1.02 This practice has been issued to incorporate all information required to check out a SUPERSET 4 after installation.

2. TEST AND OPERATIONAL PROCEDURES

General

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

2.02 When a SUPERSET 4 has power applied to it (i.e. is just connected to an operating system) or the system has just been powered-up, ":SUPERSET 4:" is displayed for approximately 1 minute. Then the display clears to time and date.

2.03 If any test fails, verify that the system is installed correctly and is powered-up.

2.04 Perform the tests listed in Table 2-1 at each SUPERSET 4.

TABLE 1-1
RELATED MITEL PRACTICES

SECTION NO.	TITLE
MITL9174-518-100-NA	General Description
MITL9174-518-105-NA	Features and Services Description
MITL9174-518-200-NA	Shipping, Receiving, and Installation Instructions
MITL9174-518-290-NA	Installation Instructions

TABLE 2-1
INSTALLER LOOP TEST ROUTINES

STEP	ACTION	VERIFICATION	NOTES
Accessing Test Routines			
1.	Go off-hook (handset or hands-free).	- 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 Buttons Test			
4.	Press the "display", "select features", "speaker on/off", and "mic. on/off" buttons in turn.	A 2-digit number is displayed as follows: Button Pressed / Number Displayed display / 12 select features / 13 speaker on/off / 14 mic. on/off / 15	4 5 6

TABLE 2-1 (CONT'D)
INSTALLER LOOP TEST ROUTINES

STEP	ACTION	VERIFICATION	NOTES
Feature Select Buttons and Features Display Test			
5.	Press each of the feature select (unmarked) buttons in turn.	The prompts above each button are activated, and a 2-digit number is displayed. See Figure 2-1.	7
6.	Press the "select features" button.	Supplementary feature names are activited (see Fig. 2-1).	8
Line Select Buttons, Hold Button, Line Status Display, and Tone Ringer Test			
7.	Press the red hold button and each line select button in turn.	- The line status display next to each button (except hold) is activated to indicate an incoming call (alternating square/circle format). - A 2-digit number is displayed, as follows: hold button = 30 to upper line select button = 45 - The tone-ringer sounds when the upper line select button 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" button, and replace the handset.	Number 14 displayed, then "HANDSET DOWN" displayed.	
9(a)	If the tests are run with the handset off-hook, replace handset.	"HANDSET DOWN" displayed.	
(b)	Lift handset.	"HANDSET UP" displayed.	

TABLE 2-1 (CONT'D)
INSTALLER LOOP TEST ROUTINES

STEP	ACTION	VERIFICATION	NOTES
Terminating Test Routines			
10.	If the tests are run with the handset on-hook, press the "speaker on/off" button, 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 hands-free mode, "MIC ON" is displayed.
2. Access code is found in the relevant switch practice.
3. All prompts and line status displays are cleared. "MIC ON" remains if test is run in hands-free mode.
4. Supplementary feature names are also displayed.
5. Do not press this button if test is run in hands-free mode, as it will cause the test to be terminated.
6. If test is run in hands-free mode, "MIC ON" prompt is turned on or off each time this button is pressed.
7. Prompts remain displayed after button is released to allow error patterns to be detected.
8. Supplementary feature names remain displayed until another button is pressed.

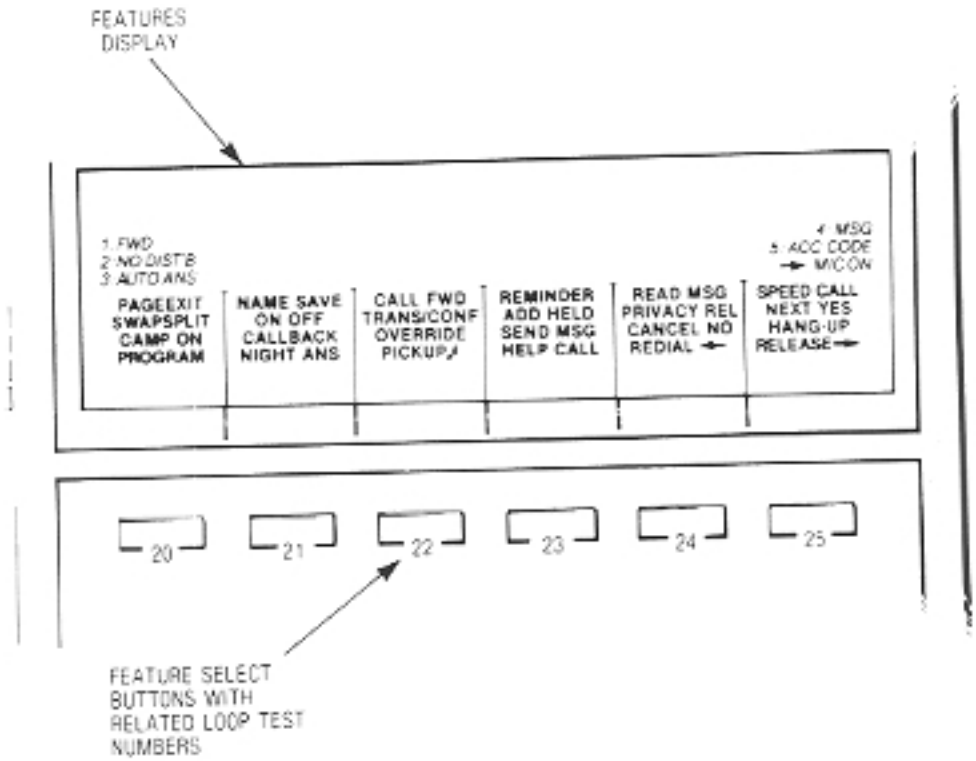


Fig. 2-1 Feature Select Buttons and Features Display Test

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