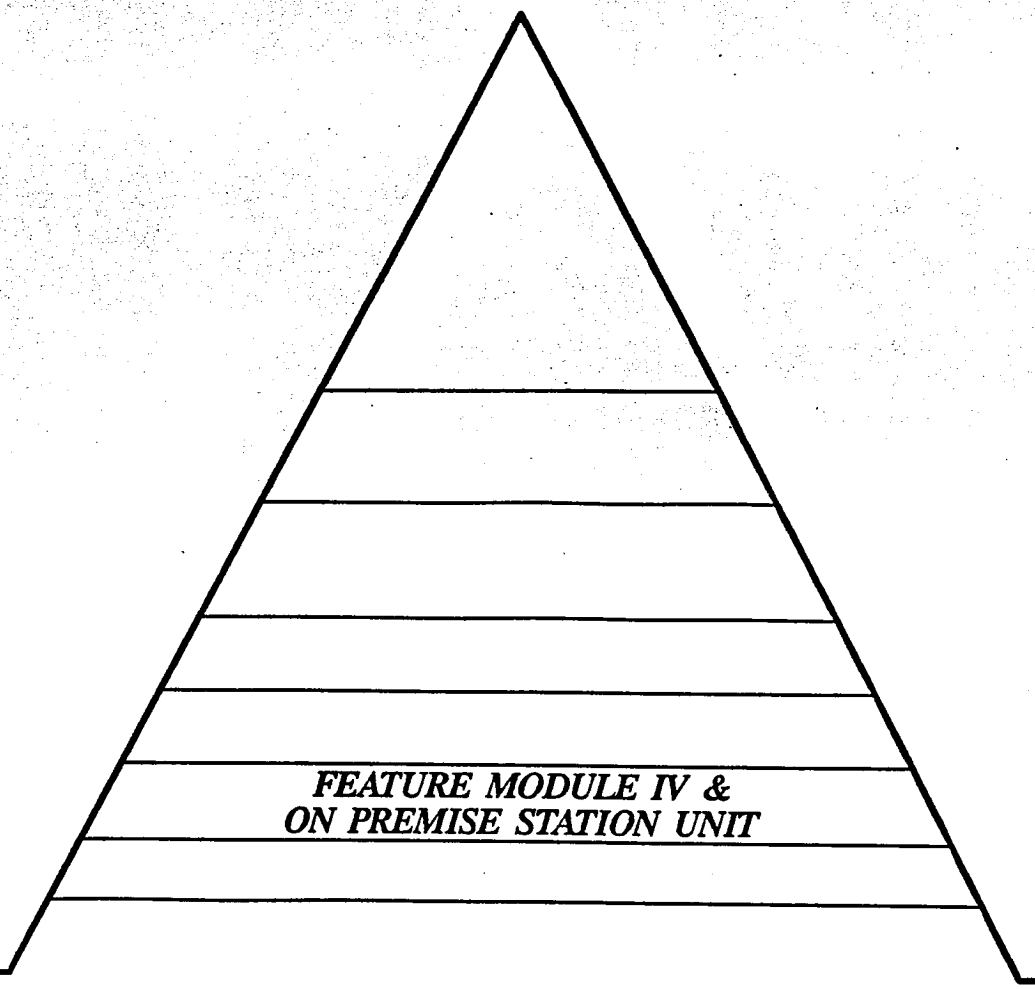
Panther® II

SYSTEM MANUAL



FEATURE MODULE IV &
ON PREMISE STATION UNIT

91-0580-1A

MITEL®

This document is for Panther II 820, Panther II 1032, Panther II 2064 Systems and for Panther II Proprietary Peripherals

Panther® II 820/1032/2064
Electronic Key Telephone System

FEATURE MODULE IV & ON PREMISE STATION UNIT

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FIGURES

1. INTRODUCTION

General

1.01 This Practice provides instructions for installing and programming Panther II 820/1032/2064 Systems with Feature Module IV software and the On Premise Station Unit.

Reason For Issue

1.02 This is the first issue of this Practice. It is one of the set of Practices written to assist a craftsperson install, operate and maintain the system in the field.

2. FEATURE MODULE IV SOFTWARE

General

2.01 In addition to providing the Panther II features outlined in the *Feature & Services Practice* of the *Panther II System Manual,* Feature Module IV software provides Panther II 820/1032/2064 Systems with the following:

- enhanced Call Forwarding,
- improved extension displays,
- displays for Transfer Ringing to the attendant, and
- a change in the default setting of the Loud Bell Ringing/Ringing Over Paging feature

Feature Module IV software provides displays in English only.

Installation

2.02 The Feature Module IV Cartridge plugs into a port on Panther II 820 or 1032 Key Service Units. If you're installing the system for the first time follow the procedure outlined under the sub-heading *Initial Installation*; if you're replacing the Feature Module Cartridge in an existing installation follow the procedure given under the sub-heading *Replacing the Feature Module Cartridge.*

CAUTION: Follow the instructions carefully. If you don't install the Feature Module IV Cartridge correctly, you could damage the software on the Feature Module IV Cartridge, or worse, damage the software in the Key Service Unit (KSU).

Initial Installation

(FOR PREVIOUSLY INSTALLED SYSTEMS, GO TO THE NEXT SECTION)

The following instructions detail initial installation of the Feature Module IV Cartridge.

CAUTION: Don't plug in the KSU power cord until you're instructed to do so.

Step 1 Mount the KSU as per the instructions in the INSTALLATION AND COMMISSIONING PRACTICE of the PANTHER II SYSTEM MANUAL.

Step 2 There are two small grooves on the Feature Module IV Cartridge connector. Holding the Feature Module IV Cartridge so that the grooves are facing you, plug it securely into the port on the KSU *(refer to the close-up shown in Figure 2-1)*. Place the protective cover over the Feature Module IV Cartridge, push in the plastic expansion plugs, and tighten the two screws.

Step 3 Install the remainder of the system as outlined in the INSTALLATION AND COMMISSIONING PRACTICE OF THE PANTHER II SYSTEM MANUAL. After the system is completely installed, including the stations, plug in the KSU power cord. Ensure the STATUS lamp on the side panel of the KSU is flashing.

Step 4 Set the MEM. CLEAR Switch to the ON position. The MEM. CLEAR Switch (dipswitch #2) is located on the right-hand side panel of the KSU.

Step 5 Press the RESET Switch.

Step 6 Set the MEM. CLEAR Switch to the OFF position. The system is now reset to the default settings.

Step 7 Set the Battery Switch for the KSU memory to the ON position. The Battery Switch (dipswitch #4) is located on the right-hand side panel of the KSU.

Step 8 You must now program the system. Refer to the PROGRAMMING PRACTICE in the PANTHER II SYSTEM MANUAL for instructions. You'll find programming instructions for the additional features provided by Feature Module IV software and the On Premise Station Unit in this Practice.

Replacing the Feature Module Cartridge

The following instructions detail the replacement of a Feature Module Cartridge in an existing installation.

Step 1 UNPLUG THE KSU POWER CORD. Telephone service will be disconnected.

Step 2 Remove the Feature Module Cartridge protective cover. The protective cover, located half-way down the right-hand side of the KSU, is secured by two screws and two plastic expansion plugs. Loosen the two screws, pull back the plastic expansion plugs and remove the protective cover.

Step 3 Unplug the installed Feature Module Cartridge from the port on the side of the KSU.

Step 4 There are two small grooves on the Feature Module IV Cartridge connector. Holding the replacement Feature Module IV Cartridge so that the grooves are facing you, plug it securely into the port on the KSU *(refer to the close-up shown in Figure 2-1)*.

Step 5 Plug in the KSU power cord.

Step 6 Replace the protective cover over the Feature Module IV Cartridge, push in the plastic expansion plugs, and tighten the two screws.

Step 7 Set the MEM. CLEAR Switch to the ON position. The MEM. CLEAR Switch (dipswitch #2) is located on the right-hand side panel of the KSU.

Step 8 Press the RESET Switch.

Step 9 Set the MEM. CLEAR Switch to the OFF position. The system is now reset to the default settings.

Step 10 Ensure the BATTERY Switch for the KSU memory is in the ON position. The Battery Switch (dipswitch #4) is located on the right-hand side panel of the KSU.

Step 11 You must now program the system with the customer's feature selections. Refer to the PROGRAMMING PRACTICE in the PANTHER II SYSTEM MANUAL for instructions. Programming instructions for the additional features provided by Feature Module IV software and the On Premise Station Unit are given in this Practice.

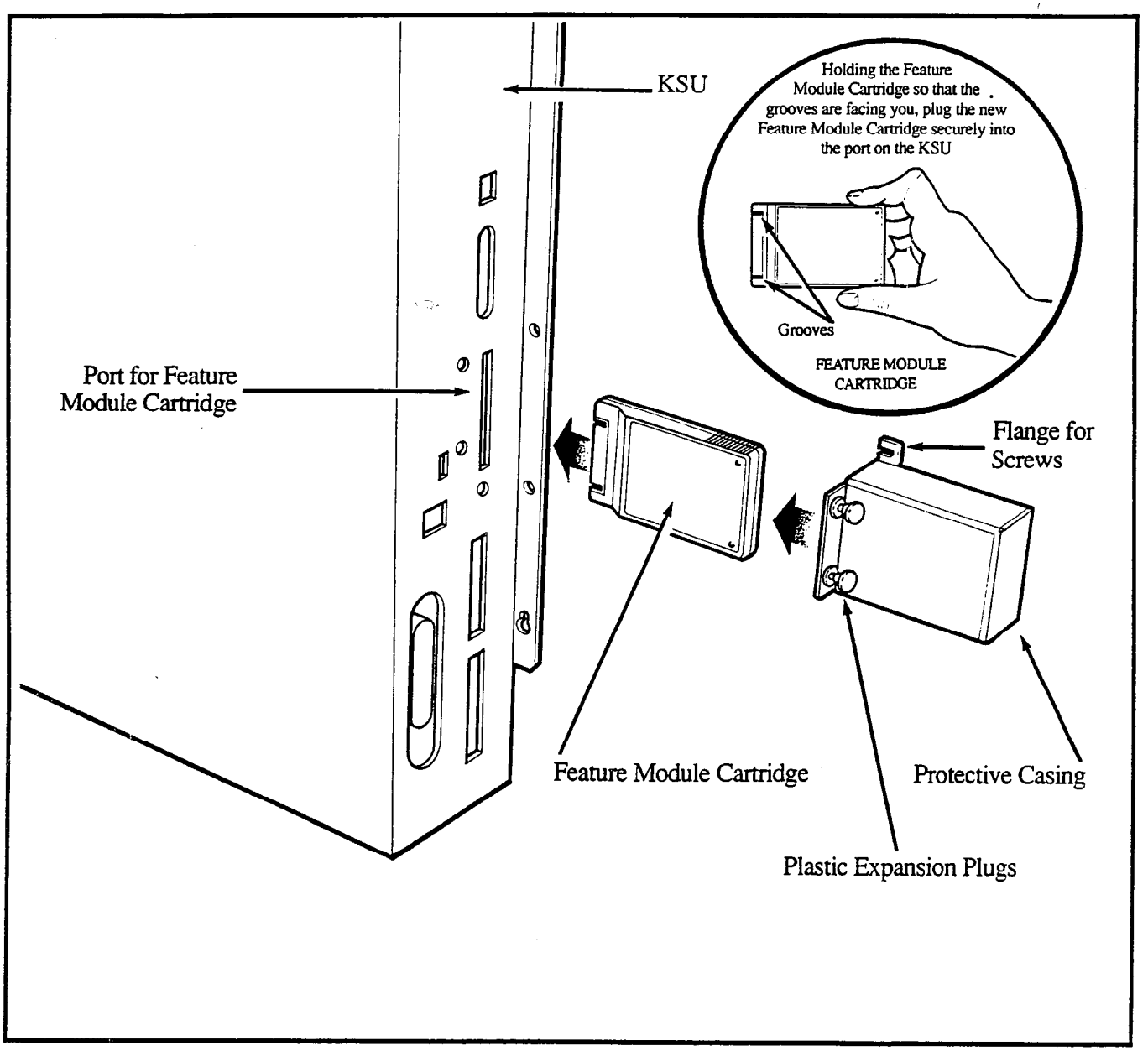


Figure 2-1 Inserting the Feature Module IV Cartridge

Additional Features

2.03 This section provides descriptions and programming instructions for the additional features that are available with Feature Module IV software.

Enhanced Call Forwarding
In addition to forwarding internal ringing calls and certain transfer ringing calls, Feature Module IV software provides call forwarding of

- Incoming external ringing calls, and
- Internal DISA ringing calls

TO PROGRAM CALL FORWARDING AT A PANTHER SET
(See Note Below):

Step 1 Dial *# to enter programming mode.

Step 2 Dial one of the following 2-digit Call Forwarding codes:

21 for **Follow Me**
(forwards internal ringing, transfer ringing, external ringing and internal DISA ringing calls)

22 for **Call Forward Busy**
(forwards internal ringing, transfer ringing, external ringing and internal DISA ringing calls)

23 for **Call Forward No Answer**
(forwards internal ringing, external ringing and internal DISA ringing calls)

24 for **Call Forward Busy/No Answer**
(forwards internal ringing, external ringing and internal DISA ringing calls)

Step 3 Dial the 2-digit number (10 to 73) of the station where you want the calls forwarded to.

Step 4 Dial * to exit programming mode.
Call Forwarding is now activated at the set.

TO TURN CALL FORWARDING OFF:

Step 1 Dial *# to enter programming mode.

Step 2 Dial 20

Step 3 Dial * to exit programming mode.

NOTE: For instructions on programming an ONS port with Call Forwarding, refer to section 5.02.

Station Display

When you place a internal call from a Panther II Display set, the station that you're calling is indicated in the liquid crystal display. With Feature Module I or Feature Module II software, the station is indicated by "Ext. XX", where XX is the station number. With Feature Module IV software, the display has been changed to "Stn XX".

EXAMPLE:

FM I or FM II Software Display

FM IV Software Display

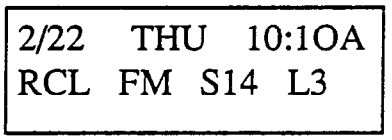
Display for Transfer Ringing to Attendant Station

When a transfer ringing call is redirected to the Attendant Station, the liquid crystal display on the Attendant Station's Display Set identifies the station that the call was initially transferred to, and the line that the call is on. For example:

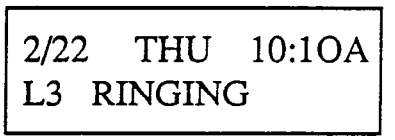
1. An incoming external call on line 3 is answered at Station 13.
2. The person at Station 13 performs a ringing transfer to Station 14.
3. If the call isn't answered at Station 14, it's returned to Station 13.
4. If the call isn't answered at Station 13, it's sent to the Attendant Station.
5. The liquid crystal display on the Attendant's Display Set appears as follows:

With Feature Module I or Feature Module II software, only the line number of the incoming call is identified when a transfer ringing call is redirected to the Attendant Station.

Feature Module IV software provides displays in English only.



FM IV Software Display



FM I or FM II Software Display

Loud Bell Ringing/Ringing Over Paging By Line

The default value for the Loud Bell Ringing/Ringing Over Paging By Line feature (Day mode: access code 063XX) is "Does NOT ring selected line during Day Mode" (data code 1). In the previous software versions, Feature Module I and Feature Module II, the default value for this feature is "Ringing selected line during Day Mode" (data code 0).

3. ON PREMISE STATION UNIT

General

3.01 The On Premise Station (ONS) Unit provides a 4-port interface between Panther II 820/1032/2064 Systems and the following devices:

- single-line set
- auto attendant
- voice mail system

The ONS unit is a sealed unit of metal construction measuring 34.0 cm (13.4 inches) high, 23.9 cm (9.4 inches) wide and 6.54 cm (2.6 inches) deep.

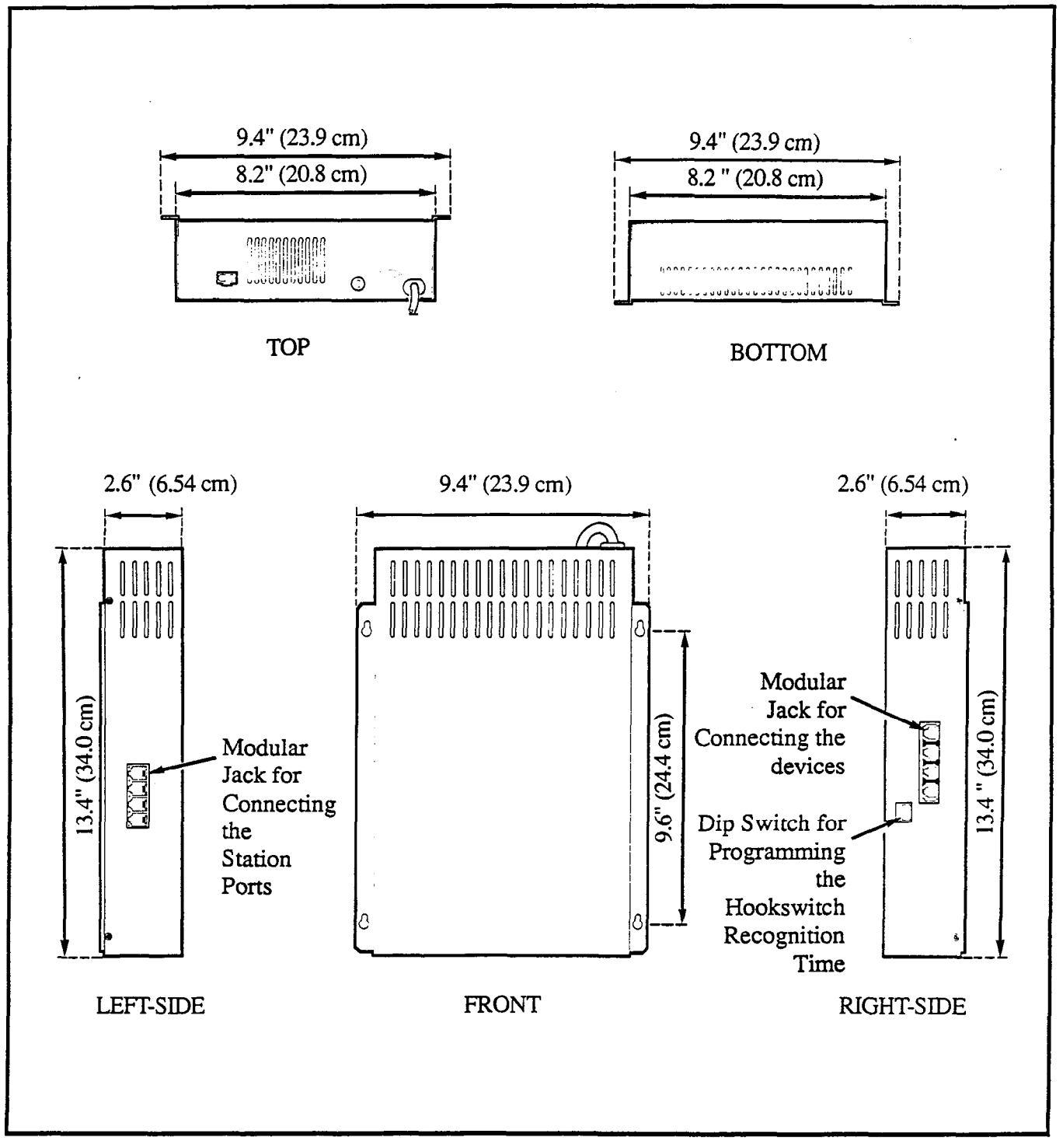


Figure 3-1: On Premise Station Unit

Performance Requirements

The ONS Unit has the following performance requirements:

ENVIRONMENTAL	
Storage Temperature	-20 to +60°C
Functional Temperature	+5 to +40°C
Recommended Operating Temperature	+15 to +35°C
Humidity	0 to 90% non-condensing

Table 3-1: Environmental Requirements

POWER	
AC Power	115 Vac ± 10% (50/60 Hz) 0.5 Amp max load
Battery Backup Power	24 Vdc

Table 3-2: Power Requirements

DTMF SIGNALING FREQUENCY		
Digit	Low Group	High Group
1	697	1209
2	697	1336
3	697	1477
4	770	1209
5	770	1336
6	770	1477
7	852	1209
8	852	1336
9	852	1477
*	941	1209
0	941	1336
#	941	1477
A	697	1633
B	770	1633
C	852	1633
D	941	1633

Table 3-3: DTMF Signaling Frequencies

DTMF DIGIT TRANSMISSION TIMING		
Manual Access	True DTMF	
Automatic Access	Tone Duration (programmable)	over 100 ms
		over 200 ms
		over 300 ms
		over 400 ms
	Interdigit Pause (not programmable)	over 100 ms

Table 3-4: DTMF Digit Transmission Timing

DETECTION TIMING	
DTMF Digit Duration	40 ms minimum
Interdigit Pause Duration	40 ms minimum

Table 3-5: Detection Timing

RINGING GENERATION		
Ringing Voltage		200 V p to p (square wave)
Ringing Frequency		20 ± 5 Hz
Ringing Cadence	Incoming C.O. line call, Incoming DISA line call, Transfer Ringing call, and Hold Recall	0.5 seconds ringing 0.25 seconds pause, 0.5 seconds ringing, and 3.75 seconds off
	Incoming Intercom call	1.0 second ringing and 4 seconds off

Table 3-6: Ringing Generation

Tone Generation from Panther Sets

The ONS Unit generates DTMF tones to enable Panther set users to access a voice mail-box or signal an auto attendant. Table 3-7 shows the digits that must be dialed on a Panther set to generate the different dialing tones required by a voice mail system or auto attendant. An ONS Station must be programmed for an auto attendant or a voice mail system, before the ONS Unit will generate DTMF tones for that ONS port.

DIGITS (DIALED ON PANTHER SET)	DTMF DIALING TONE GENERATED BY ONS UNIT AND SENT TO VOICE MAIL BOX OR AUTO ATTENDANT
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
*	*
0	0
#	#
Flash/Cancel + 3	A
Flash/Cancel + 6	B
Flash/Cancel + 9	C
Flash/Cancel + #	D

Table 3-7: Tone Generation from Panther Sets

Direct Inward System Access

The ONS Unit is designed to operate with the DISA feature. If your system has an Options Interface Unit and is programmed for Direct Inward System Access, then you can call into the Panther II system and place internal calls directly to ONS stations.

Call Progress Tones

The ONS Unit provides the following call progress tones:

AUDIBLE RINGS:
- C.O. line ringing tone
- Internal DISA ringing tone
- Transfer ringing tone
- Hold Recall ringing tone
- Intercom ringing tone

MANUAL TONE
BUSY TONE

The KSU provides the following call progress tones:

BACK TONES
- Internal Calling (Tone Call)
- Internal Calling (Voice Call)
- All Page
- Zone Page
- Busy Override

EXECUTIVE OVERRIDE TONE
DIAL TONE
BUSY TONE

Installation

3.02 The On Premise Station (ONS) Unit connects to station ports on the left-hand side of Panther II 820, 1032 and 2064 KSUs. The ONS Unit supports up to four devices and each device occupies a station port on the KSU. In order for the ONS unit to operate, Feature Module IV software must be installed in the KSU.

You can connect a maximum of two ONS Units to a Panther II 820, 1032 or 2064 System. However, you can't connect an ONS Unit to more than one KSU. For example, you can't connect two ONS ports to a Panther II 820/1032/2064 KSU and connect the other two ONS ports to another Panther II 820/1032/2064 KSU.

You can install or remove the ONS Unit without disconnecting power to the system or interrupting service to all stations. In fact, the KSU must be receiving power when you plug in the ONS power cord. If the KSU isn't powered up when you plug in the ONS power cord, the ONS unit may not operate properly. In addition, if you disconnect any of the modular cords that connect the KSU stations to the ONS Unit, you must disconnect the power to the ONS Unit. After reconnecting the modular cords, you can then plug in the ONS power cord (providing that the KSU is receiving power). If these procedures aren't followed, the ONS Unit will not operate properly.

Follow the steps listed below to install the ONS Unit.

Step 1 Mount a main distribution frame (MDF) to the right of the KSU on the wooden backboard. Then, mount the ONS Unit to the right of the MDF with the four wood screws (refer to Figure 3-2).

Step 2 Connect the MDF to the desired KSU station ports using a 25-pair cable and two 50-pin 'D' Amp Connectors (refer to Figure 3-3).

Step 3 Connect each of the four station ports from the MDF to one of the four modular jacks on the left side of the ONS Unit. Use a DBU4 type cord (4-conductor mod-to-mod cord) with an RJ14C connector to make the connection (refer to Figure 3-4).

Step 4 Each modular jack on the left-hand side of the ONS Unit corresponds to a jack on the right-hand side. The modular jacks on the right-hand side connect to the devices (single-line set, voice mail system or auto attendant). Connect the modular jacks on the right-hand side of the ONS Unit to the devices using DBU4 type cords with RJ14C connectors.

Step 5 If the KSU power isn't connected, plug in the KSU power cord.

Step 6 Program the system to recognize the type of devices that are connected to the ONS Unit. To program the type of device:

a. Connect a Panther II Display Set to Station 10

b. Dial *#015 to enter programming mode

c. Dial access code 100YY where YY is the 2-digit station number of the ONS device
d. Enter the desired data code:
   5 for a single line set,
   6 for a voice mail system, or
   7 for an auto attendant
e. Press the # key to store your selection
f. Repeat steps c to e for each ONS station
g. Press * to exit programming mode

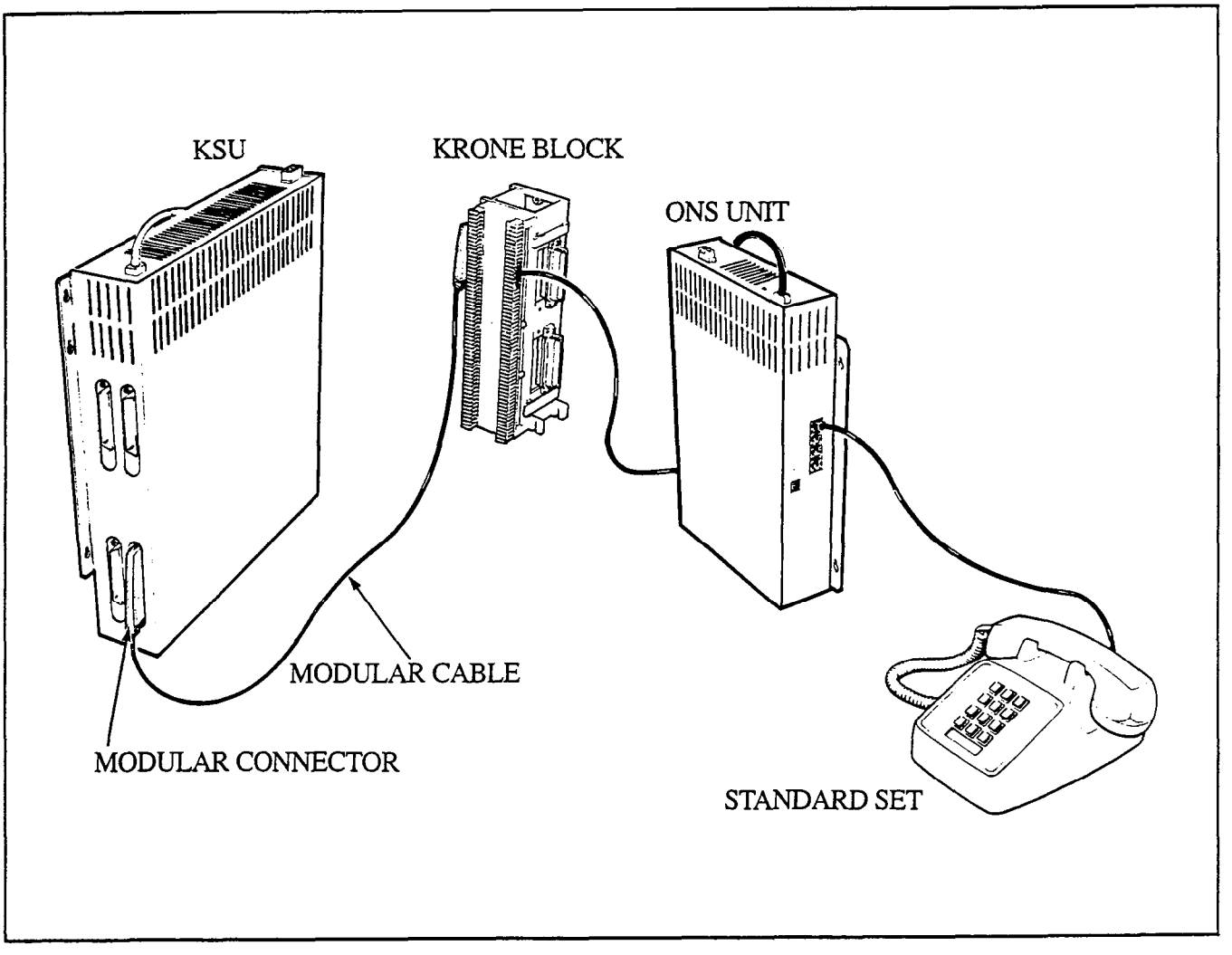


Figure 3-2: On Premise Unit Installation

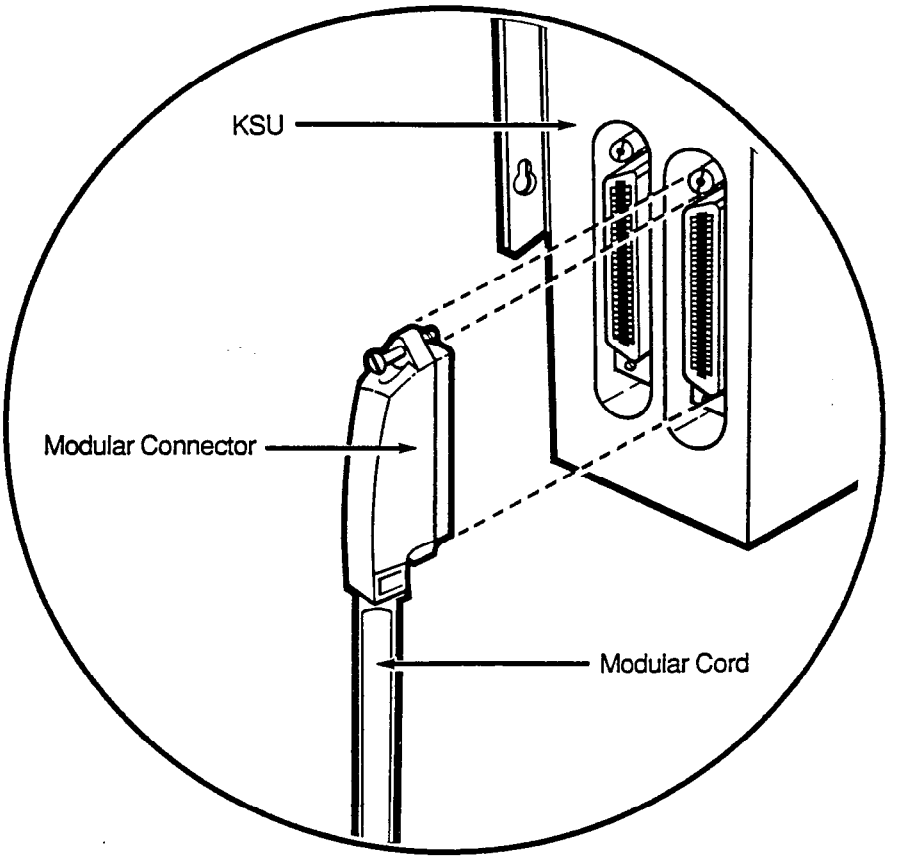


Figure 3-3: Connecting the MDF to the KSU

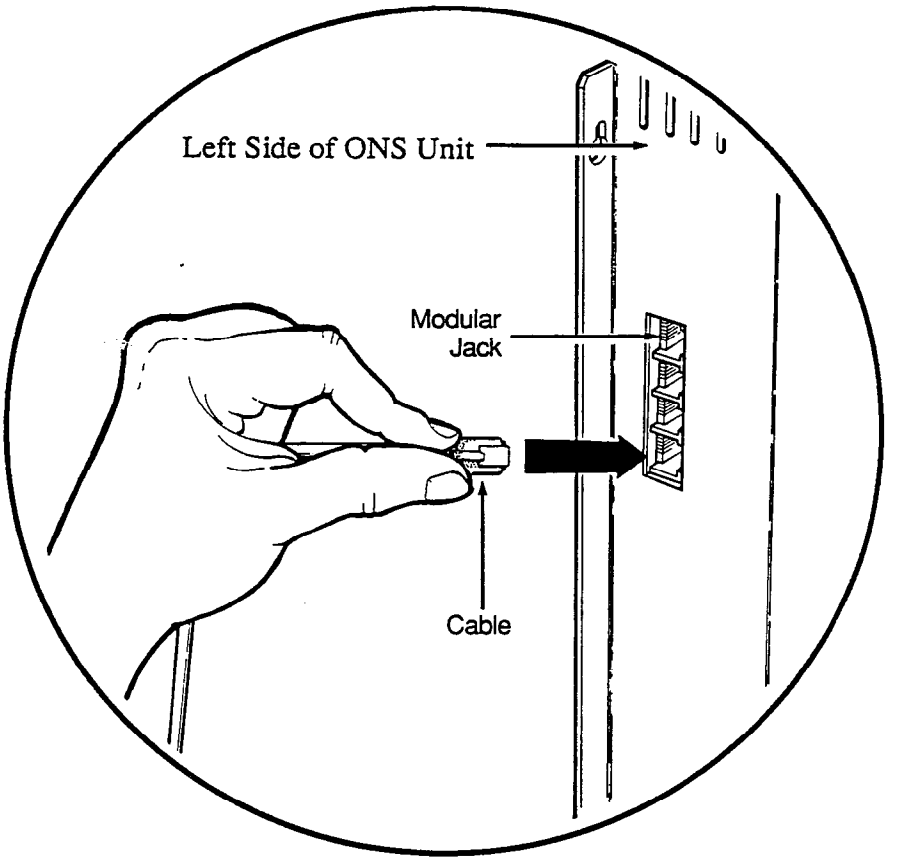


Figure 3-4: Connecting the KSU Station Ports to the ONS Unit

Step 7 Program the type of line select for the ONS stations:

a. From the Panther II Display Set at Station 10
b. Dial *#015 to enter programming mode
c. Dial access code 113YY where YY is the 2-digit station number of the ONS device
d. Enter the desired data code:
   0 for Auto Intercom (for a voice mail system)
   2 for Manual Line Select (single line set or auto attendant)
e. Press the # key to store your selection
f. Repeat steps c to e for each ONS station
g. Press * to exit programming mode

Step 8 Adjust the dipswitches located on the right-hand side of the ONS Unit to set the duration of the Flash/Cancel Recognition (refer to Figure 3-5 and Table 3-8). The duration of the Flash/Cancel Recognition should be set to the duration of the flash/cancel signal that is produced by the ONS devices. Note that the dipswitch settings determine the Flash/Cancel Recognition for all four ONS stations (i.e., you can't set a different Flash/Cancel Recognition for each ONS station).

Step 9 Plug in the ONS power cord. The ONS device (e.g., standard tone telephone) begins working approximately 6 seconds after you plug in the ONS power cord.

CAUTION: The KSU must be receiving power when you plug in the ONS power cord. If you plug in the ONS power cord before plugging in the KSU power cord, the ONS unit will not work properly.

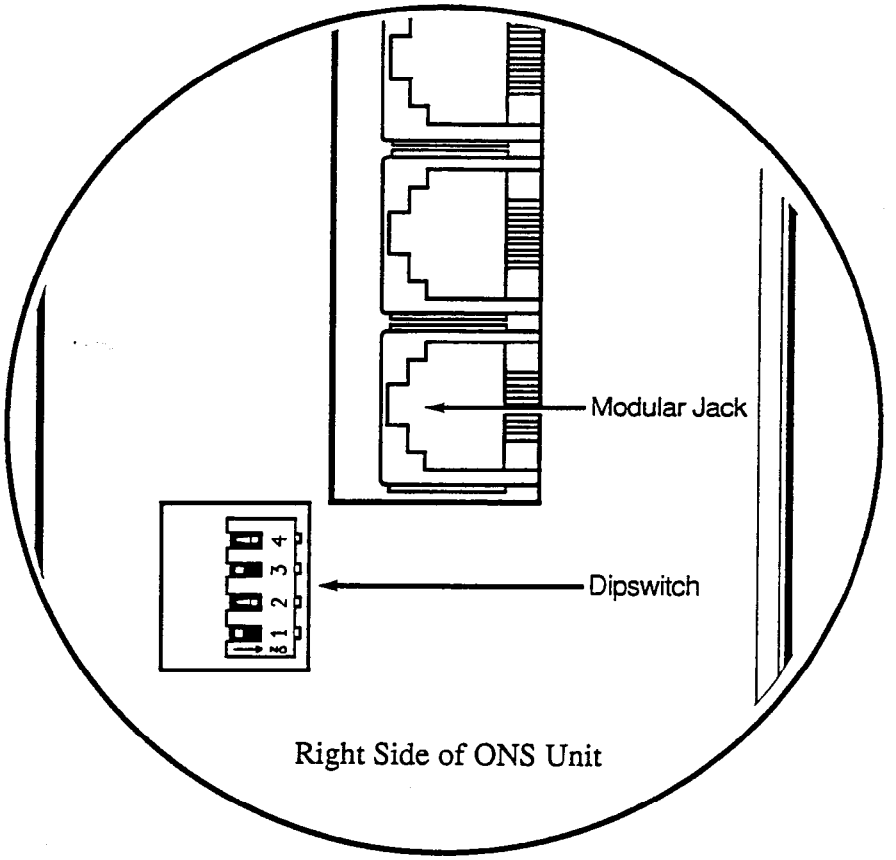


Figure 3-5: On Premise Station Unit Dipswitch

DIPSWITCH				FLASH RECOGNITION (ms)	CANCEL RECOGNITION (ms)
1	2	3	4	(minimum) (maximum)	(minimum)
Off	Off	Off	Off	60 → 100	100
On	Off	Off	Off	60 → 200	200
Off	On	Off	Off	60 → 300	300
On	On	Off	Off	60 → 400	400
Off	Off	On	Off	60 → 500	500
On	Off	On	Off	60 → 600	600
Off	On	On	Off	60 → 700	700
On	On	On	Off	60 → 800	800
Off	Off	Off	On	60 → 900	900
On	Off	Off	On	60 → 1000	1000
Off	On	Off	On	60 → 1100	1100
On	On	Off	On	60 → 1200	1200
Off	Off	On	On	60 → 1300	1300
On	Off	On	On	60 → 1400	1400
Off	On	On	On	60 → 1500	1500
On	On	On	On	60 → 1600	1600

Default: Flash Recognition is 60 to 100 ms
Cancel is 100 ms

Table 3-8: Dipswitch Settings

4. ON PREMISE STATION DEVICES

General

4.01 This section provides a brief description of each ONS device and identifies any special programming requirements.

Single-Line Set

4.02 You can perform certain Panther features from a single-line **(tone only)** telephone that's connected to an ONS station. However, you must first program the ONS station for a single-line set (access code 100YY, data code 5) and for Manual Line Select (access code 113YY, data code 2) if you want to access both internal and external lines. Refer to the ONS User Guide for instructions on using the set.

You can transfer calls from a Panther set to an ONS device. You can also transfer calls from an ONS device to a Panther set. Before a call can be transferred from an ONS device, you must program the flash-hook as a Transfer signal (access code 055, data code 3).

Auto Attendant

4.03 An auto attendant answers and directs external calls to stations within the system. Most auto attendants operate by prompting the caller to enter the number of the desired station or to dial a specific digit for a particular department. When the caller enters the desired station number or dials the desired digit, the auto attendant transfers the call. To allow an auto attendant to transfer calls, you must program the flash-hook as a Transfer signal (access code 055, data code 3) and set the Transfer Ringing Return feature to "Return to Sub-Attendant" (access code 104YY, data code 1). If the Transfer Ringing Return feature is left with the default setting, unanswered transfer calls return to the originator. The default setting is inappropriate for an auto attendant because any unanswered transferred calls that were initially transferred by the auto attendant will be returned to the auto attendant.

You can program incoming external calls to ring at the auto attendant. To allow incoming external calls to ring the auto attendant, you must program the lines to ring at the ONS station port that the auto attendant port is connected to. Refer to *Flexible Ringing Assignment* in the *Programming Practice* of the *Panther II System Manual* for instructions.

When all the internal intercom paths are busy, the auto attendant is unable to transfer an incoming external call.

Incoming external calls can be transferred from a station to the auto attendant. The auto attendant is able to answer and redirect the transferred call to a station. Since internal call transfer isn't available with the Panther II System, an auto attendant can't direct internal calls to stations within the system. For the same reason, internal calls that are forwarded to the auto attendant can't be redirected either.

Calls that arrive at a busy ONS auto attendant port can be forwarded to another ONS auto attendant port. Refer to the section *Setting Call Forwarding* in this Practice.

Voice Mail

4.04 A voice mail system provides "voice mailboxes" in which callers can leave recorded messages. A person can call your mailbox and leave a recorded message for you. Later, you can access your mailbox and listen to any messages that have been left for you.

The ONS Unit can be programmed to allow callers to automatically access your voice mailbox (see Section 5.03). If the ONS Unit is programmed to allow automatic access, you can forward your calls directly to your voice mailbox by forwarding your set to the ONS station that the voice mail system is connected to. If a caller, who has been forwarded from your set directly to your mailbox, leaves a recorded message, the ONS Unit will send a message waiting signal to your set. The Intercom indicator lamp on your set winks if you've a message waiting. To respond to a message waiting signal, press the # key or Intercom key. If the message is entered in your mailbox you will access your mailbox and hear the recorded message, but if the message was placed on your set from another Panther set, you'll simply ring that set.

If a message waiting signal is sent from a Panther set, single-line set or auto attendant to a station that has call forwarding enabled, the message waiting signal will be forwarded to the call forwarding destination. But, message waiting signals that are sent from a voice mail system to a station that has call forwarding enabled will not be forwarded. So, if someone leaves a recording in your voice mailbox while you have call forwarding enabled, your set will indicate that you've a message waiting. The message waiting signal will not appear at the station that your calls are forwarded to. In order for the voice mail system to send message waiting signals, the ONS station port that the voice mail system is connected to, must be programmed for Auto Intercom Select (access code 113YY, data code 0).

Calls that arrive at a busy ONS voice mail port can be forwarded to another ONS voice mail port. Refer to the section *Setting Call Forwarding* in this Practice.

You can program incoming external calls to ring at the voice mail system To allow incoming external calls to ring a voice mail port, you must program the lines to ring at the ONS station port that the voice mail system is connected to. Refer to *Flexible Ringing Assignment* in the *Programming Practice* of the *Panther II System Manual* for details.

5. ON PREMISE STATION UNIT PROGRAMMING

General Programming

5.01 This chapter provides programming instructions for the ONS Unit. The programming parameters for the ONS Unit and ONS stations are listed in the tables of this chapter.

To program ONS features:

Step 1 Dial *#015 on the Panther II Display Set at Station 10
Step 2 Select the desired feature from the table and dial the appropriate 3- to 7-digit access code.
Step 3 To change the default, dial the data code of the desired setting.
Step 4 Press the # key to store the data.
Step 5 Repeat steps 2 to 4 for each system feature setting or each ONS station setting that you wish to change.
Step 6 Press the * key to exit programming. The new programming is complete

ONS Unit Flash-Hook Recognition

You can program the flash-hook signal that is generated at an ONS device to be recognized by the ONS Unit as either a hold, flash, cancel or transfer. The flash-hook signal for Panther sets is not the same signal and is programmed separately using a different access code (access code 055 changes the function of the ONS flash-hook; access code 005 changes the function of the Panther system flash-hook).

ACCESS CODE	CONDITION	DATA CODE	FUNCTION
055	Hold	0	A flash-hook performed at a single-line set, voice mail system or auto attendant signals the ONS Unit that a call is to be held
	Flash	1	Network flash
	Cancel	2	Network cancel
	Transfer	3	A flash-hook performed at a single-line set, voice mail system or auto attendant signals the ONS Unit that a call is to be held and transferred

Default: Cancel

Table 5-1: ONS Unit Flash-hook Recognition

The hold and transfer signals generated by the ONS unit are produced only within the Panther system, whereas the flash and cancel signals are generated both within the Panther system and on the central office lines.

If you are connecting an auto attendant to an ONS port, or if you want to be able to transfer calls from a single-line set, you must program the flash-hook as a Transfer signal.

You can set the ONS Flash/Cancel Recognition time to correspond to the Flash/Cancel signal produced by the ONS device by adjusting the dipswitch located on the right-hand side of the ONS Unit (refer to Figure 3-5 and Table 3-8).

Type of ONS Device

Each ONS station supports either a single-line set, an auto attendant or a voice mail system. You must program the type of device that you are connecting to the ONS station because the system defaults to a Panther II Display Set at station 10 and Panther 1032/2064 Sets at all other stations.

ACCESS CODE	TYPE OF ONS DEVICE	DATA CODE
100YY	single-line set	5
	voice mailbox	6
	auto attendant	7

Default: Panther II Display Set at station 10
Panther 1032/2064 Sets for all other stations
Note: YY = station number (10 to 73)

Table 5-2: Type of ONS Device

Manual Line Select/Auto Intercom/Auto C.O.

If you're connecting a single-line set to an ONS station, you should program the ONS station for Manual Line Select. If the single-line set isn't programmed for Manual Line Select, you'll be unable to access both internal and external lines from the set.

If you're connecting an auto attendant or voice mail system, leave the ONS station with the default value of Auto Intercom. If a voice mail system isn't programmed for Auto Intercom, it can't send a message waiting signal to a Panther station that has a voice mail message.

ACCESS CODE	LINE SELECT	DATA CODE
113YY	Auto Intercom	0
	Auto C.O.	1
	Manual Line Select	2

Default: Auto Intercom Note: YY=station number (10-73)

Table 5-3: Line Select

FEATURE	ACCESS CODE	DEFAULT
Type of Set	100YY	Panther II Display Set at station 10 and Panther 1032/2064 Sets at all other stations
Night Transfer Group	101YY	No Ringing
Executive Override Capability	102YY	No
Toll Restriction by Station	103YY	Class A
Transfer Ringing Return	104YY	Returns to originator; then to sub-attendant
Ringing Line Pickup	105YY	Yes - *See Note 1*
DND Override Capability	106YY	No (Except station 10)
Account Code Type	107YY	Manual Account Codes - *See Note 2*
One Touch Speed Dial/ Auto Line Hold	110YY	One Touch Speed Dial - *See Note 3*
Relay Access	111YY	No relay access (except station 10)
Manual Select/Auto Intercom/ Auto C.O.	113YY	Automatic Intercom
Handset/headset	115YY	Handset - *See Note 2*
Block Programming	118AA	MMNN - *See Note 4*
Flexible Ringing Assignment	119YY	Only Station 10 is preprogrammed to ring during an incoming call on all lines

Table 5-4: ONS Station Features *(continued on page 27)*

FEATURE	ACCESS CODE	DEFAULT
Tenant Groups	121YY	No preprogrammed Tenant Groups
Zone Paging Groups	122YY	No preprogrammed Zone Groups
Prime Line Preference Groups Intercom Tenanting/	123YY	No preprogrammed Prime Line Preference Groups
Station Hunt Groups Hunt Groups	124YY	All station in Group 1
Pickup Groups	125YY	All Stations in Group 1

Note 1: An ONS station has Ringing Line Pickup, regardless of whether it is programmed for a single line set, auto attendant, or voice mail system.
Note 2: These features must be programmed "0"
Note 3: This feature isn't available/applicable because there aren't any DSS keys on a single line set, auto attendant, or voice mail system.
Note 4: AA = the 2-digit number of a station whose programming characteristics you would like to copy to a block of other stations.
MM = the 2-digit number of the first station in the block
NN = the 2-digit number of the last station in the block
Note 5: YY = station number (10 to 73)

Table 5-4: ONS Station Features *(continued from page 26)*

ONS Station Features

Table 5-4 lists the programmable station features that are applicable to an ONS single-line Refer to the *Programming Practice* of the *Panther II System Manual* for the possible settings available for each feature.

Setting Call Forwarding

5.02 A single-line set, voice mail system or auto attendant can forward external ringing calls, internal ringing calls, internal DISA calls and certain transfer ringing calls to a Panther station or another ONS station.

The ONS Unit has four station ports that you can connect to the ports of an auto attendant or voice mail system. One possible application is to forward the calls that arrive at a busy a voice mail or auto attendant port to another voice mail or auto attendant port. Note however, that an ONS station is allowed only one call forwarding hop. For example, if a call is forwarded from an ONS station port to another station that also has call forwarding enabled, the call will not be forwarded a second time.

To set Call Forwarding on or off, at an ONS single-line set,

Step 1 Lift the handset
Step 2 Dial *#
Step 3 Dial one of the following codes to specify the type of call forwarding:

21YY for Follow Me (external, internal, internal DISA and transfer ring calls);
22YY for Call Forward Busy (external, internal, internal DISA and transfer ring calls);
23YY for Call Forward No Answer (external, internal, internal DISA calls);
24YY for Busy/No Answer (external, internal, internal DISA calls); or
20 to turn Call Forwarding off.

Note: YY = the number (10 to 73) of the station where you want your calls forwarded to.

Step 4 Dial * to exit programming.
Step 5 Hang up the handset

To set Call Forwarding on or off at an ONS station that is programmed for an auto attendant or voice mail system:

Step 1 Go to the Panther II Display set at station 10.
Step 2 Dial *#015 to enter programming mode.
Step 3 Dial access code 100YY (Type of Set) where YY is the ONS station number of the voice mail system or auto attendant.
Step 4 Enter data code 0 for a Panther 1032/2064 Set.
Step 5 Dial * to exit programming mode.
Step 6 Unplug the modular cord (that corresponds to the auto attendant or voice mail system) from the left-hand side of the ONS Unit (see Figure 5-1).
Step 7 Plug the RJ14 connector on the modular cord into a Panther II 1032/2064 Set
Step 8 Dial *#
Step 9 Dial one of the following codes to specify the type of call forwarding:

21YY for Follow Me (external, internal, internal DISA and transfer ring calls);
22YY for Call Forward Busy (external, internal, internal DISA and transfer ring calls);
23YY for Call Forward No Answer (external, internal, internal DISA calls);
24YY for Busy/No Answer (external, internal, internal DISA calls); or
20 to turn Call Forwarding off.
Note: YY = the number (10 to 73) of the station where you want your calls forwarded to.

Step 10 Dial * to exit programming
Step 11 Unplug the modular cord from the Panther 1032/2064 Set and plug it back into the ONS station of the voice mail system or auto attendant.

Step 12 Return to the Panther II Display Set at station 10.
Step 13 Dial *#015 to enter programming mode.
Step 14 Dial access code 100YY (Type of Set) where YY is the ONS station number of the voice mail system or auto attendant).
Step 15 Enter 6 for a voice mail system, or 7 for an auto attendant.
Step 16 Dial * to exit programming mode.
Step 17 **Unplug the power cord to the ONS unit. After waiting several seconds reconnect the power to the ONS Unit.**

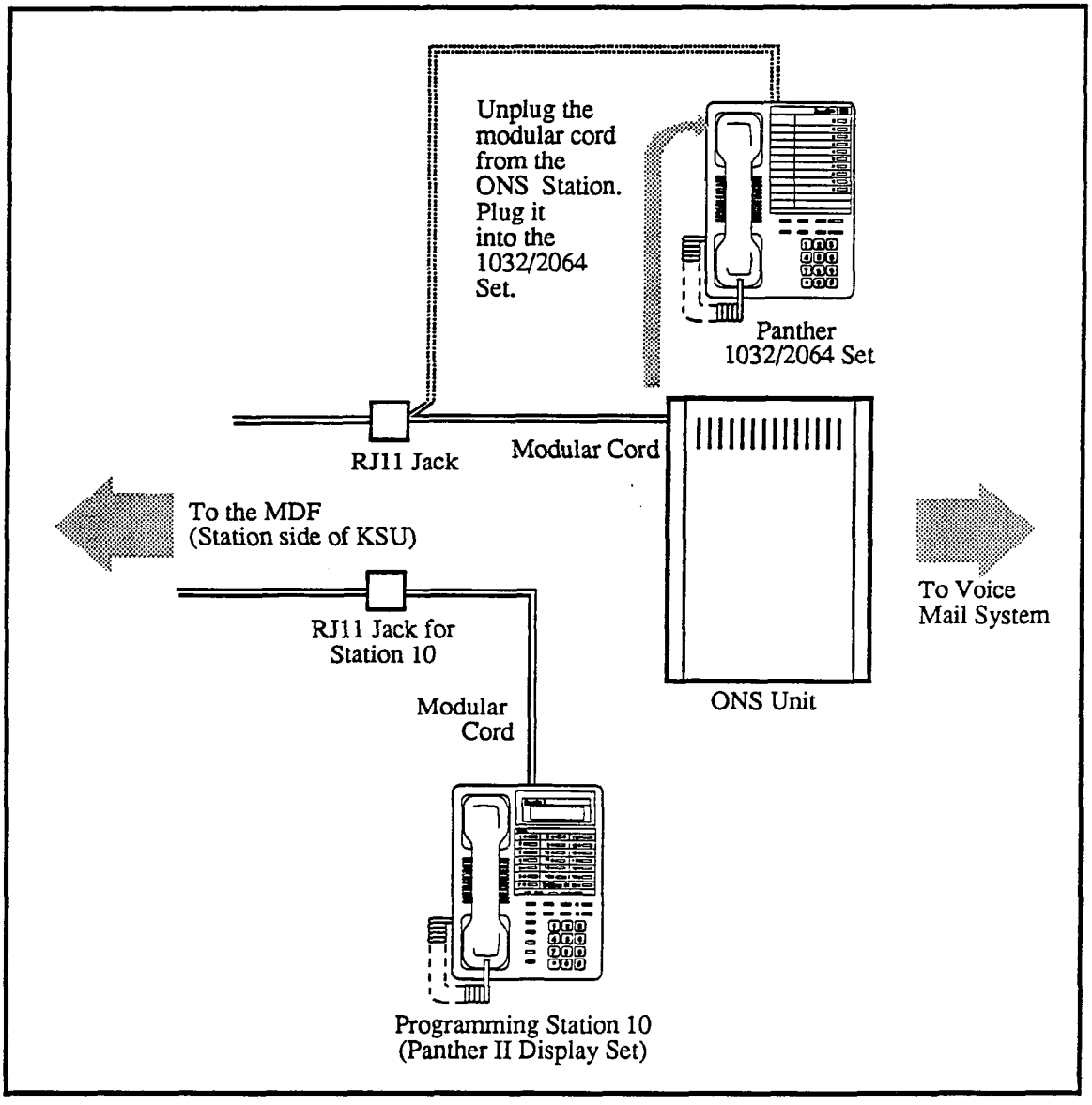


Figure 5-1: Setting Call Forwarding

Programming Automatic Access to a Voice Mail System

5.03 You can program the ONS Unit to allow Panther station users to forward their calls directly to their voice mailboxes. When the system has been programmed for automatic access people can redirect their incoming calls to their voice mailboxes simply by call forwarding their sets to the ONS station number of the voice mail system.

To enable automatic access, you must program DTMF digit strings into the ONS Unit that will allow the voice mail system identify the type of calls and the stations' voice mailboxes. You program the DTMF digit strings and the voice mailbox numbers from the Master Attendant Station. After programming the DTMF digits strings and voice mailbox numbers, you have the option of setting conditions to automatic access.

In addition, you may have to change the default settings of some of the following parameters to allow the automatic access feature to work with your type of voice mail system:

- DTMF Digit Timing
- Pause Duration
- Transfer Ringing Time
- Tone/Pulse C.O. Lines

You program the parameters listed above from station 10.

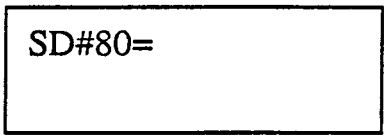
Programming DTMF Digit Strings for Automatic Access

To program the type of calls:

Step 1 Go to the Panther II Display Set at the Master Attendant Station.

Step 2 Press the **Speed** key. The Intercom lamp winks slowly and the display is blank.

Step 3 Enter the 3-digit code (from Table 5-5) that corresponds to the type of call. The code will appear in the display as you enter it. For example, if you enter #80 the display will appear as follows:



Display Set LCD

NO.	TYPE OF CALL		CODE	VM DTMF String (default
1	External Incoming Forwarded Call or Internal DISA Forwarded Call	Follow Me	#80	PP
2		Busy	#81	PP
3		No Answer	#82	PP
4		Busy/No Answer	#83	PP
5	Internal Forwarded Call or Transferred Ringing Forwarded Call	Follow Me	#84	PP
6		Busy	#85	PP
7		No Answer	#86	PP
8		Busy/No Answer	#87	PP
9	Message Waiting		#88	A
10	Message Waiting Answer		#89	P#2

Note: PP= Pause, Pause. The digit string for each type of call defaults to PP. You must change the PP for each type of call to the digit string required by the voice mail system. It's also possible to change the duration of the Pause signal using system programming. (Refer to Table 5-9)

Table 5-5: Programming Digit Strings for the Type of Call

Step 4 Enter the DTMF string that is required by the voice mail system. The voice mail system requires a specific DTMF string to recognize each type of call. These DTMF strings should be provided in the documentation that is supplied with the voice mail system. They can be a maximum of 5 digits in length. The defaults are shown in Table 5-5.

You can program the following digits into the DTMF strings for the type of call:

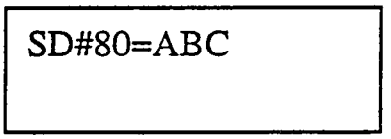
0 to 9, *, #, A, B, C, D or Pause

However, for the Message Waiting data string (code #88), only A, B, C, or D can be stored as the first digit . To enter an A, B, C, D tone or Pause, dial the digits/keys given Table 5-6.

DTMF TONE	DIAL --	DTMF TONE	DIAL --
A	Flash/Cancel key +3	D	Flash/Cancel key +#
B	Flash/Cancel key+6	PAUSE	Conference key
C	Flash/Cancel key+9		

Table 5-6: Dialing DTMF Tones

Example:



Display Set LCD

Step 5 Repeat steps 2 to 4 for each type of call that you want the voice mail system to recognize.

Step 6 Press the **Speaker** key. The Intercom lamp turns off. The display returns to showing the date and time.

Item No. 9 in the Table 5-5, Message Waiting, is a DTMF digit string that's sent from the voice mail system to the ONS Unit. A caller, forwarded from a station to the station's voice mailbox, can leave a message. If the caller leaves a message, the voice mail system will send this signal (default A) and the mailbox number to the ONS Unit. The ONS unit converts the mailbox number into the appropriate station number and sends a message waiting signal to the Panther station. The Intercom indicator lamp on the Panther set will flash to indicate that there is a message waiting. If the mailbox number doesn't correspond to a station, the Panther KSU sends busy tone to the voice mail system. Remember, the ONS station port that the voice mail system is connected to, must be programmed for Auto Intercom select, or a Message Waiting signal won't be sent to the Panther set.

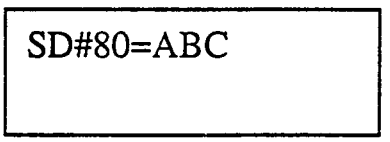
To confirm the digit strings that you've stored:

Step 1 Press the **Display** key on the Panther II Display Set at the Master Attendant Station. The Intercom lamp turns on steady and the display is blank.

Step 2 Press the **Speed** key.

Step 3 Enter the 3-digit code (from Table 5-5) that corresponds to the type of call (e.g., #80). The digit string stored for that code will be displayed.

Example:



Display Set LCD

Step 4 Repeat steps 2 and 3 for each digit string that you wish to confirm.

Step 5 Press the **Display** key. The Intercom lamp turns off. The display returns to showing the date and time.

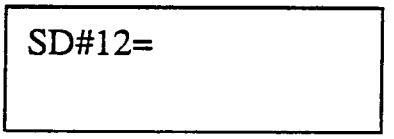
Programming Voice Mailbox Numbers

Each Panther station that requires a voice mailbox, requires a mailbox number. The mailbox number, which can be from one to three digits in length (i.e., 0 to 999), is programmed into the ONS Unit. The mailbox numbers are determined by the voice mail system and you must refer to the manufacturer's documentation to determine what they can be. The voice mailbox numbers for the stations default to the Panther Station number (e.g., Panther Station 12 is preprogrammed with the voice mailbox number 12).

To program voice mailbox numbers into the Panther system:

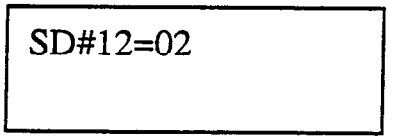
Step 1 Press the **Speed** key on the Panther II Display Set at the Master Attendant Station. The Intercom indicator lamp begins winking.

Step 2 Enter the #YY where YY is the desired station number. The selected station number is shown in the display. For example, if you dial #12 the display appears as follows:



Display Set LCD

Step 3 Enter the desired voice mailbox number (0 to 999). The display shows the mailbox number as you enter it. For example, if you dial 02 the display will appear as follows:



Display Set LCD

Step 4 Repeat steps 1 to 3 for each station that you wish to program with a voice mailbox.

Step 5 Press the **Speaker** key. The Intercom indicator lamp turns off. The display returns to showing the date and time.

To confirm the mailbox numbers that you've stored:

Step 1 Press the **Display** key on the Panther II Display Set at the Master Attendant Station. The Intercom lamp turns on steady and the display is blank.
Step 2 Press the **Speed** key.
Step 3 Enter the #YY where YY is the station number. The voice mailbox number for that station will be displayed.
Step 4 Repeat steps 2 and 3 for each mailbox number that you wish to confirm.
Step 5 Press the **Display** key. The Intercom lamp turns off. The display returns to showing the date and time.

Reseting the Digit Strings and Voice Mailbox Numbers

You can reset the digit strings (for the type of call) and the voice mailbox numbers to the default settings. Note that the following procedure also clears all common speed dial numbers and/or all private speed call numbers.

To reset the digit strings and/or the voice mailbox numbers:

Step 1 Dial *#015 on the Panther II Display Set at Station 10
Step 2 Dial 0701# to reset the data strings for the types of call. Note that all common speed dial numbers will also be cleared.
and/or
Dial 0702# to reset the voice mailbox numbers. Note that all private speed dial numbers will also be cleared.
Step 3 Dial * to exit programming mode.

Setting Conditions to Automatic Access

You can program the system to impose conditions on automatic access to the voice mail system. The system checks the validity of the data string for the type of call and the validity of the origin of the call (station or line number). If the data meets the programmed conditions, access to the voice mail system will be allowed. If the data doesn't meet the programmed conditions, access will be denied. These conditions don't apply to the Message Waiting signal that's sent from the voice mail system to the ONS Unit.

To program conditions to automatic access:

Step 1 Dial *#015 on the Panther II Display Set at Station 10
Step 2 Dial access code 058.
Step 3 Enter data code of the desired condition (Table 5-7)
Step 4 Press the # key to store the data
Step 5 Press the * key to exit programming

FEATURE	ACCESS CODE	CONDITION		DATA CODE
		DATA STRING	STATION/LINE NUMBER	
Automatic Access	058	Not Valid	Not Valid	0
		Valid	Not Valid	1
		Not Valid	Valid	2
		Valid	Valid	3

Default: Data code 1

Note: This table doesn't apply to the Message Waiting signal that's sent from the VM system to the ONS Unit

Table 5-7: Setting Conditions to Automatic Access

DTMF Digit Timing

When you dial the voice mailbox from a Panther set, the DTMF tones generated by the ONS Unit are true DTMF signals. However, for automatic access, you can adjust the DTMF tone duration to the specific duration required by your voice mail system. Table 5-8 lists the possible tone durations that you can program for automatic access.

To program the duration of the DTMF tones

Step 1 Dial *#015 on the Panther II Display Set at Station 10
Step 2 Dial access code 056
Step 3 Enter data code of the desired setting (Table 5-8)
Step 4 Press the # key to store the data
Step 5 Press the * key to exit programming

FEATURE	ACCESS CODE	DTMF TONE DURATION	DATA CODE
DTMF Tone Duration for Automatic Access	056	Approximately 100 ms*	0
		Approximately 200 ms	1
		Approximately 300 ms	2
		Approximately 400 ms	3

Notes: * = Default
Interdigit pause time is approximately 100 ms (fixed value)

Table 5-8: DTMF Digit Timing

Pause Duration for Automatic Access

DTMF strings identify the type of call to the voice mail system (see Table 5-5) during automatic access. As previously indicated, these DTMF strings can include Pause signals. You can program the duration of the Pause signal to the specific duration required by your voice mail system.

To program the Pause duration:

Step 1 Dial *#015 on the Panther II Display Set at Station 10
Step 2 Dial access code 057
Step 3 Enter data code of the desired setting (Table 5-9)
Step 4 Press the # key to store the data
Step 5 Press the * key to exit programming

FEATURE	ACCESS CODE	CONDITIONS	DATA CODE
Pause Time for Automatic Access	057	Approximately 100 ms	0
		Approximately 500 ms	1
		Approximately 1 s	2
		Approximately 2 s	3
		Approximately 3s	4

Default: Approximately 1 s

Table 5-9: Pause Duration for Automatic Access

Transfer Ringing Time

Transfer Ringing Time is the length of time a transferred call will ring at a set before the call is redirected to the originator, a sub-attendant or the master attendant. If you are programming your system for automatic access to a voice mail system, you must ensure that the Transfer Ringing Time is not too short. The Transfer Ringing Time must be greater than the total time required for the voice mail system to answer the call and for the ONS Unit to send the DTMF digit string to the voice mail system. If the Transfer Ringing Time is too short, a call forwarded to the voice mail system will be redirected before it is connected to a voice mailbox.

Transfer Ringing Time > Time required for VM system to answer a call + Time required for ONS Unit to Send DTMF digit string to VM system

To program the Transfer Ringing Time

Step 1 Dial *#015 on the Panther II Display Set at Station 10
Step 2 Dial access code 017
Step 3 Enter data code of the desired setting (Table 5-10)
Step 4 Press the # key to store the data
Step 5 Press the * key to exit programming

FEATURE	ACCESS CODE	CONDITIONS	DATA CODE
Transfer Ringing Time	017	10 seconds	0
		20 seconds	1
		30 seconds	2
		45 seconds	3
		1 minute	4
		1.5 minute	5
		Until call is Answered	6

Default: 30 seconds

Table 5-10: Transfer Ringing Time

Tone/Pulse C.O. Lines

This programming parameter determines the type of dialing, tone or pulse, for each C.O. line that is connected to the system. If the C.O. lines that are connected to your system can receive either tone or pulse signals, program the system for tone type C.O. lines.

To program the system for tone type C.O. lines:

Step 1 Dial *#015 on the Panther II Display Set at Station 10
Step 2 Dial access code 060XX where XX is the line number
Step 3 Enter data code 0
Step 4 Press the # key to store the data
Step 5 Repeat Steps 2 to 4 for each C.O. line
Step 6 Press the * key to exit programming

FEATURE	ACCESS CODE	CONDITIONS	DATA CODE
Tone/Pulse Type	060XX	Tone	0
		Pulse	1

Default: Tone

TABLE 5-11: Tone/Pulse C.O. Lines

Examples of Call Forwarding to Voice Mail

External Incoming Call to Voice Mail by Call Forwarding

Figure 5-2 shows an example of an external incoming call being directed to a voice mail box using the Call Forwarding feature. The steps listed below are shown in Figure 5-2.

1. Ian calls in on line 03 to Tony's station.
2. Tony's station is programmed to ring for line 03, but Tony has programmed his set for Call Forward Follow Me to Station 20.
3. Ian's call is forwarded to Station 20. Station 20 is connected to a port on the ONS Unit which is connected to a voice mail system. When the voice mail system answers, the ONS Unit sends the following DTMF digits to the voice mail system:

   PPD 03 02

   PPD = Type of call
   03 = C.O. line number
   02 = Tony's mailbox number

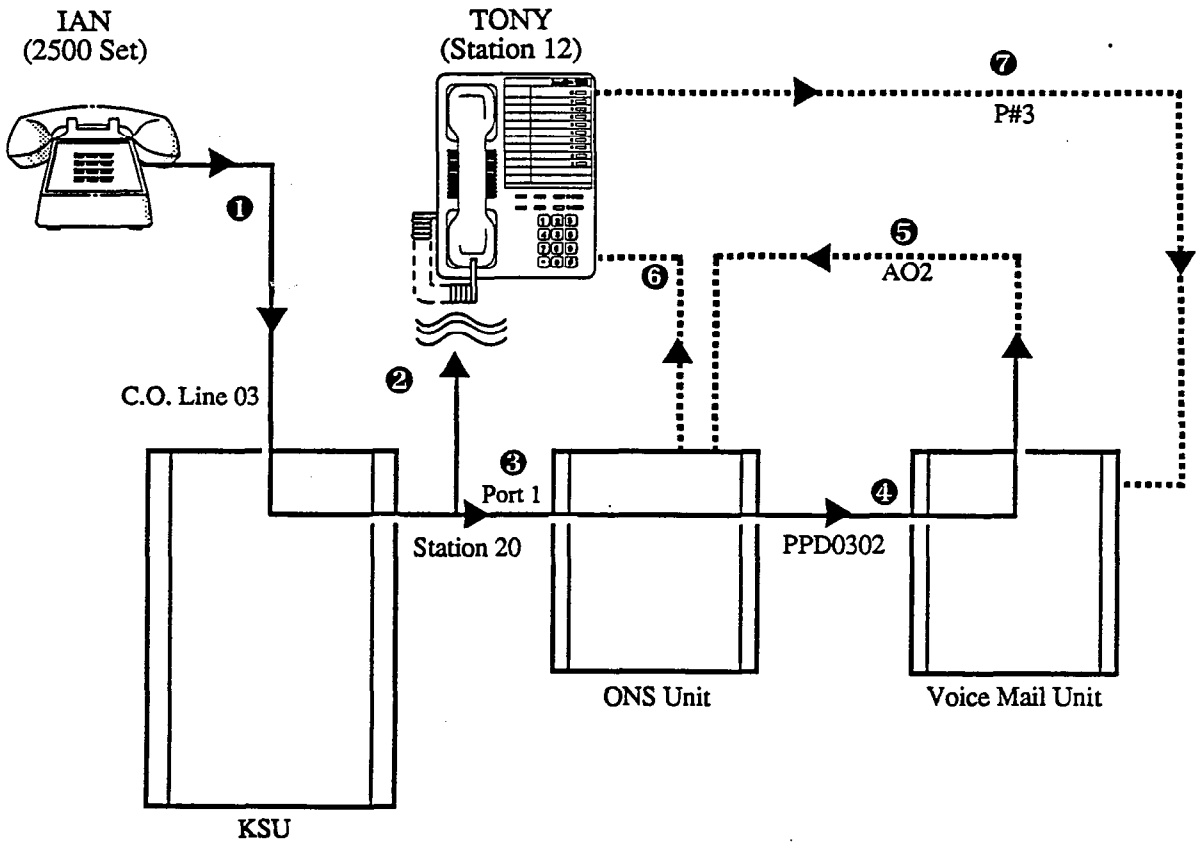
4. Ian is connected to Tony's mailbox and leaves a recorded message.
5. After Ian hangs up, the voice mail system sends the following DTMF string to the ONS Unit:

   A 02

   A = Message Waiting data string
   02 = Tony's mailbox number

6. In response to this DTMF string, the ONS Unit sends a Message Waiting signal to Tony's set. Tony's Intercom lamp flashes.

7. When Tony responds to the Message Waiting signal by pressing the # key or **Intercom** key, the ONS Unit sends the data string that's programmed for Message Waiting Answer to the voice mail system. The Message Waiting Answer data string (P#3 in this example) signals the voice mail system to connect Tony with his voice mailbox.



PROGRAMMING

Assume the system has been programmed with the following:

Automatic Access is programed for the following: Data string=valid; Station/line=valid

Station 12 is programmed with Call Follow Me to ONS Station 20

Data string for Call Forward Follow Me of a C.O. call = PPD

The voice mailbox for station 12 is programmed as 02

The data string for the Message Waiting is left as the default A

The data string for the Message Waiting Answer is P#3

Figure 5-2: Forwarding an External Call to Voice Mail

Internal Call to Voice Mail by Call Forwarding

Figure 5-3 shows an example of an internal call being directed to a voice mail box by Call Forwarding. The following steps are illustrated in Figure 5-3:

1. Sue places an internal call to Lilianna.
2. Lilianna is busy on her phone, but she has programmed her set for Call Forward Busy to Station 17, so Sue's call is forwarded to Station 17.
3. Station 17 is connected to a port on the ONS Unit which is connected to a voice mail system.
4. When the voice mail system answers, the ONS Unit sends the following DTMF digits to the voice mail system:

   A*D 16 155

   A*D = Type of call
   16 = Call Forwarding station
   155 = Lilianna's mailbox number

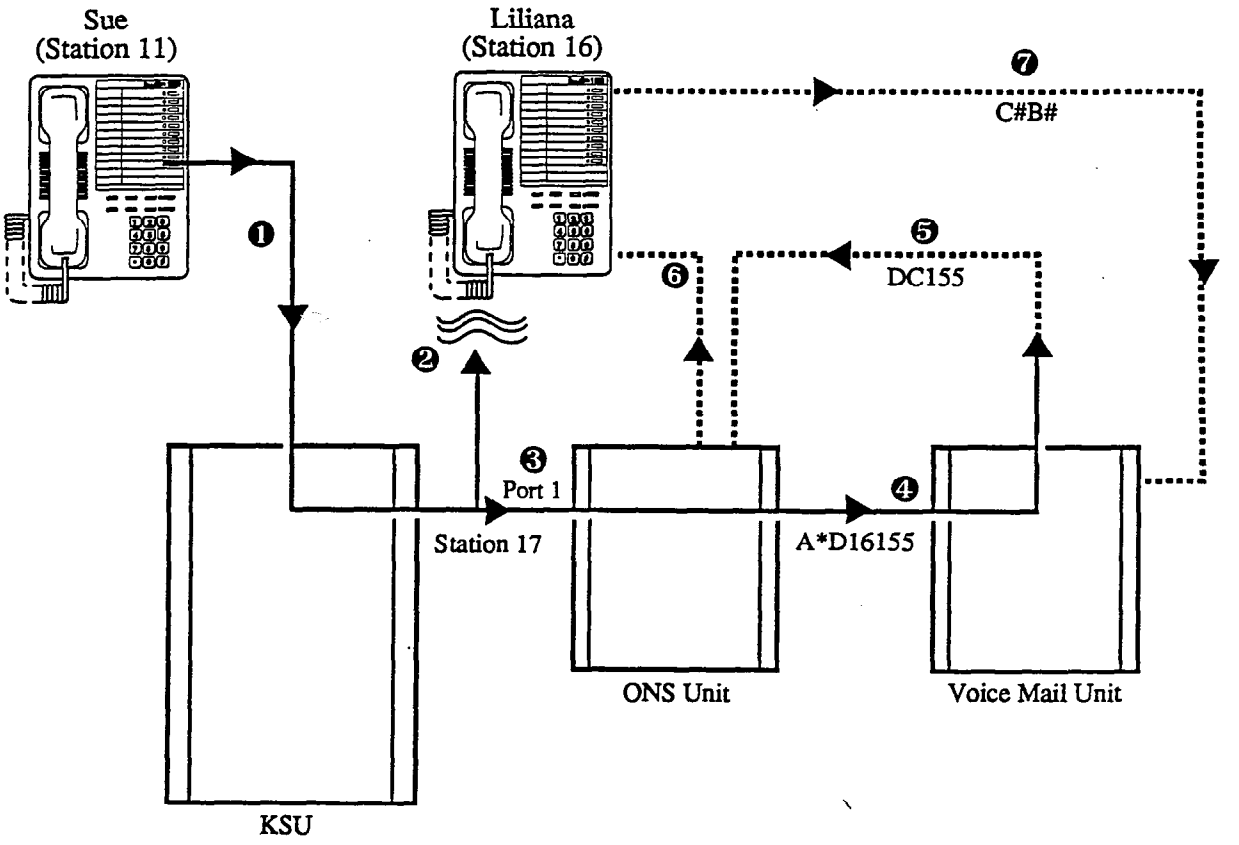
5. Sue is connected to Lilianna's mailbox and leaves a recorded message. After Sue hangs up, the voice mail system sends the following DTMF string to the ONS Unit:

   DC 155

   DC = Message Waiting data string
   155 = Lilianna's mailbox number

6. In response to this DTMF string, the ONS Unit sends a Message Waiting signal to Lilianna's set. Lilianna's Intercom lamp flashes.

7. When Lilianna responds to the Message Waiting signal by pressing the # key or **Intercom** key, the ONS Unit sends the data string that is programmed for Message Waiting Answer to the voice mail system. The Message Waiting Answer data string (C#B# in this example) signals the voice mail system to connect Lilianna with her voice mailbox.



PROGRAMMING

Assume the system has been programmed with the following:

Automatic Access is programed for the following: Data string=valid; Station/line=valid

Station 16 is programmed with Call Forward Busy to ONS Station 17

Data string for Call Forward Busy of an internal call = A*D

The voice mailbox for station 16 is programmed as 155

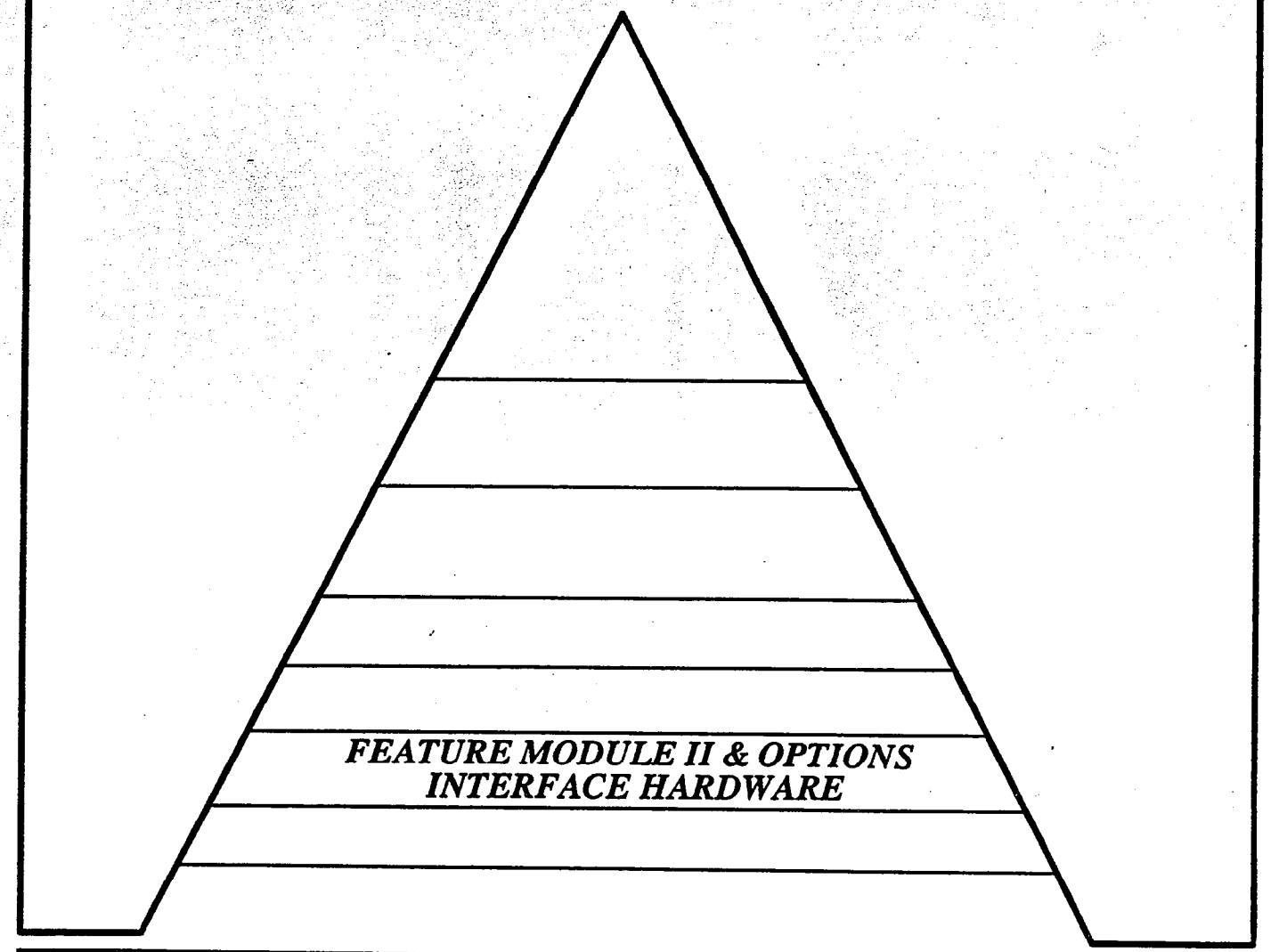
The data string for the Message Waiting is DC

The data string for the Message Waiting Answer is C#B#

Figure 5-3: Forwarding an Internal Call to Voice Mail

Panther® II

SYSTEM MANUAL



FEATURE MODULE II & OPTIONS INTERFACE HARDWARE

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TRILLIUM
telephone systems

F-3623-1

Panther ® II 820/1032/2064
Electronic Key Telephone System

FEATURE MODULE II & OPTIONS INTERFACE HARDWARE

TABLE OF CONTENTS PAGE

1. INTRODUCTION

GENERAL

1.01 This Practice provides instructions for installing and programming Panther II 820/1032/2064 Systems with Feature Module II and Options Interface Hardware.

REASON FOR ISSUE

1.02 This is the first issue of this Practice. It is one of the set of Practices written to assist a craftsperson install, operate and maintain the system in the field.

2. FEATURE MODULE II SOFTWARE

GENERAL

2.01 In addition to providing the Panther II features outlined in the *Feature & Services Practice* of the *Panther II System Manual,* Feature Module II software provides Panther II 820/1032/2064 Systems with the following:

- additional Programmable Feature Keys,
- enhanced displays for Transfer Ringing Return, and
- Remote Programming and System Status (RPASS).

INSTALLATION

2.02 The Feature Module II Cartridge plugs into a port on Panther II 820 or 1032 Key Service Units. If you're installing the system for the first time follow the procedure outlined under the sub-heading *Initial Installation*; if you're replacing the Feature Module Cartridge in an existing installation follow the procedure given under the sub-heading *Replacing the Feature Module Cartridge.*

> CAUTION: Follow the instructions carefully. If you don't install the Feature Module II Cartridge correctly, you could damage the software on the Feature Module II Cartridge, or worse, damage the software in the Key Service Unit (KSU).

Initial Installation (for previously installed systems, go to the next section)

The following instructions detail initial installation of the Feature Module II Cartridge.

> CAUTION: Don't plug in the KSU power cord until you are instructed to do so.

Step 1. Mount the KSU as per the instructions in the *Installation and Commissioning Practice* of the *Panther II System Manual.*

Step 2. There are two small grooves on the Feature Module II Cartridge connector. Holding the Feature Module II Cartridge so that the grooves are facing you, plug it securely into the port on the KSU (refer to the close-up shown in Figure 2-1). Place the protective cover over the Feature Module II Cartridge, push in the plastic expansion plugs, and tighten the two screws.

Step 3. Install the remainder of the system as outlined in the *Installation and Commissioning Practice* of the *Panther II System Manual.* After the system is completely installed, including the stations, plug in the KSU power cord. Ensure the STATUS lamp on the side panel of the KSU is flashing.

Step 4. Set the MEM. CLEAR Switch to the ON position. The MEM. CLEAR Switch (dipswitch #2) is located on the right-hand side panel of the KSU.

Step 5. Press the RESET Switch.

Step 6. Set the MEM. CLEAR Switch to the OFF position. The system is now reset to the default settings.

Step 7. Set the Battery Switch for the KSU memory to the ON position. The Battery Switch (dipswitch #4) is located on the right-hand side panel of the KSU.

Step 8. You must now program the system. Refer to the *Programming Practice* in the *Panther II System Manual* for instructions. You'll find programming instructions for the additional features provide by Feature Module II software in this Practice.

Replacing the Feature Module Cartridge

The following instructions detail the replacement of a Feature Module Cartridge in an existing installation.

Step 1. Set the MEM. CLEAR Switch to the ON position. The MEM. CLEAR Switch (dipswitch #2) is located on the right-hand side panel of the KSU.

Step 2. Press the RESET Switch.

Step 3. Set the MEM. CLEAR Switch to the OFF position. The system is now reset to the default settings.

Step 4. Ensure the BATTERY Switch for the KSU memory is in the ON position. The Battery Switch (dipswitch #4) is located on the right-hand side panel of the KSU.

Step 5. **Unplug the KSU power cord.** Telephone service will be disconnected.

Step 6. Remove the Feature Module Cartridge protective cover. The protective cover, located half-way down the right-hand side of the KSU, is secured by two screws and two plastic expansion plugs. Loosen the two screws, pull back the plastic expansion plugs and remove the protective cover.

Step 7. Unplug the installed Feature Module Cartridge from the port on the side of the KSU.

Step 8. There are two small grooves on the Feature Module II Cartridge connector. Holding the replacement Feature Module II Cartridge so that the grooves are facing you, plug it securely into the port on the KSU (refer to the close-up shown in Figure 2-1).

Step 9. Plug in the KSU power cord.

Step 10. Replace the protective cover over the Feature Module II Cartridge, push in the plastic expansion plugs, and tighten the two screws. Replacement of the Feature Module Cartridge is complete.

Step 11. You must now program the system with the customer's feature selections. Refer to the *Programming Practice* in the *Panther II System Manual* for instructions. Programming instructions for the additional features provided by Feature Module II software are given in this Practice.

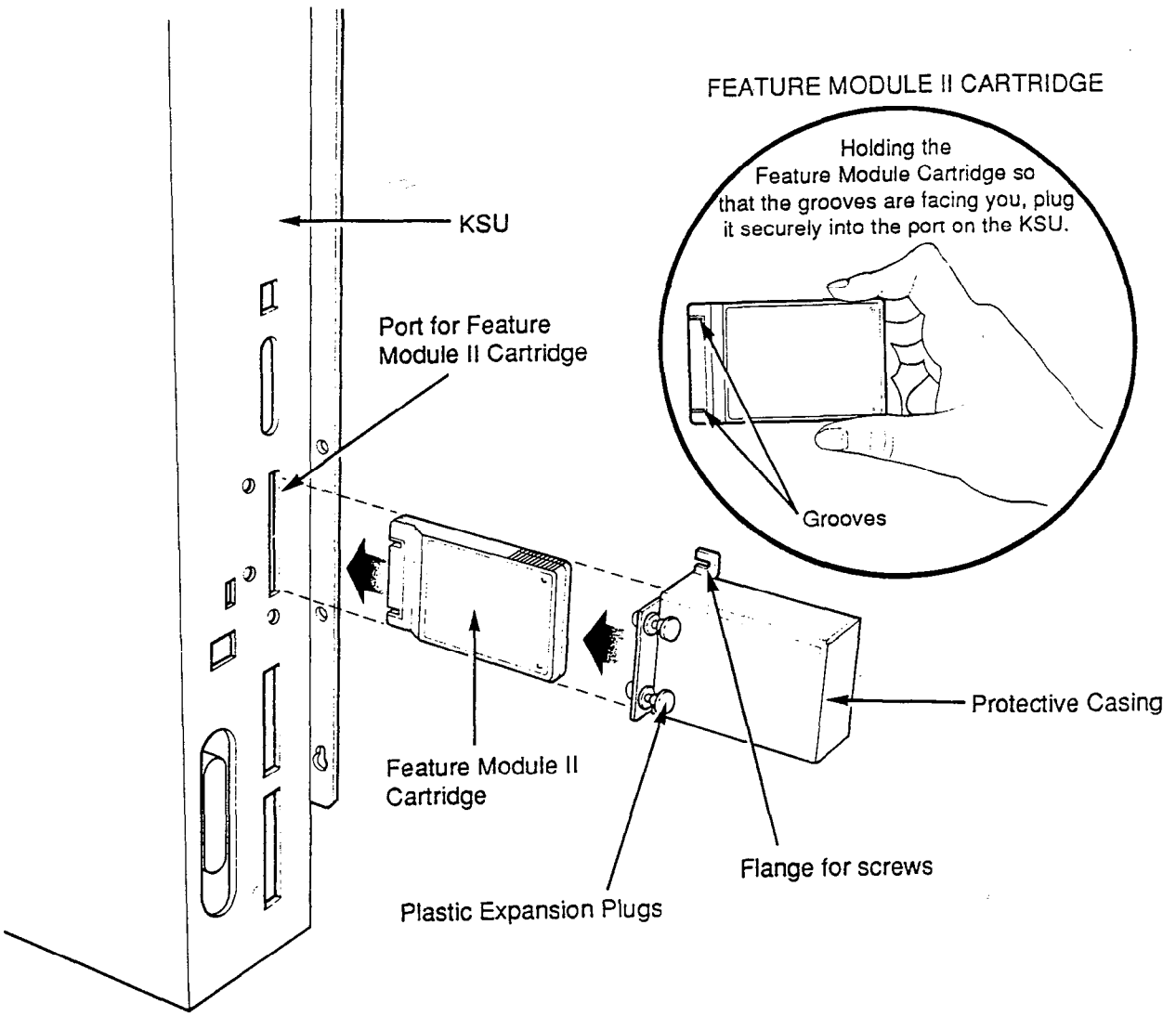


Figure 2-1 Installing the Feature Module II Cartridge

ADDITIONAL FEATURES

2.03 This section provides descriptions and programming instructions for the additional features that are available with Feature Module II software.

Additional Programmable Feature Keys

Panther II systems allow you to program feature codes into the line keys and Direct Station Select (DSS) keys that are located on the set's designation card (i.e., the line/DSS keys that are located above the fixed function keys). Once you've programmed a line/DSS key with a feature code, instead of accessing a line or station the key will provide you with easy access to the feature.

You can program the following features into the programmable line/DSS keys of Panther Sets that are connected to Panther II 820/1032/2064 Systems:

Feature	Code
Saved Number Redial	050
Call Pickup - Local	057
Call Pickup - Remote	058
Night Pickup	059
Do Not Disturb	060
Program	061
Unused key	062

Feature Module II software allows you to program an additional eight features into programmable line/DSS keys:

Feature	Code
Service*	056
Background Music	063
All Call Page	064
External Page	065
Executive Override	066
Answer All Call Page & Answer External Page	067
Relay Control OFF	068
Relay Control ON	069

* The **Service** key must be programmed for your Panther II Display Set before you can use Remote Programming and System Status, to program another system.

Programming

Feature keys are programmed at each individual set. To program a line/DSS key to activate a feature:

Step 1. Dial *# (or press the **Program** key) at the set.

Step 2. Dial the digit 4.

Step 3. Press the line/DSS key that you wish to program. Remember, you can only program line/DSS keys that are located on the set's designation card.

Step 4. Dial the code of the desired feature (e.g., dial 063 to program the key to activate background music).

Step 5. Press * to exit programming.

Note that you can return a key to its default setting by entering code 000 in Step 4.

Operation

Refer to the Panther II Feature Module II User Guide for details on how to use the programmable keys.

Operating Notes

- The indicator lamps beside keys that have been programmed as features won't indicate the status of the feature. For example, when the Relay Control ON key is pressed the relay is activated, but the indicator lamp beside the Relay Control ON key doesn't turn on.
- Before you can use a Relay Control ON key or a Relay Control OFF key, the system must be programmed for *Relay Control* and for either *Automatic or Manual Relay Control*. If the system is programmed so that the relay automatically returns to off (default setting), then obviously you won't require a Relay Control OFF key. Refer to the *Programming Practice* in the *Panther II System Manual* for instructions on how to program these parameters.
- Relay Control ON/OFF keys only work at stations that have been programmed for *Relay Access*. The Master Attendant Station is the only station preprogrammed with *Relay Access*.
- Before you can use the Executive Override key at a set, the set must be programmed with *Executive Override* capability.
- A music source must be connected to the KSU before a Background Music key can be used to activate background music.

Transfer Ringing Return Displays

Feature Module II software provides displays for the Transfer Ringing Return feature. When an incoming external call is transferred to another station, if the call isn't answered within a programmable time period the call will either:

- return to the station that transferred the call, then be sent to the Master Attendant Station (or sub-attendant, if sub-attendants are programmed),
- be sent directly to the Master Attendant Station (or sub-attendant, if sub-attendants are programmed), or
- not be returned (i.e., ring at the station that the call was transferred to, until the call is answered).

For the first transferred call that is returned, the liquid crystal display on a Panther II Display Set will identify the station that the call is being returned from, and the line that the call is on.

Programming

The callback destinations are programmed individually for each station using *Transfer Ringing Return*. The length of time that the call will ring at an unanswered set before being returned is programmed using *Transfer Ringing Time*. Refer to the *Programming Practice* in the *Panther II System Manual* for instructions on how to program these parameters. The default settings for these parameters are as follows:

Transfer Ringing Return - returns call to the station that initially transferred the call, then sends the call to the Master Attendant Station.

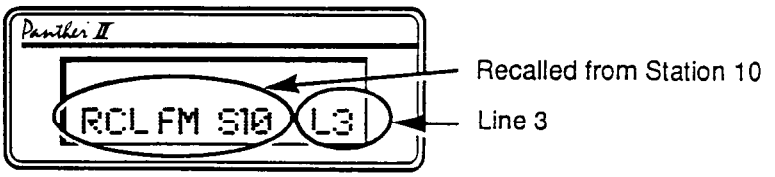
Transfer Ringing Time - 30 seconds.

Operation

If a transferred call is returned to a Panther II Display set, the liquid crystal display will show:

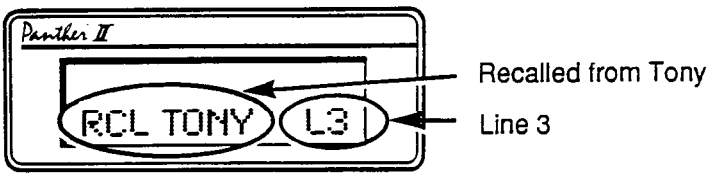
- the number of the station that the call is being returned from, and
- the line number of the call.

Example:



If a name has been programmed for the station that the call is being recalled from, the name instead of the station number will appear in the liquid crystal display.

Example:



Operating Notes

Assume your station is programmed to have unanswered, transferred calls returned to your set, then returned to the Master Attendant Station. If you transfer two incoming external calls to different stations and neither of the transferred calls are answered, the first call will be returned to your set and the second will be camped on. However, if the second call is returned while the first call is ringing at your set, the second call will be rerouted to the Master Attendant Station.

Remote Programming and System Status

The Remote Programming and System Status (RPASS) feature allows Panther II 820/ 1032/2064 Systems to be programmed from a remote location. Basically, it's designed to allow a dealer, using a Panther II Display Set, to program a customer's Panther II system from his/her office.

Using the RPASS feature doesn't require any additional hardware at either the dealer's premises or the customer's premises. However, both the dealer and the customer must have a Panther II system with Feature Module II software. Although the dealer must have a Panther II Display set, the customer doesn't require one.

Preparation

Before you can use RPASS, you must install a Panther II Display set at your Station 10 and program it with a **Service** key (refer to the previous section *Additional Programmable Feature Keys* for instructions on how to program a **Service** key).

You also require the 4-digit RPASS access code of the Panther II system that you wish to program. This 4-digit access code must be programmed into the customer's system at the customer's premises prior to using RPASS. There is no preprogrammed value for this code.

To program a customer's Panther II system with a 4-digit RPASS access code:

Step 1. At the customer's premises go to Station 10.

Step 2. Dial *# (or press the **Program** key) on the set.

Step 3. Dial 015. The Intercom indicator lamp turns on and the display confirms that you are in programming mode.

Step 4. Dial 028. The Intercom indicator lamp flashes quickly.

Step 5. Enter the desired 4-digit RPASS access code.

Step 6. Dial # to store the code. The Intercom indicator lamp comes on steady.

Step 7. Dial * to exit programming mode.

Using RPASS to Program a Customer's System

Once a 4-digit RPASS access code has been programmed, you can use RPASS to program the customer's system from a Panther II Display Set in your office. To program a customer's system using RPASS:

Step 1. Call the customer from the Panther II Display Set at your Station 10. Ensure the line that you are using is programmed for tone dialing (see the section, *Tone or Pulse* in the *Programming Practice* of the *Panther II System Manual*).

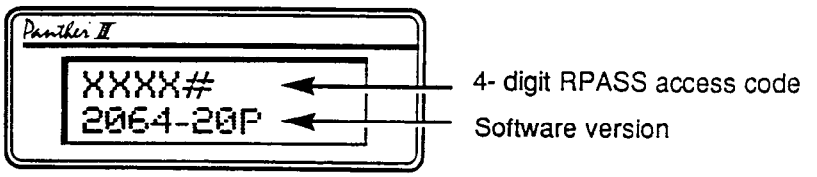
Step 2. When your call is answered, ask the person who answers if you're connected with the Master Station (default Station 10). If you aren't, request that your call be transferred to the Master Station.

Step 3. When you're connected with the customer's Master Station, instruct the person you're speaking with to:

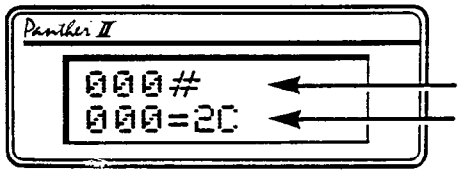
- press the **Conference** key, and
- dial #01.

The indicator lamp of line that you're using for RPASS will flash very slowly. While you're programming the system, the person at the Master Station can use his/her set; however, the line being used for RPASS programming will be busy. In addition programming can't be accessed from the customer's premises until you release the RPASS connection.

Step 4. Dial #, press the **Service** key, enter the 4-digit RPASS access code and dial # again. The type and software version of the system you are programming will be displayed in the set's liquid crystal display. You are now in programming mode.



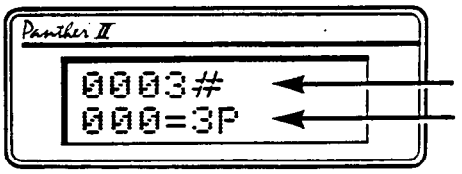
Step 5. Dial the 3- to 7-digit access code of the feature you wish to change, then dial #. (The feature access codes are given in the *Programming Practice*). Each digit will be displayed in your set's liquid crystal display as you dial it. The setting currently programmed for the feature will be displayed.



Access code 000 for Hold Recall Time

Current setting for Hold Recall Time Data Code = 2 so Hold Recall Time is Programmed for 1 minute.

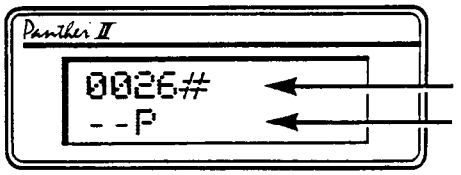
Step 6. To change the current setting, dial the access code again, dial the data code of the desired feature setting, then press the # key (data codes and possible feature settings are also given in the *Programming Practice*). Your selection will appear in the display.



To change current feature setting, enter the access code again followed by the data code of the desired setting; then dial #.

New setting appears in the display.

If you enter an ineligible access or data code "--P" will be displayed. If you make an error simply re-enter the access and data codes correctly, then dial #.

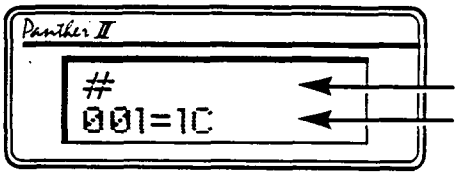


An ineligible data code.

Indicates an error.

Step 7. Repeat Steps 5 and 6 for each additional feature you wish to change.

Step 8. To confirm your programming selections enter the first access code by dialing 000#. Press # to step through each access code. The data code currently programmed for each access code will be displayed.



Press # to step to the next feature.

The access code and data code programmed for the system are displayed.

Step 9. Press the * key to exit programming and release the line. Programming is complete.

Step 10. Hang up the handset or, if handsfree, press the **Speaker** key.

Operating Notes

- If you hang up while using RPASS, the system will automatically release the line. The system will also release the line if you don't press any keys for 3 minutes.
- You can't use the **Flash/Cancel** key to delete an inputting error or use the **Hold** key to increment the access code during RPASS programming.
- The customer won't be able to enter programming mode from their Station 10 while you're using RPASS to program their system. Conversely, if the customer is in programming mode at their Master Attendant Station, you won't be able to enter programming mode on their system using RPASS.

3. OPTIONS INTERFACE HARDWARE UNIT

GENERAL

3.01 When used with Feature Module II software, the Options Interface Hardware Unit enhances the operation of Panther II systems by providing the following new features:

- Amplified Lines,
- Trunk to Trunk Conference,
- External Call Forward, and
- Direct Inward System Access.

Note that you can only use the Options Interface Hardware Unit if your system has Feature Module II software. In addition the Options Interface Hardware Unit uses the following stations on the Key System Unit (KSU):

- Stations 28 to 29 on the Panther II 820 System
- Stations 28 to 33 on the Panther II 1032 System
- Stations 28 to 33 on the Panther II 2064 System

Therefore, sets connected to these stations will be inoperative.

INSTALLATION

3.02 The Options Interface Hardware Unit connects to a port on Panther 820 or 1032 Key Service Units. Follow the procedure listed below to install the Options Interface Hardware Unit.

Step 1. Ensure the Battery Switch for the KSU memory is in the ON position. The Battery Switch (dipswitch #4) is located on the right-hand side panel of the KSU.

Step 2. Unplug the KSU power cord. Telephone service will be disconnected.

Step 3. Remove the woodscrew from the bottom right-hand flange of the KSU.

Step 4. Position the Options Interface Hardware Unit connection plate over the screw hole in the bottom right-hand flange of the KSU (refer to Figure 3-1). Then, replace the screw you removed in Step 3.

Step 5. Mount the Options Interface Hardware Unit to the right of the KSU on the wooden backboard. Align the screw hole in the bottom left-hand corner of the Options Interface Hardware Unit with the screw hole in the connection plate (as shown in Figure 3-4). Fasten the Options Interface Hardware Unit to the wooden backboard with the four wood screws.

Step 6. There's a short strip of black tape along the lower right-hand side of the KSU that covers two ports. Starting at the top of the tape, peel it back to expose the top port (refer to Figure 3-2). Cut off the excess tape.

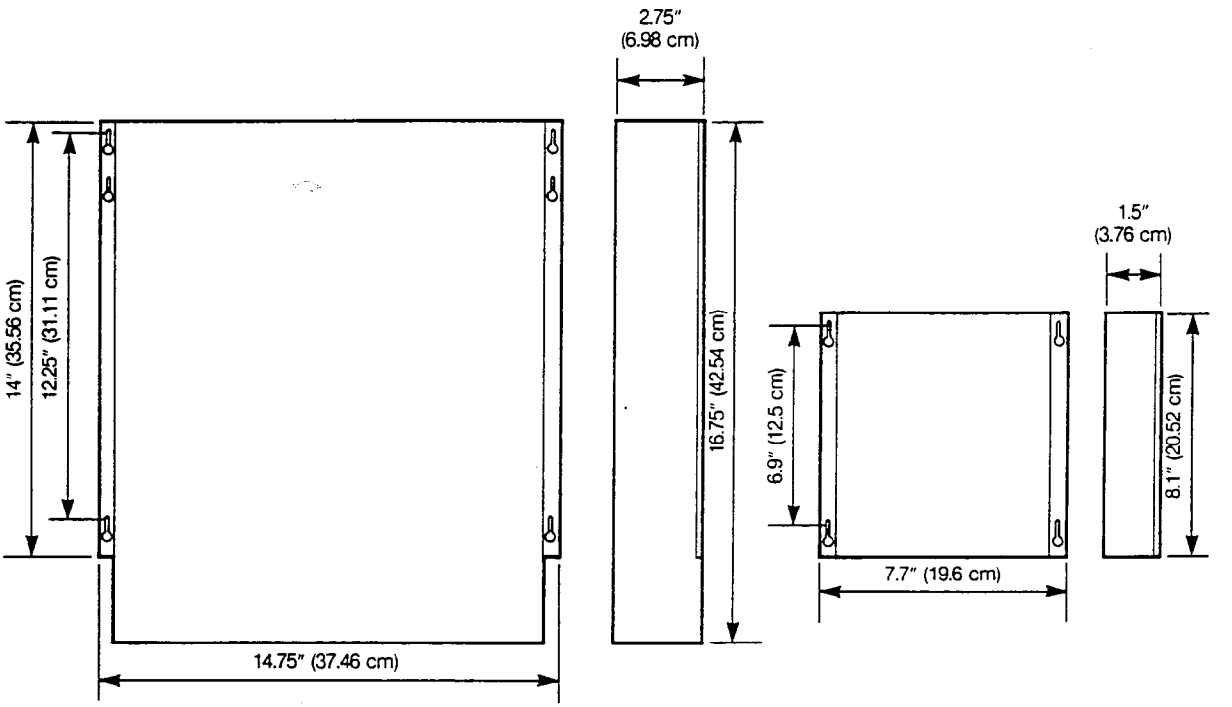


Figure 3-1 Mounting the Options Interface Hardware Unit

Step 7. Plug one end of the supplied ribbon cable into the port that you uncovered in Step 6. Refer to Figure 3-3 to locate the correct port on the KSU. The connector fits into the port only one way. Don't attempt to force the connector into the port.

Step 8. Plug the other end of the ribbon cable into the port on the left panel of the Options Interface Hardware Unit.

Step 9 Plug in the KSU power cord.

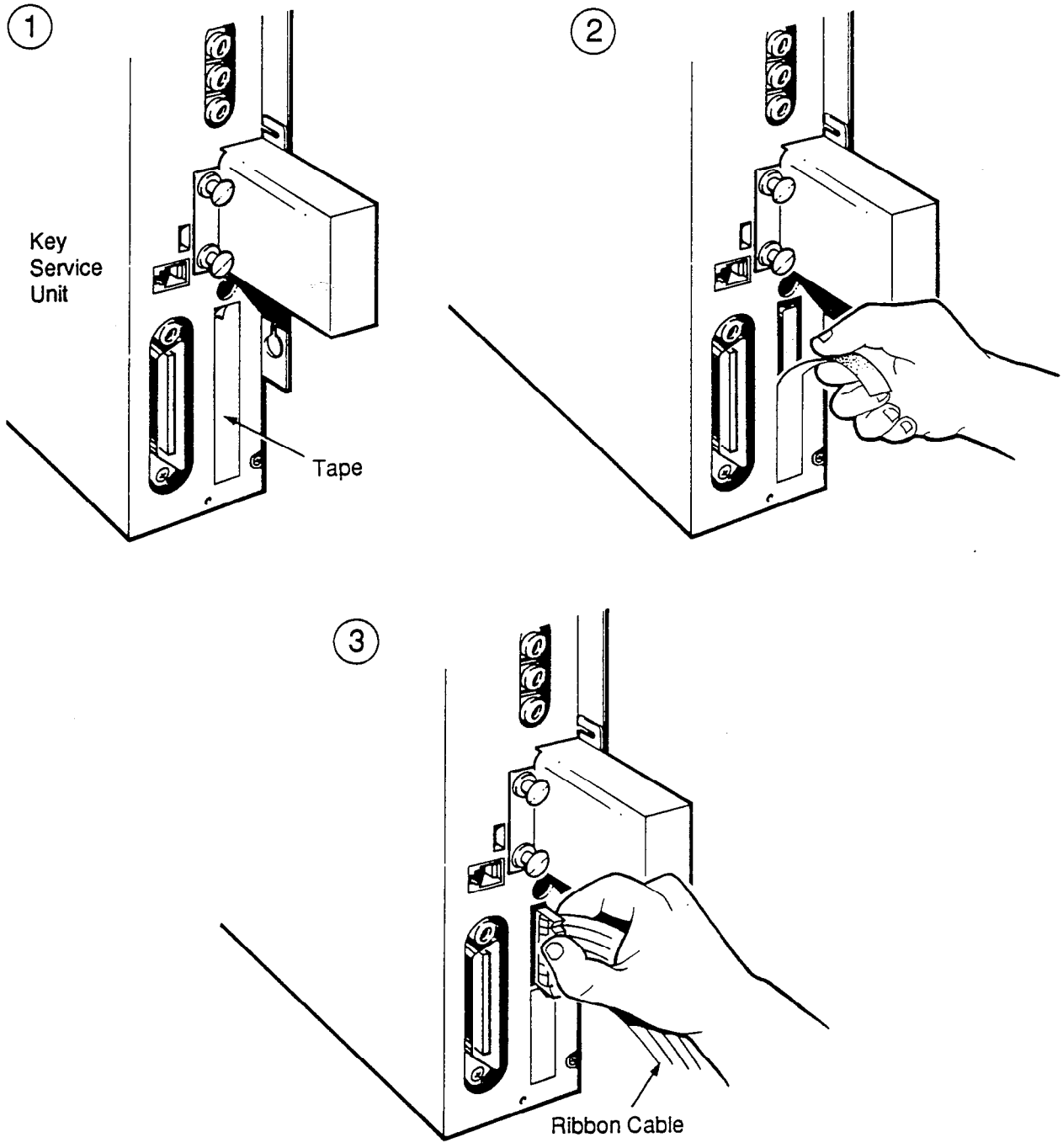


Figure 3-2 Exposing the Port for the Ribbon Cable

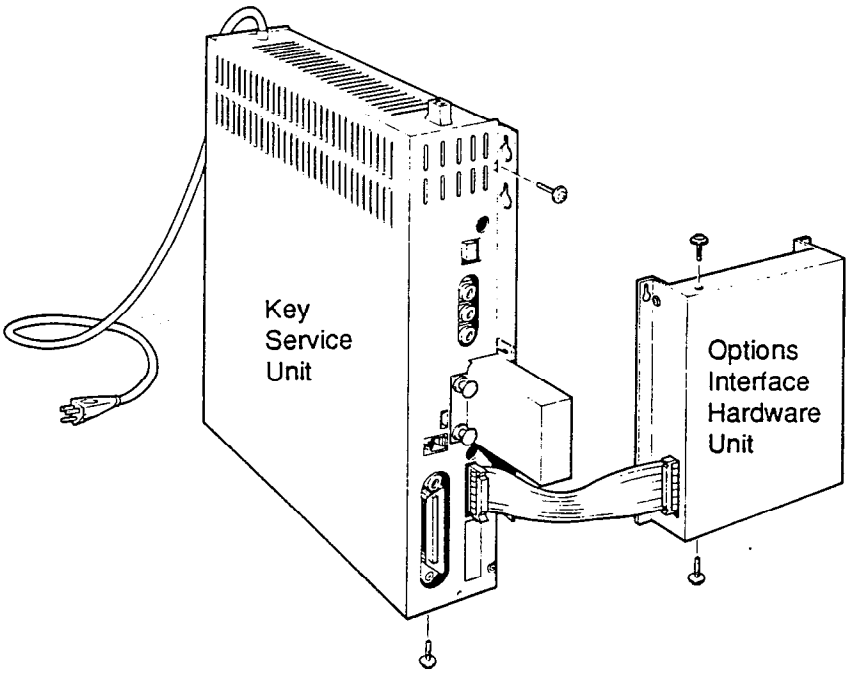


Figure 3-3 Connecting the Ribbon Cable

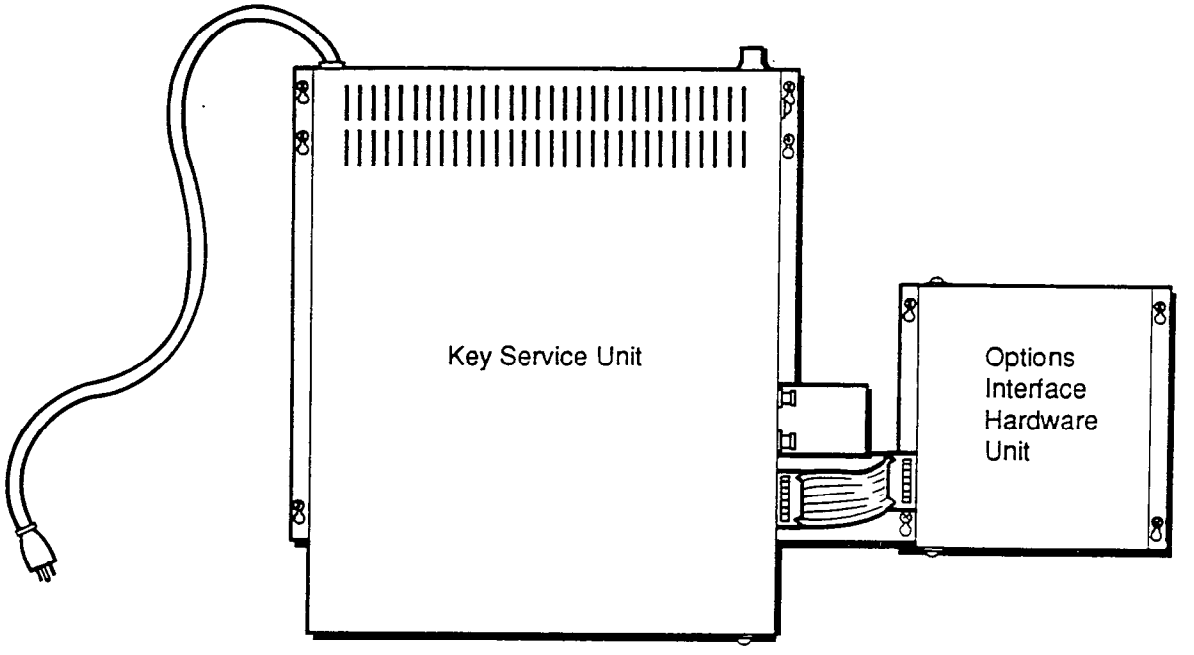


Figure 3-4 Installation Complete

FEATURES

3.03 This section provides descriptions and programming instructions for the features made available by the Options Interface Hardware Unit.

Amplified Lines

Normally, during an external conference there is a slight reduction in the voice signals over the C.O. lines. To remedy this inconvenience, the Options Interface Hardware Unit has a built-in amplifier that compensates for reductions in the voice signals on external conference calls.

External conference calls can be set up with either amplified lines or non-amplified lines. If you initiate a external conference call and you hear two bursts of tone, the lines you are using are amplified. If you hear a single burst of tone, then the external conference has been established with non-amplified lines.

The Options Interface Hardware Unit can amplify any four C.O. lines at one time. Trunk to Trunk Conference, External Call Forwarding and external calls using Direct Inward System Access each require two amplified lines. If you set up an external conference when all the amplified lines are busy, you will hear a single tone. The single tone indicates that you aren't using amplified lines and that you can't set up a Trunk to Trunk Conference. If you try to use External Call Forwarding or Direct System Inward Access when all the amplified lines are busy, you will hear continuous ringing.

Trunk to Trunk Conference

The Options Interface Hardware Unit allows you to set up trunk to trunk conferences using amplified lines. When you're on an external conference call, you can hang up while allowing the two external parties to remain connected for a preprogrammed length of time. Before the preprogrammed time period expires, the outside parties will hear an 11-second tone. Either party can restart the preprogrammed time period by dialing * during the tone. If neither person dials *, they will be disconnected at the end of the 11-second tone.

Programming

The length of time that the external parties remain connected after you hang up is programmable. The possible selections are: 0 minutes, 3 minutes (default setting), 5 minutes and 10 minutes. To change the default setting:

Step 1. At Station 10, dial *# (or press the **Program** key).

Step 2. Dial 015. The Intercom indicator lamp turns on and the display confirms that you're in programming mode.

Step 3. Dial 024 (access code for Trunk to Trunk Conference). The Intercom indicator lamp flashes quickly.

Step 4. Dial the data code of your selection:

Length of Time	Data Code
0 minutes (No Trunk to Trunk Conferencing)	0
3 minutes (default setting)	1
5 minutes	2
10 minutes	3

Step 5. Dial # to store your selection. The Intercom indicator lamp comes on steady.

Step 6 Dial * to exit programming mode.

Operation

You must establish an external conference call on amplified lines before you can set up a Trunk to Trunk Conference:

While on an external call,

- Press the **Hold** key
  The call will be placed on hold and the line indicator lamp will flash quickly.
- Press the key of an external line
- Dial the desired telephone number
  After the called party answers,
- Press the **Conference** key
- Press the line key of the call on hold

If you hear two short bursts of tone, you have set up the conference on amplified lines. You must be using amplified lines to set up a Trunk to Trunk Conference. If you hear a single burst of tone, you aren't using amplified lines and won't be able to set up a Trunk to Trunk Conference.

*During the conference call, you can hang-up and the two external parties will remain connected for a preprogrammed length of time (providing the conference was set up using amplified lines and the system is programmed for Trunk to Trunk Conferencing). Before hanging up, tell the external parties that they can expect to hear an 11-second warning tone before being disconnected. Explain to them that if they wish to continue their conversation either of them can restart the timer by dialing * during the tone. If neither party dials *, the call will be disconnected at the end of the 11-second tone. Note that the party that dials the * must have a tone dial set.*

Before either party hangs up, one of them must dial 0# to release the lines. If neither party dials 0# before hanging up, the system will automatically release the lines when the preprogrammed time for Trunk to Trunk Conferences has expired.

You can re-enter a Trunk to Trunk Conference anytime before the preprogrammed time period expires. To re-enter a Trunk to Trunk Conference:

With the handset in the cradle,

- Dial *, press the line key of one of external lines being used for the conference
  or
  Dial *0, dial the line number (01-20) of one of the external lines being used for the conference
  Two tones announce your entry into the call in progress.
- Lift the handset.

Operating Notes

If you exit and then re-enter a Trunk to Trunk Conference, the timer for the Trunk to Trunk Conference will be restarted when you hang up.

Direct Inward System Access (DISA)

The Direct Inward System Access (DISA) feature allows you to call into the Panther II system from a telephone located outside the office and--

- place calls using Panther II system C.O. lines, or
- make internal calls directly to Panther stations.

You are most likely to use DISA to make work-related, long-distance calls from your home phone, from a local telephone in a client's office, or from a pay phone, during or after normal working hours. The advantage of using DISA is that you're making your long-distance call on one of the Panther system C.O. lines, so the call will be billed to your office and not to the telephone that you're calling from.

You can also use DISA to place an internal call directly to a station in the office. This saves you from having to go through the Master Attendant to call a station.

Two amplified lines are required to place an external call using DISA, but amplified lines aren't required to place a DISA call to a station in the office. So, you can be using DISA to call a station and there will still be four amplified lines available for Trunk to Trunk Conferences, External Call Forwarding or for making external calls using DISA. However, if all four of the system's amplified lines are being used when you try to access the system on the DISA line, you will hear continuous ringing and must try again later.

Programming

Any two C.O. lines may be programmed as incoming DISA lines. The only exception to this rule is that you can't program an incoming ECF line as a DISA line.

Once you've accessed the system using DISA, you can call any station, or use any C.O. line to make an external outgoing call. However, before you can access the system, you must enter a 4-digit DISA access code. Since there is no default value for this code, you must program at least one DISA access code. Up to four DISA access codes can be programmed for the system.

You can program each of the incoming DISA lines separately for Day or Night Mode operation. Each of the lines can have one of four possible settings:

- Day off/Night off - DISA won't work during the Day or Night Mode (default setting),
- Day on/Night off - DISA will work only during Day Mode,
- Day off/Night on - DISA will work only during Night Mode, or
- Day on/Night on - DISA will work during both Day and Night Mode.

You can also change the default setting of the release time for the DISA feature. The release time determines the length of time allowed for an external call made using the DISA feature. Note that the length of time you select also determines the release time for the ECF feature.

In summary, the parameters that you must program for DISA are:

- incoming lines for DISA,
- the DISA access codes,
- Day/Night Mode for incoming line 1,
- Day/Night Mode for incoming line 2 (if programmed), and
- the DISA/ECF release time.

Follow the procedure listed below to program the system for DISA:

Step 1. At Station 10, dial *# (or press the **Program** key).

Step 2. Dial 015.

Step 3. Program the incoming DISA lines:

a. Dial access code 0300=XX where XX=the number of the line desired for incoming DISA line 1.
b. Dial # to store the line number.
If a second incoming DISA line is desired,
c. Dial access code 0301=XX where XX=the number of the line desired for incoming DISA line 2.
d. Dial # to store the line number.

Default: No lines programmed for DISA.

Note: Later, you may want to disable DISA. To disable DISA line 1 enter access code 0300=00 in step a. To disable DISA line 2, enter access code 0301=00 in step c.

Step 4. Program the desired DISA access codes:

a. Dial 0290XXXX# where XXXX=the desired 4-digit code for the first DISA access code.
b. Dial 0291XXXX# where XXXX=the desired 4-digit code for the second DISA access code.
c. Dial 0292XXXX# where XXXX=the desired 4-digit code for the third DISA access code.
d. Dial 0293XXXX# where XXXX=the desired 4-digit code for the fourth DISA access code.

Default: No codes.

Step 5. Program the Day/Night Mode selection for incoming DISA line 1.

a. Dial access code 0380.
b. Dial data code 0 for Day off/Night off (default setting),
1 for Day on/Night off,
2 for Day off/Night on, or
3 for Day on/Night on.
c. Dial # to store your selection.

Step 6. Program the Day/Night Mode selection for incoming DISA line 2 (only if you programmed an incoming DISA line 2 in Step 3).
a. Dial access code 0381.
b. Dial data code 0 for Day off/Night off (default setting),
1 for Day on/Night off,
2 for Day off/Night on, or
3 for Day on/Night on,
c. Dial # to store your selection.

Step 7. Enter the desired release time. Note that the length of time selected will also determine the release time for ECF. To program the DISA/ECF release time:
a. Dial access code 027.
b. Dial data code 0 for 30 seconds,
1 for 1 minute (default setting),
2 for 2 minutes,
3 for 3 minutes,
4 for 5 minutes, or
5 for 10 minutes
c. Dial # to store the release time.

Step 8. Press * to exit programming.

Operation

You can only use the DISA feature from a tone dial (DTMF) telephone.

To make an internal call to a station:
- Call into the office on an incoming C.O. line that is programmed for DISA
  You will hear two bursts of ringing and then the system automatically provides internal dial tone.
- Dial #XXXX# (where XXXX=the 4-digit DISA access code)
  If you enter the code correctly you'll hear internal dial tone; if you enter it incorrectly, you will hear an error tone. If you hear error tone, you must hang up and call again.
- Dial # then dial the number (10-73) of the desired station
  *You will hear internal ringing tone. If your call isn't answered you may dial *, dial # then dial the number of another station, or dial * and hang up. If your call is answered, when you finish your conversation, simply*
- Hang up to end the call

To access a C.O. line and place an outgoing call:
- Call into the office on an incoming C.O. line that is programmed for DISA
  You will hear two bursts of ringing and then the system automatically provides internal dial tone.
- Dial #XXXX# (where XXXX=the 4-digit DISA access code)
  If you enter the code correctly you'll hear internal dial tone; if you enter it incorrectly, you will hear an error tone. If you hear error tone, you must hang up and call again.
- Dial 3, then dial the number (01-20) of the desired line
  *You will hear internal dial tone. If you hear a busy signal dial *, dial 3 then dial the number of another line. When you have internal dial tone,*

- Dial the desired telephone number
  *After several seconds of silence you will hear ringing. When the person answers, begin your conversation. If the party doesn't answer dial 0# and hang up the handset. Both you and the person you're speaking with will hear an 11-second warning tone before the preprogrammed release time expires. If you wish to continue your conversation, either you or the person you're calling can dial * during the tone to restart the timer. Note that the person that dials the * must have a tone dial (DTMF) set.*
- Dial 0# and hang up to end the call

Operating Notes

- Since the Options Interface Hardware Unit can't create HALTs or PAUSEs, the DISA feature can't be used behind Private Branch Exchanges (PBXs) that require HALTs or PAUSEs in dialing sequences.
- Trunk to Trunk Conferences, External Call Forwarding and external calls using Direct Inward System Access each use two amplified lines. The Options Interface Hardware Unit only has the capability of providing four amplified lines at any given time. If all four amplified lines are being used when you call in on the DISA line, you will hear continuous ringing. You must hang up and try again. When amplified lines become available, you will be able to use the DISA feature.
- DISA callers aren't subject to the class of service (toll restriction) applied to the line that they are calling out on.
- When DISA is enabled for a line, calls can't come directly in on that line. A person who attempts to call in on a line enabled for DISA will be dropped after approximately 20 seconds unless he/she enters the DISA access code.
- If an SMDR Unit is connected to the system, the DISA access code used to make an external DISA call is printed in the 77 to 80 column of the SMDR printout.
- Don't use DISA lines to make outgoing calls from the office because this will tie up the DISA lines. If a person tries to call in on a busy DISA line, he/she will hear busy tone.
- It's possible, although not advisable, to program an outgoing ECF line as an incoming DISA line, However, the system will respond with the error message, "--P", if you try to program an incoming ECF line as a DISA line.

External Call Forward

The External Call Forward (ECF) feature allows incoming external calls to be automatically forwarded to the telephone of another external number. For example, when working at home, you can have the incoming external calls that come into the office on a specific line forwarded to your home phone.

You can program two lines to handle incoming external calls for external call forwarding. Each incoming line is assigned to an outgoing line that will forward incoming external calls to an external number. The attendant programs the external numbers for the outgoing lines in common speed dial codes 98 and 99.

Programming

There are four parameters that you must program for external call forwarding:
- incoming lines for external call forwarding,
- the outgoing lines for external call forwarding,
- the release time, and
- the external numbers that you want the calls forwarded to.

To program the system for external call forwarding:

Step 1. At Station 10, dial *# (or press the **Program** key).

Step 2. Dial 015.

Step 3. Program the incoming ECF lines:
a. Dial access code 0310=XX where XX=the number of the desired line.
b. Dial # to store the line number.
If you programmed a second outgoing ECF line, you must program a second incoming ECF line,
c. Dial access code 0311=XX where XX=the number of the desired line.
d. Dial # to store the line number.

Note: To disable incoming ECF line 1 enter access code 0310=00 in step a. To disable incoming ECF line 2, enter access code 0311=00 in step c.

Step 4. Program the outgoing ECF lines that you want assigned to the incoming ECF lines:
a. Dial access code 0410=XX where XX=the number of the desired line for outgoing ECF line 1.
b. Dial # to store the line number.
If a second outgoing ECF line is desired,
c. Dial access code 0411=XX where XX=the number of the desired line for outgoing ECF line 2.
d. Dial # to store the line number.

Note: To disable outgoing ECF line 1 enter access code 0410=00 in step a. To disable outgoing ECF line 2, enter access code 0411=00 in step c.

Step 5. Enter the desired DISA/ECF release time. The release time determines the length of time allowed for an ECF call. Note that the length of time selected will also determine the release time for the Direct Inward System Access feature. To change the default setting of the release time:
a. Dial access code 027.
b. Dial data code 0 for 30 seconds,
1 for 1 minute (default setting),
2 for 2 minutes,
3 for 3 minutes,
4 for 5 minutes, or
5 for 10 minutes.
c. Dial # to store the release time.

Step 6. Press * to exit programming.

Step 7. Program the telephone numbers that you want the calls forwarded to, at the Master Attendant Station.

a. Press the **Speed** key.
b. Dial speed call code 98.
c. Dial the telephone number to be stored. This number will be assigned to outgoing ECF line 1 (programmed in Step 4).
d. Press the **Speaker** key.

If you've programmed a second pair of lines for ECF,

e. Press the **Speed** key.
f. Dial speed call code 99.
g. Dial the telephone number to be stored. This number will be assigned to outgoing ECF line 2 (programmed in Step 4).
h. Press the **Speaker** key.

Note: A HALT or PAUSE shouldn't be programmed into a number for an outgoing ECF line because the Options Interface Hardware Unit can't create HALTs or PAUSEs in dialing sequences.

Operation

Briefly, this is how External Call Forwarding works (refer to Figure 3-5):

1. ECF is enabled by dialing *081 at the Master Attendant Station.
2. A caller dials the telephone number of a line that has been programmed as an ECF incoming line.
3. When the external incoming call rings the line, the call is automatically diverted onto the corresponding outgoing ECF line.
4. The system dials the preprogrammed telephone number (stored in either common speed call code 98 or 99) for that outgoing ECF line.
5. When the person at the telephone of the preprogrammed telephone number answers, he/she is connected with the caller.
6. Both parties will hear an 11-second warning tone before the preprogrammed release time expires. If they wish to continue their conversation, either party can dial * on their set during the tone to restart the timer. Note that the party that dials the * must have a tone dial (DTMF) set.
7. When the call is completed either party must dial 0# to release the line. If both parties forget to dial 0# before hanging up, the system will automatically release the line after a preprogrammed length of time (default value 1 minute).
8. ECF can be disabled by dialing *080 at the Master Attendant Station when it's no longer required.

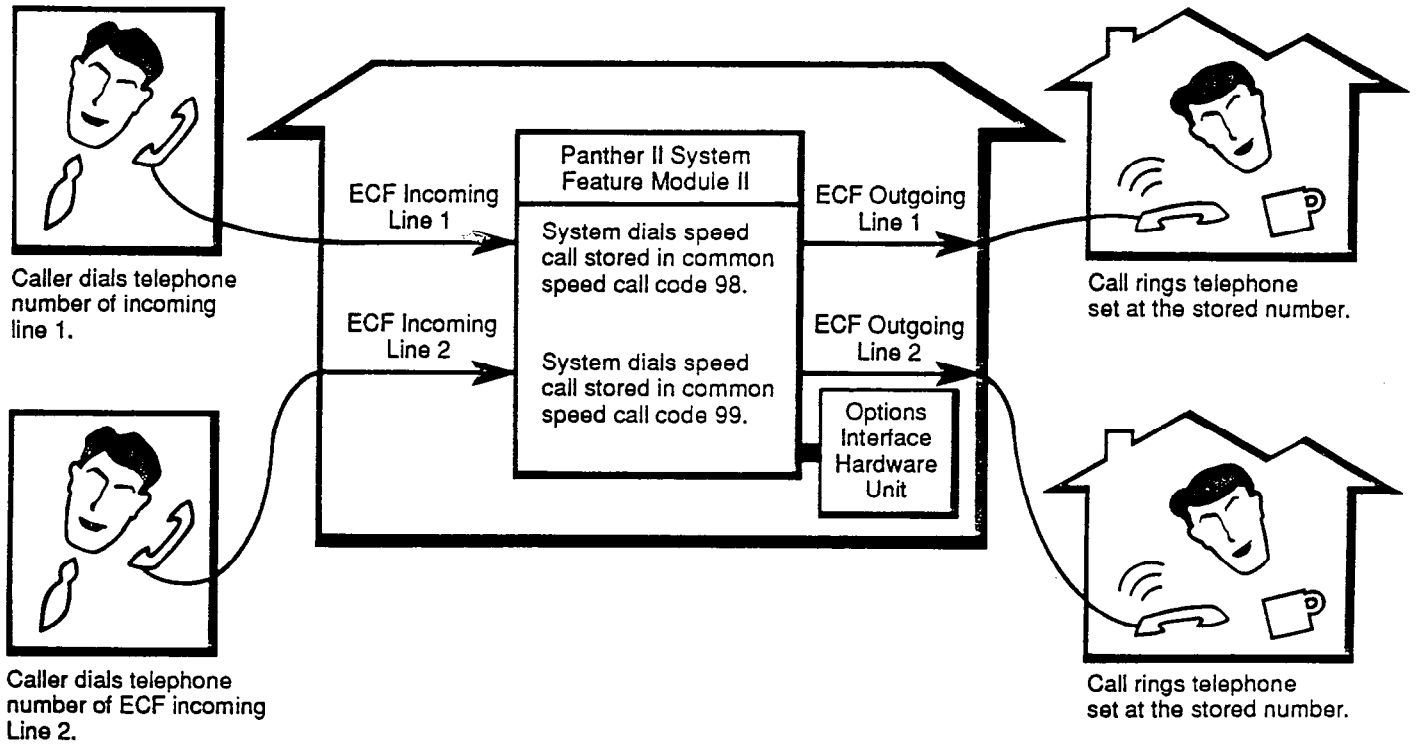


Figure 3-5 External Call Forwarding

Operating Notes

- External call forwarding is enabled at the Master Attendant Station by dialing *081 and disabled by dialing *080.
- Trunk to Trunk Conferences, External Call Forwarding and external calls using Direct Inward System Access each use two amplified lines. The Options Interface Hardware Unit only has the capability of providing four amplified lines at any given time. Therefore, if all four amplified lines are being used, when you call in on the incoming ECF line, you will hear continuous ringing. You must hang up and try again.
- Since the Options Interface Hardware Unit can't create HALTs or PAUSEs, the ECF feature can't be used behind Private Branch Exchanges (PBXs) that require HALTs or PAUSEs in dialing sequences.
- Don't use ECF lines to make outgoing calls from the office because this will tie up the ECF lines. A person calling in to a busy ECF line will hear busy tone. If the outgoing ECF line is busy, the person calling in on the corresponding incoming ECF line will hear continuous ringing.

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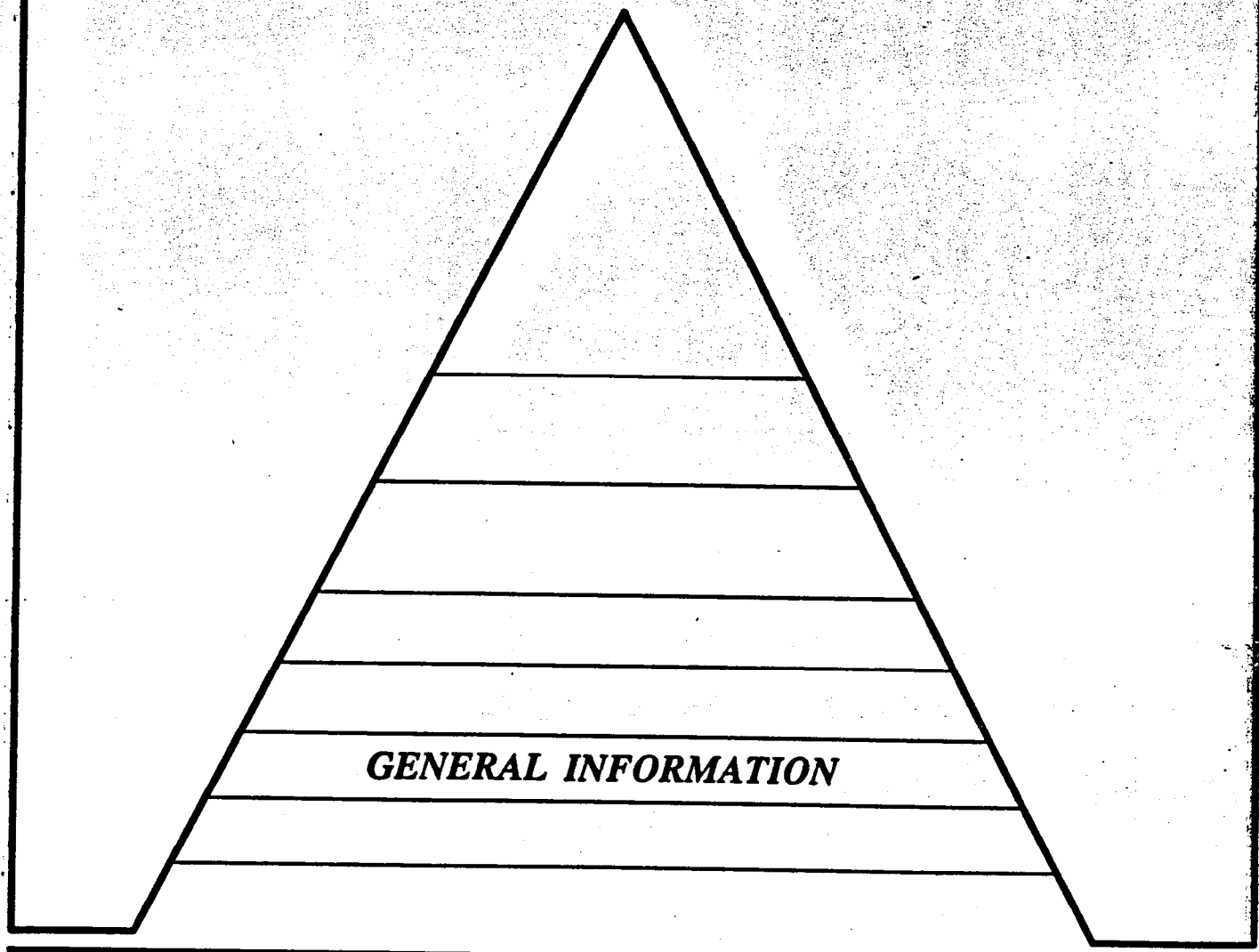
SYSTEM MANUAL



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Panther II 820/1032/2064
Electronic Key Telephone System

GENERAL INFORMATION

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Tables

1. GENERAL

Introduction

1.01 This Practice provides a general description of the Panther II 820, 1032 and 2064 Electronic Key Telephone Systems. It outlines the major functional elements, the features and the electrical characteristics of each system.

Reason For Issue

1.02 This is the second issue of this Practice. It is one of the set of Practices written to assist a craftsperson install, operate and maintain the system in the field. The remaining Practices in the set are:

Practice Title	Practice Number	Part Number
Features and Services	Panther II 820/1032/2064-105	91-0472
Programming	Panther II 820/1032/2064-205	91-0473
Installation and Commissioning	Panther II 820/1032/2064-200	91-0474
Maintenance and Troubleshooting	Panther II 820/1032/2064-320	91-0475
Door Answer Unit	Panther II 820/1032/2064-290	91-0500
Power Fail Transfer Unit	Panther II 820/1032/2064-291	91-0501
Station Message Detail Recording	Panther II 820/1032/2064-292	91-0502
Off-Premises Extension Unit	Panther II 820/1032/2064-293	91-0542
FAX Interface Unit	Panther II 820/1032/2064-294	91-0513
6-Line Expander Unit	Panther II 820/1032/2064-295	91-0514

2. SYSTEM OVERVIEW

General

2.01 The Panther II 820 system is comprised of one Panther II 820 Key Service Unit (KSU). The Panther II 1032 system is comprised of one Panther II 1032 KSU, while the Panther II 2064 system consists of two KSUs: a Panther II 1032 KSU and a Panther II 2064 KSU. Each system can be enhanced by the addition of a number of optional ancillary devices. See Figure 2-1. The Panther II systems are designed for easy migration, meaning that systems can be easily expanded to accommodate more lines/stations, while the original station configuration and equipment remains intact. Each system can be used in a stand-alone mode, behind a Private Branch Exchange (PBX) or with Centrex.

- Panther II 820 System - The Panther II 820 system comprises one Key Service Unit (KSU), designated the Panther II 820 KSU, and up to 20 Panther Telephone sets. See Note. It supports connection to a maximum of 8 Dual Tone Multi-Frequency (DTMF) or rotary lines.

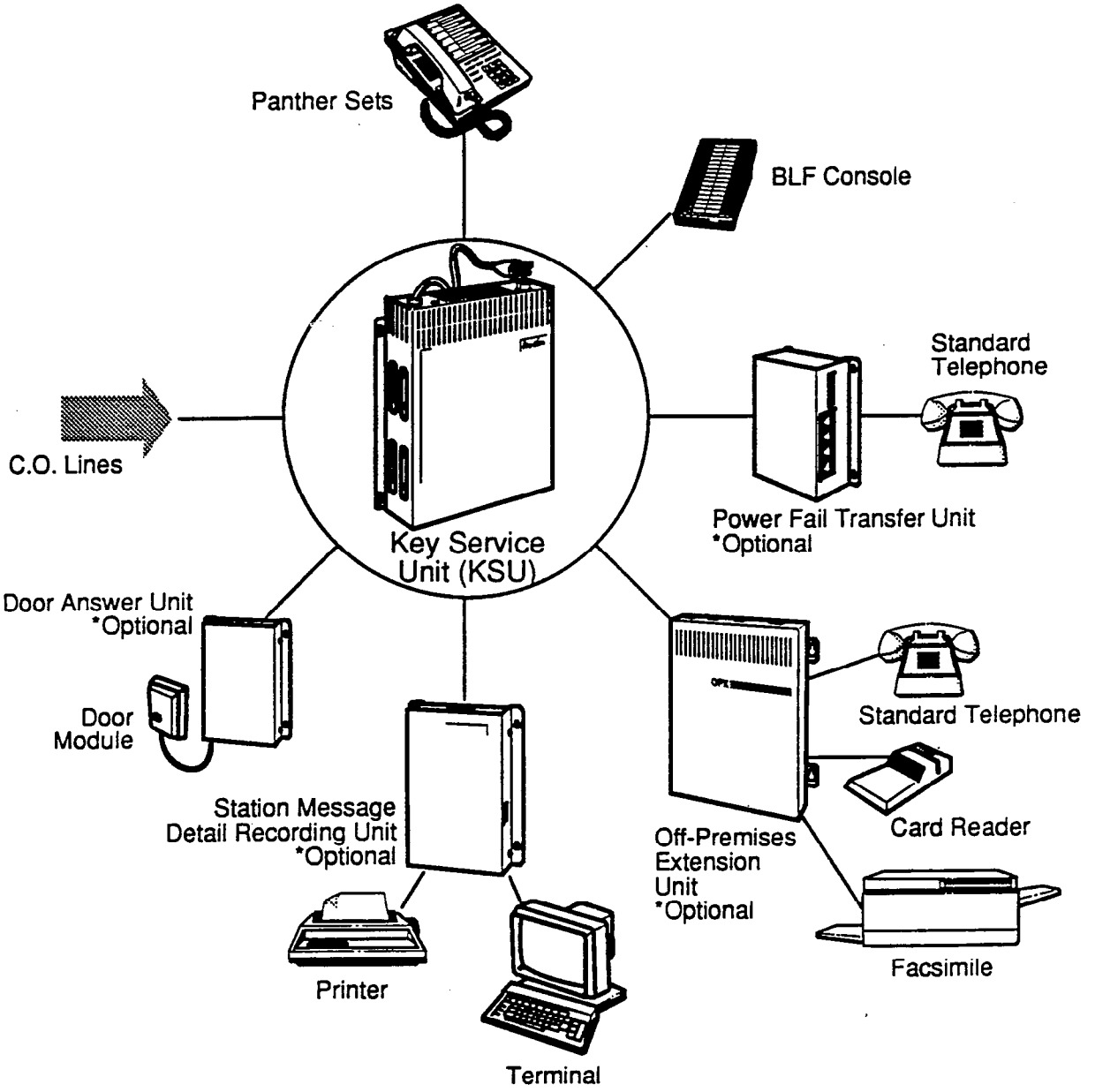

Figure 2-1 System Configuration

- Panther II 1032 System - The Panther II 1032 system comprises one Key Service Unit (KSU), designated the Panther II 1032 KSU, and up to 32 Panther Telephone sets. See Note below. It supports connection to a maximum of 10 Dual Tone Multi-Frequency (DTMF) or rotary lines (or a combination of both).

- Panther II 2064 System - The Panther II 2064 system comprises two Key Service Units (KSUs), designated Panther II 1032 and 2064. The Panther II 1032 KSU acts as the main control centre for the system, and it accommodates the first 10 lines and 32 stations. The Panther II 2064 KSU allows expansion of the system up to 20 lines and 64 stations. Combined, the 1032 and 2064 KSUs support a maximum of 64 Panther Telephone sets (See Note) and a maximum of 20 Dual Tone Multi-Frequency (DTMF) or rotary lines (or a combination of both).

NOTE: The Panther II KSUs support all Panther Telephone sets. See Table 2-1, Set Migration.

2.03 The configuration maximums for the Panther II systems are given in Tables 2-2 to 2-4.

TYPE OF SET(S)	PANTHER II SYSTEM MIGRATION		
	820 KSU	1032 KSU	2064 KSU
306 NHF/HF Sets	YES	YES	YES
612 Std./Att. Sets	YES	YES	YES
1032 NHF/HF Sets	YES	YES	YES
2064 NHF/HF Sets	YES	YES	YES
1032 DSS/BLF Unit	YES	YES	YES
2064 DSS/BLF Unit	YES	YES	YES
Display Set	YES	YES	YES
Panther II Set	YES	YES	YES

Table 2-1 Panther Telephone Set Migration

SYSTEM CAPABILITIES	
C.O./PBX/Centrex Lines	8 (7 with Door Answer)
Panther Sets	20 HF or 20 NHF sets or a combination of both (max. 20 including Attendant Consoles)
Attendant Consoles	10 maximum
Intercom Speech Paths	4
Door Modules	2
Power Fail Transfer	2 See Note.
Station Message Detail Recording	• Baud Rate 150, 300, 600, 1200, 2400, 4800 or 9600 • RS-232C Connection • 80 Column Printout • No protocol between data recorder and printer • 1 Start Bit, 7 Character Bits, 2 Stop Bits, No Parity

Note:
One PFT Unit: Transfers 4 C.O. lines to 4 standard telephones.
Two PFT Units: Transfers 8 C.O. lines to 8 standard telephones.

Table 2-2 Panther II 820 System Configuration Maximums

SYSTEM CAPABILITIES	
C.O./PBX/Centrex Lines	10 (9 with Door Answer)
Panther Sets	32 HF or 32 NHF sets or a combination of both (max. 32 including Attendant Consoles)
Attendant Consoles	16 maximum
Intercom Speech Paths	4
Door Modules	2
Power Fail Transfer	3 See Note.
Station Message Detail Recording	• Baud Rate 150, 300, 600, 1200, 2400, 4800 or 9600 • RS-232C Connection • 80 Column Printout • No protocol between data recorder and printer • 1 Start Bit, 7 Character Bits, 2 Stop Bits, No Parity

Note:
One PFT Unit: Transfers 4 C.O. lines to 4 standard telephones.
Two PFT Units: Transfers 8 C.O. lines to 8 standard telephones.
Three PFT Units: Transfers 10 C.O. lines to 10 standard telephones.

Table 2-3 Panther II 1032 System Configuration Maximums

SYSTEM CAPABILITIES	
C.O./PBX/Centrex Lines	20 See Note 1.
Panther Sets	64 HF or 64 NHF sets or a combination of both (max. 64 including Attendant Consoles)
Attendant Consoles	32 maximum. See Note 2.
Intercom Speech Paths	8
Door Modules	4
Power Fail Transfer	6 (3 max. per KSU)
Station Message Detail Recording	• Baud Rate 150, 300, 600, 1200, 2400, 4800 or 9600 • RS-232C Connection • 80 Column Printout • No protocol between data recorder and printer • 1 Start Bit, 7 Character Bits, 2 Stop Bits, No Parity

Notes:

1. 18 C.O. lines with 2 Door Answer Units, 19 with 1 Door Answer Unit.

2. Sixteen 1032 DSS/BLF Consoles, or Fourteen 2064 DSS/BLF Consoles are allowed (max). If a combination of 1032 and 2064 DSS/BLF Consoles are used, the maximum number of 2064 DSS/BLF Consoles is 10.

Table 2-4 Panther II 2064 System Configuration Maximums

Key Service Unit (KSU)

2.04 The Key Service Unit, typified in Figure 2-2, is a microprocessor-controlled unit employing space division switching and stored program control to provide all of the switching and control requirements of the system. The KSU is wall mounted, and has connectors which facilitate connection of lines, telephone sets and ancillary equipment. The external lines are connected to the KSU directly. The sets are connected to the KSU via a Terminal Block (typically a 66-Block or Bix Block). A 50-pin connector connects the KSU to the Terminal Block, while 4-wire cables connect the Terminal Block to the sets (except where off-hook voice announce on a Panther II Display Set is used). Ancillary equipment is connected to the KSU directly, using the appropriate cable/connector. The two KSUs of the Panther II 2064 system are connected by two expansion cables included with the Panther II 2064 KSU. The Panther II 2064 KSU is mounted on the 1032 KSU using a mounting bracket (included with the Panther II 2064 KSU). Refer to *Panther II 820/1032/2064-200, Installation and Commissioning* for installation instructions.

2.05 The KSU operates from a 110 Vac, 60 Hz, 15 Amp mains supply. An external 24 Vdc battery backup unit can be connected to the KSU to maintain operation in the event of A.C. line power failure.

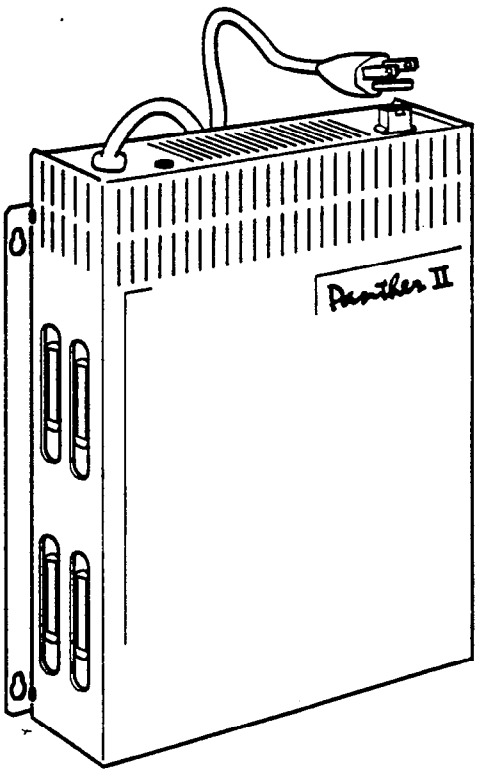

Figure 2-2 Key Service Unit

Panther Telephone Sets

2.06 The Panther II systems offer a range of ergonomically designed sets which encourage the user to take full advantage of the features offered by the system. With the use of a Desk/Wall Mount unit, the sets may be wall-mounted. A typical set is shown in Figure 2-3. (Illustration of the other Sets, is provided in *Panther II 820/1032/2064-105, Features and Services*). Operation of the Sets is provided in the appropriate *Panther II User Guide.* The Panther Telephone sets which may be used with the Panther II system are:

- **Panther 2064 NHF (Non-Handsfree) Telephone Set -** a fully featured telephone having: twenty programmable C.O. Line keys, a Hold key, a Speaker key, a Conference key, a Speed key, a Redial key, a Flash/Cancel key and a soft-touch keypad. In addition, indicator lamps are provided to show the status of the outside lines, the intercom line and the microphone. The indicator lamps have distinctive flashing rates to further define the status of the line. Panther 2064 NHF telephone sets have Handsfree Answerback on intercom.

- **Panther 2064 Handsfree Telephone Set -** this set offers the features of the Panther 2064 Standard Set, with built-in speakerphone which provides full handsfree operation for internal and external calls.

- **Panther 1032 Standard NHF (Non-Handsfree) Telephone Set -** a fully featured telephone having: ten programmable C.O. Line keys, a Hold key, a Conference key, a Speed key, a Mic on/off key, a Speaker key, a Redial key, a Flash/Cancel key and a soft-touch keypad. In addition, indicator lamps are provided to show the Busy/Idle status of the outside lines, the intercom line and the microphone. The indicator lamps have distinctive flashing rates to further define the status of the line. Panther 1032 NHF telephone sets have Handsfree Answerback on intercom.

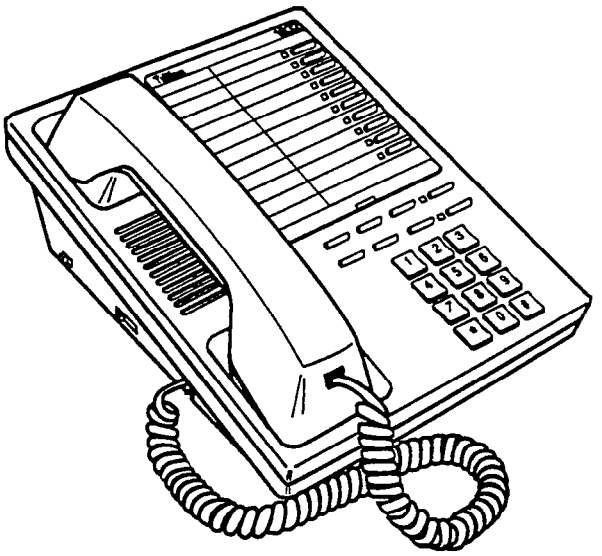

Figure 2-3 Panther 1032 Set

- **Panther 1032 Handsfree Telephone Set** - this set offers the features of the Panther 1032 Standard Set, with built-in speakerphone which provides full handsfree operation for external and internal calls.

- **Panther 612 Standard NHF Telephone Set** - a fully featured telephone having: twelve interchangeable Direct Station Select/Speed Dial keys, six interchangeable C.O. line keys, a Hold key, a Conference key, a Speed key, a Speaker key, a Mic on/off key, a Redial key, a Flash/Cancel key and a soft-touch keypad. In addition, indicator lamps are provided to show the status of the outside lines, the intercom line and the microphone. Panther 612 NHF Sets have Handsfree Answerback on intercom. The indicator lamps have distinctive flashing rates to further define the status of the line.

- **Panther 612 Attendant (HF/BLF) Telephone Set** - This set offers the features of the Panther 612 Standard Set, plus handsfree operation for external and internal calls, and visual indication of the status of up to twelve sets in the system.

- **Panther 306 Standard NHF (Non-Handsfree) Telephone Set** - a fully featured telephone having: six interchangeable Direct Station Select/Speed Dial keys, three interchangeable C.O. line keys, a Hold key, a Conference key, a Speed key, a Mic on/off key, a Speaker key, a Redial key, a Flash/Cancel key and a soft-touch keypad. In addition, indicator lamps are provided to show the Busy/Idle status of the three outside lines, the intercom line and the microphone. The indicator lamps have distinctive flashing rates to further define the status of the line. Panther 306 NHF Sets have Handsfree Answerback on intercom.

- **Panther 306 HF/BLF (Handsfree/Busy Lamp Field) Telephone Set** - This set offers the features of the Panther 306 Standard Set, plus handsfree operation for external and internal calls, and visual indication of the Busy/Idle status of up to six sets in the system.

- **Panther II Display Telephone Set** - a fully featured telephone having: 20 Programmable keys which can be programmed as C.O. Line keys, DSS/Speed Dial keys or feature keys; a Hold key, a Conference key, a Speed key, a Mic on/off key, a Redial key, a Speaker key, a Saved Number Redial (S/N Redial) key, an Intercom key, a Flash/Cancel key, a Display key, a Program key, a Message key, a Feature key and a soft-touch keypad. In addition, the telephone Set provides a 32-character Liquid Crystal Display to monitor call activity at the Set, program messages, show date and time, and confirm dialed digits. The Set is fully handsfree for external and internal calls, and provides system programming and Off-Hook Voice Announce capability. Indicator lamps show the status of "appearing" outside lines, the intercom line and microphone.

- **Panther II Telephone Set -** a low cost telephone which has dial access capability for all the Panther II features. The Set has a Flash/Cancel key, a Conference key, an Intercom indicator, a Speaker key, a Speed key, a Redial key, a Hold key, and a soft-touch keypad.

Direct Station Select/Busy Lamp Field (DSS/BLF) Console

2.07 The Direct Station Select/Busy Lamp Field (DSS/BLF) Console, shown in Figures 2-4 and 2-5, is used in combination with one Panther 1032, 2064 or Panther II Display Set (if it is not wired for Off-Hook Voice Announce) to form an attendant position. The DSS/BLF Console provides visual indication of all other Panther Telephone sets in the system. It continuously monitors up to 32 or 64 stations, indicating the busy/idle status of stations through the on/off state of indicator lamps. In addition, it provides direct station select keys which allow the attendant to speed dial desired stations. Each 32- or 64-station DSS/BLF console occupies one station position at the KSU and must be connected in sequential order following the set's station position. The DSS/BLF console is connected to the KSU with standard 4-conductor cable.

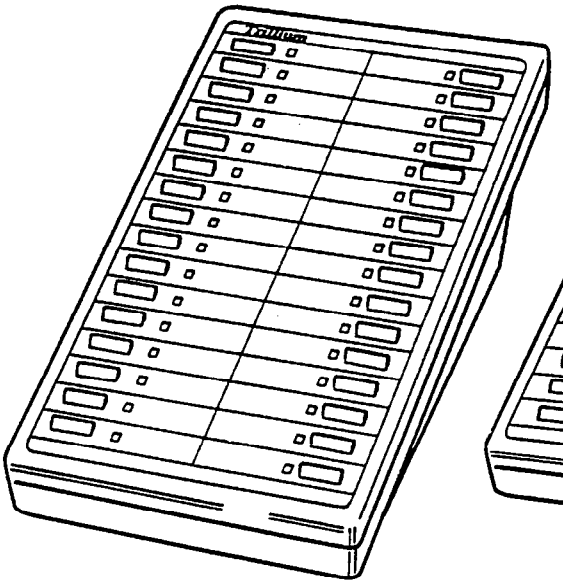

Figure 2-4
32-Station DSS/BLF Console

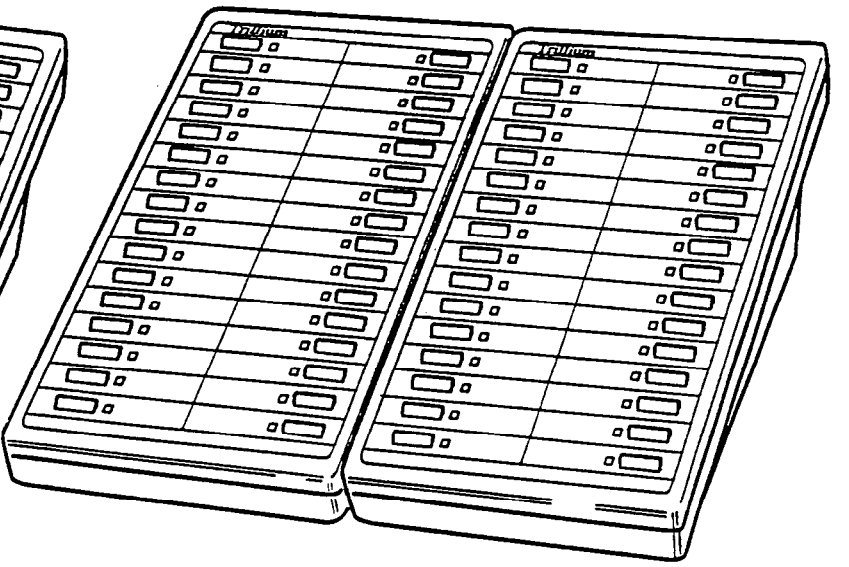

Figure 2-5
64-Station DSS/BLF Console

Ancillary Devices

2.08 Many options are available to enhance the operation of the Panther II systems. They are:

• **Power Fail Transfer Unit**, provides telephone service in the event of an electrical power failure. In that event, the outside lines are automatically transferred to customer-supplied standard single-line (2500- / 500-type) telephones. The Panther II 820 system supports a maximum of two Power Fail Transfer units, allowing all eight C.O. lines to be transferred to eight standard single-line telephones. The Panther II 1032 system supports a maximum of three Power Fail Transfer units, allowing up to 10 C.O. lines to be switched to 10 standard single-line telephones. The Panther II 2064 system supports a maximum of six Power Fail Transfer units (3 maximum per cabinet) allowing up to 20 C.O. lines to be switched to 20 standard telephones.

• **Door Answering Unit,** supports two Door Modules which allow two locations on the Panther II 820 or 1032 systems and four locations (if two door answer units are connected) on the Panther II 2064 system (such as exterior doors), to be equipped with one-touch intercom service. When a visitor presses the intercom button on the Door Module, a distinctive ringing sound is heard on the last line of each set which has been programmed for Door Answering capability. Door Answering is connected to ring on Line 8 of the Panther II 820 system, Line 10 of the Panther II 1032 system, and Line 20 of the Panther II 2064 system. Pressing the line key on the set, allows conversation to take place. The Door Answering Unit connects to the Key Service Unit via a 6-wire modular cord.

• **Station Message Detail Recording (SMDR) Unit**, provides an interface between the Panther II system and an RS-232C serial printer for the purpose of recording call data; e.g., call duration, call date and time, identity of calling and called parties, account codes, etc. Alternatively, the SMDR interface can be used to connect the system to a computer terminal or stand-alone call accounting system.

3. FEATURES OVERVIEW

3.01 As with all Panther systems, the majority of the features offered by the system are an integral part of the Key Service Unit. The parameters assigned to each feature are preprogrammed at the factory with a default value, allowing the system to be fully operational upon power-up. At any time, the features can be reprogrammed by a craftsperson from the programming extension (station 10). A full description of each feature is given in *Panther II 820/1032/2064-105, Features and Services.*
Refer to *Panther II 820/1032/2064-205, Programming* for programming details.

4. SYSTEM REQUIREMENTS

4.01 The environmental and power requirements of the Panther II systems are given in Table 4-1 and 4-2 respectively. The Dialing parameters of the system are given in Tables 4-3 to 4-5.

ENVIRONMENTAL REQUIREMENTS	
Operating Temperature	32 -104 degrees F (0 - 40 degrees C)
Relative Humidity	90% or less, non-condensing
Signaling - Rotary/Tone	Pulse Dial and/or Tone Dial

Table 4-1 Environmental Requirements

POWER REQUIREMENTS	
AC Power Requirements	110 Volts +/- 10% (50/60 Hz) 1.8 Amp max load (per KSU)
Paging Output Level	200 mV rms into 600 ohms
Music Input Level	50 mV rms
Station Loop Limit	120 ohms maximum (Equivalent to 2000 feet of 24 AWG)
C.O. Loop Limit	1200 ohms

Table 4-2 Power Requirements

Digit	FREQUENCY	
	Low Group	High Group
1	697	1.209
2	697	1.336
3	697	1.477
4	770	1.209
5	770	1.336
6	770	1.477
7	852	1.209
8	852	1.336
9	852	1.477
0	941	1.336
*	941	1.209
#	941	1.477

Table 4-3 MF Signaling Frequency

Pulse Rate	Make Ratio
10 pps	33% 40%
20 pps	33% 40%

Table 4-4 Pulse Rate and Make Ratio

	TONE DURATION			
Specs.	A	B	C	D
Sending Time	over 50 ms	over 75 ms	over 100 ms	over 200 ms
Minimum Pause	over 100 ms	over 100 ms	over 100 ms	over 100 ms

Table 4-5 DTMF Dialing Speed

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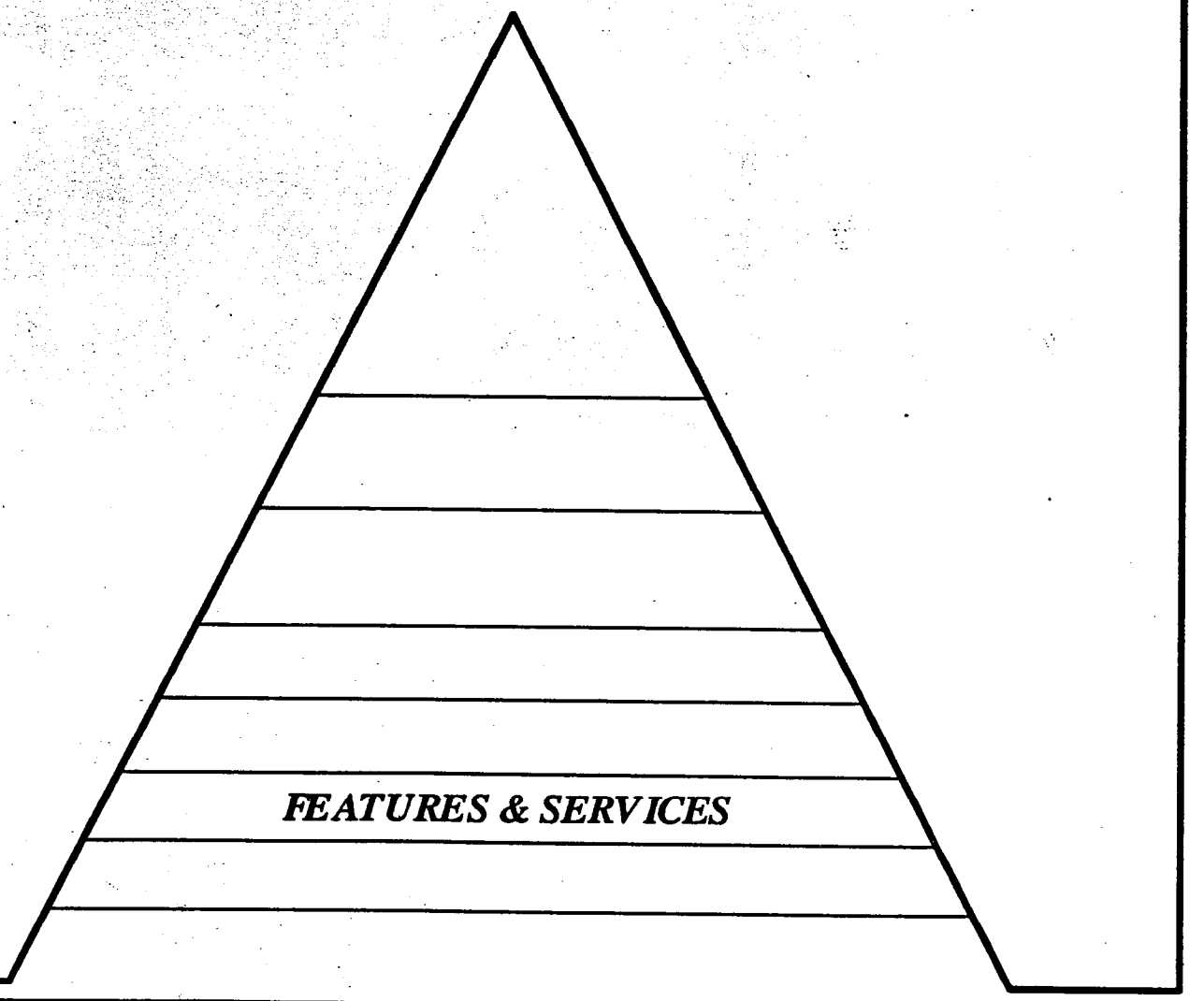

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Panther® II 820/1032/2064-105
Electronic Key Telephone System

FEATURES AND SERVICES

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1. GENERAL

Introduction

1.01 This Practice provides a description of the features and services offered by the Panther II 820, 1032 and 2064 Electronic Key Telephone Systems. The Practice is arranged such that the features and services are presented in alphabetical order, under the following three categories:

- **System Features** - includes features that may require some programming, and are available on a systemwide basis.
- **Station Features** - includes features that may require some programming, and are available on a set-by-set basis.
- **Panther II Display Set Features** - includes special or added capabilities of this particular Set.

1.02 Each feature listing in Sections 4 and 5 provide: a brief **description** of the feature or service; any **conditions** that may affect operation of the feature or service; and **programming** codes that are required to perform the feature or service. Refer to *Panther II 820/1032/2064-205, Programming* for further programming details. Section 6 provides only a **description** of the feature or service as it applies to the Panther II Display Set.

1.03 Optional add-on modules are not discussed in this Practice. Refer to the following Sections for details on these peripherals:

- Door Answer Unit and Module - *Panther II 820/1032/2064-290.*
- Power Fail Transfer Unit - *Panther II 820/1032/2064-291.*
- SMDR Unit - *Panther II 820/1032/2064-292.*

Reason For Issue

1.04 This is the second issue of this Practice. It is one of the set of Practices written to assist a craftsperson install, operate and maintain the system in the field.

2. PANTHER TELEPHONE SETS

2.01 Features are selected using the keys and indicators of the Panther Telephone Sets. Although similar in appearance, the various Panther Sets which may be installed in a system, differ in the number of keys and indicators they contain. All models of Panther telephone Sets can be connected to the three Panther II systems.

They are:

- The Panther 306 Non-Handsfree (NHF) Telephone Set
- The Panther 306 Handsfree/Busy Lamp Field (HF/BLF) Telephone Set
- The Panther 612 Standard Telephone Set
- The Panther 612 Attendant (HF/BLF) Telephone Set
- The Panther 1032 NHF Telephone Set
- The Panther 1032 HF Telephone Set
- The Panther 1032 Direct Station Select/Busy Lamp Field (DSS/BLF) Console
- The Panther 2064 NHF Telephone Set
- The Panther 2064 HF Telephone Set
- The Panther 2064 DSS/BLF Console
- The Panther II Set (may be referred to, as the Basic Set)
- The Panther II Display Set.

2.02 The keys and indicators of various Sets are shown in Figures 2-1 through 2-7.

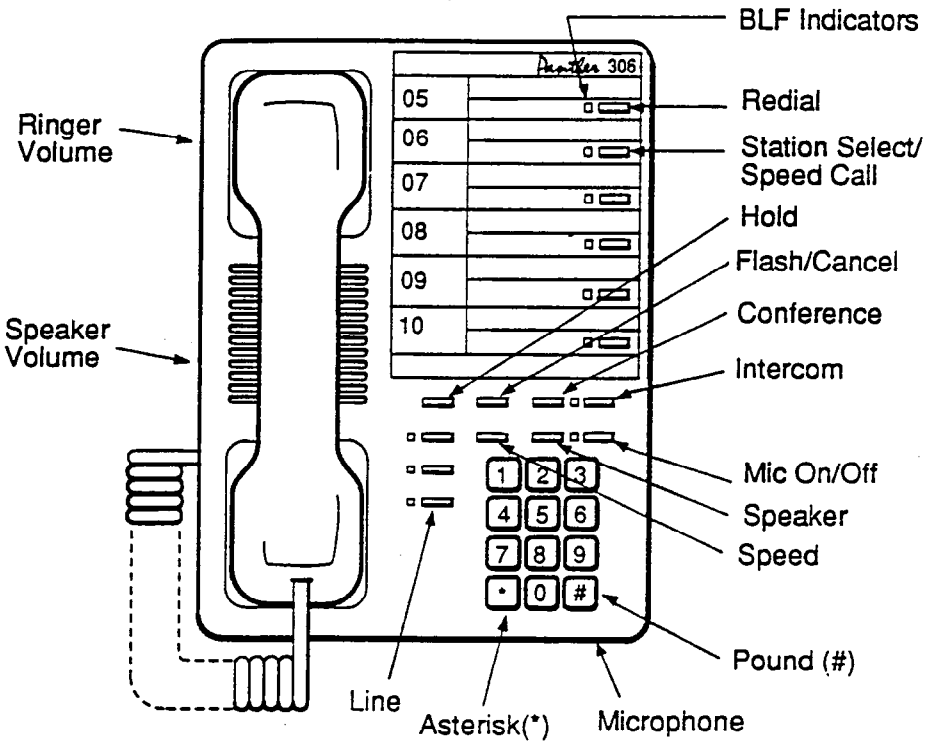


FIGURE 2-1 PANTHER 306 HF/BLF TELEPHONE SET

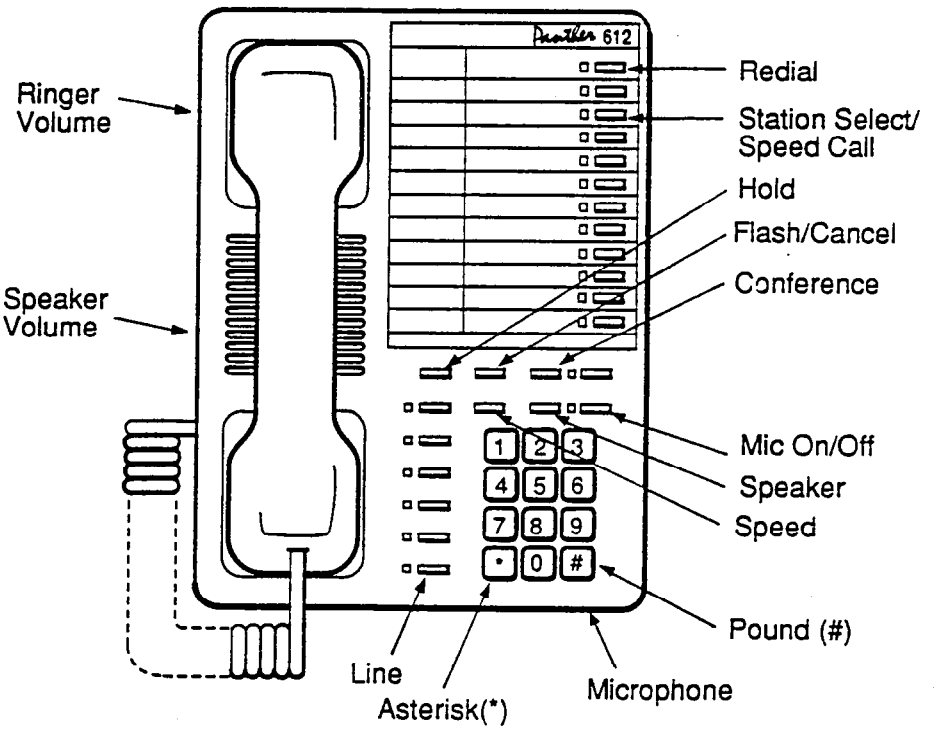


FIGURE 2-2 PANTHER 612 ATTENDANT TELEPHONE SET

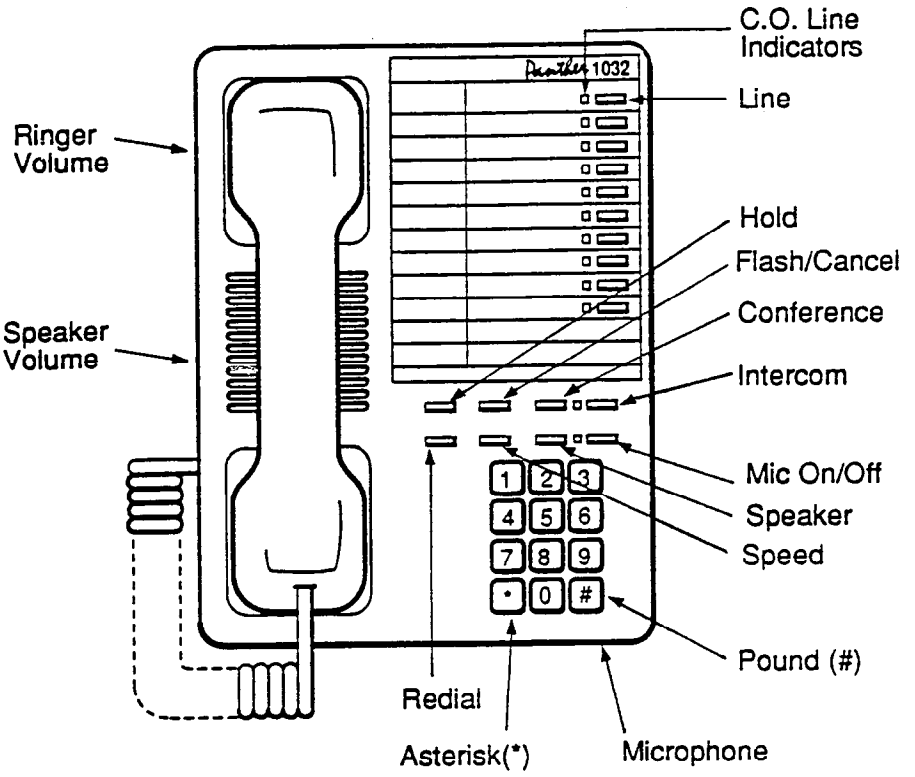


FIGURE 2-3 PANTHER 1032 HF TELEPHONE SET

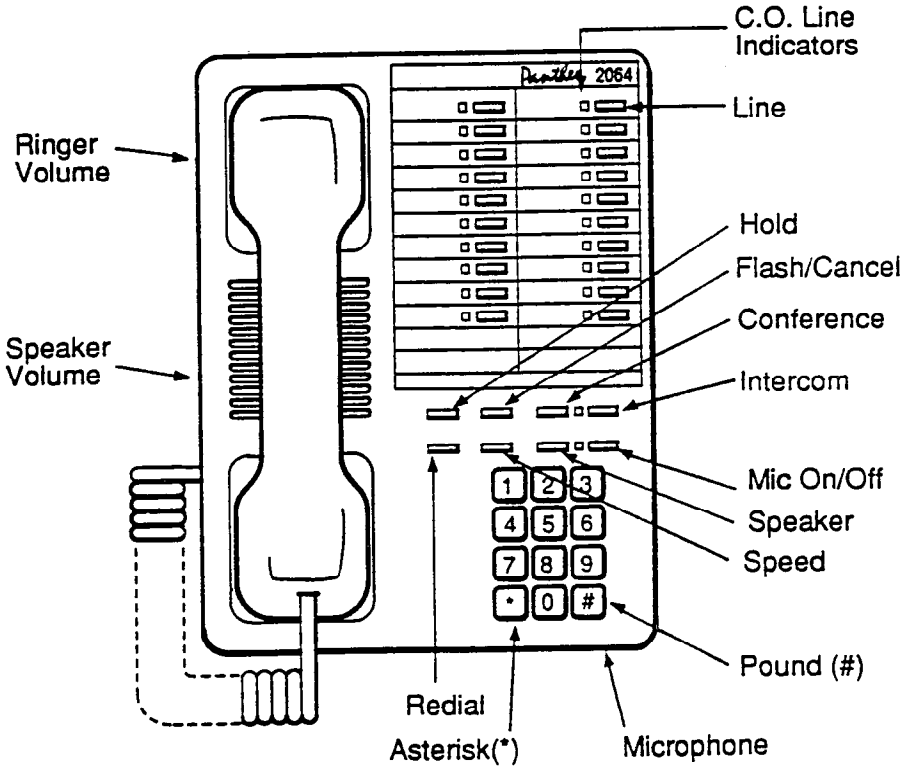


FIGURE 2-4 PANTHER 2064 HF TELEPHONE SET

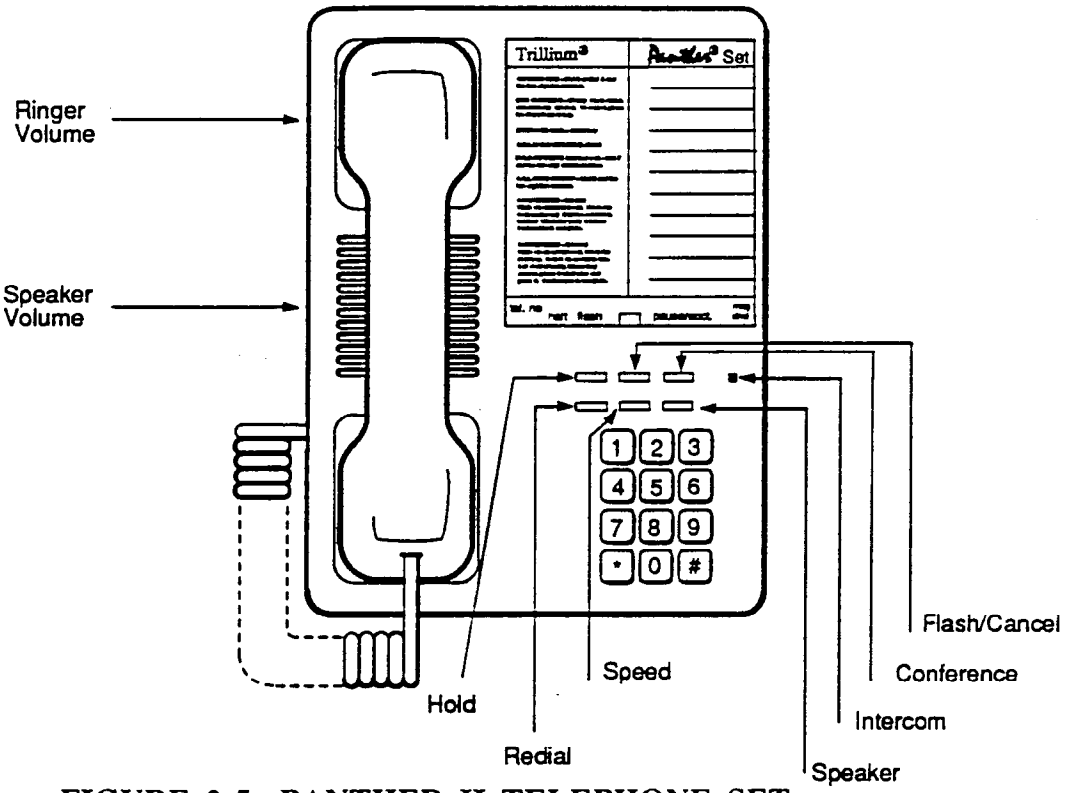


FIGURE 2-5 PANTHER II TELEPHONE SET

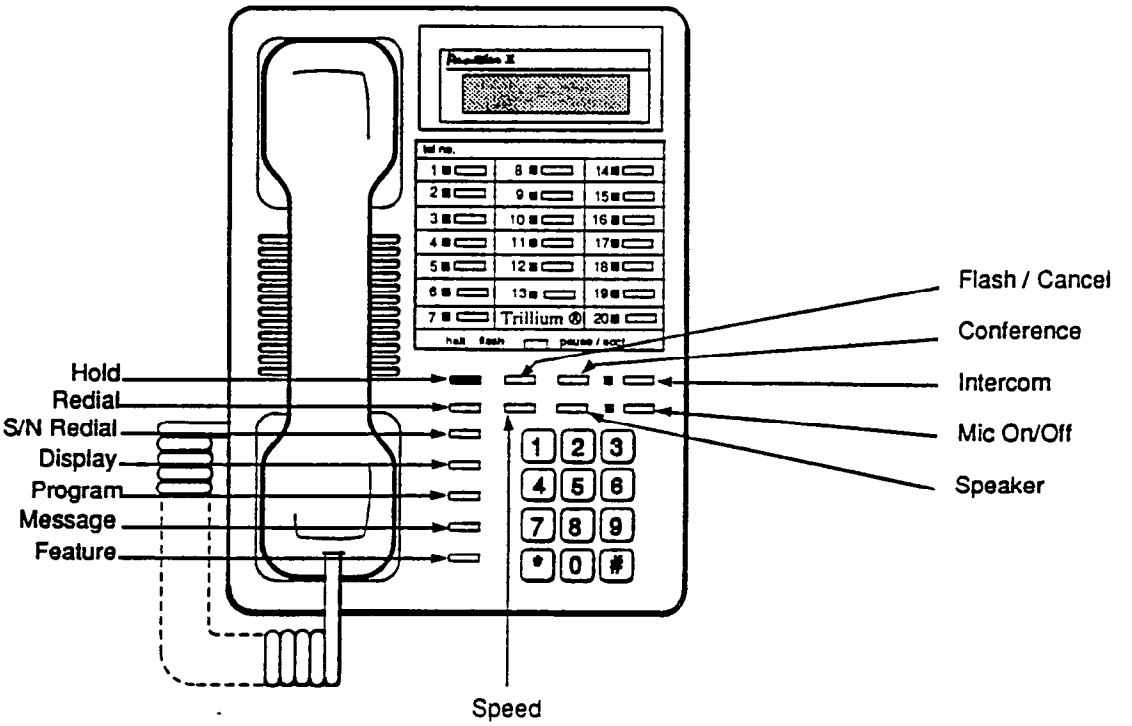


FIGURE 2-6 PANTHER II DISPLAY TELEPHONE SET

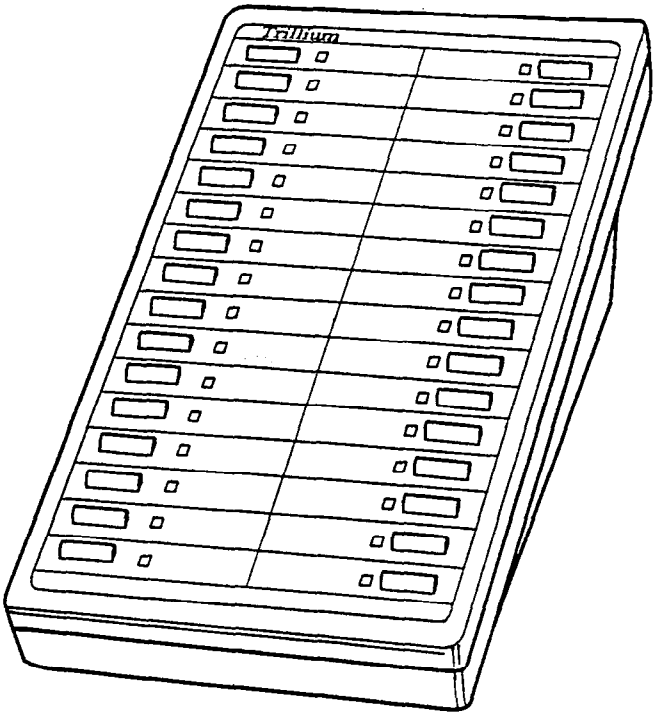


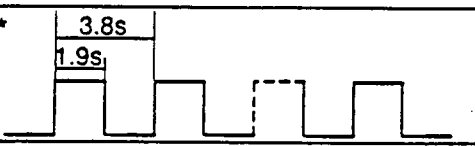
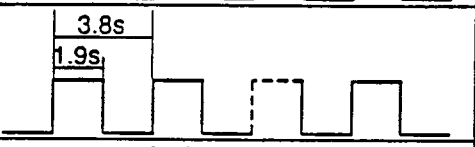
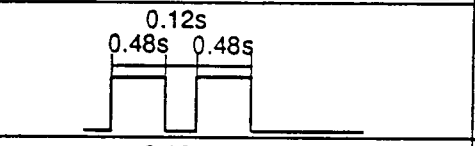
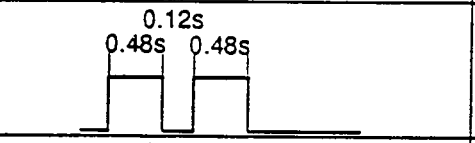
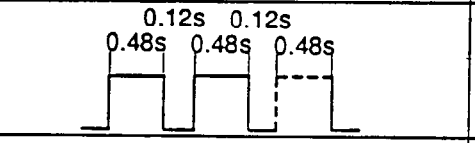
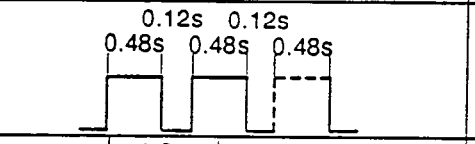
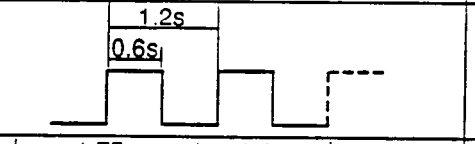
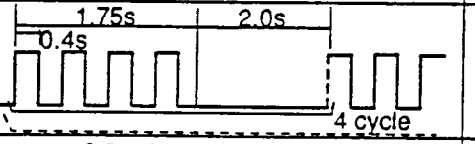
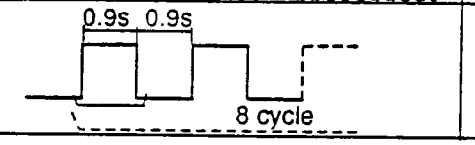
FIGURE 2-7 PANTHER 1032 DSS/BLF CONSOLE

3. AUDIO AND VISUAL INDICATORS

3.01 The operation of any Panther telephone Set is enhanced by audio (tones) and visual (indications) which keep the user informed of many factors related to the call.

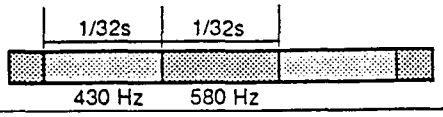
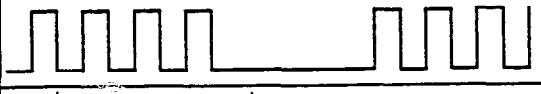
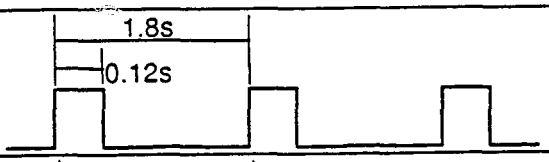
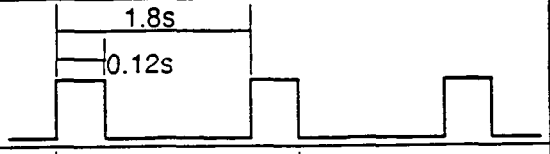
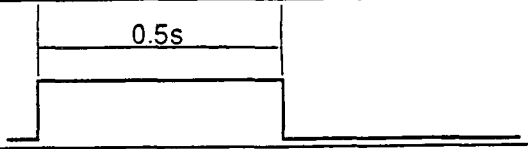
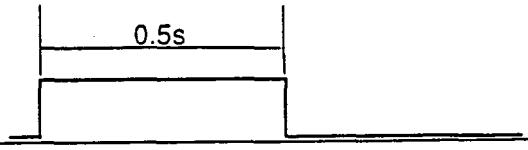
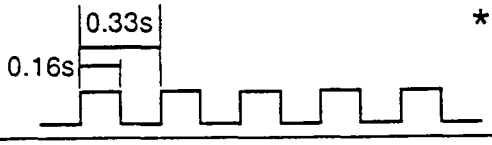
3.02 Audio indicators in the form of tones having different frequencies and repeat rates are heard by the user during a call to indicate various events; e.g., a tone is heard when the Executive Override feature is invoked. These tones are identified in Table 3-1 and Table 3-2. Table 3-1 lists the tones which may be heard during a intercom call and Table 3-2 lists the tones which may be heard during a call to/from a C.O. line.

3.03 Visual indicators, namely the C.O. line LEDs, the INT LED and the MIC LED, can be On, Off or flashing to indicate different status; e.g., if the C.O. line LED lights solid, this indicates that the line is busy. Since flash rates are set-dependant, the LEDs and their various flash rates are described in each Panther Set's respective User Guide.

No	Status	Tone Signal	Tone Frequency
1	Call arrive (voice)		400 Hz
	Back Tone		400 Hz
2	Call arrive (tone)		400 Hz
	Back Tone		400 Hz
3	Paging Tone (All call) (External)		400 Hz
	Back Tone		400 Hz
4	Paging Tone (Zone)		400 Hz
	Back Tone		400 Hz
5	Busy Tone		400 Hz
6	Door Phone 1		a: 430 Hz b: 580 Hz modulated 16 Hz
	Door Phone 2		a: 430 Hz b: 580 Hz modulated 16 Hz

* Continuous

TABLE 3-1 INTERCOM CALL TONES

No	Status	Tone Signal	Tone Frequency
1	Call arrive	Synchronizes with incoming ringing signal. 	a: 430 Hz b: 580 Hz modulated 16 Hz
2	Hold Recall		a: 430 Hz b: 580 Hz modulated 16 Hz
3	Busy Override		a: 430 Hz b: 580 Hz modulated 16 Hz
	Back Tone		a: 430 Hz b: 580 Hz modulated 16 Hz
4	Barge in		400 Hz
	Back Tone		400 Hz
5	The restricted outgoing call		400 Hz

* Continuous

TABLE 3-2 C.O. LINE TONES

4. SYSTEM FEATURES

AUTO HOLD

Description
This feature allows you to place an external call on hold simply by pressing a DSS key and then transfer the call by announcing to the person at the station to pick up the line that the call is on. This capability is assigned on a set-by-set basis. If Auto Hold is not programmed, you will have One Touch Speed Dial capability, where speed dialing is available by pressing a DSS key.

Conditions
- Auto Hold is programmable for each Set.

Programming Required
- Access Code 110 - One Touch Speed Dial / Auto Line Hold

AUTO LINE SELECT / AUTO INTERCOM / MANUAL SELECT

Description
Each Set may be programmed for one of the following: Auto Line Select, Auto Intercom, or Manual Select. The system is preprogrammed with all Sets in Auto Intercom Mode.

Auto Line Select - automatically selects an outside line (the last line used) when the handset is lifted or the SPEAKER key is pressed. The user still needs to press the INTERCOM key or # key to select an internal (intercom) line.

Auto Intercom - automatically selects one of the internal intercom lines when the handset is lifted or the SPEAKER key is pressed. The user still needs to press a Line key or dial 9 to select an outside line. All Sets are preprogrammed with this choice.

Manual Select - when the handset is lifted or the SPEAKER key is pressed, a Line key must be pressed to select an outside line, or the INTERCOM or # key must be pressed to obtain an internal (intercom) line.

Conditions
- Auto Line Select will be affected if Forced Account Codes or Toll Security are enabled at a Set.
- If Auto Line Select and Prime Line Select are programmed, Prime Line Select has priority.

Programming Required
- Access Code 113 - Manual Select / Auto Intercom / Auto Line Select.

BATTERY BACKUP CAPABILITY

Description
Each Panther II Key Service Unit has an interface for an external 24 Volt dc battery backup unit (optional) in order to maintain full system operation during an electrical power failure. With a 24 Vdc battery backup unit connected, when the power fails, the system will automatically switch over to battery operation for the duration of the power failure, and no calls will be lost.

Conditions
- It is recommended that the KSU power be disconnected, prior to connection of a Battery Backup Unit.

Programming Required
None

BLOCK PROGRAMMING

Description
Allows the system programming selections for a particular station to be automatically copied to a block of other stations.

Conditions
- All stations in the block will have the same programming characteristics.
- After block programming is completed, a station may be reprogrammed on an individual basis.

Programming Required
- Access Code 118 - Block Programming.

CAMP-ON

Description
This is an automatic feature when transfer ringing is sent to a busy station. When busy tone is heard, the user simply replaces the handset, and the call is camped-on. If the user does not wish to camp the call onto the busy party, they have three options at this point. They can perform a Busy Override, an Executive Override (if enabled) or return to the caller.

When a caller is camped-on, the busy station will hear a single 1-second beep through their Set's speaker, at preprogrammed intervals (Camp-On Tone Interval) to alert them that a call is waiting. After a preprogrammed length of time (Camp-On Duration), ringing returns either to the originator or to the attendant (or sub-attendant), depending on Transfer Ringing Return programming. The originator of the Camp-On also has the capability of retrieving the call at any point before the Camp-On Duration has expired.

Conditions
Automatic

Programming Required
- Access Code 050 - Camp-On Duration
- Access Code 051 - Camp-On Tone Interval
- Access Code 104 - Transfer Ringing Return

DISCRIMINATING RINGING

Description
Three different ringing signals are inherent in the system to distinguish between internal, external and transferred calls. For added flexibility, when the system is placed behind PBX/Centrex, simultaneous or serial ringing may be programmed. The preprogrammed choice, serial ringing, is used for stand-alone systems (one ringing line will be heard at a time), whereas simultaneous ringing is typically used behind PBX/Centrex (and all ringing signals will be heard simultaneously).

Conditions
- Discriminating Ringing will apply to the programmed Flexible Ringing assignment.

Programming Required
- Access Code 047 - Simultaneous / Serial Ringing

FLASH/CANCEL/TRANSFER

Description
Defines the function of the FLASH/CANCEL key to be one of the following on a systemwide basis:

Flash - simulates the rapid pressing and releasing of the hookswitch and provides access to PABX and custom-calling features. The recommended signal is 500 milliseconds in duration.

Cancel - terminates an external call and returns dial tone without hanging up the handset. This is the Panther II system's preprogrammed choice and is 1 second in duration.

Transfer - transfers an outside call to another station.

Conditions
- The duration of the Flash or Cancel signal must be properly set to ensure correct operation.
- If the Panther II system is placed behind PBX/Centrex, the programming should be set to FLASH capability.
- Only one choice (Flash, Cancel or Transfer) is allowed per system.

Programming Required
- Access Code 005 - Flash / Cancel / Transfer
- Access Code 011 - Flash / Cancel Timing

FLEXIBLE MASTER STATION NUMBERING

Description
The Master Station is typically allocated to an attendant or receptionist, and has access to features and services not available at other stations. The Panther II System is preprogrammed with Station 10 as the Master Station, but flexible programming allows any station to be given the Master Station's capabilities. These capabilities include:

- Control of Common Speed Call programming
- Night Transfer Control
- Control of music over an external paging system
- Setting system time and date
- Clearing Set features
- Setting up Toll Security
- Programming a user's name to appear on the LCD of each Panther II Display Set
- Preprogrammed Transfer Ringing Return
- Transfer of Attendant capability
- Preprogrammed Do Not Disturb Override capability
- Preprogrammed ringing during an incoming call on any line
- Preprogrammed Relay Control

NOTE: Station 10 is also used as the Programming Station. This capability CANNOT be given to another station.

Conditions
- If extensive programming is necessary, it is recommended that the Master station number be changed.

Programming Required
- Access Code 053 - Flexible Master Station Programming

FLEXIBLE RINGING ASSIGNMENT

Description
Used to program ringing for each station. Except for Station 10, each station is preprogrammed NOT to ring during an incoming call on any line. Lines are programmed individually and may, or may not appear at a Set.

Conditions
None

Programming Required
- Access Code 119 - Flexible Ringing Assignment

HOLD RECALL

Description
If a call was placed on hold and is not retrieved within a predetermined length of time, the user hears four short tones, repeated at regular intervals through the Set's speaker, to remind them that a call is on hold.

Conditions
- Hold Recall Time is a systemwide feature that must be set up in system programming.

Programming Required
- Access Code 000 - Hold Recall Time

INCOMING LINE ONLY

Description
Lines can be programmed to receive incoming calls only; no outgoing calls can be made on these lines at any Set.

Conditions
- Class A (the preprogrammed value), must be changed to Class C' to restrict outgoing calls on a line.

Programming Required
- Access Code 065 - Toll Restriction by Line

INTERCOM ON HOLD

Description
An intercom (internal) call can be placed on hold, and the calling party will hear music if it is wired to the system. Intercom on Hold is programmed during system programming and is a systemwide feature that allows an internal call to be placed on hold temporarily and an external party to be added to an existing internal call to create a conference call.

Conditions
- Each station can only put one intercom call on hold at a time.

Programming Required
- Access Code 040 - Intercom on Hold

TENANTING

Description
Stations can be placed in one of four tenant groups to restrict other users in the system from accessing the lines in the tenant group.

Conditions
- Users in different groups will be unable to contact each other unless Tenant Type programming is changed from its preprogrammed value - No Access.

Programming Required
- Access Code 121 - Tenant Groups
- Access Code 006 - Tenant Types
- Access Code 201 - Tenant Group Assignment
- Access Code 054 - Private/Non-Private Tenanting
- Access Code 124 - Intercom Tenanting/Station Hunt Groups

LINE POOLS

Description
This feature allows a standard line key to be used to access a group of "like" lines for outgoing calls. The benefit of this feature is to free up keys on the

telephone Sets. There is one primary line pool with an unlimited number of lines, and three other pool groups with an unlimited number of lines per group.

If a line pool key is not available, a code can be dialed to select the line pool. This allows Sets such as the Panther II Set (Basic Set) to access line pools. The codes for selecting line pools are as follows:

Line Pool	Code
1	401
2	402
3	403
4	404

When the line pool key is pressed, the system selects the first available line in the pool group. If all lines are busy, the user can queue for the first available line in the pool group.

NOTE: It is recommended that a key be programmed for the primary line pool, and that the primary line pool be made up of local lines. The programmer decides which C.O. line key on each station Set will be "replaced" by a line pool.

Conditions
- Only "like" lines should go into a line pool (e.g., a pool is made up of all "same area" WATS lines, FX lines, Local lines, and so on).
- The same line will not be in more than one line pool group, however a line can be both a line and a line pool on individual Sets.

Programming Required
- Access Code 204 - Line Pooling Groups
- Line Pool keys must be designated at each Set

LOUD BELL DRY CONTACTS

Description
An optional external ringer can be connected to the KSU by means of the last cable pair on the 50-pin station connector (stations 10 to 17). This feature provides a dry contact closure (no voltage) when there is an incoming call. The system can be programmed for any or all lines to activate the ringer, in both Day and Night mode.

Conditions
- Since the same closure is used for Loud Bell and Relay Control, the system must be programmed for one or the other.

Programming Required
- Access Code 018 - Loud Bell / Relay Control

- Access Code 063 - Loud Bell Ringing/Ringing Over Paging by Line (Day Mode)
- Access Code 064 - Loud Bell Ringing/Ringing Over Paging by Line (Night Mode)

MULTIPLE ATTENDANTS

Description

A Master Attendant and up to three additional sub-attendants can be designated per Panther II system (in conjunction with the four possible Intercom Tenanting / Station Hunt Groups). The Master Attendant is preprogrammed as Station 10 but may be changed through "Flexible Master Station Programming" to be any other Set. The Master Attendant has added capability that other Sets do not have (see Section 4, FLEXIBLE MASTER STATION PROGRAMMING).

Three sub-attendants can be designated. For example, various autonomous groups or departments in a company, can provide their own customer service, and leave the Master Attendant free to perform more efficient call processing. The Master Attendant simply transfers an incoming call to the appropriate department's sub-attendant. The sub-attendant can then route the call to the appropriate (or available) person, take a message, perform transfer ringing, etc. All Transfer Ringing Returns, Callbacks, Hold Recall Return, Dialing "0" for Operator, etc., will go to the group's sub-attendant.

The Master Attendant can also dial a code to transfer its capabilities to one of the sub-attendants, for instance, during a lunch break. If the Attendant cancels the code, all capabilities will be returned.

Conditions

- Sub-attendants should be the LOWEST numbered station in each Intercom Tenanting / Station Hunt Group.
- Multiple Attendants should be set up only after Intercom Tenanting / Station Hunt Groups have been programmed, if applicable.
- There can only be one attendant (or sub-attendant) per Intercom Tenanting / Station Hunt Group.

Programming Required

- Access Code 124 - Intercom Tenanting / Station Hunt Groups
- Access Codes 0370, 0371, 0372 and 0373 - Multiple Attendants
- Access Code 054 - Private / Non-Private Tenanting

NIGHT TRANSFER GROUPS

Description

In Night Transfer, all of the lines are put into one of four "Night Transfer Line Groups", and then each of the stations are put into one of the four "Night Transfer Station Groups". This flexible programming tells the system which lines will ring at which stations when the system is operating in Night Mode; for example, Group 1 may be programmed to ring certain lines in Night Transfer mode, while Groups 2, 3, and 4 are programmed to ring other lines. This service can be used to allow more than one business in a building to share minimal night security or night reception duties.

Conditions

- Lines can be put into more than one "Night Transfer Line Groups", but each station can only be assigned to one of the four "Night Transfer Station Groups".
- Night Transfer overrides the normal ringing assignments at each Set.
- This capability should be assigned to at least one station in the system.
- If "Day Level Privilege" or "Low Level Privilege" Station Security is programmed at a Set, you won't be able to access an outgoing line from that set without first entering a 4-digit security code.

Programming Required

- Access Code 203 - Night Transfer Line Groups
- Access Code 101 - Night Transfer Station Groups
- Station Security

NIGHT TRANSFER (MANUAL AND AUTO)

Description

The Panther II system has the capability of being switched into Day or Night mode from the Master Attendant station, either automatically or manually.

Auto Switching - For example, if a business has a normal routine (e.g., every afternoon at 5 p.m. the system goes into Night Mode, and every morning at 8 a.m. it returns to Day Mode), the system can be set up to automatically switch at these times.

Even with automatic switching, the Master Attendant still has the capability of overriding the preprogrammed switching time by dialing a code (e.g., on weekends if the business wishes to remain in Night Mode throughout the day).

Manual Switching - If a business does not have a normal routine, the Panther II system can be manually switched between Day and Night mode whenever necessary (by dialing a code from the Master Attendant station).

Conditions

None

Programming Required
- All programming for this feature is done from the Master Attendant station.
- When you are programming automatic switching, you must enter the time using a 24-hour clock.

ON-LINE PROGRAMMING

Description
Programming selections can be changed directly from Station 10, while the system is operational. All telephones except Station 10 can be used during the programming process, and no calls will be lost.

Conditions
- If the Master Attendant is also Station 10, it is recommended that Attendant functioning be moved to another station number for the duration of on-line programming (see Section 5, TRANSFER OF ATTENDANT CAPABILITY).

Programming Required
None. On-line programming is an automatic service provided by the Panther II system.

PBX/CENTREX COMPATIBLE

Description
The Panther II system can be used in stand-alone mode, behind a Private Branch Exchange (PBX), or with Centrex. There are a number of added features which can be programmed when the system is behind PBX. The FLASH/CANCEL key can be programmed to simulate the rapid pressing and releasing of the hookswitch, which is required by most PBXs to provide access to PBX access codes and custom-calling features.

To allow time for a second dial tone to be returned when behind PBX, a pause can be inserted in Speed Call storing, or the PAUSE ON NUMBER feature can be utilized to tell the system to pause after a specific number is dialed after the first digit. More than one number can be selected to activate a pause.

If the system is connected to a PBX, ringing can be programmed to follow the C.O./ PBX ringing cadence (see Section 4, DISCRIMINATING RINGING).

Conditions
- "Type of Line" programming must be set to PBX/CENTREX lines.
- Only one of: FLASH, CANCEL or TRANSFER is allowed per system.

- If the system is behind PBX/CENTREX, FLASH will be required.
- Available choices for PAUSE ON NUMBER are: 7, 8, 9, and/or 0.

Programming Required
Any or all of the following:

- Access Code 061 - Type of Line
- Access Codes 0120, 0121, 0122, 0123 - Pause on Number
- Access Code 013 - Pause Time
- Access Code 005 - Flash / Cancel / Transfer
- Access Code 011 - Flash / Cancel Timing
- Access Code 047 - Simultaneous / Serial Ringing (Discriminating Ringing)

PICKUP GROUPS

Description
In order to perform the Call Pickup - Local feature on the Panther II system, each station must be assigned to one of the fifteen pickup groups (01 to 15). The pickup groups should be organized so that stations in close physical proximity to each other are placed in the same pickup group. Pickup Group assignment allows a user to answer any incoming or transferred call on a line that does not appear (or ring) at their Set, as long as it appears on at least one Set in the group.

Conditions
- Calls will be answered in the following order of priority, when the Call Pickup -Local code is dialed from a Set:

    1. Incoming C.O. calls
    2. Transfer Ringing calls
    3. Incoming Intercom (internal) calls.

- The incoming C.O. call of each of the above three types will be answered first.

Programming Required
- Access Code 125 - Pickup Groups

PRIVATE LINES

Description

This feature allows any line to be programmed to be exclusive to any one Set or groups of Sets. The private line cannot be answered or accessed from any other station.

Conditions

- To program the Private Line, one station must be assigned to one group, and that group must be assigned to one line. All other lines must be placed in other groups.

Programming Required

- Access Code 201 - Tenant Group Assignment
- Access Code 121 - Tenant Groups
- Access Code 006 - Tenant Types

PROGRAMMABLE RELAY

Description

The Dry Contacts can be programmed to activate the Loud Bell equipment, or optional equipment such as electronic doors, security systems, etc., using a programmable relay (Loud Bell / Relay Control). All users can be programmed on a set-by-set basis to have access to the programmable relay (Relay Control Capability). The programmable relay can operate in Automatic or Manual mode (Automatic / Manual Return To Off).

Automatic Mode should be selected if the relay activates motorized equipment (e.g., a motorized gate), which only requires a signal to start the gate's motor. If Automatic mode is selected, the relay control will turn off automatically after a programmable length of time (Automatic Return To Off Timing).

If the relay contact will be used for equipment which requires both a start (ON) and stop (OFF) code (e.g., to open a door and close it after the person has entered), then Manual Mode should be selected.

Conditions

- Relay Control equipment is customer-supplied.
- Since the same closure is used for Loud Bell and Relay Control, the system must be programmed for one or the other.

Programming Required

- Access Code 018 - Loud Bell / Relay Control
- Access Code 019 - Automatic / Manual Return to OFF
- Access Code 052 - Automatic Return to OFF Timing
- Access Code 111 - Relay Control Capability

RINGING LINE PREFERENCE (Ringing Line Pickup)

Description

This feature allows a station user to pick up a ringing line, simply by lifting the handset (or pressing the SPEAKER key if handsfree). The feature is

programmed on a set-by-set basis, during system programming. The system is preprogrammed to provide Ringing Line Pickup capability to all stations.

If Ringing Line Pickup is programmed for a set, then all calls that ring at that set can be answered simply by lifting the handset, regardless of whether the set is programmed for Auto Line Select, Auto Intercom or Manual Select.

Conditions

- C.O. line calls have priority over Transfer Ringing if both ring at the same time.
- Transfer Ringing has priority over intercom calls if both ring at the same time.
- You must assign C.O. lines (Flexible Ringing Assignment) to a station before you can have Ringing Line Preference at the station.

Programming Required

- Access Code 119 - Flexible Ringing Assignment
- Access Code 105 - Ringing Line Pickup

RINGING OVER PAGING

Description

This allows ringing to go through the optional external paging amplifier, if one is connected. It is programmable in the same manner as the Dry Contact Relay is for ringing. Ringing through External Page can ring selected lines during the day, and can ring others at night.

Conditions

- C.O. ringing has priority over voice paging.
- An external paging amplifier is optional on the Panther II System, and must be connected for this feature to work.

Programming Required

- Access Code 063 - Loud Bell Ringing/Ringing Over Paging By Line (Day Mode)
- Access Code 064 - Loud Bell Ringing/Ringing Over Paging By Line (Night Mode)
- Access Code 018 - Loud Bell/Relay Control

SET MIGRATION

Description

The Panther line of Key Telephones are designed for easy migration. Today's Panther 306, 612, 1032 and 2064 Sets all migrate to the Panther II KSUs. The Panther II System has features that add flexibility and strength to each Set. There is little programming required when new Sets are added;

only the new station's set type and ringing assignment must be designated in system programming. Feature programming for the new stations can be easily accomplished using the Block Programming capability (see Section 4, BLOCK PROGRAMMING).

Conditions
None

Programming Required
- Access Code 100 - Type of Set
- Access Code 119 - Flexible Ringing Assignment

STATION HUNTING GROUPS

Description
Four Station Hunt Groups can be set up on the Panther II system. The programming of Station Hunt Groups allows calls to be transferred to a group of users, such as a specific department, with little Master Attendant intervention; e.g., a call can be transferred to the Sales Department (to no specific person) by dialing the Sales Department's Hunt Group code, and the call will ring at the lowest-numbered, available station in the Hunt Group. This feature is applicable in a Sales or Customer Service environment, where it is important that incoming calls are divided equally. If busy tone is heard when the Station Hunt Group's code is dialed, this indicates that all Sets in the Hunt Group are busy. If all Sets in the group are busy, the call can be camped on and the first available station will receive the call.

Conditions
None

Programming Required
- Access Code 124 - Intercom Tenanting / Station Hunt Groups

SYSTEM CLEAR

Description
During System Programming, the programmer selects one of three system clear capabilities which will be performed on a systemwide basis, when the appropriate code is dialed from Station 10 (the Programming Station). The three possible System Clear options are:

- The capability of clearing all System features and resetting the system to its preprogrammed values.
- The capability of clearing all Common Speed Call numbers for the system.

OR

- The capability of clearing all Private Speed Call numbers for the system.

CAUTION: This feature should be used with extreme discretion. The feature is not to be confused with "Set Feature Clear".

Conditions
None

Programming Required
- Access Code 070 - System Clear

TENANT TYPES

Description
This programming is done in conjunction with Flexible Ringing Assignment, Tenant Groups and Tenant Group Assignment. It allows the Panther II System to be programmed on a systemwide basis as one of the following four line group types:

Type A - Sets assigned to this line group can only make and answer calls on lines within the same tenant group.

Type B - Sets assigned to this line group can make and answer calls on lines within the same tenant group, and can also answer incoming calls ringing in another group.

Type C - Sets assigned to this line group can make and answer calls on lines within the same tenant group, and can also receive calls transferred from another group.

Type D - Sets assigned to this group have no restrictions. Includes the features of Types A, B, and C.

Conditions
None

Programming Required
- Access Code 006 - Tenant Types

TOLL RESTRICTION BY LINE

Description
This feature allows the lines on the Panther II System to be placed in one of six possible toll restriction groups:

Class A - there are no restrictions on making calls.

Class A' - no restrictions except the preprogrammed entries in Deny Table A.

Class B - dialing any of the preprogrammed entries from Deny Table B, or dialing the number of Digits to Deny when Behind PBX/Centrex, or dialing a restricted Common Speed Call number from the Split Restriction Table for Class B** will restrict a call. Digits dialed in Allow Table B will be accepted.*

*Class B' - dialing any of the preprogrammed entries from Deny Table B or dialing the number of Digits to Deny * when Behind PBX/Centrex, or dialing a restricted Common Speed number from the Split Restriction Table for Class B ** will restrict a call.*

*Class C - no outside calls can be made, except those telephone numbers beginning with preprogrammed entries included in Allow Table C, or dialing Common Speed Call numbers that are unrestricted in the Split Restriction Table for Class C***. This allows the Class C user to have access to some emergency numbers.*

Class C' - no outside calls can be made.

This feature is programmed in conjunction with TOLL RESTRICTION BY STATION, and the TOLL RESTRICTION TABLES. Class A is the preprogrammed value for all lines.

***DIGITS TO DENY -**
Determines on a systemwide basis, the digit on which dialing will be denied for Class B Restrictions.

**** SPLIT RESTRICTION FOR CLASS B -**
Determines on a systemwide basis, whether the first or last 40 Common Speed Call numbers will be available to stations with Class B Restrictions. (See also, Section 5, COMMON SPEED CALL - DIALING).

***** SPLIT RESTRICTION FOR CLASS C -**
Determines on a systemwide basis, whether the first or last 40 Common Speed Call numbers will be available to stations with Class C Restrictions. (See also, Section 5, COMMON SPEED CALL - DIALING).

Conditions

- If the Panther II System is placed behind PBX, the restricted digits will apply after the PBX Access Code has been dialed, providing the system has been programmed for PBX type lines and providing a PAUSE has been programmed after the PBX Access Code.
- Restrictions in the Deny Tables take precedence over the exceptions in the Allow Tables.

Programming Required

- Access Code 014 - Digits to Deny
- Access Codes 0150 and 0151 - Split Restriction for Class B Common Speed Numbers
- Access Codes 0160 and 0161 - Split Restriction for Class C Common Speed Numbers
- Access Code 065 - Toll Restriction by Line

TOLL RESTRICTION BY STATION

Description
Determines which one of the six classes of Toll Restriction (see Section 4, TOLL RESTRICTION BY LINE) will be assigned to each station. Each station is preprogrammed with Class A Toll Restriction.

Conditions
- Toll Restriction by Station will be affected if Forced Account Codes or Toll Security are enabled at a Set.

Programming Required
- Access Code 103 - Toll Restriction by Station

TOLL RESTRICTION EXCEPTION TABLES

Description
These tables define preprogrammed 1- to 4-digit entries which will be allowed or denied by the six Toll Restriction groups. After the ALLOW and DENY tables are set up, each line (see Section 4, TOLL RESTRICTION BY LINE) and then each station (see Section 4, TOLL RESTRICTION BY STATION) is placed into one of the six possible Toll Restriction groups.

> ***Deny Table A** is used for CLASS A' and consists of sixteen possible 1- to 4-digit entries. Preprogrammed entries include the digits 411, 555 and 976.*
>
> ***Deny Table B** applies to CLASS B and CLASS B'. It consists of eight possible 1- to 4-digit entries. Preprogrammed entries include the digits 0 and 1.*
>
> ***Allow Table B** is used for CLASS B and consists of eight possible 1-to 4-digit entries. Preprogrammed entries include the digits 1800 and 800.*
>
> ***Allow Table C** applies to CLASS C and consists of sixteen possible 1- to 4-digit entries. Preprogrammed entries include the digits 911.*

Conditions
- Restrictions in the Deny Tables take precedence over the exceptions in the Allow Tables.

Programming Required
- Access Code 0420 - Deny Table A
- Access Code 0421 - Deny Table B
- Access Code 0430 - Allow Table B
- Access Code 0431 - Allow Table C

STATION SECURITY

Description

This feature prevents unauthorized users from accessing an outside line from a station. Before an outside line can be accessed, users must dial a security code.

Up to six possible 4-digit Station Security Codes can be designated by the Master Attendant for use on the Panther II system. The 4-digit codes can be any digits from 0000-9999. Once the Station Security Codes are designated, then the Master Station provides each station in the system with one of the following four privileges on a set-by-set basis:

> ***High Level Privilege*** *- This user does not need to dial a Station Security Code at any time. This is the preprogrammed value for all Sets.*
>
> ***Day Level Privilege*** *- This user does not need to dial the code when the system is in Day Mode, but must dial the Station Security Code in order to have access to an outside line when the system is in Night Mode.*
>
> ***Night Level Privilege*** *- This user must dial the code when the system is in Day Mode, but does not need to dial the Security Code during Night Mode. This programming is reserved for those users which do not normally use the system when it is in Night Mode.*
>
> ***Low Level Privilege*** *- This user must dial the Station Security Code at all times, in order to have access to an outside line.*

If one of the six codes is dialed from any station, access to an outside line is guaranteed. This allows a user to make calls from any set, even from a set which is in secure mode. The user's Station Security Code is not verified by the system.

Conditions

- After entering your Station Security Code, you will access either the last line used at the set or the set's prime line.

Programming Required

- All programming for this feature is done from the Master Attendant Station.

ZONE PAGING GROUPS

Each station can be assigned to fifteen 2-digit zone paging groups (01 to 15). Paging groups can be made up of different departments, different functional groups or different locations. Zone Paging announcements can then be made through the Set speakers, to one specific group of stations (which have been programmed into the specific zone), or to all sets simultaneously. The announcement will be heard only within the designated zone.

Conditions

- A station can be assigned to more than one zone.

Programming Required

- Access Code 122 - Zone Paging Groups

5. STATION FEATURES

ACCOUNT CODES (FORCED AND MANUAL)

Description

There are two types of Account Codes available on the Panther II system, Forced and Manual. Both are used to bill calls to an account, but in the case of Forced Account Codes, the user must supply the account number before being given access to an outside line. Manual Account Codes can be entered at any time before a call is ended.

Before you can access an outside line you must enter a Forced Account Code. After you enter the Forced Account Code, you will automatically be given access to an outside line. If your set has been programmed with a Forced Account Code, and you press a line key, a line pool key or dial 9, without entering the security code you will not obtain dial tone and the line LED will not turn on.

Each station is programmed to accommodate Manual or Forced Account Codes on a set-by-set basis. Account Codes can be any 4 -, 6- or 8-digit number, dependent on programming. In default, 6-digit Account Codes are used. Codes 000000 to 999999 can be entered to allow 1,000,000 possible combinations. When more are required, # and * can be used; e.g., *#99.

An Account Code can be programmed to appear (on a systemwide basis) on the far right field of the SMDR printout immediately following the call information. It will be preceded by the letter "A", such as A123456.

Conditions

- Each Set can use Forced or Manual Account Codes, but not both.
- If a Panther II system is set up with both Station Security and Forced Account Codes enabled at a Set simultaneously, the user must dial the Station Security Code first, followed by the Forced Account Code, in order to obtain an outside line.
- Account Code Printout must be programmed for the system before Account Codes can be used.
- Account Codes cannot be stored in a Saved Number Redial key, a Redial key or speed dial keys.

Programming Required

- Access Code 021 - Forced/Manual Account Code Digits
- Access Code 007 - Account Code Printout
- Access Code 107 - Account Code Type

ALARM REMINDERS

Description

Users can program an alarm to sound through their Set's speaker on a one-

time basis, or to be repeated at daily or weekly intervals, to remind them of meetings, appointments, etc. The alarm consists of six 1-second bursts of ringing. The alarm will sound if the set is idle. However, if the set is in use the alarm will not sound until the set is returned to an idle state and the clock turns to the next minute. In addition, the Panther II Display Set can program a message to appear on the LCD Display for 60 seconds when the alarm sounds (see Section 6, ALARM REMINDER MESSAGES).

Conditions
- Only one type of (one-time, daily or weekly) can be programmed at a time. If a second reminder is programmed, the first is cancelled.
- There is programming verification at an LCD Set only.

Programming Required
None

ALL CALL PAGE

Description
This feature allows a user to make voice paging announcements to all idle stations simultaneously by dialing a code or pressing their own DSS key. Any one of the paged stations may answer the announcement simply by dialing the "Meet-Me Answer" code, provided that the user originating the announcement is still on the line. The All Call Page announcement is preceded by a double tone at all stations.

Conditions
None

Programming Required
None

BACKGROUND MUSIC

Description
If a music source is connected to the system, background music can be activated through the speaker of each Set individually. Music will stop temporarily during an incoming call.

Music can also be played through the external paging system (see Section 5, MUSIC THROUGH EXTERNAL PAGE). Calls placed on hold will hear music automatically (see Section 5, MUSIC ON HOLD).

Conditions
- A music source must be connected.

Programming Required
None

BUSY OVERRIDE

Description
The Busy Override feature allows a user (Party A) to signal another user (Party B), who is on another call, that they want to speak with Party B. When Busy Override is activated, Party B hears three short tone bursts through the speaker and has the option of answering or ignoring the signal.

Conditions
- You cannot Busy Override a Set that has Do Not Disturb enabled unless Do Not Disturb Override is enabled at your Set.

Programming Required
None

CALLBACK

Description
When a call is transferred, if the station does not answer after the programmed length of time, ringing:

- is returned to the originator then the Master Attendant (or sub-attendant if programmed), or
- is returned directly to the Master Attendant (or sub-attendant, if programmed), or
- is not returned.

The choice is dependent on the programming of the originating Set.

Conditions
- The callback destinations are programmed for each set in the system.
- If the callback returns to the originator and remains unanswered, the call is routed to the attendant upon expiry of a second ring period.

Programming Required
- Access Code 017 - Transfer Ringing Time
- Access Code 104 - Transfer Ringing Return

CALL HOLD / HOLD RECALL

Description

The Call Hold feature allows an external or internal call to be placed on hold. While the call is on hold, the Set may be used to perform other functions such as transfer, conference or paging. When a Set has placed a call on hold, the appropriate line indicator flashes at one rate at that Set, and at a different rate at other Sets.

If an external call on hold is not retrieved within a predefined time, the system provides four short tones, repeated at regular intervals through the Set's speaker, to remind the user that a call is on hold. In addition, the Panther II Display Set provides a visual reminder of the call on hold (see Section 6, HOLD RECALL DISPLAY).

Calls on hold can be stacked in order. Dialing the digit 6 will automatically retrieve the first (oldest) external call placed on hold. Calls on hold can be retrieved from any station (see Section 5, CALL HOLD RETRIEVE).

Conditions

- Only one station can be placed on hold at a time, but any available number of outside lines can be placed on hold at a time.

Programming Required

- Access Code 000 - Hold Recall Time
- Access Code 040 - Intercom on Hold

CALL HOLD RETRIEVE

Description

The Call Hold Retrieve feature allows a call that was placed on hold to be picked up from another station. It is only necessary to know the station number that put the call on hold. The feature is helpful for stations that do not have all lines appearing at their Sets.

If a user places a call on hold at their own Set, goes to another area (and wishes to retrieve the call from a Set without line appearance), the user can dial their own station number to retrieve the call.

Conditions

None

Programming Required

None

CALL PARK

Description
The Call Park feature allows a call to be parked temporarily and picked up from another station. It is only necessary to know the number of the line that was parked. The feature is helpful as an Attendant call processing feature.

Conditions
None

Programming Required
None

CALL PICKUP - LOCAL

Description
Any station can be assigned to a pickup group (see Section 4, PICKUP GROUPS), and can answer any type of call for that group, by dialing the Call Pickup - Local code.

Programmable Feature Keys allow a specific key to be programmed as a Call Pickup - Local key (See Section 5, PROGRAMMABLE FEATURE KEYS for more details).

Conditions
- Calls will be answered in the following order of priority, when the Call Pickup - Local code is dialed from a Set:
    1. Incoming C.O. calls
    2. Transfer Ringing calls
    3. Incoming Intercom (internal) calls.
- The incoming C.O. ringing call of each of the above three types will be answered first.

Programming Required
- Access Code 125 - Pickup Groups

CALL PICKUP - REMOTE

Description
Call Pickup - Remote allows a station user to answer any internal call ringing at another station within the system, by dialing the Call Pickup - Remote code, followed by the number of the ringing station. This feature is not determined by group.

Programmable Feature Keys allow a specific key to be programmed as a Call Pickup - Remote key (See Section 5, PROGRAMMABLE FEATURE KEYS for more details).

Conditions
- If more than one station attempts to pick up a ringing line at the same time, the call will be answered by the first person who dials the Call Pickup - Remote code.
- Call Pickup priorities are the same as Call Pickup - Local priorities. The oldest (first) ringing call of each type will be answered first.

Programming Required
None

CALLING THE ATTENDANT

Description
The Set which is installed at the master station position, can be called simply by dialing 0 on an intercom path. The master station position is preprogrammed to be station number 10 but may be programmed for any other station number (see Section 4, FLEXIBLE MASTER STATION PROGRAMMING). If multiple attendants (sub-attendants) are programmed, dialing the digit 0 will call that Set's sub-attendant.

Conditions
None

Programming Required
- Access Code 053 - Flexible Master Station Programming
- Access Codes 0370, 0371, 0372, 0373 - Multiple Attendants

CALL TRANSFER - VOICE

Description
The Call Transfer - Voice feature allows you to transfer an outside call by pressing the HOLD key (to put the call on hold), making a paging announcement to the desired station, and then informing the person at the station which line the call is on. The person at the station picks up the call by simply pressing the appropriate line key.

Conditions
None

Programming Required
None

COMMON SPEED CALL - DIALING

Description

Each user on a Panther II 820, 1032 or 2064 system has access to a systemwide directory of 80 Common Speed Call entries. These entries, when stored in the system's memory, can be dialed from any Set. Common Speed Call entries are stored by 2-digit codes (20 to 99; see COMMON SPEED CALL - STORING in this section), but can be dialed either by code, or by One Touch Speed Dial, if programmed.

Common Speed Call entries can be dialed on any available line, but are subject to SPLIT RESTRICTIONS for a Class B or Class C user (see also Section 4, TOLL RESTRICTION BY LINE). Split Restrictions allow the Common Speed Call bins to be divided into two parts:

	First 40 Speed Calls	Last 40 Speed Calls	Preprogrammed Value
Class A	No restriction	No restriction	No restriction
Class B	Can be restricted	Can be restricted	No restriction on all 80 Speed Calls
Class C	Can be restricted	Can be restricted	No restriction on all 80 Speed Calls

Conditions

- Class B, B' and C users may be restricted from dialing certain Common Speed Call numbers if Split Restriction is programmed.
- Common Speed Call numbers override the DIGITS TO DENY feature (see Section 4, TOLL RESTRICTION BY LINE).

Programming Required

The following codes may apply:

- Access Codes 0150 and 0151 - Split Restriction for Class B Common Speed Numbers
- Access Codes 0160 and 0161 - Split Restriction for Class C Common Speed Numbers.

COMMON SPEED CALL - STORING

Description

Common Speed Call entries are stored at the Master Station. Each entry is stored using a 2-digit code from 20 to 99. The entries can be up to 26 digits in length, including pauses, halts and flashes.

Automatic pauses, hookswitch flashes and halts can be entered into a speed dialing sequence by pressing the appropriate key, as marked on the Set's designation card; press HOLD to insert a Halt; press FLASH/CANCEL to insert a Flash; press CONFERENCE to insert a Pause.

Storing instructions are provided in the Master Attendant section of each *Panther II User Guide*.

Conditions
None

Programming Required
None

CONFERENCE CALL - EXTERNAL

Description
There are three types of conferencing when an additional party is added to an existing call. An external party may be added to an existing outside call to form a 3-party external conference.

Conditions
- Conference quality can be affected by various operating conditions.

Programming Required
None

CONFERENCE CALL - INTERNAL

Description
The Internal Conference Call feature allows an additional station to be added to an existing internal call to form a 3-party internal conference.

Conditions
None

Programming Required
None

CONFERENCE CALL - MIXED

Description
The Conference Call - Mixed allows an internal call to be added to an existing outside call to form a 3-party mixed conference.

If Intercom On Hold (Access Code - 040) is programmed for the system, you can establish a mixed conference call by adding an external call to your intercom call on hold.

Conditions
None

Programming Required
None

DIAL SIGNAL CONVERSION

Description
While an external call is being dialed, if the user presses the * key, the Panther II system will switch from pulse dialing to tone dialing for the remaining digits in the call. This allows the user to have access to tone dialing. The Set reverts to pulse dialing when the call is completed (when the user hangs up).

Conditions
- The Panther II System must be connected to rotary lines, and be programmed for Pulse operation in order for this feature to operate.

Programming Required
- Access Code 060 - Pulse or Tone Dialing

DO NOT DISTURB

Description
The Do Not Disturb feature prevents all external calls, internal calls and paging announcements from ringing at the Set. Any user trying to page the Set hears busy tone. The Intercom indicator flashes while Do Not Disturb is on. If a Panther II Display Set user calls or pages a Set with Do Not Disturb activated, the user will see the DND Message on their LCD.

Programmable Feature Keys allow a specific key to be programmed as a Do Not Disturb key (See Section 5, PROGRAMMABLE FEATURE KEYS for more details).

Conditions
- A user with Do Not Disturb activated at their Set can only be interrupted by a user with DO NOT DISTURB OVERRIDE capability. See DO NOT DISTURB OVERRIDE, below for more details.

Programming Required
None

DO NOT DISTURB OVERRIDE

Description
When a Set user with Do Not Disturb Override capability encounters Do No Disturb (a busy signal) at a Set, they can press the # key. This sends a long tone to the station with Do Not Disturb activated, to alert them that someone is trying to reach them. In default mode, the Master Attendant is the only station with Do Not Disturb Override capability, but any station can be programmed with this privilege, on a set-by-set basis. Note that the Do Not Disturb Override capability cannot be removed from the Master Attendant.

Conditions
- This capability must be programmed on a set-by-set basis during system programming.

Programming Required
- Access Code 106 - Do Not Disturb Override capability

EXCLUSIVE CALL HOLD

Description
The Exclusive Call Hold is a variation of the Call Hold feature. The Set which originally placed the call on exclusive hold is the only Set which can retrieve the call. The appropriate line indicator on the controlling set flashes at the Exclusive Call Hold rate, while the corresponding indicator at other Sets will be on (in use).

Conditions
None

Programming Required
None

EXECUTIVE OVERRIDE

Description
The Executive Override feature (also known as Barge-In), overrides the privacy of an outside call in progress by allowing a user to enter the conversation. An intrusion tone is preprogrammed to be heard by the other parties, prior to the user 'barging-in' on the call.

When this feature is used and the overriding or overridden party has a display set, the word "Conference" will appear in the display.

Condition
- The Executive Override feature is assigned to individual Sets during system programming. Only Sets which have the feature assigned to them can activate the feature.
- Only one user can 'barge into' a conversation at a time.

Programming Required
- Access Code 026 - Executive Override Tone
- Access Code 102 - Executive Override Capability

EXTERNAL LOUDSPEAKER PAGING

Description
This feature allows an announcement to be made through an optional external loudspeaker (public address) system, if connected.

Conditions
- To operate this feature, an optional external loudspeaker system must be connected to the Panther II system.

Programming Required
None

HANDSET / HANDSFREE

Description
The Handset / Handsfree feature allows a user to switch from the handset to handsfree operation and vice versa, at any time during a call. Handsfree conversations are achieved by speaking in a normal voice in the direction of the Set during handsfree mode. To switch from handsfree to handset operation during a call, lift the handset.

It is recommended that the handset be used instead of the microphone in areas with excessive background noise; e.g., near an air-conditioning vent, fan, or in open office areas.

Conditions
- A handsfree set must be used to initiate a handsfree conversation, but non-handsfree Sets can still have handsfree answerback on intercom (see Section 2, PANTHER TELEPHONE SETS, for a listing of handsfree and non-handsfree Sets, and refer to HANDSFREE ANSWERBACK below).

Programming Required
None

HANDSFREE ANSWERBACK

Description
When an intercom call (by voice) is placed to a Non-Handsfree Set, if the user's microphone is on, the user can have a handsfree conversation simply by speaking in the direction of the Set.

Conditions
- All Non-Handsfree Sets except the Panther II Set have Handsfree Answerback on intercom.

Programming Required
None

INCOMING CALLS

Description
Incoming calls are defined as calls which are received over C.O. lines. The presence of an incoming call is indicated by audible ringing and/or a flashing line indicator.

If Ringing Line Preference is programmed for the Set (see Section 4, RINGING LINE PREFERENCE), the ringing call can be picked up by simply lifting the handset (or pressing the SPEAKER key, if handsfree), or dialing 9. If Ringing Line Preference is not programmed, the ringing call can be picked up by pressing the flashing line indicator. Panther II Sets should be programmed with Ringing Line Preference.

Conditions
In order for ringing to occur, ensure that the following options are programmed correctly:

- Ringing must be programmed for the line that the call is coming in on (see Section 4, FLEXIBLE RINGING ASSIGNMENT).
- Do Not Disturb cannot be activated at the Set (see Section 5, DO NOT DISTURB).
- If the Set belongs to Tenant Type B or D, only C.O. lines within the same Tenant Group can be accessed (see Section 4, TENANT TYPES).
- Ringing will follow either Simultaneous or Serial programming (see Section 4, DISCRIMINATING RINGING).
- C.O. calls have priority over Intercom calls, if both ring in at the same time.

Programming Required
Any or all of the following can be programmed:

- Access Code 119 - Flexible Ringing Assignment
- Access Code 105 - Ringing Line Preference
- Access Code 047 - Simultaneous / Serial Ringing (Discriminating Ringing)
- Access Code 006 - Tenant Types

INTERCOM PAGING (DSS/BLF KEYS/CONSOLES)
- To an Individual Station

Description
The Individual Intercom Paging feature allows the user to make voice paging announcements to specific stations by pressing the desired station's DSS key. Individual paging announcements can be answered by using the handset or simply by speaking in the direction of the Set. The individual paging announcement is preceded by a single tone. (See also, Section 5, STATION TO STATION CALLING, for Sets that do not have DSS keys).

Conditions
- A DSS key must be programmed for a specific station, in order for a user to make an Intercom Paging announcement to the station.

Programming Required
- Programmable Keys allow DSS keys to be programmed as stations. See Section 5, PROGRAMMABLE DSS/SPEED for details.

INTERNAL CALL FORWARDING

Description
There are four types of Internal Call Forwarding available on the Panther II system:

Call Forward - Follow Me, *directs the internal and transferred ringing calls that are sent to a user's station to another station where the user will be working for some period of time.*

Call Forward - Busy, *directs the internal and transferred ringing calls that are sent to a user's station while the Set is busy ; e.g., if the user will be using the telephone for some period of time, and wants messages to be taken by another person.*

Call Forward - No Answer, *directs the internal calls that are sent to a user's station to another station when his/her set isn't answered. e.g., if the user will be away from his/her desk for some period of time, and wants messages to be taken by another person. The Set will ring for a*

programmable length of time before being forwarded to the appropriate station.

Call Forward - Busy/No Answer, *directs the internal calls that are sent to a user's station to another station if the Set is busy or does not answer. For Call Forward - No Answer, the Set will ring for a programmable length of time before being forwarded to the appropriate station.*

When Call Forwarding is activated, the Intercom indicator lamp flashes quickly and the LCD (on Panther II Display Sets) shows, "TRANSFER TO S--". Call Forwarding will remain in effect at a Set until the user or Master Attendant cancels it.

Conditions
- Only one type of Call Forwarding can be activated at each Set, at a time.

Programming Required
- Access Code 036 - Call Forwarding - No Answer Time

LAST NUMBER REDIAL

Description
The Last Number Redial feature allows the last number dialed at the Set to be redialed automatically whenever a line is accessed and the REDIAL key is pressed.

Conditions
- If Auto Hold is programmed, the SPEED key must be pressed before pressing the REDIAL key to avoid placing the selected line on hold.

Programming Required
None

LINE POOL ACCESS

Description
This feature allows a standard line key to be used to access a whole pool of lines. If a line key isn't available for use as a line pool key, then an access code can be dialed to select the line pool. This allows sets, such as the Panther II Set (Basic Set), to access line pools. The codes for accessing line pools are as follows:

Line Pool	Access Code
1	401
2	401
3	403
4	404

Pressing a line pool key will select the first available line in the pool. If none of the lines in the pool are free, the user can queue for the line pool, using the same methods as normal line queuing. See also Section 4, LINE POOLS.

Programmable Feature Keys allow a specific key or several keys to be programmed as Line Pool keys (See Section 5, PROGRAMMABLE C.O. LINES for more details).

Conditions
- Line Pools must be set up in System Programming.

Programming Required
- None

LINE QUEUING

Description
This feature gives you the ability to reserve a line for use when the line becomes available. You can queue for any available line in your line group, or queue for a specific line (or pool of lines).

You are automatically placed in queue for the line when you:
- dial 3 and the number of a busy line,
- press a busy line key, *or*
- dial 9 when all lines are busy.

If a prime line is programmed for your set, when you dial 9 you will be queued for your prime line only.

You will hear one burst of tone confirming that you have been placed in queue. When the queued line becomes free, you will hear bursts of tone every second for 5 seconds. To cancel the queue, simply press the FLASH/CANCEL key while on hook.

Conditions
- None

Programming Required
None

MEET-ME ANSWER

Description
This feature allows a user to respond to an ALL PAGE, ZONE PAGE or EXTERNAL LOUDSPEAKER PAGE announcement, by dialing a code. When the user dials the Meet-Me Answer Code, they are automatically connected to the station that performed the paging announcement.

Conditions
- None

Programming Required
None

MESSAGE WAITING

Description
The Message Waiting feature allows any station to leave a message waiting signal at a Set which is busy or does not answer an internal call. The FLASH/CANCEL key is pressed (once busy or no-answer tone is heard) to leave a message waiting signal, and the internal connection is dropped automatically. When message waiting is activated at a Set, the Intercom indicator lamp flashes. The user with the message waiting signal presses the Intercom key (or the # key on a Panther II Set) to contact the person who sent a message (by tone). Busy tone is heard if the user that left the message waiting signal is busy.

Up to five messages can be left at each station. If a user tries to leave a message at a station that already has five messages waiting, busy tone will be heard and the user can try again later. If two messages are sent to a station by the same user, the first message is cancelled.

Message Waiting signals are stacked in order of oldest to newest. When the person responds to a message waiting signal by pressing the Intercom key (or the # key on a Panther II Set), they will contact the first person who left a message. Once the conversation is completed and the user hangs up, if the Intercom lamp is still flashing, this signifies that another message is waiting. By pressing the Intercom key (or the # key on a Panther II Set) again, the user contacts the next station who left a message, and so on. All messages have been answered if the Intercom lamp does not flash after the user hangs up.

Conditions
- When the Intercom key (or # key on a Panther II Set) is pressed while the Intercom Indicator lamp is flashing, internal dial tone will not be heard - priority is given to contacting the station that left a message.

Programming Required
None

MUSIC ON HOLD

Description
When an optional music source is connected to the Panther II system, calls on hold will hear background music automatically.

Conditions
- Ensure that the proper music input to the KSU is used.

Programming Required
None

MUSIC THROUGH EXTERNAL PAGE

Description
The optional Music through External Page feature allows music to be piped through a public address system if a music source and loudspeaker are connected to the Panther II system. Music through External Page is activated from the Master Attendant (preprogrammed as Station 10).

Conditions
- Music will stop temporarily when an ALL PAGE, ZONE PAGE or EXTERNAL PAGE announcement is being made.

Programming Required
None

NIGHT PICKUP

Description
The Night Pickup feature allows users to pick up any ringing line that comes through a Set, through optional external paging equipment or through the Loud Bell, during Night Mode. Any user can go to any Set in the system, dial the Night Pickup Code and pick up the ringing line.

Programmable Feature Keys allow a specific key to be programmed as a Night Pickup key (See PROGRAMMABLE FEATURE KEYS in this Section for more details).

Conditions

- A Set programmed to have the ringing line appear, can also answer the call by pressing the appropriate line key.
- The ringing call of lowest numbered line will be picked up first.
- The first user to dial the Night Pickup code (or press the appropriate line key), will answer the call.

Programming Required

None

OFF-HOOK VOICE ANNOUNCE

Description

The Off-Hook Voice Announce feature uses two consecutive station ports in the system. For example, if a Panther II Display Set using Off-Hook Voice Announce is connected at Station 13, then Station 14's voice pair must be reserved for Off-Hook Voice Announce wiring; Station 14 cannot be used as a regular station.

Off-Hook Voice Announce allows the Display Set user who is busy on an off-hook call, to be contacted through their Set's speaker at any time during the call. The Off-Hook Voice Announcement will be preceded by a tone. To avoid Off-Hook Voice Announce interruptions, the Display Set user must use their Set handsfree.

When the Off-Hook Voice Announcement is initiated (by code), a handsfree conversation can take place.

Conditions

- Off-Hook Voice Announce is available through a Panther II Display Set only, exept during intercom call.
- The maximum number of Off-Hook Voice Announce ports is limited by the number of ports in the system and the number of Panther II Display Sets used.
- A 6-conductor cable and jack is required for each station that will be using the Off-Hook Voice Announce feature.
- A Panther II Display Set can be accompanied by either Off-Hook Voice Announce, or a DSS/BLF Console, but not both.

Programming Required

- Access Code 100 - Type of Set programming

ON HOLD ACCESS

Description
To retrieve calls on hold, a user can either press the line key (if the line appears at their Set), or dial 6. Calls can be retrieved off-hook or on-hook.

Pressing the 6 key will retrieve calls in the order that they were placed on hold at the station (oldest to newest).

Conditions
- Any available number of outside lines can be placed on hold at the same time, but only one internal station can be placed on hold at a time.

Programming Required
None

ON-HOOK DIALING

Description
Pressing a line key or dialing 9 while on-hook, selects an outside line (without the need to lift the handset). When dial tone is heard through the speaker, the outside call can be dialed. If the call is being made on a Panther II Display Set, digits will be displayed on the LCD as they are dialed. When the called party answers, the handset can be lifted.

Pressing the Intercom key while on-hook, selects an internal line (without the need to lift the handset). When internal dial tone is heard through the speaker, the internal call can be dialed. If the call is being made on a Panther II Display Set, digits will be displayed on the LCD as they are dialed. When the called party answers, the handset can be lifted.

Conditions
None

Programming Required
None

OUTGOING CALLS

Description
Outgoing calls are defined as calls which are originated at the Panther II System over C.O. lines. To place an outgoing call, there are four methods of selecting a line:

- The last line used at the Set can be automatically selected by pressing the 9 key. If the last line is in use, the system selects the next

available line that the user has access to. If Prime Line Select is programmed for a Set, pressing the 9 key will select the Prime Line.

• A line pool key can be pressed to select one of the four possible pools of lines (e.g., a pool made up of "same area" WATS lines, FX lines, local lines, etc.). Line Pool keys must first be programmed, using PROGRAMMABLE C.O. LINES information given in this Section. Details about line pools are provided in Section 4, LINE POOLS.

• A line key can be pressed to select a specific available line (or to be placed in queue for a specific busy line), if the line key appears at the Set.

• Dialing the digit 3, followed by the 2-digit line number (01 to 20) will select a specific line. This method is useful to select a line which does not appear at the Set, or is useful for the Panther II Set which does not have line keys.

Conditions

• Access to outside lines will be affected by any of the following programming features enabled at the Set: FORCED ACCOUNT CODES, TOLL SECURITY, TOLL RESTRICTION, TENANT TYPES OR FLEXIBLE RINGING ASSIGNMENT. See the applicable feature descriptions in this Guide for more details.

Programming Required

None

PREPROGRAMMED MESSAGES

Description

There are ten preprogrammed messages available on the Panther II system. When a user dials the appropriate message access code, a message will be left on his/her Set, and the message will be displayed when a Panther II Display Set calls the station. The message will remain activated until it is cancelled. The ten messages and their respective access codes are:

• Access Code 80 - Call at Hr:Min:(a.m./p.m.).
• Access Code 81 - Return at Hr:Min:(a.m./p.m.).
• Access Code 82 - Return Yr/Month/Date.
• Access Code 83 - On Vacation.
• Access Code 84 - In Meeting.
• Access Code 85 - At Lunch.
• Access Code 86 - Out of Town.
• Access Code 87 - Page Me.
• Access Code 88 - Do Not Disturb.
• Access Code 89 - Gone For Day.

Conditions
- Preprogrammed messages can be left by any station user, but will only be seen by those users who have a Panther II Display Set.

Programming Required
- Access codes (shown above) must be dialed from the Set which wishes to leave the message.

PRIME LINE SELECT / PRIME LINE PREFERENCE

Description
This feature allows an individual station to have one specific line (01 to 20) designated as their Prime Line. This line would be accessed automatically when the user dials 9, or (if Auto Line Select is programmed for the Set) goes off-hook or presses the SPEAKER key.

Prime Line Select should be pre-planned/assigned by the System Manager. Each of the lines in the system are put into one of fifteen Prime Line Groups. A line can be in more than one Prime Line Group. Then each of the stations which will be using this feature, are placed in one of the fifteen Prime Line Groups.

The choice of a Prime Line should take into account which lines each user has access to, and which lines will not conflict with other users in the system. Then, in order to program Prime Line at a Set, a System Manager will enter the appropriate 2-digit Prime Line Access Code; either 00 for last line, or 01 to 20 for a specific line on the system. This allows simple, automatic access to the designated line for all outgoing calls.

Conditions
- If Prime Line Select is not programmed for a Set, when the user dials 9, goes off-hook or presses the SPEAKER key, the last line that they used will be selected.
- If the last line and Prime Line are both busy, the next available line that the user has access to, will be selected.

Programming Required
- Access Code 202 - Prime Line Groups (to put lines into one of 15 Prime Line Groups)
- Access Code 123 - Prime Line Preference (to put stations into Prime Line Groups)

PRIVATE SPEED CALL - DIALING

Description
The Private Speed Call - Dialing feature allows the user to speed dial one of

11 previously-stored numbers. Private Speed Call numbers can only be dialed from the Set at which the number is stored. To store Private Speed Call numbers, refer to Section 5, PRIVATE SPEED CALL - STORING.

There are two methods of dialing a stored number:

- BY CODE - Pressing the SPEED key, and then dialing the 2-digit number (00 to 10) which corresponds to the stored telephone number,
  OR
- BY ONE TOUCH SPEED DIAL - Pressing the DSS key which corresponds to the stored telephone number.

Conditions
- Private Speed Call Numbers are subject to call restrictions.
- When Auto Hold is programmed, the SPEED key must be pressed before pressing the desired Speed Call key to avoid placing the selected line on hold.
- One Touch Speed Dialing is only possible for Private Speed numbers which have the corresponding DSS key programmed. See PROGRAMMABLE DSS/SPEED in this Section.

Programming Required
None

PRIVATE SPEED CALL - STORING

Description
A Panther Telephone Set can store 11 Private telephone numbers in Private Speed Call locations 00 to 10. Each speed call entry may comprise up to 26 digits, including digits in the range 0-9, pauses, hookswitch flashes and halts, as well as PBX/Centrex access codes. Automatic pauses, hookswitch flashes and halts can be entered into a dialing sequence by pressing the keys shown on the Set's designation card; i.e., press HOLD to insert a halt; press FLASH/CANCEL to insert a flash; press CONFERENCE to insert a pause.

After a telephone number has been stored in one of the Speed Call locations (00 to 10), the telephone number will be dialed automatically when accessed by code or One Touch Speed Dial (see PRIVATE SPEED CALL - DIALING in this Section).

Conditions
None

Programming Required
None

PROGRAMMABLE C.O. LINES

Description

Flexible C.O. Line Programming allows increased flexibility of C.O. lines on a set-by-set basis. Line keys can be programmed to be any possible line or line pool available on the system; e.g., a Panther 306 Set which normally has access to a block of three consecutive lines (e.g., Line 1, 2 and 3), could be reprogrammed for use on a Panther II 2064 system with access to any lines and/or line pools.

To program any key to be a specific line key (or line pool key), the System Manager must follow the procedure outlined in the PROGRAMMABLE KEYS section of *Panther II 820/1032/2064-205, Programming.*

Conditions

- The Flexible C.O. Line feature is programmed from each Set , but the System Manager must still assign the flexibility, based on the station's FLEXIBLE RINGING ASSIGNMENT, TOLL RESTRICTION, and TENANT TYPE.
- The same line will be in more than one line pool, and a line can be both a line key and line pools on individual Sets.
- Only one key can be programmed as a particular line.

Programming Required

- Programming of C.O. Lines is completed by the System Manager at each individual Set.

PROGRAMMABLE DSS/SPEED

Description

On Panther 306 and 612 Sets, the Direct Station Selection (DSS) keys can be individually programmed to have any station appear on any key.

For other Panther Sets (Panther 1032, 2064 and Display Sets), the programmable keys on each Set are preprogrammed as line keys. One or more line keys can be converted into DSS keys at each Set. To program any key to be a specific DSS key, the System Manager must follow the procedure outlined in the PROGRAMMABLE KEYS section of *Panther II 820/1032/2064-205, Programming.*

If Private Speed Call numbers and Common Speed Call numbers are stored using codes (00 - 10 and 20 - 99, respectively), codes 00 - 10 and 20 - 62 will correspond to a particular DSS key for One Touch Speed Dialing. See the *Panther II User Guides* for more details on One Touch Speed Dialing.

Conditions

- Refer to the conditions stated in Section 5 for PRIVATE SPEED CALL, COMMON SPEED CALL and STATION TO STATION CALLING.

- Access to stations through a DSS key will be affected by INTERCOM TENANTING *(see Section 4)*.
- Only one DSS key can be programmed as a particular station.

Programming Required
Programming of DSS keys is completed by the System Manager at each individual Set.

PROGRAMMABLE FEATURE KEYS

Description
Any line or DSS key located above the feature keys (on a Panther Set's designation card) can be programmed as a Feature key to perform 10 special "one-touch" functions.

The System Manager must follow the procedure outlined in the PROGRAMMABLE KEYS section of *Panther II 820/1032/2064-205, Programming* using the following access codes:

Dial Access Code	To Program a Key to be...
050	Saved Number Redial
057	Call Pickup - Local
058	Call Pickup - Remote
059	Night Pickup
060	Do Not Disturb
061	Program

Conditions
If a key is used to perform any of the special functions listed above, the key's functioning is still subject to the constraints of the feature itself; e.g., if a key is desired for Do Not Disturb, Access Code 060 (Do Not Disturb Capability) must be enabled for the set.

Programming Required
Programming of Feature keys is done by the System Manager at each individual Set.

PROGRAMMABLE USER NAMES

Description
This feature allows the Master Attendant (preprogrammed as Station 10) to enter an 8-character name for each station user (instead of the user's station

number) which will be displayed on all Panther II Display Sets in the system during call processing. For example, if Mary (at Station 15) calls a Panther II Display Set at Station 24, the LCD at Station 24 will read "CALL FM MARY" instead of "CALL FM Ext. 15".

Conditions
- A maximum of 8 characters per name are allowed.
- Only the Master Attendant station can perform this feature.
- The user name designated for each Set will remain activated until it is overwritten with another user name.

Programming Required
Programmming is completed from the Master Attendant Station (preprogrammed as Station 10).

SAVED NUMBER REDIAL

Description
Any telephone number that is dialed can be saved for repeated short-term use. The telephone number will be stored until another number is saved. The number can be stored using one of the following methods:

1. After hanging up from a call, the user can press the SPEED key, press * , and then press the SPEAKER key.

2. After hanging up from a call, the user can press the key that is designated as a SAVED NUMBER REDIAL key (see Section 5, PROGRAMMABLE FEATURE KEYS).

3. **On the Panther II Display Set ONLY** - After hanging up from a call, the user can press the S/N REDIAL key.

Conditions
- Up to 26 digits can be stored in the Saved Number Redial location.

Programming Required
None

SET FEATURE CLEAR

Description
This capability allows the Master Attendant (preprogrammed as Station 10) to dial a code which will cancel currently-activated programming for Set features such as Internal Call Forwarding and Do Not Disturb for a specific Set, or for all Sets in the system simultaneously. This feature will clear

only those features that were initialized by a user; Private Speed Call numbers or features that were set up in System Programming will not be affected. NOTE: This feature is not to be confused with System Clear.

Conditions
- This capability is only available to the Master Attendant station (preprogrammed as Station 10).

Programming Required
None

STATION TO STATION CALLING

Description
Station to Station calling can be done by accessing internal dial tone and pressing the desired Direct Station Selection key. If a Set does not have a DSS key, the intercom is selected and the 2-digit station number is dialed.

Conditions
- In order for a Set to have station-to-station calling capability through DSS keys, a DSS key must be programmed for the station using the PROGRAMMABLE DSS/SPEED programming methods described in *Panther II 820/1032/2064-205, Programming*.
- This feature can be affected by INTERCOM TENANTING (see Section 4).

Programming Required
Programming of DSS keys is done by the System Manager at an individual Set.

TRANSFER OF MASTER ATTENDANT CAPABILITY

Description
The Master Attendant can transfer their capabilities to any other Set in the system (e.g., to a sub-attendant during a lunch hour). Refer to Section 4, FLEXIBLE MASTER STATION NUMBERING for a list of Attendant capabilities. When the Master Attendant returns, another code can be dialed from the new Master Attendant Set to return Attendant functionality.

Conditions
- Only the Master Attendant (designated during system programming) can perform this feature.
- The station that you transfer the Master Attendant capabilities to, should be assigned with the same lines as the original Master Attendant Set.

Programming Required
Programming of this feature is done from the Master Attendant station (preprogrammed as Station 10).

TRANSFER RINGING / TRANSFER RINGING RETURN

Description

The Transfer Ringing feature allows incoming external calls to be transferred (unsupervised) to any Panther Telephone Set in the system (even if the Set is busy). The call can be transferred simply by pressing the FLASH/CANCEL key (if programmed as a TRANSFER key - see Section 4, FLASH/CANCEL/TRANSFER), or by pressing the line key that the call came in on, then dialing the 2-digit number of the station to which the call will be transferred (or pressing the appropriate DSS key, if available). Even if the Set is busy, when the person transferring the call hangs up, the transferred call will be automatically camped on to the busy station for a preprogrammed length of time (see Section 4, CAMP-ON).

If the call is not answered within a predetermined length of time (TRANSFER RINGING TIME), the call will return as stated in Section 5, CALLBACK.

Conditions

- When a Set receives Transfer Ringing, the user can pick up the handset or press the SPEAKER key and be automatically connected to the transferred caller.

Programming Required

Some or all of the following programming codes may be used:

- Access Code 050 - Camp-On Duration
- Access Code 051 - Camp-On Tone Interval
- Access Code 104 - Transfer Ringing Return
- Access Code 005 - Flash / Cancel / Transfer
- Access Code 017 - Transfer Ringing Time

ZONE PAGING

Description

Paging announcements can be made to a group of Sets which have been programmed into a specific paging zone (see Section 4, ZONE PAGING GROUPS). By dialing the corresponding paging number from 81 to 95, an announcement can be made to a specific zone or to all zones simultaneously.

Conditions

- A station can be put in more than one zone paging group.

Programming Required

- Access Code 122 - Zone Paging Groups

6. PANTHER II DISPLAY SET FEATURES

32-CHARACTER LIQUID CRYSTAL DISPLAY (LCD)

The most prominent feature of the Panther II Display Set is its visual prompts and messages appearing in the 32-character LCD. The LCD comprises two rows of 16 characters. The prompts and messages make the telephone easy to use. By looking at the LCD, the Set user knows, for example: the number of the station the user is talking to; the station on hold; the station calling; the C.O. line that is being transferred; the telephone number being dialed; and the variety of alternatives the user has and how to select them for a particular operation. On the display, the initial "L" precedes a Line Number, and the initial "S" precedes a Station Number.

When the Panther II Display Set is idle, the top row shows the current date, day of the week and time (using a 12-hour clock), and the bottom row shows the station number (and the user's name, if programmed).

While talking to another party, the LCD displays the elapsed time of the call in the top right portion of the display, a useful feature for long-distance calls. The user can also program reminders and messages to appear for meetings and appointments, or can leave a message for other Display Sets in the system. See also LCD INTENSITY CONTROL in this section.

ALARM REMINDER MESSAGES

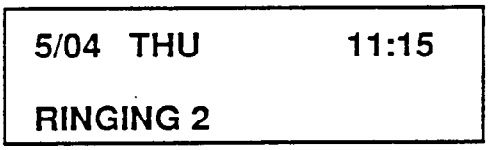
The Panther II Display Set allows the user to program a time and/or message as a reminder, on a one-time or daily/weekly basis. Programming of a time and message is done from the keypad. When the programmed message time arrives, the message will be displayed for 60 seconds and an alarm will sound. The message can be cancelled at any time.

The message takes the following format: the date appears in the top left corner; the day of the week appears in the middle of the top row, and the time is shown on the top right corner. The reminder message itself is displayed on the bottom row of the LCD.

CALLING PARTY IDENTIFICATION

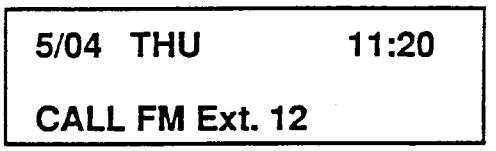
When an external call is ringing at a Display Set, the LCD shows the date and time in the top row and the number of the ringing line in the bottom row.

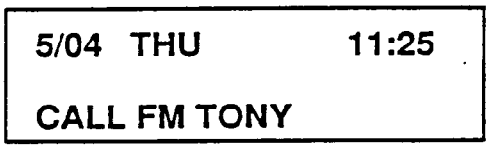
Example:



When another station in the system calls a Display Set, the LCD on the Display Set shows the date and time in the top row and the station that is calling in the bottom row. If the caller's name has been programmed into the system, it will appear instead of the station.

Example:





When you place an internal call from a Display Set, the LCD will show you the type of call on the top row - either CALLING VOICE, CALLING TONE or CALLING B.O.T. (which stands for Busy Override Tone).The station number of the set you're calling will be shown on the left-hand side of the bottom row following the initial "S", and the caller's name (if programmed) will be shown on the right-hand side of the bottom row.

CALL TIMER DISPLAY

The timer on the LCD starts for each external connection as soon as the system clock starts timing the duration of the call. The duration of a call, conference, line on hold, etc., appears in the form of 00:00 (minutes and seconds) and is always shown on the top right of the display. The timer updates itself every 5 seconds.

CALL TRANSFER DISPLAY

When a call is transferred to an idle station, the bottom row of the idle station's LCD will show the number of the line (L) that is being transferred, followed by the word RINGING. The top row will show date and time.

After a preprogrammed length of time, if the station does not answer the transferred call, the call will be re-routed to the Callback destination (see Section 5, CALLBACK). The LCD of the Set receiving the Callback notification will show the line number (L), followed by the words RINGING BACK on the bottom row. The top row will show date and time.

CAMP-ON DISPLAY

When a call is camped-on, the busy station's LCD will show the line number (L) that is currently in use and the call time on the top row of the display. The bottom row of the display will show the number of the line that is camping-on (L), followed by the word CAMP.

C.O. LINE RINGING DISPLAY

The oldest ringing line is displayed on the bottom row of the LCD, following the word RINGING and the initial "L", with the date and time shown on the top row. Only one ringing line is displayed at a time.

Once connected, the line number moves to the top left of the display, and the call timer starts timing the duration of the call. The call time appears on the top right of the LCD.

CONFERENCE DISPLAY

When a conference is established, the lines and/or stations connected will be displayed on the LCD.

For EXTERNAL conferencing, the date and time will be replaced on the top row by the call timer display, once the conference is established. The first line used to set up the 3-party external conference is displayed on the top left side of the display (following the initial "L"); the second line used to set up the 3-party conference appears on the bottom left side (following the initial "L"), with the word CONFERENCE shown on the right side of the bottom row.

An INTERNAL conference will display the two stations that have been added, but no timer appears. The first station used to set up the 3-party internal conference is displayed on the top left side of the display (following the initial "S"); the second station used to set up the 3-party conference appears on the bottom left side (following the initial "S"), with the word CONFERENCE shown on the right side of the bottom row.

A MIXED conference will display the line and station that have been added, and a timer appears. The line used to set up the 3-party mixed conference is displayed on the bottom left side of the display (following the initial "L"); the station added appears on the top left side (following the initial "S"), with the word CONFERENCE shown on the right side of the bottom row. The timer appears on the top right side of the display.

DIALED NUMBER DISPLAY

The LCD shows the telephone number or station number being dialed, on the bottom row of the display. If the number of digits entered exceeds 16, then the number will start to wrap around the display, and the additional digits will copy over the first digits dialed. The only case where dialed digits will not be displayed, is if the user has preprogrammed a SECURE NUMBER DISPLAY for a Private Speed Call number. See SECURE NUMBER DISPLAY in this Section.

DISPLAY KEY

The DISPLAY key on the Panther II Display Set is used to display calls on hold or Messages Waiting at a Set, or to show what is stored in memory for the Saved Number Redial, Last Number Redial or Speed Call keys.

Displaying Calls on Hold -

During normal call processing the LCD displays only the oldest call on hold, but if more than one call is on hold and the DISPLAY key is pressed, the LCD will show up to four calls on hold. Calls on hold are shown on the bottom row of the LCD in order of left to right, with the leftmost line on hold corresponding to the oldest call on hold, and the rightmost line on hold corresponding to the newest call on hold. This display will remain until the DISPLAY key is pressed again. Once a call is taken off hold and the DISPLAY key pressed, all the remaining calls on hold can be displayed by pressing the HOLD key.

Displaying Saved Number Redial or Last Number Redial -

If the DISPLAY key is pressed, followed by either the SAVED NUMBER REDIAL key or LAST NUMBER REDIAL key, the LCD will show the telephone number currently stored in memory for that location. The only case where the telephone number would not be displayed is if the stored number had been originally speed-dialed using a number with SECURE NUMBER DISPLAY enabled. The stored number will be displayed until the DISPLAY key is pressed again. If a telephone number is not programmed in the Saved Number Redial location, the LCD will be blank.

Displaying Speed Dial Numbers -

If the DISPLAY key is pressed, followed by the SPEED key, the LCD will prompt the user to press the key that they would like to view. When the user presses one of the 20 programmable keys, the Speed Call Number that is stored in that location will be displayed. The only case where the stored number would not be displayed, is if the Speed Number had been entered using the SECURE NUMBER DISPLAY feature.

Displaying Messages Waiting -

For details on the use of the DISPLAY key with the Message Waiting feature, refer to MESSAGE WAITING DISPLAY in this Section.

FEATURE KEY

This key is reserved for future applications.

HOLD DISPLAY

The LCD will display the station OR the first line that was put on hold at a Set, following the word HOLD on the bottom row of the display. If the call on hold is an external C.O. line, the display will show the duration of the call on hold in the upper right corner.

When the call is taken off hold, the re-connected line or station number, will move to the upper row of the display. If the call is not taken off hold before the preprogrammed Hold Recall Time expires, the user will hear four short bursts of tone and the Panther II Display Set will display the Hold Recall Reminder. See HOLD RECALL DISPLAY in this Section.

HOLD RECALL DISPLAY

If a call is not taken off hold before the preprogrammed Hold Recall Time expires, the user will hear four short bursts of tone and the Panther II

Display Set will show the Hold Recall Reminder message. This message consists of a call timer in the upper right corner (for external calls only), and the words HOLD RECALL on the lower row, followed by the line (L) or station (S) number that is being recalled.

LCD INTENSITY CONTROL

The LCD intensity control can be adjusted using a slider switch located on the top of the LCD. This allows the Liquid Crystal Display to be viewed under any lighting conditions, from either a standing or sitting position.

MESSAGE KEY

This key on the Panther II Display Set is used to program, confirm and cancel messages. Instructions for operation of this key are provided in the *Panther II Display Set User Guide.*

MESSAGE WAITING DISPLAY

When the Intercom LED lights, indicating that a message is waiting to be answered, the DISPLAY key must be pressed to show up to four station numbers that left a message. Stations that left a message are shown on the bottom row of the LCD in order of left to right, following the initials "MW", with the leftmost station number corresponding to the oldest message, and the rightmost station number corresponding to the newest message. This display will remain until the DISPLAY key is pressed again. Once a message has been answered, if the DISPLAY key is pressed again, all remaining stations that left a message will shift one position to the left.

PAGING DISPLAY

If a user performs an EXTERNAL PAGE, ZONE PAGE or ALL PAGE announcement from a Panther II Display Set, the LCD display will show the type of Page being performed, on the top row. The 2-digit access code that was dialed to achieve the Paging announcement will be shown on the bottom left. For a ZONE PAGE, the Zone Group number will appear on the top right of the display, following the intial "G". When the announcement is complete, the LCD display will return to its idle state.

PERSONALIZED MESSAGES

Each Panther II Display Set user can program a personal message to appear when other Panther II Display Set users call them; e.g., GONE TO LAB. One message per user is allowed, and the message can be up to 16 characters in length, including spaces, numbers and special symbols. The message is entered from the keypad, using the methods explained in the *Panther II Display Set Guide*. The message will remain activated until the user cancels it.

PROGRAM KEY

The PROGRAM key on the Panther II Display Set is used to enter Programming Mode.

SAVED NUMBER REDIAL KEY

The SAVED NUMBER REDIAL key is pressed to store a telephone number for repeated short-term use. The key is also pressed when the user wishes to dial the number that has been stored. The stored number will be retained in memory until another telephone number replaces it. The stored number can be viewed using the DISPLAY key (see DISPLAY KEY in this Section).

SECURE NUMBER DISPLAY

When the PROGRAM key is pressed at the appropriate point during a Private Speed Call Storing operation, the SECURE NUMBER feature will be enabled and privacy will be enforced for the specific telephone number. This means that when the Speed Call Number is dialed at a later time, the LCD display will not show the digits that were saved in memory. Instead, the LCD will display the line number used and call duration on the top row, and the Secure Number will appear on the bottom row as question marks (?).

SPEED DIAL DISPLAY

When a Private or Common Speed Dial number is dialed, either by code, or pressing the appropriate DSS key, the LCD display will show the telephone number that was stored in the code's location. The stored telephone number will not appear if SECURE NUMBER DISPLAY is active (see above).

A Speed Dial number can also be viewed at any time by following the procedures given in Section 6, DISPLAY KEY.

SYSTEM TIME / DATE SETTING AND DISPLAY

When the Panther II system is connected, the display on each Panther II Display Set will show - *Please set time!* If the Panther II Display Set is used in the Master Attendant position (preprogrammed as Station 10), the time and date for the entire system can be programmed from this Set.

The correct date, time and day of the week must be entered from the keypad of the Master Attendant Set, using the procedures described in the *Panther II Display Set User Guide - Master Attendant section.*

Although the time must be entered using a 24-hour clock, the LCD of Panther II Display Sets in the system will show the time in 12-hour format (with "A" for a.m. and "P" for p.m.).

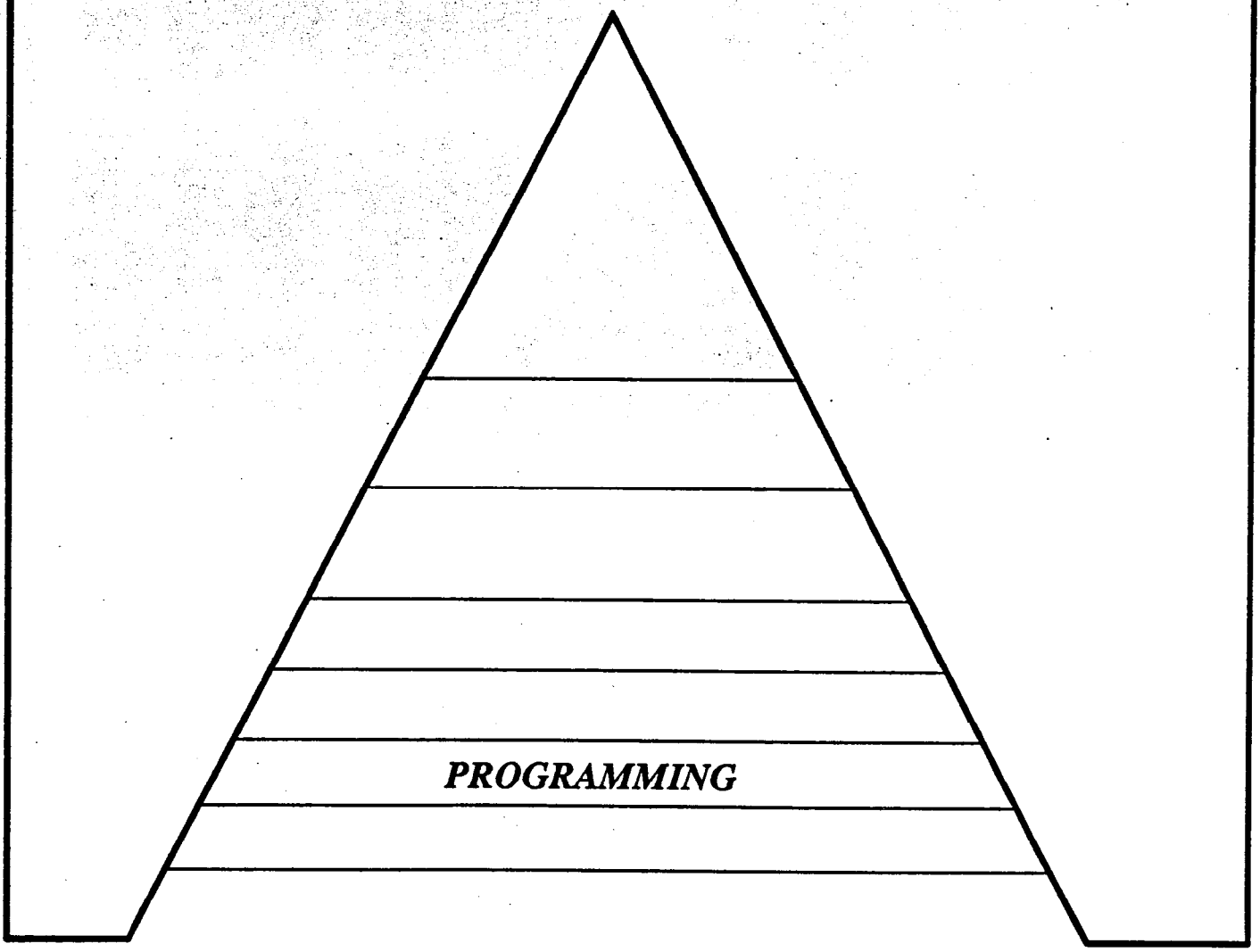
The system's time and date will appear on the LCD of each Panther II Display Set in the system, when their Set is in its idle state.

TRANSFER RINGING DISPLAY

When Transfer Ringing is sent from a station, the LCD of the transferring station will show the line number that is being transferred on the top row of the display. The word.TRANSFER will appear on the left side of the bottom row, followed by the number of the station where the call is being sent.

Panther® II

SYSTEM MANUAL



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F-3611-1

Panther® II 820/1032/2064-205
Electronic Key Telephone System

PROGRAMMING

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1. GENERAL

Introduction

1.01 This Practice contains information pertaining to the programming of the Panther II 820, 1032 and 2064 systems. Programming should be performed when installation and commissioning of the system, and its ancillary devices (if any), is complete.

Reason for Issue

1.02 This is the second issue of this Practice. It is one of a set of Trillium Standard Practices written to assist a craftsperson install, operate and maintain the system in the field.

2. PROGRAMMING

General

2.01 Programming of the Panther II systems is the process by which information, relating to features and system configuration, is entered into the memory resident in the KSU.

2.02 Programming is accomplished in one of two ways: (i) by using the preprogrammed values stored in the system or; (ii) modifying the preprogrammed values in order to 'customize' the system to the customer's requirements. The latter 'customizing' is accomplished by keying information into the KSU using the keypad of the Panther II Display set designated as 'station 10'. It is essential that you use a Panther II Display Set at station 10 when you program the system because your programming selections are verified on the LCD display. Note, the Panther II systems remain operational (except station 10) while programming is in progress, thereby eliminating inconvenience to the user.

How to Use This Practice

2.03 Programming information is arranged under four main headings: System Programming, Station Programming, Group Programming, and Programmable Keys. The **System Programming** subsection describes programming codes which apply to the Panther II System on a systemwide basis. This subsection is further divided into groupings which combine parameters associated with particular applications (e.g., Toll Restriction, SMDR, Tenanting). The **Station Programming** subsection describes codes which are programmed on a set-by-set basis The **Group Programming** subsection describes codes which are used to place lines and stations into groups. The **Programmable Keys** subsection describes how to set up Prime Line selection, flexible line keys, line pool keys, flexible DSS/Speed keys and feature keys at each individual Set.

2.04 Before programming the Panther II System, read all introductory material, including "Selecting Preprogrammed Values" and "Modifying Preprogrammed Values". Step through the Programming example provided. Although programming can be completed in any order, it is recommended that System Programming be completed first. The Programmable Keys subsection may be performed at the end, after the system is operational, or on an individual user basis, as user's needs become apparent. The following list indicates where specific programming codes are discussed in this Practice.

SYSTEM PROGRAMMING:

General	- Hold Recall Time - Intercom on Hold - Transfer Ringing Time - Forced/Manual Account Code Digits (4, 6 or 8 digits) - Executive Override Tone - Time Display (12/24 Hr.) - Call Forwarding Time - Master Station Number - Multiple Attendants - Simultaneous/Serial Ringing - Camp-on Duration - Camp-on Tone Interval - System Clear
C.O. Specification	- Make/Break Ratio - Pulse Rate - Interdigit Pause - Tone Duration
Type of Line	- Tone or Pulse - Telephone or PBX/Centrex
Behind PBX/Centrex	- Pause on Number - Pause Time - Flash / Cancel / Transfer - Flash/Cancel Timing
Loud Bell/ Relay Control	- Loud Bell or Relay Control - Loud Bell Ringing by Line (Day Mode) - Loud Bell Ringing by Line (Night Mode) - Auto/Manual Relay Control - Auto Return to Off Timing

Toll Restriction
- Digits to Deny
- Split Restriction for Class B
- Split Restriction for Class C
- Toll Restriction Tables
- Toll Restriction by Line

Tenanting
- Tenant Type
- Private/Non-Private Internal Tenanting

Station Message Detail Recording
- Account Codes Printout
- SMDR Printout Conditions
- SMDR Call Timing
- Digit Timer
- Baud Rate

STATION PROGRAMMING:

General
- Type of Set
- Executive Override
- Toll Restriction by Station
- Transfer Ringing Return
- Ringing Line Pickup
- Do Not Disturb Override
- Account Code Type
- Toll Security
- One Touch Speed Dial / Auto Line Hold
- Relay Control
- Manual Select / Auto Intercom / Auto Line
- Handset/Headset Compatible
- Block Programming
- Flexible Ringing Assignment

GROUP PROGRAMMING:

General by Line
- Tenant Group Assignment
- Line Pooling Groups
- Night Transfer Line Groups
- Prime Line Groups

General by Station
- Tenant Groups
- Pickup Groups
- Prime Line Preference
- Zone Paging Groups
- Intercom Tenanting Groups / Station Hunt Groups
- Night Transfer Station Groups

Selecting Preprogrammed Values

2.05 The procedure for selecting the preprogrammed values stored in the KSU is as follows:

> CAUTION: This procedure will clear any existing Speed Call entries and system parameters stored in memory.

Step 1. Set the MEM. CLEAR 2 switch, located on the right-hand side of the KSU, to the ON position.

Step 2. Press the RESET button. The KSU LED will begin to flash after a few seconds, indicating that the system is operational with the preprogrammed values.

Step 3. Set the MEM. CLEAR 2 switch to the OFF position.

Step 4. Press the RESET button. The system is operational with the preprogrammed values.

Modifying Preprogrammed Values

2.06 Note, when 'customizing', it is only necessary to modify those parameters which differ from the preprogrammed values. To modify the preprogrammed values, refer to Tables 2-1 through 2-20 and complete the following instructions. A Programming example is provided in paragraph 2.07.

Step 1 At Station 10 (using a Panther II Display Set as the Programming Station), dial *** # 0 1 5**. Station 10's Intercom LED turns ON and the LCD Display confirms that you are in "Programming Mode".

Step 2 For each feature to be changed, dial the appropriate 3- to 7-digit ACCESS CODE (given in Tables 2-1 through 2-20) using the dial pad of Station 10. The LCD Display will confirm each digit as it is dialed, and the Intercom LED will flash very quickly as soon as you dial your first digit.

Step 3 To change the feature value, dial the associated DATA CODE (given in Tables 2-1 through 2-20) using the dial pad of station 10. The LCD Display will confirm each digit as it is dialed, and the Intercom LED will flash quickly as soon as you dial your first data digit.

Step 4 Press the # key. The Intercom LED lights steady.

Step 5 Repeat Steps 2 to 4 for each additional feature you wish to change.

Step 6 Press the * key to exit programming when all changes have been made. The new programming is complete.

NOTES:

1. *To correct an inputting error during Steps 2 and 3*, press the FLASH/CANCEL key, and begin the procedure again at Step 2.

2. *To confirm what is programmed for a particular feature*, it is only necessary to perform Steps 1, 2, and 4 (in order). The programmed value for the feature will be displayed on the LCD after Step 2. When confirmation is completed, go to Step 6.

3. *To confirm all features*, it is only necessary to perform Steps 1, 2, and 4 (in order). Keep pressing the # key to step through access codes. When confirmation is completed, go to Step 6.

4. *To increment during access codes*. For some features such as Flexible Ringing Assignment, it is helpful to be able to store all the line assignments for a particular station before moving to the next station's access code. To perform step programming such as this, press the HOLD key after entering the appropriate data for the first line, station or group during Step 3. This will increment the LCD Display to the next line, station or group. Alternate between entering data and pressing the HOLD key until all lines, stations or groups are programmed, and then continue with Step 4.

PROGRAMMING EXAMPLE: SETTING HOLD RECALL TIME TO 1.5 MINUTES.

2.07 After entering programming mode at Station 10:

1. Locate the Hold Recall Time parameters in Table 2-1.
2. Dial ACCESS CODE 000 (given in Table 2-1).
3. Dial the DATA CODE 3 (to change the recall time to 1.5 minutes).
4. Complete programming by dialing # to store the data, and then dialing * to exit programming mode.

General System Programming

2.08 The General System parameters, including Access Codes and Data Codes are provided in Table 2-1. (Refer to *Panther II 820/1032/2064-105, Features and Services* for more details.) They are:

HOLD RECALL TIME: Defines the Hold Recall Time to be; no reminder, or 30 seconds, 1 minute, 1.5 minutes, 2 minutes, 3 minutes, or to remind the user after 3 minutes and then return the call to the attendant after 5 minutes. The Hold Recall feature provides a reminder of a call on hold by returning ringing to the set upon expiry of the Hold Recall time.

Preprogrammed Value = No Reminder.

INTERCOM ON HOLD: Defines whether or not the system is set up for Intercom on Hold capability. This feature allows an internal call to be placed on hold.

Preprogrammed Value = No Intercom on Hold capability.

TRANSFER RINGING TIME: Defines the length of time an unanswered set will ring before returning to the set defined by the Transfer Ringing Return feature. Available values are: 10 seconds, 20 seconds, 30 seconds, 45 seconds, 60 seconds, or 90 seconds, or the system can be programmed to ring indefinitely until the call is answered.

Preprogrammed Value = 30 seconds.

FORCED/MANUAL ACCOUNT CODE DIGITS: Defines the number of digits that will be required by the system for a forced or manual account code. The number of digits can be 4, 6, or 8.

NOTE: If the Toll Security feature will be used, it is recommended that the Forced/Manual Account Code Digits parameter be left at the preprogrammed value.

Preprogrammed Value = 6 digits.

EXECUTIVE OVERRIDE TONE: Defines whether or not a tone will be heard before a user with Executive Override capability can enter a call in progress.

Preprogrammed Value = Yes.

TIME DISPLAY: This feature defines whether system time will be displayed using a 12-hour or 24-hour clock.

NOTE: System Date/Time is set from the Master Attendant Station. Refer to the Panther II Display Set User Guide (Attendant Console section), for instructions.

Preprogrammed Value = 12-hour clock.

CALL FORWARDING TIME: Defines the length of time that a set will ring before the Internal Call Forwarding - No Answer feature will be applied. Length of time can be 5 seconds, 10 seconds, 20 seconds or 30 seconds.

Preprogrammed Value = 10 seconds.

MASTER ATTENDANT NUMBER: (Use Table 2-2) Allows any station to be programmed as the Master Attendant. The Master Attendant is provided with access to features and services not available at other sets. These features include:

- Control of Common Speed Call programming
- Night Transfer control
- Control of music over an external paging system
- Setting system time and date
- Clearing Set Features
- Setting up Toll Security
- Programming a user's name to appear on the LCD of each Display Set
- Preprogrammed Transfer Ringing Return
- Transfer of Attendant capability
- Preprogrammed Do Not Disturb Override capability
- Preprogrammed Relay Control

Preprogrammed Value = Station 10.

The station that you transfer the Master Attendant capabilities to, should be assigned with the same lines as the original Master Attendant Set.

MULTIPLE ATTENDANTS: Designates one Master Attendant and up to three stations as sub-attendants for Station Hunting, Transfer Ringing Return capability, Dial "0" for Operator, etc.

NOTE: This code should be programmed after Station Hunt Groups in Group Programming have been set up. The sub-attendant station numbers should be programmed as the LOWEST station number in each Station Hunt Group.

Preprogrammed Value = Station 10 for all four groups. (No sub-attendants)

Procedure for Programming Multiple Attendants

Step 1. Put the stations in Hunt Groups (Access Code - 124YY). Ensure the stations that you wish to set up as Sub-Attendants are the lowest numbered station in each group.

Step 2. Program Mulitple Attendants (Access Codes are shown in Figure 2-1).

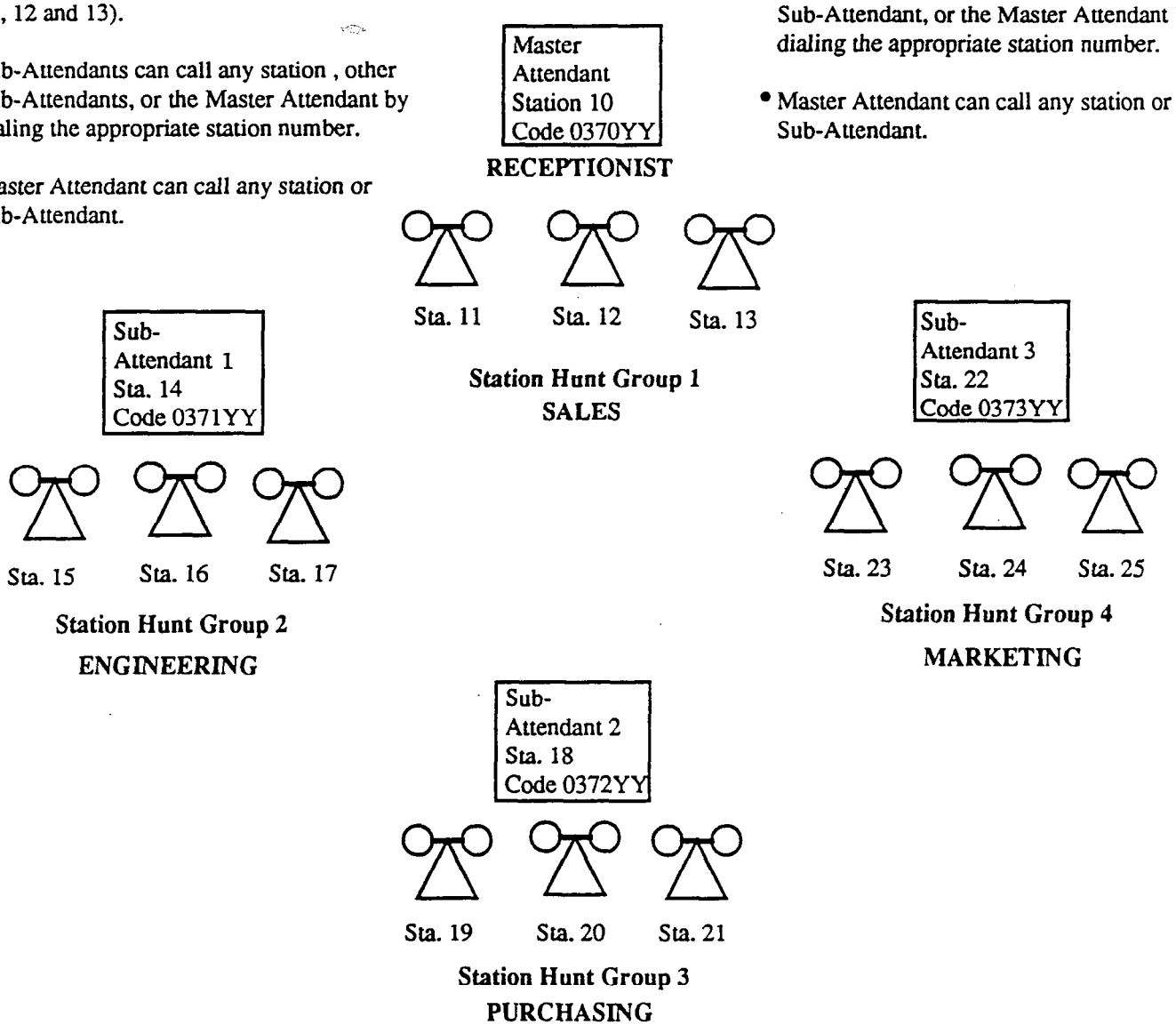
Step 3. The system can be programmed with either Private or Non-Private Tenanting (Access Code - 054). Non-Private Tenanting allows all stations to communicate with each other. The preprogrammed value is Non-Private Tenanting.

Private Tenanting

- Stations can only call other stations within their own group.
- Stations can't call the Master Attendant (unless the stations are in the same Hunt Group as the Master Attendant).
- Stations dial 0 to call their Sub-Attendant (or Master Attendant in the case of Stations 11, 12 and 13).
- Sub-Attendants can call any station , other Sub-Attendants, or the Master Attendant by dialing the appropriate station number.
- Master Attendant can call any station or Sub-Attendant.

Non-Private Tenanting

- Stations can call any station, Sub-Attendant, or the Master Attendant by dialing the appropriate station number.
- Stations dial 0 to call their Sub-Attendant (or Master Attendant in the case of Stations 11, 12 and 13).
- Sub-Attendants can call any station, Sub-Attendant, or the Master Attendant by dialing the appropriate station number.
- Master Attendant can call any station or Sub-Attendant.



Note: YY= a station number

Figure 2-1 Programming Multiple Attendants

SIMULTANEOUS/SERIAL RINGING: Serial ringing is used for stand-alone systems to ensure that one ringing line will be heard at a time. Simultaneous ringing is typically used behind PBX/Centrex (all ringing signals will be heard simultaneously).

Preprogrammed Value = Serial.

CAMP-ON DURATION: Defines the length of time that a call will be camped-on before ringing is returned either to the originator or to the sub-attendant (depending on how Transfer Ringing Return is programmed for the system). Camp-on duration can be programmed for 30 seconds, 1 minute, 2 minutes, 3 minutes or 5 minutes.

Preprogrammed Value = 1 minute.

CAMP-ON TONE INTERVAL: Programmed in conjunction with "Camp-On Duration", this parameter specifies the time interval that will elapse between each 1-second camp-on tone that is sent to the camped-on caller. Programmable parameters are 10 seconds, 20 seconds or 30 seconds.

Preprogrammed Value = 20 seconds.

SYSTEM CLEAR: There are three different System Clear capabilities that are performed on a systemwide basis:

- The capability of clearing ALL System features and resetting the system to its preprogrammed values (Access Code 070, Data Code 0),
- The capability of clearing ALL Common Speed Call numbers for the system (Access Code 070, Data Code 1), or
- The capability of clearing ALL Private Speed Call numbers from all Sets (Access Code 070, Data Code 2).

Refer to Table 2-1(a) to perform a SYSTEM CLEAR.

TABLE 2-1 GENERAL SYSTEM PARAMETERS

Feature Description	Access Code	Condition (Values)	Data Code
Hold Recall Time	000	No recall*	0
		30 seconds	1
		1 minute	2
		1.5 minutes	3
		2 minutes	4
		3 minutes	5
3 minutes and then the call is returned to attendant after 5 minutes			6
Intercom On Hold	040	No*	0
		Yes	1
Transfer Ringing Time	017	10 seconds	0
		20 seconds	1
		30 seconds*	2
		45 seconds	3
		1 minute	4
		1.5 minutes	5
		Until caller hangs up	6
Forced/Manual Account Code Digits	021	4 digits	0
		6 digits*	1
		8 digits	2
Executive Override Tone	026	Yes*	0
		No	1
Time Display	033	12-hour clock*	0
		24-hour clock	1

NOTES: * denotes preprogrammed value.

TABLE 2-1 (Cont'd) GENERAL SYSTEM PARAMETERS

Feature Description	Access Code	Condition (Values)	Data Code
Call Forwarding Time	036	5 seconds	0
		10 seconds*	1
		20 seconds	2
		30 seconds	3
Multiple Attendants	0370	sub-attendant of Group 1	YY
	0371	sub-attendant of Group 2	YY
	0372	sub-attendant of Group 3	YY
	0373	sub-attendant of Group 4	YY
	Default = Station 10 for all groups		
	YY= dial any 2-digit station number from 10 - 73		
Simultaneous/ Serial Ringing	047	Serial ringing*	0
		Simultaneous ringing	1
Camp-On Duration	050	30 seconds	0
		1 minute*	1
		2 minutes	2
		3 minutes	3
		5 minutes	4
Camp-On Tone Interval	051	10 seconds	0
		20 seconds	1
		30 seconds*	2
System Clear *(see Table 2-1(a) to perform a system clear)*	070	Clear ALL system features	0
		Clear all Common Speed Dials	1
		Clear all Private Speed Dials for all sets	2

NOTES: * denotes preprogrammed value.

TABLE 2-1(a) SYSTEM CLEAR

To perform a System Clear:

CAUTION: This procedure will RESET all system programming to its preprogrammed value, and should therefore be used with extreme discretion.

System Clear Option Selected During System Programming (Access Code 070)	To perform, dial the appropriate code from Station 10 (Programming Station)	Result
Clear ALL Features	0700#	All previous system programming will be cleared, and the system will reset to its preprogrammed values.
Clear ALL Common Speed Dial Numbers	0701#	All previously-programmed Common Speed Dial numbers will be cleared automatically.
Clear ALL Private Speed Dial Numbers	0702#	Private Speed Dial numbers programmed at all Sets will be cleared automatically.

NOTE: A System Clear can ONLY be performed for the System Clear Option that was selected in Table 2-1 (using Access Code 070). For example, if the Panther II System was programmed to "Clear ALL Private Speed Dial Numbers", the Programmer/System Manager cannot go to Station 10 and dial 0700# (the code for "Clear ALL Features").

TABLE 2-2 FLEXIBLE MASTER STATION PROGRAMMING

Feature Description	Access Code
Master Station Number	053YY

Station 10 is preprogrammed as the Master Station.

YY = a station number from 10 to 29 on the Panther II 820 system, or 10 to 41 on the Panther II 1032 system, or 10 to 73 on the Panther II 2064 system.

C.O. Line Specification Programming

2.09 The C.O. Specification parameters, including Access Codes and Data Codes are provided in Table 2-3. They are:

MAKE/BREAK RATIO: Defines the on/off ratio of pulses used for pulse dialing; either 33% or 40%.

Note: 33% is not permitted when equipment is to be installed in North America and connected to the North American Telephone Network.

Preprogrammed Value = 40%.

PULSE RATE: Defines the speed at which pulse digits are dialed out; either 10 pps or 20 pps (pps represents pulses per second).

Note: 20 pps is not permitted when equipment is to be installed in North America and connected to the North American Telephone Network.

Preprogrammed Value = 10 pps.

INTERDIGIT PAUSE: Defines the time between pulse-dialed digits as 500 ms, 700 ms, 800 ms or 1100 ms (ms represents milliseconds).

Note: 500 ms is not permitted when equipment is to be installed in North America and connected to the North American Telephone Network.

Preprogrammed Value = 800 ms.

TONE DURATION: Determines the length of each tone digit dialed. Length can be 50 ms, 75 ms, 100 ms or 200 ms.

Preprogrammed Value = 75 ms.

TABLE 2-3 C.O. SPECIFICATION PARAMETERS

Feature Description	Access Code	Condition (Values)	Data Code
Make/Break Ratio	001	33% 40%*	0 1
Pulse Rate	002	10 pps* 20 pps	0 1
Interdigit Pause	003	800 ms* 1100 ms 700 ms 500 ms	0 1 2 3
Tone Duration	004	50 ms 75 ms* 100 ms 200 ms	0 1 2 3

Notes: * denotes preprogrammed value.

Type of C.O. Line Programming

2.10 The *"Type of Line"* parameters, including Access Codes and Data Codes are provided in Table 2-4. They are:

TONE OR PULSE: Determines the type of dialing for each outside line. Choices are Tone or Pulse.

Preprogrammed Value = Tone.

TELEPHONE OR PBX/CENTREX: Tells the KSU, the type of lines that will be connected, either telephone lines (C.O.) or PBX/Centrex lines.

Preprogrammed Value = Telephone (C.O.).

TABLE 2-4 TYPE OF LINE PARAMETERS

Feature Description	Access Code	Condition (Values)	Data Code
Tone/Pulse	060XX	Tone*	0
		Pulse	1
C.O./PBX	061XX	Telephone (C.O.)*	0
		PBX/Centrex	1

Notes: * denotes preprogrammed value

XX = a line number from 01 to 08 on the Panther II 820 system, or 01 to 10 on the Panther II 1032 system, or 01 to 20 on the Panther II 2064 system. To program these access codes, you will need to enter each C.O. line number that needs to be changed from the preprogrammed value (one at a time).

Behind PBX/Centrex Programming

2.11 The Behind PBX/Centrex Programming must be completed when your Panther II system will be connected to PBX/Centrex lines. The parameters, including Access Codes and Data Codes are provided in Table 2-5. They are:

PAUSE ON NUMBER: Instructs the system to pause after a specific number is dialed as the first digit. It is employed when the Panther II system is used behind a PBX/Centrex to allow for second dial tone. More than one number can be selected to activate a pause. The digits specified by the Pause on Number parameters are; pause/no pause on 7, pause/no pause on 8, pause/no pause on 9, pause/no pause on 0.

Preprogrammed Value = No pause on any digit.

PAUSE TIME: Defines the duration of the pause for the "Pause on Number" feature, and for a pause inserted in a speed dial number. The pause time can be set to 1 second through 15 seconds, in 1-second intervals.

Preprogrammed Value = 3 seconds.

FLASH / CANCEL / TRANSFER: Defines the function of the Flash/Cancel key to be a hookswitch flash, a cancel signal for ending calls, or a Transfer key to transfer calls automatically. The duration of the Flash or Cancel signal must be properly set to ensure correct operation (see FLASH/CANCEL TIMING).

Preprogrammed Value = Cancel.

FLASH/CANCEL TIMING: Defines the duration of the Flash or Cancel signal.

Note: *Flash Timing is typically 500 msec, while Cancel Timing is typically 1 second.*

Preprogrammed Value = 1 second.

TABLE 2-5 BEHIND PBX/CENTREX PARAMETERS

Feature Description	Access Code	Condition (Values)	Data Code
Pause on Number	0120	Pause on 7 - NO*	0
		Pause on 7 - YES	1
	0121	Pause on 8 - NO*	0
		Pause on 8 - YES	1
	0122	Pause on 9 - NO*	0
		Pause on 9 - YES	1
	0123	Pause on 0 - NO*	0
		Pause on 0 - YES	1
Pause Time	013	1 second	01
		2 seconds	02
		3 seconds*	03
		4 seconds	04
		5 seconds	05
		- - - - - - -	- -
		- - - - - - -	- -
		14 seconds	14
		15 seconds	15
Flash/Cancel/ Transfer	005	Flash	0
		Cancel*	1
		Transfer	2
Flash/Cancel Timing	011	20 ms	00
		40 ms	01
		60 ms	02
		80 ms	03
		100 ms	04
		200 ms	05
		300 ms	06
		400 ms	07
		500 ms	08
		600 ms	09
		700 ms	10
		800 ms	11
		900 ms	12
		1 second*	13
		2 seconds	14
		3 seconds	15

Notes: * denotes preprogrammed value.

Loud Bell/Relay Control Programming

2.12 The Loud Bell and Relay Control parameters, including Access Codes and Data Codes are provided in Table 2-6. They are:

LOUD BELL OR RELAY CONTROL: Determines whether the dry contacts will close to activate a loud bell ringer, or to activate optional equipment such as security doors and gates.

Preprogrammed Value = Loud Bell.

WARNING FOR DRY CONTACTS:
Do not connect ringer loads or AC power directly to the dry contact. The dry contact should only be used in conjunction with a dry contact interface or a 24 Vdc supply and relay.

DRY CONTACT RATING	
DC Current	DC Voltage
2.0 amp	20 Volts
0.8 amp	30 Volts
0.6 amp	40 Volts

LOUD BELL RINGING/RINGING OVER PAGING BY LINE (DURING DAY MODE): Determines which lines will close the dry contacts during an incoming call when the system is in Day Mode.

Preprogrammed Value = Loud Bell Ringing on all lines (during Day Mode).

LOUD BELL RINGING/RINGING OVER PAGING BY LINE (DURING NIGHT MODE): Determines which lines will close the dry contacts during an incoming call when the system is in Night Mode.

Preprogrammed Value = Loud Bell Ringing on all lines (during Night Mode).

AUTO/MANUAL RELAY CONTROL: Specifies whether the relay control will turn off automatically after a programmable length of time (see below), or that it must be manually turned off following operation.

Note: Auto Mode should be selected if the relay activates motorized equipment (e.g., a motorized gate) which only needs a signal to start it. If the relay contact will be used for equipment which requires both a start (ON) and stop (OFF) code (e.g., to open a door and close it after the person has entered), then Manual Mode should be chosen.

Preprogrammed Value = Automatic Return to OFF.

AUTO RETURN TO OFF TIMING: Defines the length of time that the relay contact will remain open, before closing automatically. Values range from 20 ms to 3 seconds. Used in conjunction with AUTO/MANUAL RELAY CONTROL.

Preprogrammed Value = 1 second.

TABLE 2-6 LOUD BELL/RELAY CONTROL PARAMETERS

Feature Description	Access Code	Condition (Values)	Data Code
Loud Bell/ Relay Control	018	Loud Bell*	0
		Relay Control	1
Loud Bell Ringing/ Ringing Over Paging By Line (DAY MODE)	063XX	Rings selected line during Day Mode*	0
		Does NOT ring selected line during Day Mode	1
Loud Bell Ringing/ Ringing Over Paging By Line (NIGHT MODE)	064XX	Rings selected line during Night Mode*	0
		Does NOT ring selected line during Night Mode	1
Auto/Manual Return to OFF	019	Automatic Return to OFF*	0
		Manual Return to OFF	1
Auto Return to OFF Timing	052	20 ms	00
		40 ms	01
		60 ms	02
		80 ms	03
		100 ms	04
		200 ms	05
		300 ms	06
		400 ms	07
		500 ms	08
		600 ms	09
		700 ms	10
		800 ms	11
		900 ms	12
		1 second*	13
		2 seconds	14
		3 seconds	15

Notes: * denotes preprogrammed value.

XX = a line number from 01 to 08 on the Panther II 820 system, or 01 to 10 on the Panther II 1032 system, or 01 to 20 on the Panther II 2064 system. To program these access codes, you will need to enter each C.O. line number that needs to be changed from the preprogrammed value (one at a time).

Toll Restriction

2.13 The Toll Restriction parameters, including Access Codes and Data Codes are provided in Table 2-7. Refer to *Panther II 820/1032/2064-105, Features and Services* for more details. They are:

DIGITS TO DENY: Determines the digit on which dialing will be denied for Class B and Class B' restrictions. Parameter can be from 0 digits to 15 digits.

Preprogrammed Value = Denies 8th digit.

SPLIT RESTRICTION FOR CLASS B: Determines whether the first or last 40 Common Speed call numbers will be available to stations with Class B and Class B' restrictions.

Preprogrammed Value = No Restriction on Any Common Speed Call numbers.

SPLIT RESTRICTION FOR CLASS C: Determines whether the first or last 40 Common Speed call numbers will be available to stations with Class C and Class C' restrictions.

Preprogrammed Value = No Restriction on Any Common Speed Call numbers.

TOLL RESTRICTION TABLES: (See Table 2-7 (a))
Defines preprogrammed 1- to 4-digit entries which will be allowed or denied by the six toll restriction groups. After the "allow" and "deny" tables are set up, each line (see below), and then each station (see TOLL RESTRICTION BY STATION - Station Programming) in the Panther II system, is placed in one of the six possible toll restriction groups.

Class A - there are no restrictions on making calls.

Class A' - no restrictions except the preprogrammed entries in "Deny Table A".

"Deny Table A" consists of sixteen possible 1- to 4-digit entries. Preprogrammed entries include the digits 411, 555 and 976.

Class B - dialing any of the preprogrammed entries from "Deny Table B" or dialing the number of "Digits to Deny" when Behind PBX/Centrex, or dialing a restricted Common Speed Call number from the "Split Restriction Table for Class B" will restrict a call. Digits dialed in "Allow Table B" will be accepted.

"Deny Table B" consists of eight possible 1- to 4-digit entries. Preprogrammed entries include the digits 0 and 1.

"Allow Table B" consists of eight possible 1- to 4-digit entries. Preprogrammed entries include the digits 1800 and 800.

Class B' - dialing any of the preprogrammed entries from "Deny Table B" or dialing the number of "Digits to Deny" when Behind PBX/Centrex, or dialing a restricted Common Speed number from the "Split Restriction Table for Class B" will restrict a call.

"Deny Table B" consists of eight possible 1- to 4-digit entries. Preprogrammed entries include the digits 0 and 1.

Class C - no outside calls can be made, except those telephone numbers beginning with preprogrammed entries included in "Allow Table C", or dialing Common Speed Call numbers that are unrestricted in the "Split Restriction Table for Class C".

"Allow Table C" consists of sixteen possible 1- to 4-digit entries. Preprogrammed entries include the digits 911.

Class C' - no outside calls can be made.

Preprogrammed Value = Class A.

TOLL RESTRICTION BY LINE: (See Table 2-7) Allows the 8 lines on the Panther II 820 system, the 10 lines on the Panther II 1032 system, and the 20 lines on the Panther II 2064 system to be placed in one of the six toll restriction groups (above). Programmed in conjunction with TOLL RESTRICTION BY STATION, and the TOLL RESTRICTION TABLES.

TABLE 2-7 TOLL RESTRICTION PARAMETERS

Feature Description	Access Code	Condition (Values)	Data Code
Digits to Deny	014	No Restriction	00
		1st digit	01
		2nd digit	02
		3rd digit	03
		4th digit	04
		5th digit	05
		6th digit	06
		7th digit	07
		8th digit*	08
		9th digit	09
		10th digit	10
		11th digit	11
		12th digit	12
		13th digit	13
		14th digit	14
		15th digit	15
Split Restriction for Class B	0150	First 40§ - Restricted	0
		First 40 - Not Restricted*	1
	0151	Last 40§ - Restricted	0
		Last 40 - Not Restricted*	1
Split Restriction for Class C	0160	First 40§ - Restricted	0
		First 40 - Not Restricted*	1
	0161	Last 40§ - Restricted	0
		Last 40 - Not Restricted*	1
Toll Restriction By Line	065XX	Class A*	0
		Class A'	1
		Class B	2
		Class B'	3
		Class C	4
		Class C'	5

Notes: * denotes preprogrammed value.
§ refers to Common Speed Calls.

XX = a line number from 01 to 08 on the Panther II 820 system, or 01 to 10 on the Panther II 1032 system, or 01 to 20 on the Panther II 2064 system. To program these access codes, you will need to enter each C.O. line number that needs to be changed from the preprogrammed value (one at a time).

TABLE 2-7(a) TOLL RESTRICTION TABLES

Feature Description	Access Code	Condition (Values)	Data Code
Deny Table A for Class A'	042000	Entry 1 (Default = 411)	PPPP
	042001	Entry 2 (Default = 555)	PPPP
	042002	Entry 3 (Default = 976)	PPPP
	042003	Entry 4	PPPP
	042004	Entry 5	PPPP
	042005	Entry 6	PPPP
	042006	Entry 7	PPPP
	042007	Entry 8	PPPP
	----	----	----
	042012	Entry 13	PPPP
	042013	Entry 14	PPPP
	042014	Entry 15	PPPP
	042015	Entry 16	PPPP
Deny Table B for Class B and Class B'	042100	Entry 1 (Default = 0)	PPPP
	042101	Entry 2 (Default = 1)	PPPP
	042102	Entry 3	PPPP
	042103	Entry 4	PPPP
	042104	Entry 5	PPPP
	042105	Entry 6	PPPP
	042106	Entry 7	PPPP
	042107	Entry 8	PPPP
Allow Table B for Class B	043000	Entry 1 (Default = 1800)	PPPP
	043001	Entry 2 (Default = 800)	PPPP
	043002	Entry 3	PPPP
	043003	Entry 4	PPPP
	043004	Entry 5	PPPP
	043005	Entry 6	PPPP
	043006	Entry 7	PPPP
	043007	Entry 8	PPPP
Allow Table C for Class C	043100	Entry 1 (Default = 911)	PPPP
	043101	Entry 2	PPPP
	043102	Entry 3	PPPP
	043103	Entry 4	PPPP
	043104	Entry 5	PPPP
	043105	Entry 6	PPPP
	043106	Entry 7	PPPP
	----	----	----
	043112	Entry 13	PPPP
	043113	Entry 14	PPPP
	043114	Entry 15	PPPP
	043115	Entry 16	PPPP

PPPP = Dial up to four digits to restrict. If less than four digits are required, it is NOT necessary to provide leading "zeros". Default entries can be left as is, or changed to meet individual requirements. If the Panther II system is placed behind PBX, the restricted digits will apply AFTER the PBX access code has been dialed.

Tenanting

2.14 The Tenanting Parameters, including Access Codes and Data Codes are provided in Table 2-8. Refer to *Panther II 820/1032/2064-105, Features and Services* for more details. They are:

TENANT TYPE: This programming is completed in conjunction with Flexible Ringing Assignment, Private/Non-Private Tenanting, Tenant Group and Tenant Group Assignment. It allows you to choose one of four possible line group types:

***Type A** - Sets assigned to this line group can only make and answer calls on the lines within the same tenant group.*

***Type B** - Sets assigned to this line group can make and answer calls on lines within the same tenant group, and can also answer incoming calls ringing in another group.*

***Type C** - Sets assigned to this group can make and answer calls on lines within the same tenant group, and can also receive calls transferred from other groups.*

***Type D** - Sets assigned to this group have no restrictions. Includes the features of Types A, B and C.*

Preprogrammed Value = Type A.

PRIVATE / NON-PRIVATE INTERNAL TENANTING: Tenants in Private Mode can access (by an intercom call), only those stations within their own tenant group, whereas tenants in Non-Private Mode can access all other tenants.

Note: It is recommended that Private Mode be selected in situations where two or more separate groups of users are sharing the Panther II system (e.g., two or more businesses in the same building). If all users of the Panther II system are within the same company, but you wish to separate users into four groups for Intercom Tenanting or Station Hunting (Code 124YY), select Non-Private Mode. The selection of Non-Private Mode will allow the groups to communicate with each other. If Intercom Tenanting or Station Hunting will not be used, leave the system in Private Mode, as Code 124YY is preprogrammed with all users in Group 1.

Preprogrammed Value = Private Mode.

TABLE 2-8 TENANTING PARAMETERS

Feature Description	Access Code	Condition (Values)	Data Code
Tenant Type	006	Type A*	0
		Type B	1
		Type C	2
		Type D	3
Private/Non-Private Tenanting	054	Private Mode*	0
		Non-Private Mode	1

Notes: * denotes preprogrammed value.

Station Message Detail Recording

2.15 Station Message Detail Recording Parameters, including Access Codes and Data Codes are listed in Table 2-9. Parameters are listed below. To set up SMDR operation *(enter startup date and time)*, refer to paragraph 2.16. Sample SMDR printouts are provided in Table 2-10.

The SMDR Unit can also be used by maintenance and programming personnel to provide printouts of all programmed site data, including speed call selections for each station. Details of this application are provided in paragraph 2.17.

ACCOUNT CODES PRINTOUT: Determines whether or not Account Codes will be included on the printed SMDR record.

Preprogrammed Value = NO Printout.

SMDR PRINTOUT CONDITIONS: Defines the type of information to be included on SMDR records. Parameters include Print out outgoing, incoming, toll and transferred calls in various combinations.

Preprogrammed Values = All outgoing, all incoming and all transferred calls.

SMDR CALL TIMING: Defines the time (grace period) before the SMDR Unit starts recording information. The chosen value should take into account the average length of time for an outgoing call to be processed and answered. The call timer begins after the last dialed digit. Parameters are from 1 second to 61 seconds.

Preprogrammed Value = 5 seconds.

DIGIT TIMER: Since the SMDR timer needs to recognize when the last digit is actually dialed, a second timer verifies the elapsed time between digits. If the elapsed time exceeds the interdigit timer, the SMDR Call Timer (grace period) is enabled. *In most circumstances, the default preprogrammed value of 10 seconds will be sufficient.*

BAUD RATE: Baud rate can be set to 150, 300, 600, 1200, 2400, 4800 or 9600 baud. The SMDR Interface, and Printer/Terminal baud rates should match.

Preprogrammed Value = 1200 baud.

TABLE 2-9 SMDR PARAMETERS

Feature Description	Access Code	Condition (Values)	Data Code
SMDR Printout Conditions:			
Outgoing Calls	0080	None printed	0
		Only Toll Calls printed	1
		All outgoing calls printed*	2
Incoming Calls	0081	None printed	0
		All incoming calls printed*	1
Transferred Calls	0082	None printed	0
		All transferred calls printed*	1

Notes: * denotes preprogrammed value.

TABLE 2-9 (Cont'd) SMDR PARAMETERS

Feature Description	Access Code	Condition (Values)	Data Code
SMDR Call Timing	009	1 sec.	00
		5 sec.*	01
		9 sec.	02
		13 sec.	03
		17 sec.	04
		21 sec.	05
		25 sec.	06
		29 sec.	07
		33 sec.	08
		37 sec.	09
		41 sec.	10
		45 sec.	11
		49 sec.	12
		53 sec.	13
		57 sec.	14
		61 sec.	15
Digit Timer	010	1 sec.	00
		2 sec.	01
		3 sec.	02
		4 sec.	03
		5 sec.	04
		6 sec.	05
		7 sec.	06
		8 sec.	07
		9 sec.	08
		10 sec.*	09
		11 sec.	10
		12 sec.	11
		13 sec.	12
		14 sec.	13
		15 sec.	14
		16 sec.	15
Baud Rate	045	150 baud	0
		300 baud	1
		600 baud	2
		1200 baud*	3
		2400 baud	4
		4800 baud	5
		9600 baud	6
Account Codes Printout	007	Print Out - Yes	0
		Print Out - No*	1

Notes: * denotes preprogrammed value.

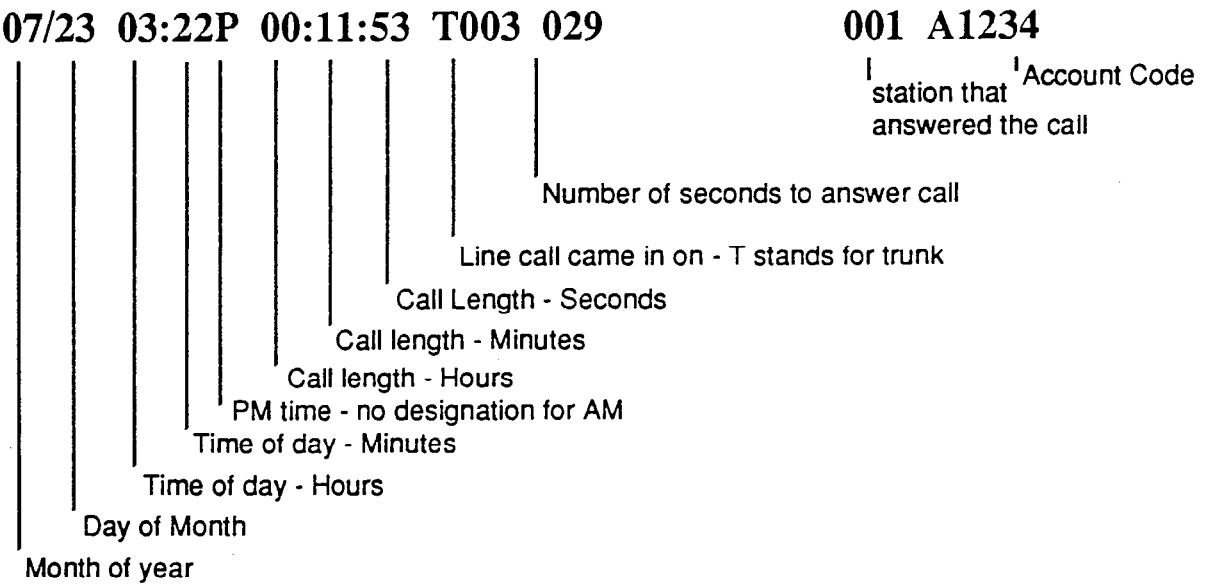
SMDR Startup Operation

2.16 Time and date setting used by the SMDR Unit is set automatically when the system clock is programmed from Station 10. (See "Setting Date/Time" procedures outlined in the *Panther II Display Set Guide* for instructions). If the system has already been in operation and the SMDR option is added later, there is no need to set the SMDR clock. Refer to *Panther II 820/1032/2064-200, Installation and Commissioning* for installation instructions. Date and time information is maintained in memory, even during power failures.

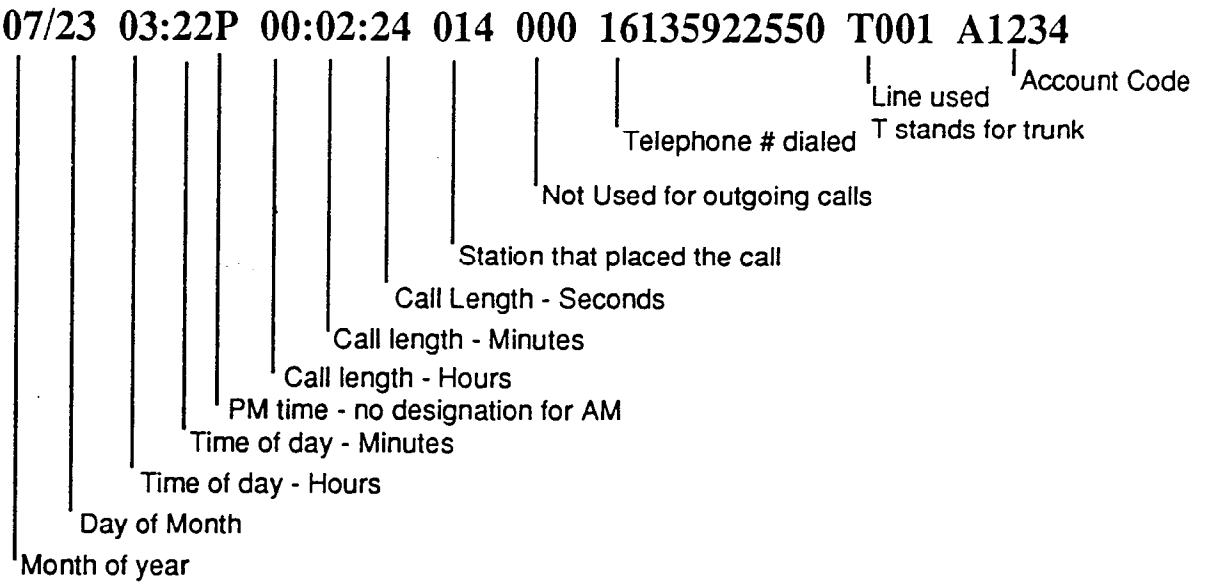
NOTE: Even though the year does not appear on the printout, it must be entered as part of the date so that the SMDR can compensate for leap years.

TABLE 2-10 SAMPLE SMDR PRINTOUTS

Incoming data appears on the printout as follows:



Outgoing data appears on the printout as follows:



Using the SMDR Printout to Verify Data and Check Speed Calls

2.17 While the following program is running, the system is not operational. The following program must be performed from Station 10.

1. At Station 10, press the PROGRAM Key (or dial * #), then dial **0 1 5**. The Intercom LED will turn on.

2. Dial **9 8 7**. The Intercom LED will flash very quickly.

3. Then dial -

   900 to print out the programmed condition for every condition/feature found in the programming charts.

   OR **901** to print out all private speed call numbers for ALL stations.

   OR **902** to print out all common speed call numbers.

   OR **903** to print out the 900, 901 and 902 options at once.

   OR **910 - 973** to print out the private speed call numbers for one specific station (Station 10 - 73).

NOTE: Only one code can be printed out at a time. Once printing commences, the Intercom LED on station 10 will flash slowly.

4. Once the printout has completed, the Intercom LED will light steady, signifying that the printer has stopped.

5. Another printout may be generated by repeating Steps 2 and 3 again (and selecting another code at Step 3).

OR Feature programming may be changed as outlined in the programming charts.

OR Dial * to put the system back into operational mode.

STATION PROGRAMMING

2.18 The General Station Parameters, including Access Codes and Data Codes are provided in Tables 2-11 to 2-14. They are:

TYPE OF SET: Defines the type of Panther telephone set that is connected at each station.

Preprogrammed Value = Panther II Display Set at Station 10 and Panther 1032 or 2064 Sets at all other stations.

EXECUTIVE OVERRIDE: Programmed in conjunction with EXECUTIVE OVERRIDE TONE in System Programming, this feature determines whether each station will or will not have Executive Override capability.

Preprogrammed Value = NO Executive Override capability at any station.

TOLL RESTRICTION BY STATION: Determines which of six classes of service will be allowed at each station (Deny and Allow Tables are provided in TOLL RESTRICTION - System Programming section):

Class A - there are no restrictions on making calls.

Class A' - no restrictions except the preprogrammed entries in "Deny Table A".

Class B - dialing any of the preprogrammed entries from "Deny Table B" or dialing the number of "Digits to Deny" when Behind PBX/Centrex, or dialing a restricted Common Speed Call number from the "Split Restriction Table for Class B" will restrict a call. Digits dialed in "Allow Table B" will be accepted.

Class B' - dialing any of the preprogrammed entries from "Deny Table B" or dialing the number of "Digits to Deny" when Behind PBX/Centrex, or dialing a restricted Common Speed number from the "Split Restriction Table for Class B" will restrict a call.

Class C - no outside calls can be made, except those telephone numbers beginning with preprogrammed entries included in "Allow Table C", or dialing Common Speed Call numbers that are unrestricted in the "Split Restriction Table for Class C".

Class C' - no outside calls can be made.

Preprogrammed Value = Class A.

TRANSFER RINGING RETURN: After TRANSFER RINGING TIME has been set in System Programming, this feature defines where unanswered Transfer Ringing to each Set will return. Parameters included: no return, return to originator then sub-attendant, OR return to sub-attendant. If sub-attendants are not used (see Multiple Attendants - System Programming), ringing returns to the master station.

Preprogrammed Value = Returns to originator, then sub-attendant.

RINGING LINE PICKUP: Determines whether or not each station will have ringing line pickup capability. This allows the user to answer any call simply by going off-hook, pressing the Speaker key, or dialing 9. Calls will be picked up in the following order: C.O. incoming ringing, Transfer ringing, then Intercom (internal) ringing.

Ringing Line Pickup works at all sets regardless of whether the set is programmed for Auto Line Select, Auto Intercom or Manual Select.

Preprogrammed Value = Ringing Line Pickup capability at each station.

DO NOT DISTURB (DND) OVERRIDE: Determines whether or not each station will have DND Override capability. This feature allows the user to override other users who have Do Not Disturb activated at their Set. The capability should only be given as an executive or attendant privilege.

Preprogrammed Value = Only Master Set has DND Override capability.

ACCOUNT CODE TYPE: Specifies whether the system will accept Forced or Manual Account Codes from a station. Refer to *Panther II 820/1032/2064-105, Features and Services* for details. This code is completed in conjunction with FORCED/MANUAL ACCOUNT CODE DIGITS in System Programming.

Preprogrammed Value = Manual Account Codes.

STATION SECURITY: (Use Table 2-11a). Determines whether or not a station user must dial the Station Security Code, to have access to an outside C.O. line when the system is in Security Mode. Preprogrammed choices are:

- ***High Level Privilege*** *- This user does not need to dial a Station Security Code at any time. This is the preprogrammed value for all Sets.*

- ***Day Level Privilege*** *- This user does not need to dial the code when the system is in Day Mode, but must dial the Station Security code in order to have access to an outside line when the system is in Night Mode.*

- ***Night Level Privilege*** *- This user must dial the code when the system is in Day Mode, but does not need to dial the Security code during Night Mode. This programming choice is typically reserved for those users which do not use the system in Night Mode.*

- ***Low Level Privilege*** *- This user must dial the Station Security code at all times, in order to have access to an outside line.*

Preprogrammed Value = High Level Privilege.

ONE TOUCH SPEED DIAL / AUTO LINE HOLD: This feature allows you to place a call on hold simply by pressing a DSS key and then transfer the call by announcing to the person at the station to pick up the line that the call is on. This capability is assigned on a set-by-set basis. If Auto Hold is not programmed, the user will have One Touch Speed Dial Capability, where speed dialing is available by pressing a DSS key.

Preprogrammed Value = One Touch Speed Dial.

RELAY CONTROL: Determines if an individual station will have access to relay-controlled equipment. This code is completed AFTER Loud Bell/Relay Control parameters have been set in System Programming.

Preprogrammed Value = No Relay access.

MANUAL / AUTO INTERCOM / AUTO LINE SELECT: Determines whether the Intercom Line is selected automatically, or a C.O. Line is selected automatically or whether the selection must be made manually when the handset is lifted.

Preprogrammed Value = Auto Intercom Line.

HANDSET / HEADSET COMPATIBLE: Allows either a handset or headset to be used at each station.

Preprogrammed Value = Handset.

BLOCK PROGRAMMING: Allows the programming selections for a station to be automatically copied to a block of other stations.

Preprogrammed Value = Not applicable.

FLEXIBLE RINGING ASSIGNMENT: Used to program ringing for each station (10 - 73). Except for Station 10, each station is preprogrammed NOT to ring during an incoming call on any line. Ringing must be programmed for a line to ring at a station. When the Door Answer Option is connected, Line 8 on the Panther II 820 system, Line 10 on the Panther II 1032 system, and Line 20 (for use with a second DAU) on the Panther II 2064 system must also be programmed to ring at the desired stations. *Fill in Tables 2-12 to 2-14 for this feature.*

TABLE 2-11 STATION PARAMETERS

Feature Description	Access Code	Condition (Values)	Data Code
Type of Set	100YY	Panther 1032 or 2064 Set	0
		Panther 306 or 612 Set	1
		Panther II Display Set	2
		Panther II Set	3
		Off-Hook Voice Announce	4
Default is a Panther II Display Set for Station 10 (Master Set), and Panther 1032/2064 Sets for all other stations.			
Executive Override Capability	102YY	No*	0
		Yes	1
Toll Restriction by Station	103YY	Class A*	0
		Class A'	1
		Class B	2
		Class B'	3
		Class C	4
		Class C'	5
Transfer Ringing Return	104YY	Returns to originator, then sub-attendant*	0
		Returns to sub-attendant	1
		No Return	2
For the first two options, if no sub-attendants are programmed, then ringing returns to the Master Set.			
Ringing Line Pickup	105YY	Yes*	0
		No	1
DND Override Capability	106YY	Yes	0
		No*	1
Default is NO for every station, except Station 10 (Master Set).			
Account Code Type	107YY	Manual Account Codes*	0
		Forced Account Codes	1
One Touch Speed Dial / Auto Line Hold	110YY	One Touch Speed Dial*	0
		Auto Line Hold	1
Relay Access	111YY	No Relay access*	0
		Relay access	1
Default is NO for every station, except Station 10 (Master Set).			

Notes: * denotes preprogrammed value

YY= a station number from 10 to 29 on the Panther II 820 system, or 10 to 41 on the Panther II 1032 system, or 10 to 73 on the Panther II 2064 system. To program these access codes, you will need to enter each station number that needs to be changed from the preprogrammed value (one at a time).

TABLE 2-11 (Cont'd) STATION PARAMETERS

Feature Description	Access Code	Condition (Values)	Data Code
Manual Select / Auto Intercom / Auto C.O.	113YY	Automatic Intercom* Automatic C.O. Manual Select	0 1 2
Handset / Headset	115YY	Handset* Headset	0 1
Block Programming *(see below)*	118AA		MMNN

Notes: * denotes preprogrammed value

YY= a station number from 10 to 29 on the Panther II 820 system, or 10 to 41 on the Panther II 1032 system, or 10 to 73 on the Panther II 2064 system. To program these access codes, you will need to enter each station number that needs to be changed from the preprogrammed value (one at a time).

BLOCK PROGRAMMING -

AA= the 2-digit number of a station whose programming characteristics you would like to copy to a block of other stations.

MM= the 2-digit number of a station that is the start of the block of stations you will copy to.

NN = the 2-digit number of the station that is the end of the block of stations you will copy to.

FOR EXAMPLE: To copy the programmed characteristics of Station 12 to a block of stations (Stations 25 through 36 inclusive), dial the digits: 118122536.

TABLE 2-11(a) STATION SECURITY

This feature prevents unauthorized users from accessing an outside line at a station. Before an outside line can be obtained, users must dial a security code.

Programming instructions provided on this page must be completed from the Master Station (preprogrammed as Station 10). Station Security is programmed in two stages. During the first stage, you enter up to six 4-digit security codes into the system's memory. During the second stage, you assign each station to one of four Station Security levels: High Level, Day Level, Night Level or Low Level. Refer to STATION SECURITY in this Section for more details. The security level determines when a user must enter one of the 4-digit security codes that you programmed into the system.

NOTE: It is recommended that Toll Security codes be changed on a frequent basis, and that security codes be given out ONLY to those individuals who will have override privileges.

PROCEDURE 1 - TO SET UP STATION SECURITY CODES

1. At Station 10, press the PROGRAM key (or dial * #) to enter Programming Mode.

2. Dial the digits **0 5**.

3. Dial one of the six Station Security codes that you wish to change (1 to 6):
   - **1** - Security Code 1. _____
   - **2** - Security Code 2. _____
   - **3** - Security Code 3. _____
   - **4** - Security Code 4. _____
   - **5** - Security Code 5 _____
   - **6** - Security Code 6. _____

4. For the Code chosen in Step 3, now store any combination of four digits (0000 to 9999) which will allow a user to override Station Security (e.g., 2345). *Preprogrammed values are 9999 for all six Security numbers.* Using a pencil, write the stored number on the corresponding line in Step 3.

5. Press the * key to exit programming. The procedure can be repeated at any time, to overwrite/change a Station Security Code.

PROCEDURE 2 - TO SECURE A STATION

NOTE: The following procedure must be completed twice for each station; once for Night Mode and once for Day Mode:

1. At Station 10, press the PROGRAM key (or dial * #) to enter Programming Mode.
2. Dial the digits **0 9**.
3. Dial the 2-digit station number (10 to 73). Then,
4. (A) TO ENABLE STATION SECURITY DURING DAY MODE, dial

   • **0 1** - Security Code Required *(for LOW level and NIGHT level privileges)*
   OR
   • **0 0** - No Security Code Required *(for DAY level and HIGH level privileges)**

   OR

   (B) TO ENABLE STATION SECURITY DURING NIGHT MODE, dial

   • **1 1** - Security Code Required *(for LOW level and DAY level privileges)*
   OR
   • **1 0** - No Security Code Required *(for NIGHT and HIGH level privileges).**
5. Press the * key to exit programming.

Notes: * denotes preprogrammed value

FLEXIBLE RINGING ASSIGNMENT:

2.19 After filling in your Flexible Ringing Assignment selections in:

- Table 2-12 (if you are connecting a Panther II 820 System),
- Table 2-13 - for the first 10 lines/32 stations (if you are connecting a Panther II 1032 System),

OR

- Table 2-13 and Table 2-14 (if you are connecting a Panther II 2064 System),

Step 1. At Station 10 (using a Panther II Display Set), dial * # **0 1 5**.

Step 2. Dial **119YY** (where YY is a 2-digit station number from 10 to 73).

Step 3. Dial **XX** (where XX is a 2-digit line number from 01 to 20).

Step 4. Dial the digit **0**, if you **do not** want the selected line to ring at the selected station,

OR

Dial the digit **1**, if you want the selected line to ring at the selected station.

Note: Only Station 10 is preprogrammed to ring during an incoming call on all lines.

Step 5. After the inputted data is displayed, press the **HOLD** key to increment to the next line.

Step 6. Repeat Steps 4 and 5 for each line assignment at that station. When the last line assignment has been entered:

- Press the **HOLD** key to increment to the next station number,

  OR

- Press # to store all previous data or dial a new access code.

Step 7. Press the * key to exit programming when all selections have been made. The new programming is complete.

TABLE 2-12 FLEXIBLE RINGING ASSIGNMENT

PANTHER II 820 SYSTEM

Check off which lines you would like to ring at each station.

STATIONS

C.O. LINES

	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1																				
2																				
3																				
4																				
5																				
6																				
7																				
8																				

Not Used on Panther II 1032 System

TABLE 2-13
FLEXIBLE
RINGING
ASSIGNMENT

Panther II
1032 System

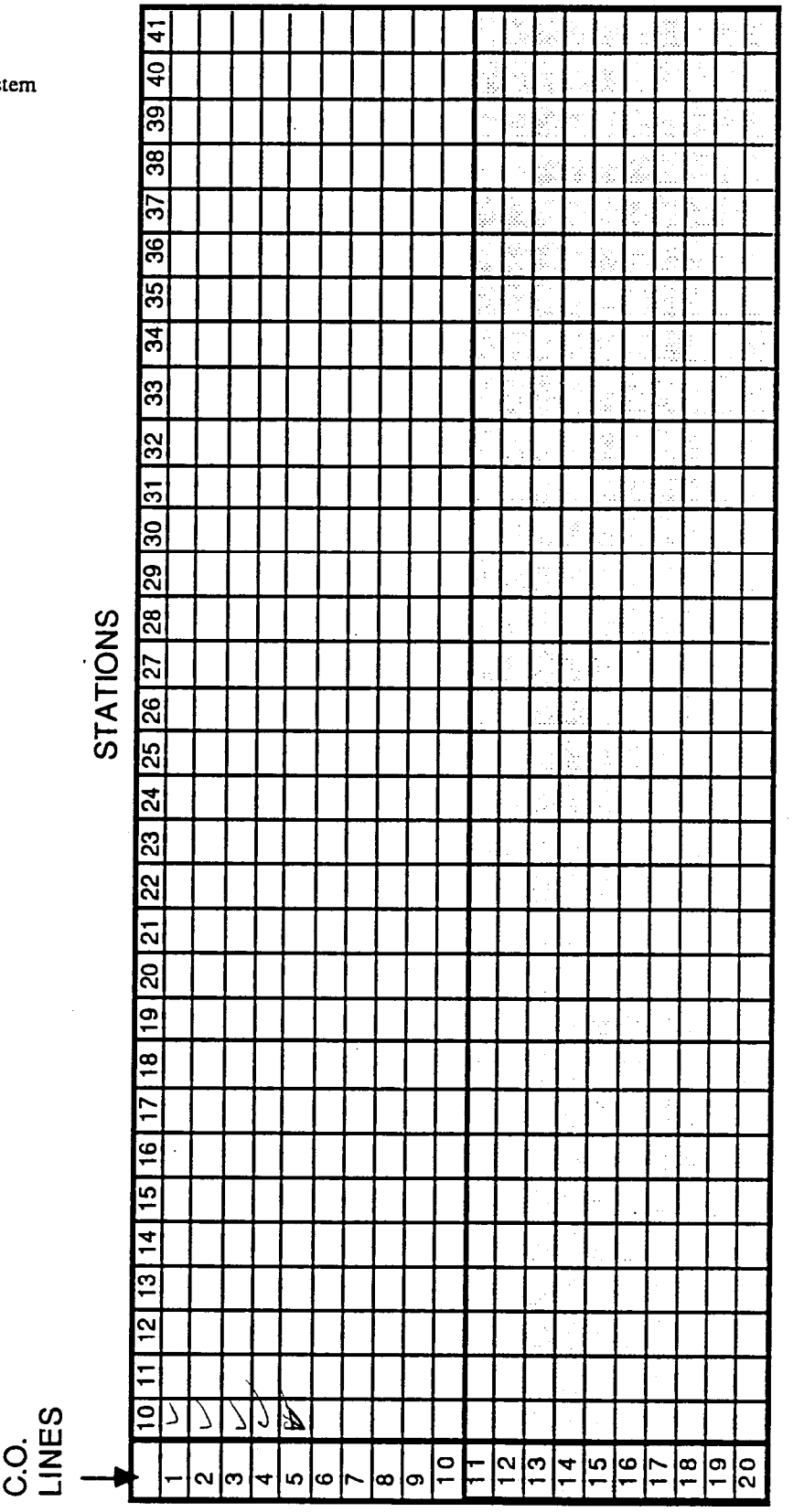


TABLE 2-14

FLEXIBLE RINGING ASSIGNMENT

Panther II 2064 System

Use all of Table 2-13 (for the first 32 stations), and this chart (for the remaining 32 stations) to fill in which lines will ring at each station.

STATIONS

C.O. LINES →

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
42																				
43																				
44																				
45																				
46																				
47																				
48																				
49																				
50																				
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71																				
72																				
73																				

GROUP PROGRAMMING

General by Line

2.20 The Group Parameters, including Access Codes and Data Codes are provided in Tables 2-15 to 2-18. The parameters are:

> **TENANT GROUP ASSIGNMENT:** Up to 8 lines on the Panther II 820 system, or 10 lines on the Panther II 1032 system, or 20 lines on the Panther II 2064 system are put into one of 15 Tenant Groups. Use Table 2-15 to check off which lines are to be included in each group from 01 to 15. Note: A line can be in more than one tenant group.

2.21 After filling in your Tenant Group Assignment selections in Table 2-15:

Step 1. At Station 10 (using a Panther II Display Set), dial * **# 0 1 5**.

Step 2. Dial **201ZZ** (where ZZ is a 2-digit group number from 01 to 15).

Step 3. Dial **XX** (where XX is a 2-digit line number from 01 to 20).

Step 4. Dial the digit **1**, if you want the selected line in the selected group,
OR
Dial the digit **0**, if you **do not** want the selected line in the selected group.

Step 5. After the inputted data is displayed, press the **HOLD** key to store the data and increment to the next line.

Step 6. Repeat Steps 4 and 5 until all lines in a particular group are programmed, then

- Press the **HOLD** key to increment to the next group number,
  OR
- Press # to store all previous data or dial a new access code.

Step 7. Press the * key to exit programming when all selections have been made. The new programming is complete.

TABLE 2-15 (a) TENANT GROUP ASSIGNMENT

	Lines									
Group Number	CO1	CO2	CO3	CO4	CO5	CO6	CO7	CO8	CO9	CO10
no group										
group 1										
group 2										
group 3										
group 4										
group 5										
group 6										
group 7										
group 8										
group 9										
group 10										
group 11										
group 12										
group 13										
group 14										
group 15										

TABLE 2-15 (b) TENANT GROUP ASSIGNMENT

	Lines									
Group Number	CO11	CO12	CO13	CO14	CO15	CO16	CO17	CO18	CO19	CO20
no group										
group 1										
group 2										
group 3										
group 4										
group 5										
group 6										
group 7										
group 8										
group 9										
group 10										
group 11										
group 12										
group 13										
group 14										
group 15										

LINE POOLING GROUPS: Up to 8 lines on the Panther II 820 system, or 10 lines on the Panther II 1032 system, or 20 lines on the Panther II 2064 system are put into one of four Pool Groups. Use Table 2-16 to check off which lines are to be included in each group from 01 to 04.

Note: Only "like" lines should go into a line pool (e.g., a pool is made up of all "same area" WATS lines, local lines, FX lines, and so on). The same line will not be in more than one line pool group. Pool groups should be organized so that there is one primary line pool with an unlimited number of lines, and three other pool groups.

*** To enable LINE POOLS as PROGRAMMABLE KEYS (on individual Sets), refer to Subsection 3.**

2.21 After filling in your Line Pooling Group selections in Table 2-16:

Step 1. At Station 10 (using a Panther II Display Set), dial *** # 0 1 5**.

Step 2. Dial **204RR** (where RR is a 2-digit pool group number from 01 to 04).

Step 3. Dial **XX** (where XX is a 2-digit line number from 01 to 20).

Step 4. Dial the digit **0**, if you **do not** want the selected line in the selected pool group,

OR

Dial the digit **1**, if you want the selected line in the selected pool group.

Step 5. After the inputted data is displayed, press the **HOLD** key to store the data and increment to the next line.

Step 6. Repeat Steps 4 and 5 until all lines in a particular line pool are programmed, then

- Press the **HOLD** key to increment to the next pool number,
  OR
- Press # to store all previous data or dial a new access code.

Step 7. Press the * key to exit programming when all selections have been made. The new programming is complete.

TABLE 2-16 LINE POOLING GROUPS

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

Check off each line you would like in each line pool group.

NIGHT TRANSFER LINE GROUPS: Up to 8 lines on the Panther II 820 system, or 10 lines on the Panther II 1032 system, or 20 lines on the Panther II 2064 system are put into one of four Night Transfer Line Groups. Use Table 2-17 to check off which lines are to be included in each group from 01 to 04. Note: A line can be in more than one Night Transfer Line Group.

2.22 After filling in your Night Transfer Line Group selections in Table 2-17:

Step 1. At Station 10 (using a Panther II Display Set), dial * # **0 1 5**.

Step 2. Dial **203RR** (where RR is a 2-digit Night Transfer Line Group number from 01 to 04).

Step 3. Dial **XX** (where XX is a 2-digit line number from 01 to 20).

Step 4. Dial the digit **0**, if you **do not** want the selected line in the selected Night Transfer Line Group,

OR

Dial the digit **1**, if you want the selected line in the selected Night Transfer Line Group.

Step 5. After the inputted data is displayed, press the **HOLD** key to store the data and increment to the next line.

Step 6. Repeat Steps 4 and 5 until all lines in a particular group are programmed, then

- Press the **HOLD** key to increment to the next Night Transfer Line Group number,

  OR

- Press # to store all previous data or dial a new access code.

Step 7. Press the * key to exit programming when all selections have been made. The new programming is complete.

TABLE 2-17 NIGHT TRANSFER LINE GROUPS

LINES

GROUP	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
01	1	1																		
02			1																	
03																				
04																				

Check off each line you would like in each Night Transfer Line Group.

PRIME LINE GROUPS: Up to 8 lines on the Panther II 820 system, or 10 lines on the Panther II 1032 system, or 20 lines on the Panther II 2064 system are put into one of 15 Prime Line Groups. Use Table 2-18 to check off which lines are to be included in each group from 01 to 15. Note: A line can be in more than one Prime Line group. (Refer also to PRIME LINE PREFERENCE in this subsection).

To enable a PRIME LINE (*at individual Sets*), refer to PROGRAMMABLE KEYS, Subsection 3.

2.23 After filling in your Prime Line Group Assignment selections in Table 2-18:

Step 1. At Station 10 (using a Panther II Display Set), dial * # 0 1 5.

Step 2. Dial **202ZZ** (where ZZ is a 2-digit group number from 01 to 15).

Step 3. Dial **XX** (where XX is a 2-digit line number from 01 to 20).

Step 4. Dial the digit **0**, if you **do not** want the selected line in the selected group,
OR
Dial the digit **1**, if you want the selected line in the selected Prime Line group.

Step 5. After the inputted data is displayed, press the **HOLD** key to store the data and increment to the next line.

Step 6. Repeat Steps 4 and 5 until all lines in a particular group are programmed, then

- Press the **HOLD** key to increment to the next Prime Line number,
  OR
- Press # to store all previous data or dial a new access code.

Step 7. Press the * key to exit programming when all selections have been made. The new programming is complete.

TABLE 2-18 (a) Prime Line Group Assignment

	Lines									
Group Number	CO1	CO2	CO3	CO4	CO5	CO6	CO7	CO8	CO9	CO10
no group										
group 1										
group 2										
group 3										
group 4										
group 5										
group 6										
group 7										
group 8										
group 9										
group 10										
group 11										
group 12										
group 13										
group 14										
group 15										

General by Station

2.24 The Group Parameters, including Access Codes and Data Codes are provided in Tables 2-19 and 2-20. The parameters are:

TENANT GROUPS: (Table 2-19) After the 8 lines on the Panther II 820 system, or the 10 lines on the Panther II 1032 system, or the 20 lines on the Panther II 2064 system have been assigned to the 15 Tenant groups (see GROUP PROGRAMMING - General by Line), each station must be assigned to one of the 15 groups.

Note: If two businesses are sharing a system and Private Mode was selected in Tenanting parameters, the stations available to each business should be placed in separate tenant groups.

Preprogrammed Value = No Tenant Groups.

TABLE 2-18 (b) Prime Line Group Assignment

	Lines									
Group Number	CO11	CO12	CO13	CO14	CO15	CO16	CO17	CO18	CO19	CO20
no group										
group 1										
group 2										
group 3										
group 4										
group 5										
group 6										
group 7										
group 8										
group 9										
group 10										
group 11										
group 12										
group 13										
group 14										
group 15										

PICKUP GROUPS: (Table 2-19) In order to perform the Call Pickup-Local feature on the Panther II system, each station must be assigned to at least one of the fifteen 2-digit pickup groups (01 to 16). The pickup groups should be organized so that stations in close physical proximity to each other are placed in the same pickup group.

Preprogrammed Value = All stations are placed in Pickup Group 01.

PRIME LINE PREFERENCE: (Table 2-19) If the lines have been assigned to the 15 Prime Line groups (using the GROUP PROGRAMMING - General by Line method), each station must be assigned to one of the 15 groups.

Note: It is recommended that each Panther II Set (Basic Set) be set up with its own individual Prime Line for easy call processing. Other users, such as those users with Panther II Display Sets may wish to have a Prime Line, but the System Manager must set up this capability from the individual's Set (using the procedure outlined in Subsection 3).

Preprogrammed Value = No Prime Line Preference groups.

TABLE 2-19 GROUP PARAMETERS

Feature Description	Access Code	Condition (Values)	Data Code
Tenant Groups	121YY	No Assignment*	00
		Group 1	01
		Group 2	02
		Group 3	03
		Group 4	04
		Group 5	05
		Group 6	06
		Group 7	07
		Group 8	08
		---	--
		---	--
		Group 15	15
Pickup Groups	125YY	Group 1*	01
		Group 2	02
		Group 3	03
		Group 4	04
		Group 5	05
		Group 6	06
		Group 7	07
		Group 8	08
		---	--
		---	--
		Group 15	15
Prime Line Preference	123YY	No Assignment*	00
		Group 1	01
		Group 2	02
		Group 3	03
		Group 4	04
		Group 5	05
		Group 6	06
		Group 7	07
		Group 8	08
		---	--
		---	--
		Group 15	15

Notes: * denotes preprogrammed value

YY= a station number from 10 to 29 on the Panther II 820 system, or 10 to 41 on the Panther II 1032 system, or 10 to 73 on the Panther II 2064 system. To program these access codes, you will need to enter each station number that needs to be changed from the preprogrammed value (one at a time).

ZONE PAGING GROUPS: In order to perform the Zone Paging feature on the Panther II system, each station must be assigned to at least one of the fifteen 2-digit pickup groups (01 to 15). Paging groups can be organized by department, function or proximity.

Preprogrammed Value = No Zone Paging Groups.

2.25 To set up Zone Paging Groups:

Step 1. At Station 10 (using a Panther II Display Set), dial * # **0 1 5**.

Step 2. Dial **122YY** (where YY is a 2-digit station number from 10 to 73).

Step 3. Dial **ZZ** (where ZZ is a 2-digit Zone Paging Group from 01 to 15).

Step 4. Dial the digit **0**, if you **do not** want the selected station to be included in the selected Zone Paging group,

OR

Dial the digit **1**, if you want the selected station to be included in the selected Zone Paging group.

Step 5. After the inputted data is displayed, press the **HOLD** key to store the data and increment to the next Zone Paging Group.

Step 6. Repeat Steps 4 and 5 until all zones at the particular station are elected, then

- Press the **HOLD** key to increment to the next station number,
  OR
- Press # to store all previous data or dial a new access code.

Step 7. Press the * key to exit programming when all selections have been made. The new programming is complete.

INTERCOM TENANTING / STATION HUNT GROUPS: **(Table 2-20)** This programming code allows all stations to be placed into one of four groups for Intercom Tenanting or Station Hunting purposes. Refer to *Panther II 820/1032/2064-105, Features and Services* for more details. Each station can be placed in only one group. If the four groups must be able to communicate with each other, ensure that the system has been changed to Non-Private Mode (as described in System Programming). See also MULTIPLE ATTENDANTS - System Programming, if sub-attendants will be linked to each group.

NOTE: Intercom Tenanting capability will be affected by TENANT TYPE programming.

Preprogrammed Value = All users in Group 1.

NIGHT TRANSFER STATION GROUPS: (Table 2-20) After the lines have been assigned to the four NIGHT TRANSFER LINE GROUPS (see GROUP PROGRAMMING - General by Line), each station must be assigned to one of the four groups.

Preprogrammed Value = No Night Transfer Station Groups.

TABLE 2-20 GROUP PARAMETERS BY STATION

Feature Description	Access Code	Condition (Values)	Data Code
Night Transfer Station Groups	101YY	No Ringing*	0
		Group 1	1
		Group 2	2
		Group 3	3
		Group 4	4
Intercom Tenanting/ Station Hunt Groups	124YY	Group 1*	0
		Group 2	1
		Group 3	2
		Group 4	3

Notes: * denotes preprogrammed value

YY= a station number from 10 to 29 on the Panther II 820 system, or 10 to 41 on the Panther II 1032 system, or 10 to 73 on the Panther II 2064 system. To program these access codes, you will need to enter each station number that needs to be changed from the preprogrammed value (one at a time).

3. PROGRAMMABLE KEYS

3.01 This subsection discusses how to program Prime Lines, flexible C.O. keys, Line Pools, flexible DSS/Speed keys, feature keys and unused keys for an individual Set. All programming outlined in this subsection is to be completed by the System Manager at each Set.

Prime Line Select

3.02 For simple call processing, a specific line (01 to 20) may be designated as the Prime Line for a particular Set. This ensures simple, automatic access to the designated line for all incoming and outgoing calls. The choice of a Prime Line should take into account which lines the user has access to, and which lines will not conflict with other users in the System. It is recommended that a Prime Line be set up for each Panther II Set (Basic Set) in the system. Once Prime Line Select is set up, the user will have quick access to the Prime Line by dialing 9, or (if Auto C.O. Select is programmed for the Set), simply lifting the handset or pressing the SPEAKER key.

To set up a Prime Line:

1. At the Set, press the PROGRAM key (or dial * #), and dial **5**.

2. Dial one of the following codes to specify the Prime Line:
   00: for last line, or
   01 - 20: for a specific line in the system.

3. Press * to exit Programming Mode.

Programming C.O. Keys (Codes 001 to 020)

3.03 Flexible C.O. Line Programming allows increased flexibility of C.O. lines on a set-by-set basis. Line keys can be programmed to be any possible line (or pool of lines) on the system. The procedure for programming LINE KEYS is given in Table 3-1, and can be performed on the following Sets:

- Panther 306 Sets - Lines 1, 2, and 3.
- Panther 612 Sets - Lines 1 to 6.
- Panther 1032, 2064 or Panther II Display Sets - Any key located on the designation card.
- Panther II Set - not applicable.

NOTE: Only one key can be programmed as a particular line. The same line will not be in more than one line pool, however a line can be both a line key and a line pool on individual Sets.

Programming Line Pool Keys (Codes 051 to 054)

3.04 This feature allows a standard line key to be used to access a group of "like" lines for outgoing calls (e.g., "same area" WATS lines, local lines, FX lines, and so on). It is recommended that one key is programmed for the primary line pool, and that the primary line pool be made up of local lines. The System Manager decides which C.O. line key on each station Set will be "replaced" by a line pool.

NOTE: Only one key can be programmed as a particular line. The same line will not be in more than one line pool, however a line can be both a line key and a line pool on individual Sets.

If there is no available line pool key, an access code can be dialed to select the line pool. This allows Sets such as the Panther II Set (Basic Set) to access line pools.

3.05 The procedure for setting up LINE POOL KEYS (given in Table 3-1) can be performed on the following Sets:

- Panther 306 Sets - Lines 1, 2, and 3.
- Panther 612 Sets - Lines 1 to 6.
- Panther 1032, 2064 or Panther II Display Sets - Any key located on the designation card.
- Panther II Set - not applicable. (Line Pooling is available only by access code.)

Programming DSS/Speed Keys (Codes 910 to 973)

3.06 On Panther 306 and 612 Sets, the Direct Station Selection (DSS) keys can be individually programmmed to have any station appear on any key. For other Panther Sets (Panther 1032, 2064 and Display Sets), the programmable keys on each Set are preprogrammed as line keys. One or more line keys can be converted into DSS keys at each Set. To program DSS KEYS, refer to Table 3-1.

Note: Only one DSS key can be programmed as a particular station.

3.07 If Private Speed Call numbers and Common Speed Call numbers are stored using codes (00 - 10 and 20 - 99, respectively), codes 00 - 10 and 20 - 62 will correspond to a particular DSS Keys for One Touch Speed Dialing. Refer to the *Panther II User Guides* for more details on One Touch Speed Dialing.

Programming Feature Keys (Codes 050,057 to 061)

3.08 Any line/DSS key located above the fixed function keys on a Set (i.e., the line/DSS keys on a Set's designation card), can be programmed as a Feature key to perform special "one-touch" functions. The System Manager must set up Programmable FEATURE KEYS at each Set using the procedures given in Table 3-1.

Programming Unused Keys (Code 062)

3.09 Any unused line key or DSS key can be programmed so that when it is pressed, nothing happens. The System Manager can program unused keys by following the procedure given in Table 3-1.

Resetting Keys to their Default Values (Code 000)

3.10 Keys that have been programmed can be reset to their preprogrammed (default) setting by using the following procedure (e.g., if you have programmed the Line 1 key on a Set as a Night Pickup key, then wish to convert it to a Line 1 key again). Note that you can reprogram a key without having to reset it to its default setting first.

To reset keys to the default values:

- Press the PROGRAM Key (or dial * #), then dial **4**.
- Press the key you wish to reset.
- Dial **0 0 0**.
- Press * to exit Programming Mode.
- Repeat the procedure for each additional key you wish to reset.

The keys default to the line keys and DSS keys that are shown on the set's designation card in printed type.

TABLE 3-1 PROGRAMMABLE KEYS

With the Panther II System, keys on a Set can be programmed as line keys, line pool keys, DSS keys, or feature keys. To convert a key -

1. At the Set, press the PROGRAM key (or dial * #).
2. Dial the digit **4**.
3. Press the key that you wish to change.
4. Dial the appropriate code below -

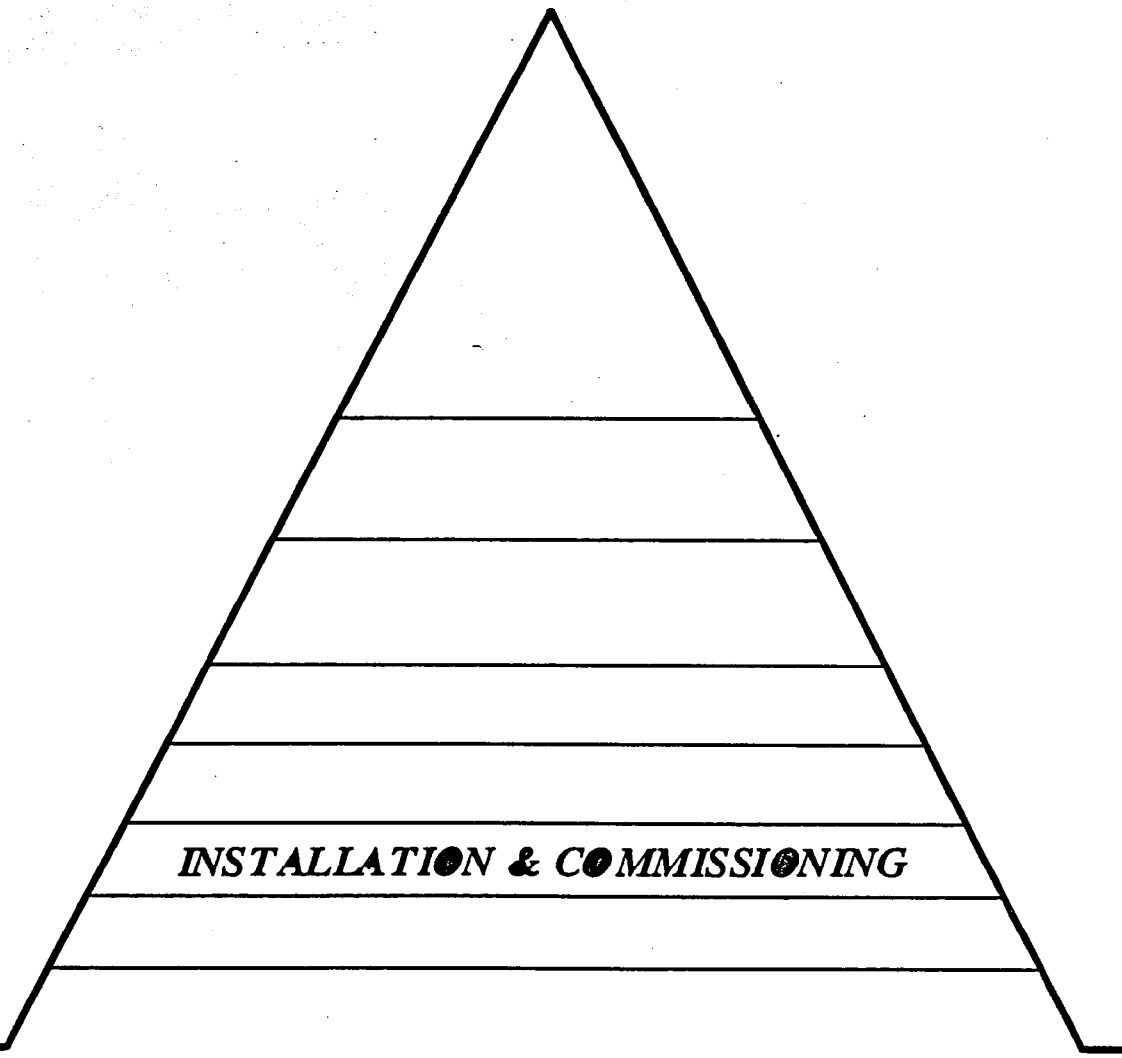
001 - 020 = a specific line from 01 to 20.	(LINE KEYS)
051 = Line Pool 1 052 = Line Pool 2 053 = Line Pool 3 054 = Line Pool 4	(LINE POOL KEYS)
050 = Saved Number Redial 057 = Call Pickup - Local 058 = Call Pickup - Remote 059 = Night Pickup 060 = Do Not Disturb 061 = Program	(FEATURE KEYS)
062 = Unused Key	(UNUSED KEYS)
910 - 973 = a specific station from 10 to 73.	(DSS KEYS)

5. Press * to exit programming.

Now the key selected in Step 3, has been changed to the new function selected in Step 4.

Panther® II

SYSTEM MANUAL



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TRILLIUM
telephone systems

F-3612-1

PANTHER® II 820/1032/2064
Electronic Key Telephone System

INSTALLATION AND COMMISSIONING

TABLE OF CONTENTS PAGE

TABLE OF CONTENTS PAGE

1. GENERAL

Introduction

1.01 This Practice contains information pertaining to the installation and commissioning of the Panther II 820, 1032 and 2064 Electronic Key Telephone Systems. Installation and commissioning may be defined as the tasks necessary to prepare the system for operation.

Reason For Issue

1.02 This is the second issue of this Practice. It is one of the set of Trillium Standard Practices written to assist a craftsperson install, operate and maintain the system in the field.

2. HARDWARE OVERVIEW

Key Service Unit

2.01 The Key Service Unit (KSU) is a sealed unit of metal construction measuring; 42.7 cm (16.8 inches) high, 34.6 cm (13.6 inches) wide and 7 cm (2.75 inches) deep and weighing approximately 6.12 Kg (Panther II 820), 6.45 Kg (Panther II 1032) or 6.18 Kg (Panther II 2064). See Figure 2-1. The unit contains all of the circuitry necessary to control the system. A power supply, located inside the KSU at the top, converts the 110 Vac supply to the voltages required by the circuits of the KSU, and those of the Panther telephone sets. The components of the KSU are cooled by air drawn, by convection, from the bottom to the top of the KSU. The air passes through the KSU before being exhausted through the vents in front and sides of the top of the unit. Keyhole slots are provided on both sides of the KSU to facilitate wall mounting. The connectors required to connect the C.O. lines and ancillary devices, along with a 4-position dip switch, a reset button and status LEDs, are easily accessible on the right side of the KSU. The connectors required to connect the KSU to the stations are located on the left side of the KSU. The removable Read Only Memory (ROM) Module (located on the right side of the KSU), in which the Stored Program Control resides. Each KSU has two internal system batteries (used to retain customer programming). The batteries have a life of approximately 10 years when ac power is applied to the KSU and the battery switch is in the on position, or 3 months when the ac power is disconnected from the KSU and battery switch is on.

Panther Telephone Sets

2.02 The Panther telephone sets are constructed of moulded plastic measuring 10.7 cm (4.2 inches) high, 17.8 cm (7 inches) wide and 23.9 cm (9.4 inches) deep. See Figure 2-2. Each set is similar in design, having a detachable handset, a soft-touch keypad, dedicated function keys and status lamps. The number of status lamps, line and function keys varies with the set type. There are 10 types of sets which can be connected to the Panther II systems.

They are:

- The Panther 306 Non-Handsfree (NHF) Telephone Set
- The Panther 306 Handsfree/ Busy Lamp Field (HF/BLF) Telephone Set
- The Panther 612 Standard Telephone Set
- The Panther 612 Attendant (HF/BLF) Telephone Set
- The Panther 1032 NHF Telephone Set
- The Panther 1032 HF Telephone Set
- The Panther 2064 NHF Telephone Set
- The Panther 2064 HF Telephone Set
- The Panther II Display Set (Available only on Panther II)
- The Panther II Set (Available only on Panther II - may be referred to as Basic Set).

2.03 In addition to the 10 types of sets, there are also two types of Direct Station Selection / Busy Lamp Field (DSS/BLF) Consoles, which allow visual monitoring of all other Panther Sets in the system. The Panther 1032 DSS/BLF Console provides 32-station indicator lamps, and the Panther 2064 DSS/BLF Console provides 64-station indicator lamps. Each of the consoles occupy one station in the system.

2.04 The differences between the Panther Telephone sets are clearly defined in *Panther II 820/1032/2064-100, General Information.*

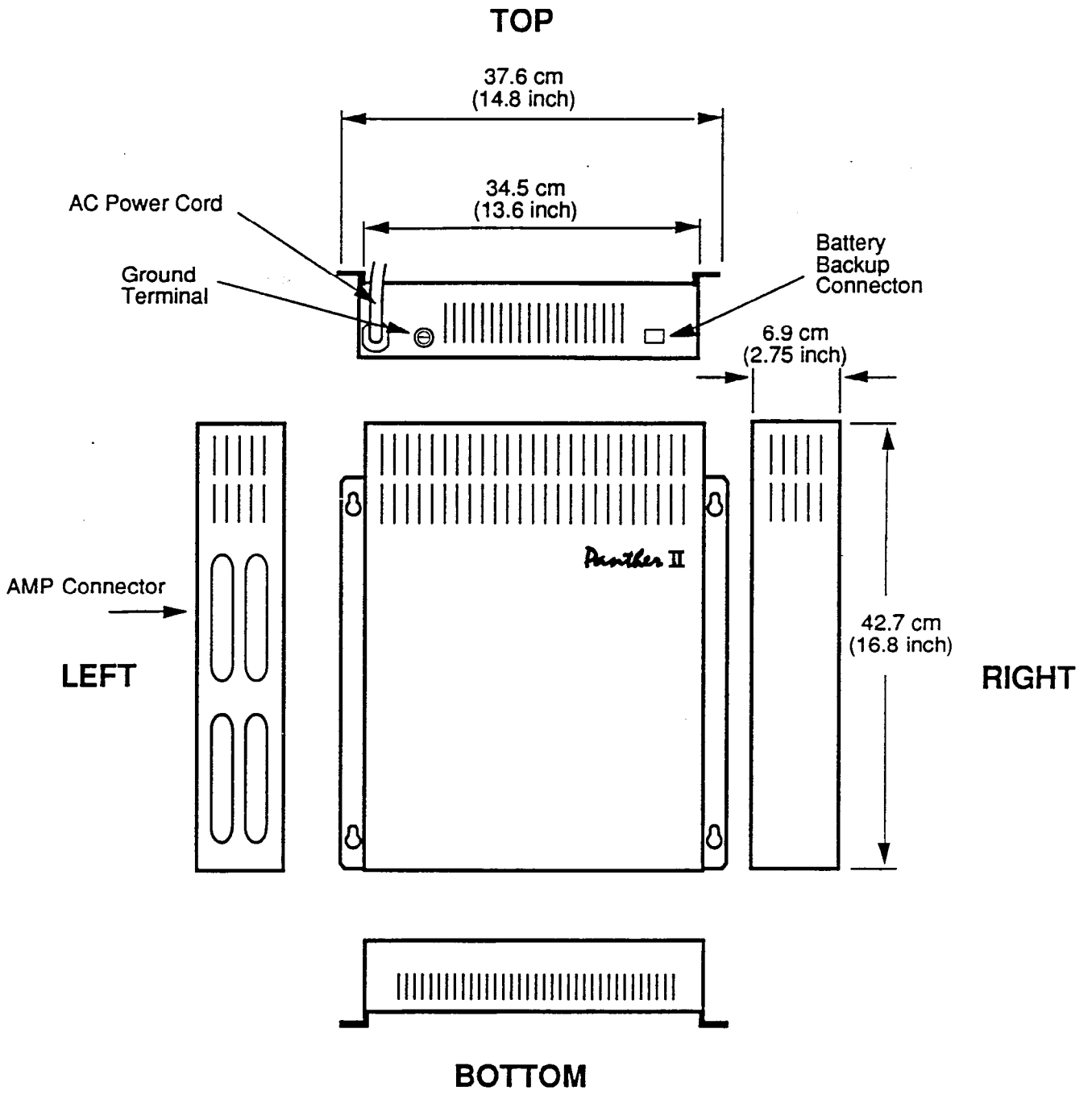


Figure 2-1 Key Service Unit Dimensions

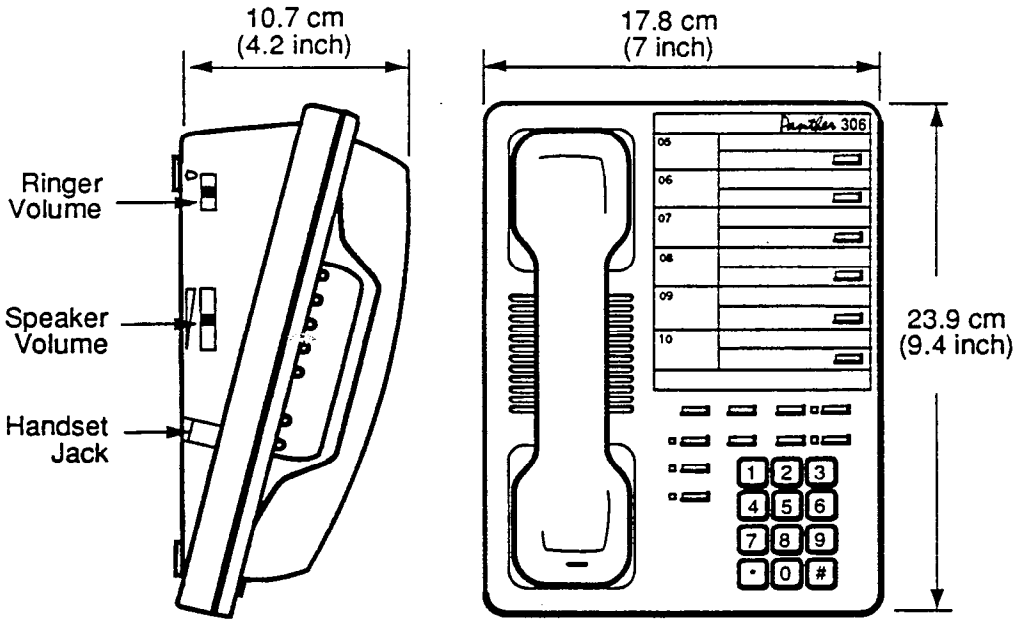


Figure 2-2 Panther Telephone Set Dimensions

3. EQUIPMENT IDENTIFICATION

General

3.01 The major components of the Panther II systems are identified by a part number normally located on the right-hand side of the KSU and on the bottom of the Panther telephone sets.

Part Numbers

3.02 The part numbers of field-replaceable items are given in Table 3-1(a) and Table 3-1(b).

PANTHER II 1032:	
1032 KSU	90-0466
Non Handsfree (NHF) Set	90-0320
Handsfree (HF) Set	90-0421
1032 DSS/BLF Console	90-0312
PANTHER II 2064:	
2064 KSU	90-0468
2064 Non Handsfree (NHF) Set	90-0288
2064 Handsfree HF Set	90-0225
2064 DSS/BLF Console	90-0226
PANTHER II 820:	
820 KSU	90-0465
ADDITIONAL SETS:	
306 NHF Set	90-0291
306 HF/BLF Set	90-0292
612 Standard Set	90-0266
612 Attendant Set (HF/BLF Set)	90-0168
Panther II Display Set	90-0469
Panther II Set (Basic Set)	90-0470
ANCILLARY DEVICES:	
Panther II SMDR	90-0471
Desk/Wall Mount	90-0059
Door Answer Unit	90-0057
Door Module	90-0058
Power Fail Transfer	90-0052
Off-Premises Extension Unit	90-0308
FAX Interface Unit	90-0472
6-Line Expander Unit	90-0467

Table 3-1(a) System Components

PANTHER II 306 SETS:	
Plastic Lens - Set	70-0211
Plastic Lens - BLF Set	70-0212
Designation Card - Set , Pk of 10	90-0296
Designation Card - BLF Set , Pk of 10	90-0297
Designation Card - Set (French) Pk of 10	90-0298
Designation Card - BLF Set (French) Pk of 10	90-0299
Line Key Overlay	77-0349
Line Key Overlay (French)	77-0350
PANTHER II 612 SETS:	
Plastic Lens - Set	70-0171
Plastic Lens - BLF Set	70-0172
Designation Card - Set , Pk of 10	90-0192
Designation Card - BLF Set , Pk of 10	90-0193
Designation Card - Set (French) Pk of 10	90-0191
Designation Card - BLF Set (French) Pk of 10	90-0194
Line Key Overlay	77-0254
Line Key Overlay (French)	77-0255
ALL PANTHER II SETS:	
Handset Cord - Coiled, 7ft, 4 Conductor	69-0048
Handset Cord - Coiled, 14ft, 4 Conductor	69-0049
Handset, Hearing Aid Compatible (box of 10)	90-0233
Modular Cord - 4 conductor	69-0030
Connecting Cord - PFT Unit	69-0050
Rubber Feet - Telephone Base (Pk of 100)	90-0133
PANTHER II 1032 SETS:	
Plastic Lens - Set	70-0208
Plastic Lens - BLF Set	70-0209
Designation Card - Set , 10 Pk	90-0258
Designation Card - Attendant Set , 10 Pk	90-0306
Designation Card - DSS/BLF 10 Pk	90-0259
Designation Card - Set (French) 10 Pk	90-0268
Designation Card - Attendant (French) 10 Pk	90-0310
Designation Card - 1032 (on 2064) Set 10 Pk	90-0414
Line Key Overlay Panther 1032 or 2064 (French)	77-0371
PANTHER II 2064 SETS:	
Plastic Lens - Set	70-0210
Designation Card - Set , Pk of 10	90-0300
Designation Card - DSS/BLF Set , Pk of 10	90-0301
Designation Card - Set (French) Pk of 10	90-0302
PANTHER II DISPLAY SET	
Plastic Lens - Set	70-0293
Designation Card - Set , 10 Pk	90-0481
Designation Card - Set (French) 10 Pk	90-0482
LCD Label	77-0602
Designation Card - (Blank) 10 Pk	90-0483
Designation Card - (Blank) (French) 10 Pk	90-0484
Keypad Overlay (French)	77-0603
PANTHER II SET - (BASIC SET)	
Plastic Lens - Set	70-0294
Keypad Overlay (French)	77-0609
Designation Card - Set , 10 Pk	90-0485
Designation Card - Set (French) 10 Pk	90-0486
Designation Card - Set (Blank) 10 Pk	90-0487
Designation Card - Set (Blank) (French) 10 Pk	90-0488
OTHER BLANK DESIGNATION CARDS	
Panther 306 BLF Set - 10 Pk	90-0407
Panther 306 Set - 10 Pk	90-0408
Panther 612 Set - 10 Pk	90-0409
Panther 612 Attendant Set - 10 Pk	90-0410

Table 3-1(b) Spare Parts

4. EQUIPMENT CONFIGURATION

4.01 The basic equipment configuration for each Panther II 820 system is one 820 Key Service Unit, and up to 20 Panther telephone sets. The Panther II 1032 system is made up of one 1032 Key Service Unit, and up to 32 Panther telephone sets. The Panther II 2064 requires two Key Service Units and up to 64 Panther telephone sets. The two KSUs making up the Panther II 2064 system are:

- a 1032 KSU which acts as the main control centre for the system and accommodates the first 10 lines and 32 stations
- a 2064 KSU which allows expansion of the system up to 20 lines and 64 stations.

In addition, each system may be configured with the following ancillary devices:

- **Door Answer Unit,** supporting a maximum of 2 Door Modules. For a general description of the Door Answer Unit refer to *Panther II 820/1032/2064-290,* Door Answer Unit.

- **Power Fail Transfer Unit.** For a general description of the Power Fail Transfer Unit refer to *Panther II 820/1032/2064-291, Power Fail Transfer Unit.*

- **Station Message Detail Recording Unit.** For a general description of the Station Message Detail Recording Unit, refer to *Panther II 820/1032/2064-292, Station Message Detail Recording Unit.*

5. INSTALLATION REQUIREMENTS

Space Requirements

5.01 It is recommended that the KSU be wall mounted on a wooden backboard. The thickness of the backboard should be 20 mm (0.75 inch) to accommodate the KSU mounting screws. The area of the backboard should be sufficient to accommodate the KSU, the Main Distribution Frame (MDF) connection block and any ancillary devices which form part of the system. The KSU alone requires clearance of 12 inches around its perimeter to facilitate installation, maintenance and ventilation. See Figure 5-1. In addition, the KSU should be mounted at least 12 inches (305 mm) above the floor.

Temperature

5.02 The Panther II KSUs can be installed in a location which complies with the following temperature and humidity constraints.

- Temperature: 32 degrees Fahrenheit to 104 degrees Fahrenheit (0 degrees Centigrade to 40 degrees Centigrade).
- Humidty: 90% or less, non-condensing.

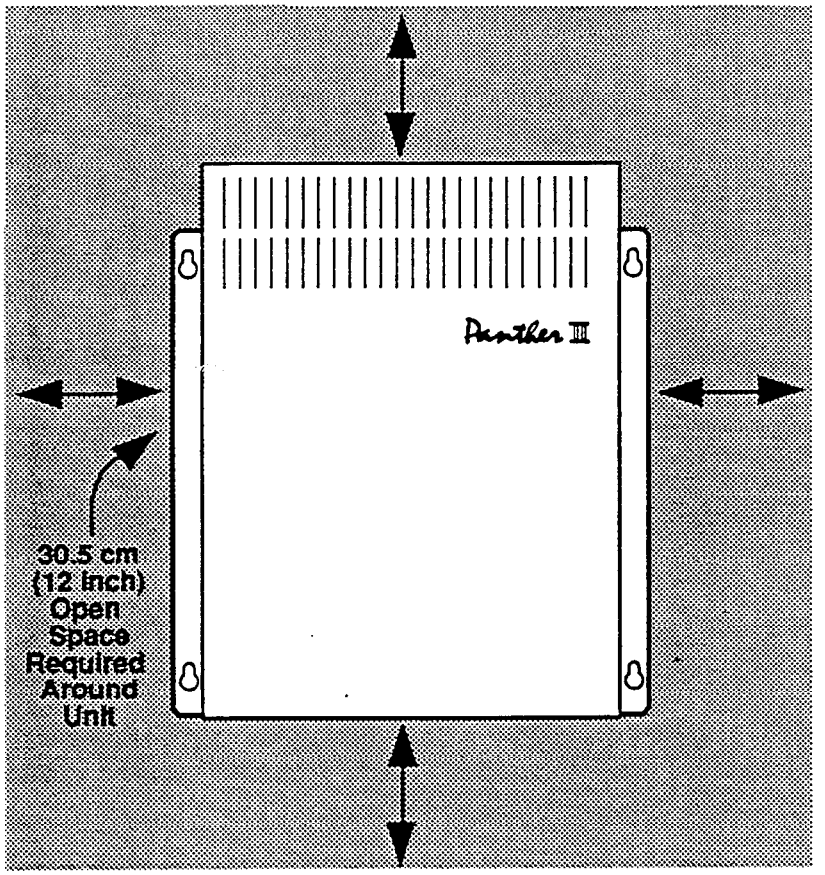


Figure 5-1 KSU Space Requirements

KSU Location

5.03 The KSU should be mounted in a location which:

- is clean, dry and well ventilated.
- provides access to the incoming C.O. lines.
- is equipped with a grounded 110 Volt ac electrical outlet.
- provides an earth ground (an all metal cold water pipe is ideal)

5.04 The position of the KSU in relation to the other equipment must be chosen so as to ensure maximum cable lengths from the Main Distribution Frame (MDF), and from the stations are not exceeded.

The maximum cable lengths are:

- KSU to MDF - should not exceed 25 feet.
- KSU to stations should not exceed the following:
  - 2000 feet using 24 AWG cable

Power Supply Requirements

5.05 The power for the Panther II systems must be supplied from a 110 Vac, 15 Amp, mains commercial power supply. It is recommended that the supply be:

- wired and fused independently from all other power receptacles.
- controlled directly from the circuit breaker and not from a local switch.
- located within 4 feet of the KSU.
- easily accessible for removal of the plug, if required.
- equipped with a surge protector to reduce the likelihood of damage to the equipment in the event of a lightning strike (Recommended Supplier: ITW LINK, Elk Grove Village, Illinois - # LP3-230-220 for C.O. Lines; # LP3-90-30 for each station pair).

Grounding

5.06 The KSU must be connected to a 'high quality' ground through a separate single, solid conductor (12-gauge), terminated on the Ground Terminal on the top panel of the KSU. The ground connection for the KSU should comply with the following requirements:

- The current, as measured between the Ring side of a C.O. Line and the ground source, should equal at least twice the short circuit loop current, measured between the Tip and Ring of that C.O. line. See Figure 5-2.

- The 12 AWG ground cable should not exceed 18 inches in length.

- The ground cable should be a continuous solid conductor having a total resistance of less than 0.5 ohms when measured between its point of origin (i.e., the ground source) and the Ground Terminal on the KSU.

> **Note:** Failure to properly ground the KSU may cause system failure.

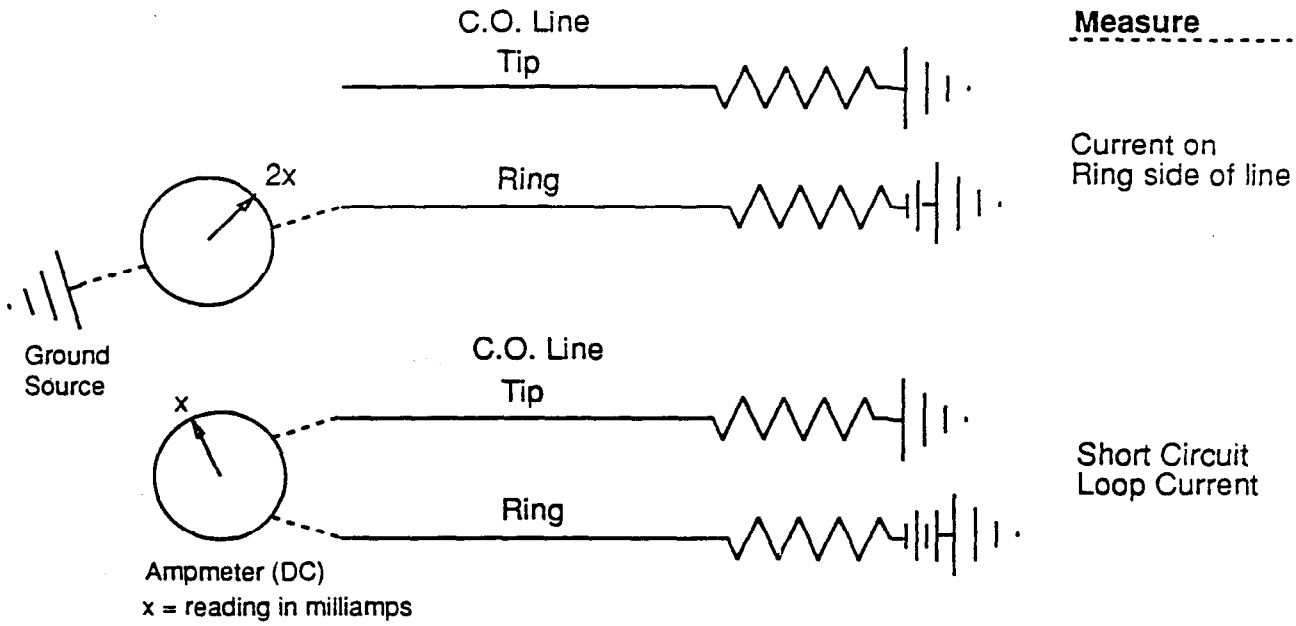


Figure 5-2 Ground Verification

Installation Tools and Equipment

5.07 The tools and equipment required to install the Panther II systems are shown in Table 5-1.

TOOLS:	APPLICATION:
Screwdrivers	Mounting major components
Punch Down Tool	Terminating MDF cables
Staple Gun	Securing cables
EQUIPMENT:	
Modular Jacks	Connecting Stations
50-pin 'D' Amp Connector	KSU to MDF Cable termination
MDF (BIX or 66 Block)	Main Distribution Frame
Surge Protector	Lightning protection at mains ac
Ground Wire (12 AWG)	Grounding the KSU
Modular-to-Modular Cords	Equipment interconnection
4-wire Cable (24 AWG)	Station wiring

Table 5-1 Installation Tools and Equipment

6. INSTALLATION PROCEDURES

General

6.01 The installation procedures given in this subsection detail the installation of the major components of the Panther II 820, 1032 and 2064 systems along with the ancillary devices which may be incorporated. The interconnection of the complete system and its ancillary devices is shown in Figure 6-1.

Delivery Check

6.02 Upon receipt of the Panther II system, the quantity and type of items received, should be checked against the purchase order. Any discrepancy should be reported to the supplier immediately.

Unpacking and Inspection

6.03 After the delivery check is complete, each item of equipment should be unpacked, in accordance with the unpacking instructions located on the outside of the equipment boxes, and inspected for transit damage. Any discrepancy should be reported to the supplier immediately.

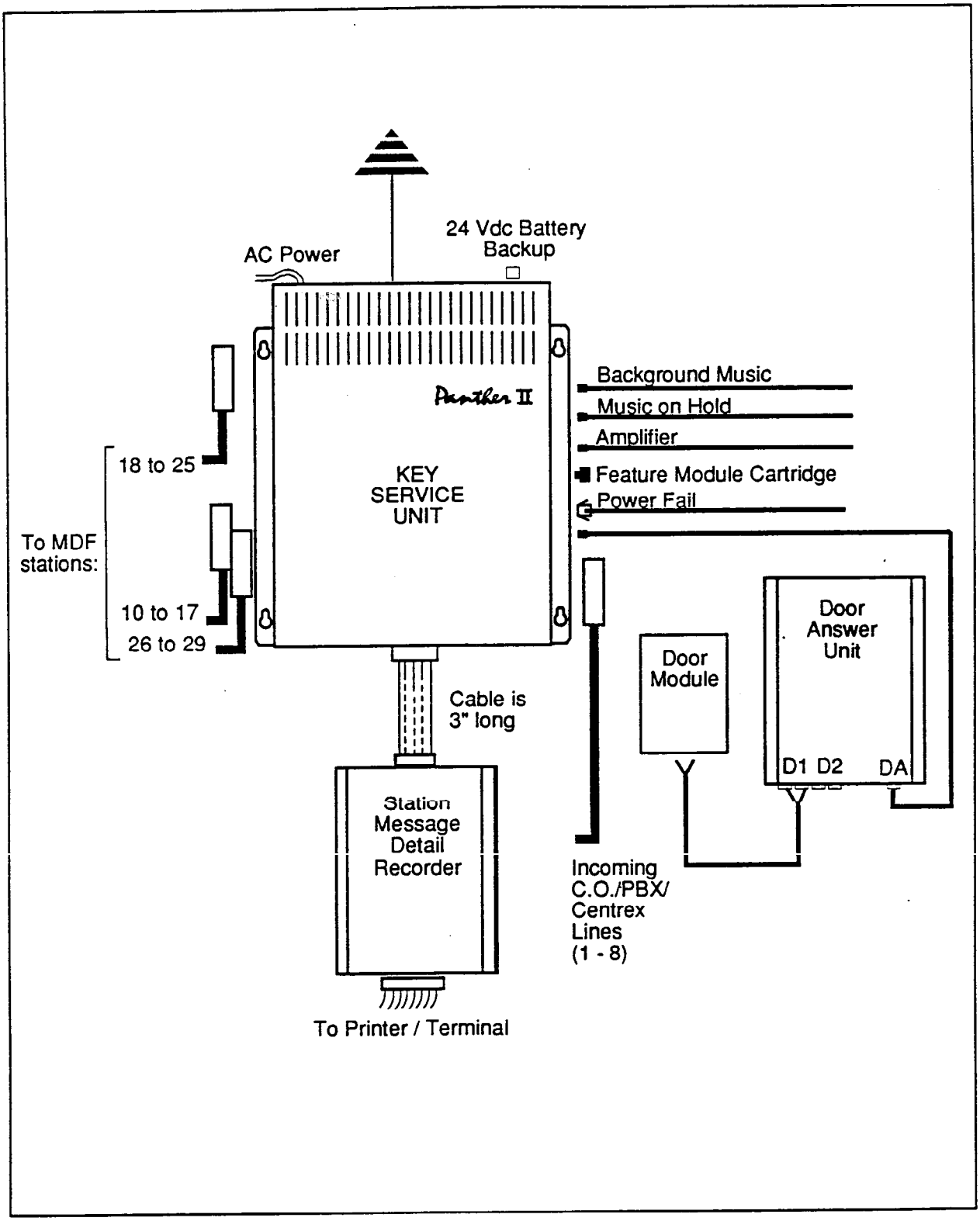


Figure 6-1 (a) Panther II 820 Main Configuration

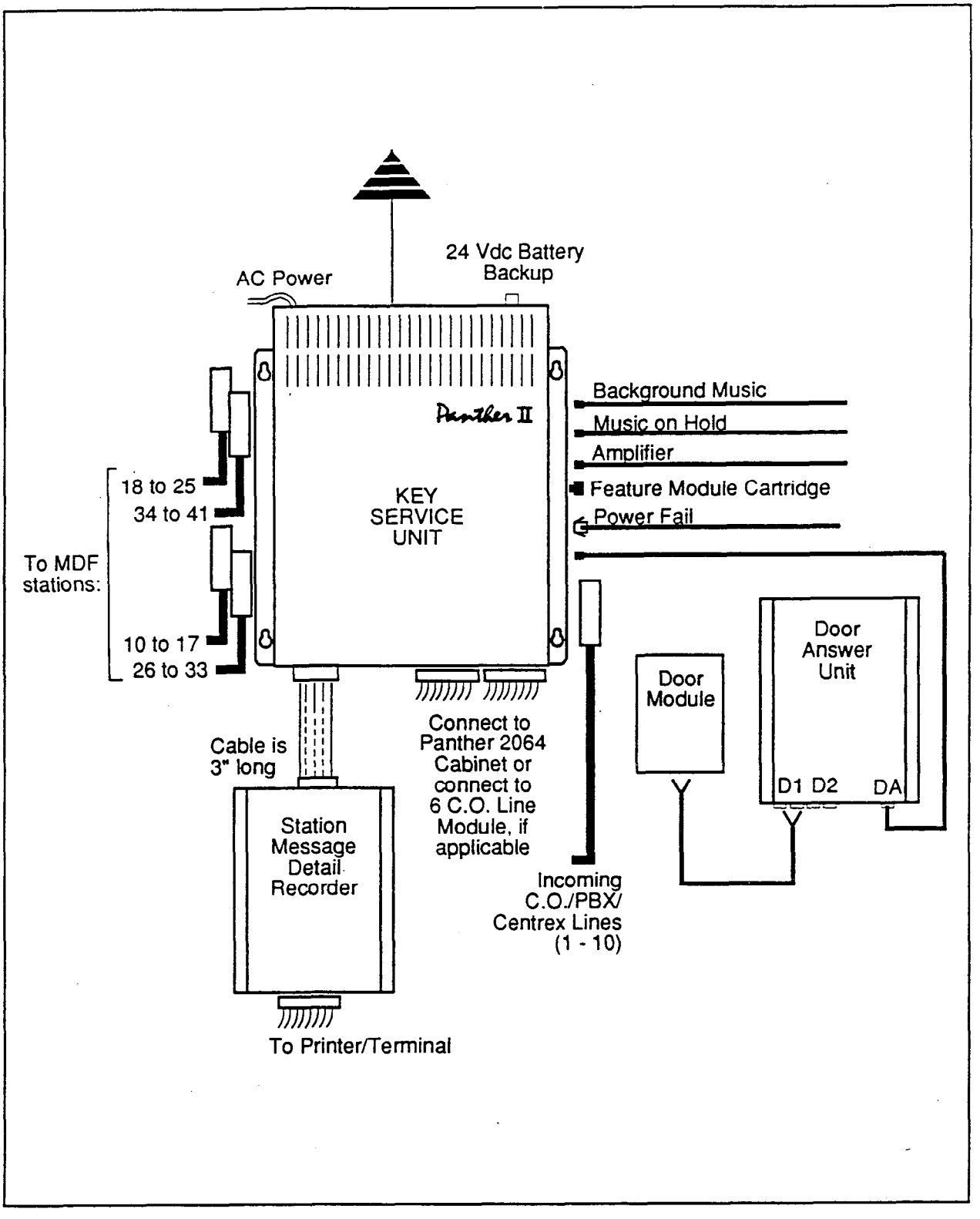


Figure 6-1(b) Panther II 1032 Main Configuration

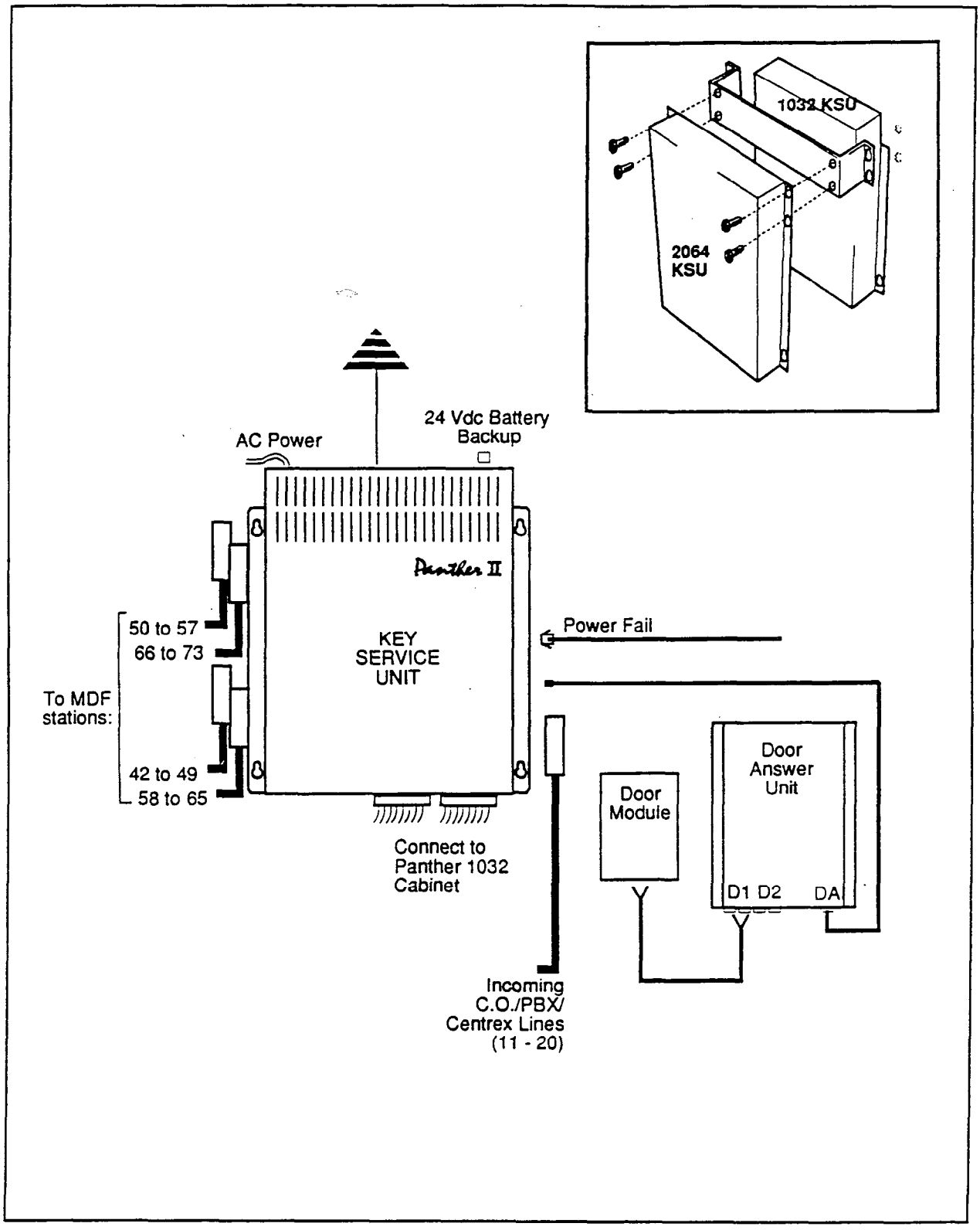


Figure 6-1(c) Panther II 2064 Main Configuration

Mounting System Components

6.04 The following instructions detail the installation of the KSU. The installation procedure is similar for any ancillary devices included in the system, only the location of the mounting screws may differ. This can be seen in Figures 6-2 to 6-6.

Step 1. Using suitable fasteners, mount a wooden backboard, of sufficient size to accommodate the KSU and ancillary devices (if any), to the wall, within 4 feet of the ac outlet and at least 12 inches (305 mm) above the floor. Allow room for installation of the ancillary devices which may be installed at a later date.

Step 2. Position the KSU on the backboard. Mark the positions of the KSU's four mounting screws on the backboard.

Step 3. Install the mounting screws supplied, into the backboard, leaving approximately an 0.2 inch (5 mm) gap between the back of the screw head and the backboard.

Step 4. Hang the KSU on the mounting screws. Tighten the mounting screws.

> **Caution:** Do not connect the KSU power cord until instructed to do so.

Step 5. Repeat Steps 1 through 4 for each of the ancillary devices to be installed.

Installing the Feature Module Cartridge

6.05 Panther II 820 and 1032 Key Service Units have a Feature Module Cartridge that contains the software for the Panther II features.

Step 1. Unpack the Feature Module Cartridge. An information sheet packed with the Feature Module Cartridge provides an installation diagram.

Step 2. There are two small grooves on the Feature Module Cartridge connector. Holding the Feature Module Cartridge so that the grooves are facing you, plug it into the port that is located halfway down the right-hand side of the KSU.

Step 3. Place the protective cover over the Feature Module Cartridge, push in the plastic expander plugs, and tighten the two screws.

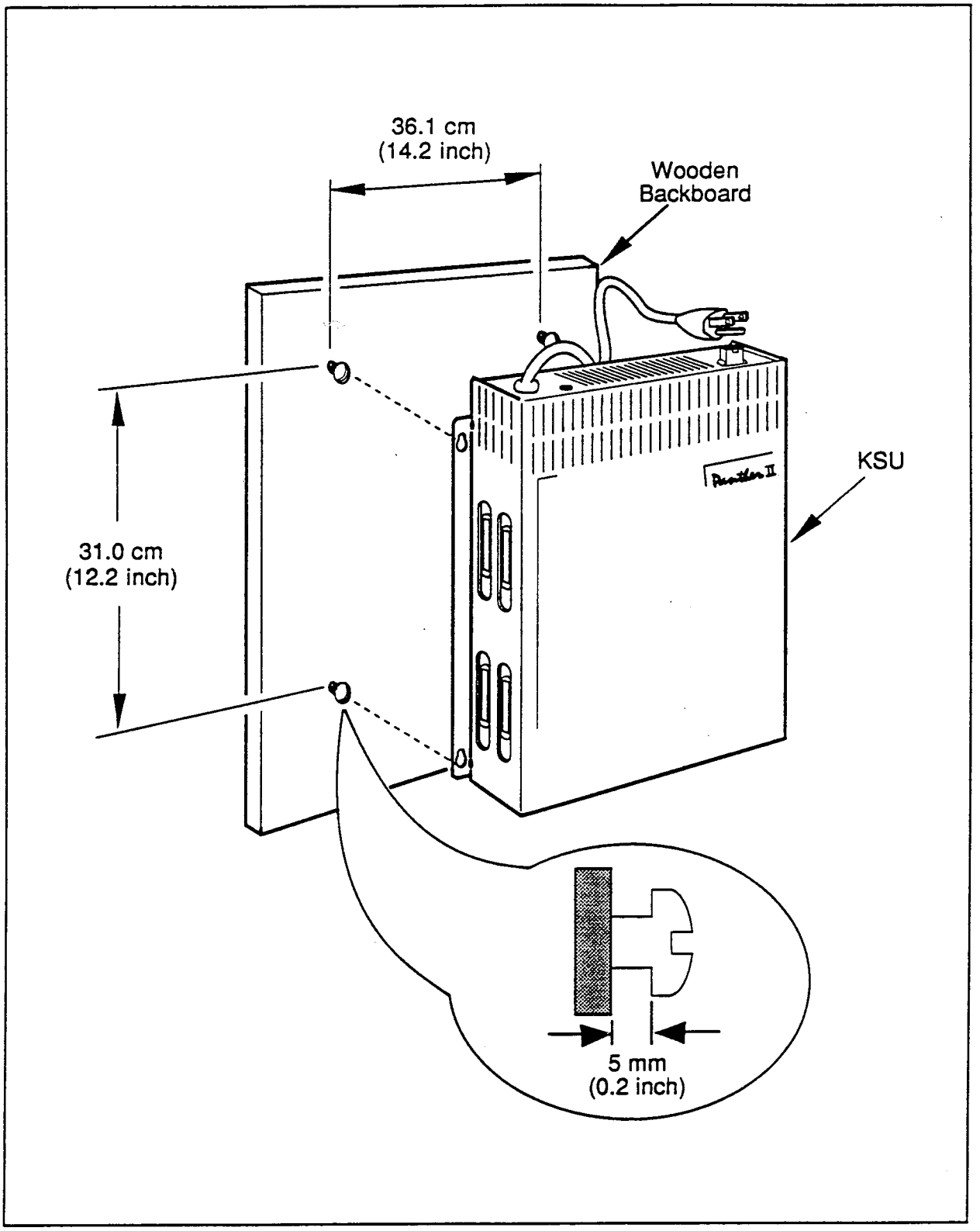


Figure 6-2 KSU Wall Mounting

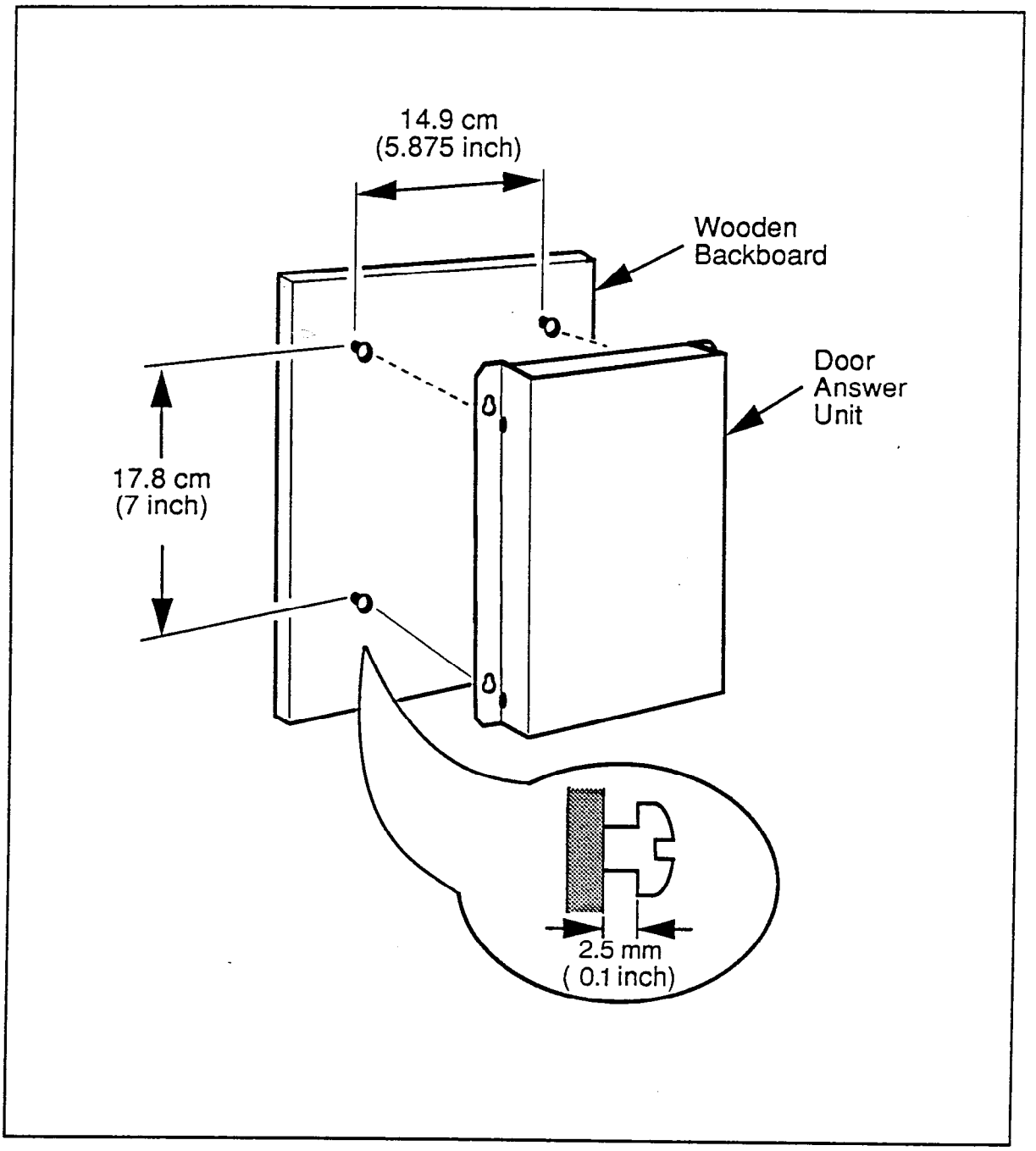


Figure 6-3 Door Answer Unit Wall Mounting

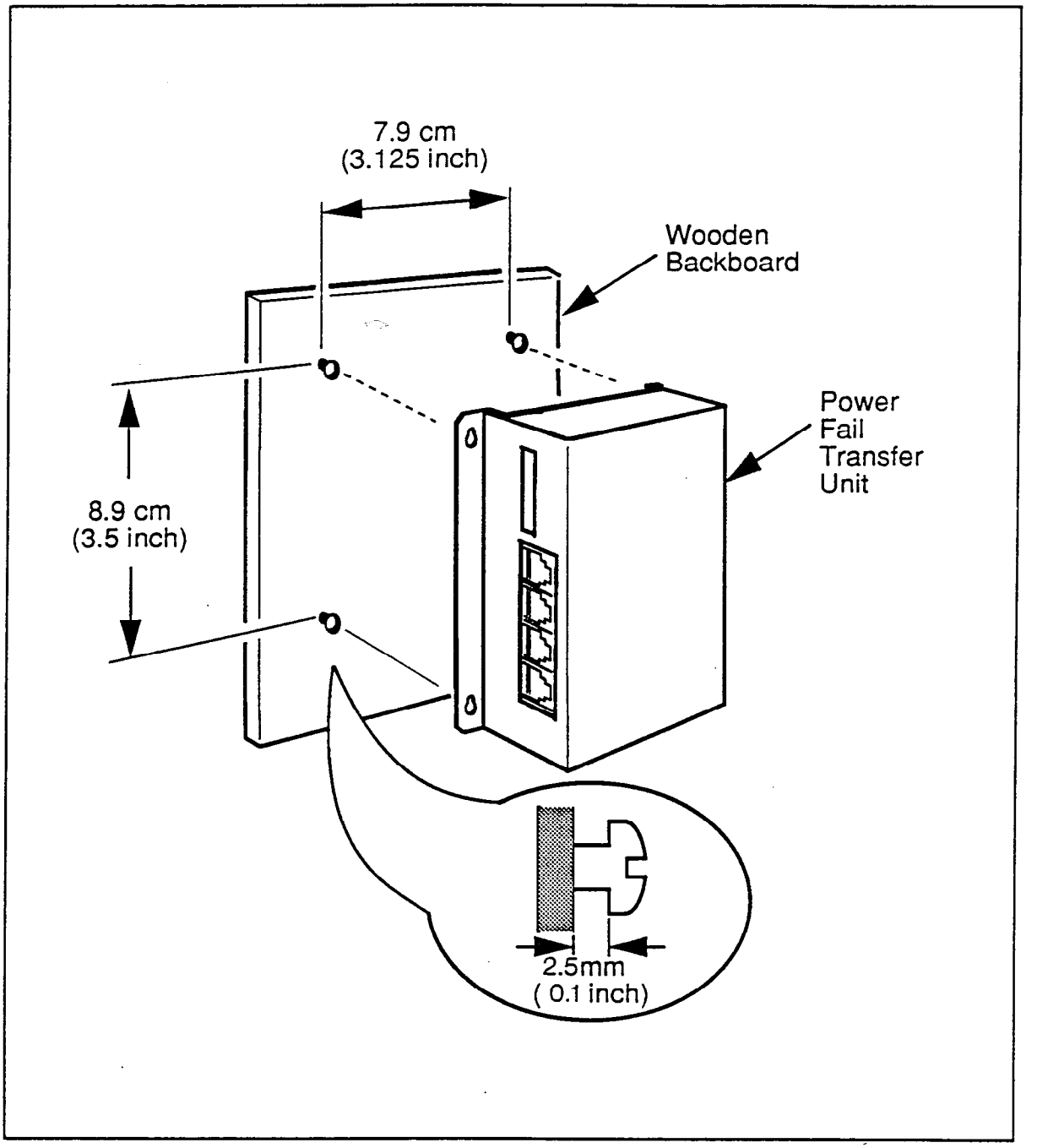


Figure 6-4 Power Fail Transfer Unit Wall Mounting

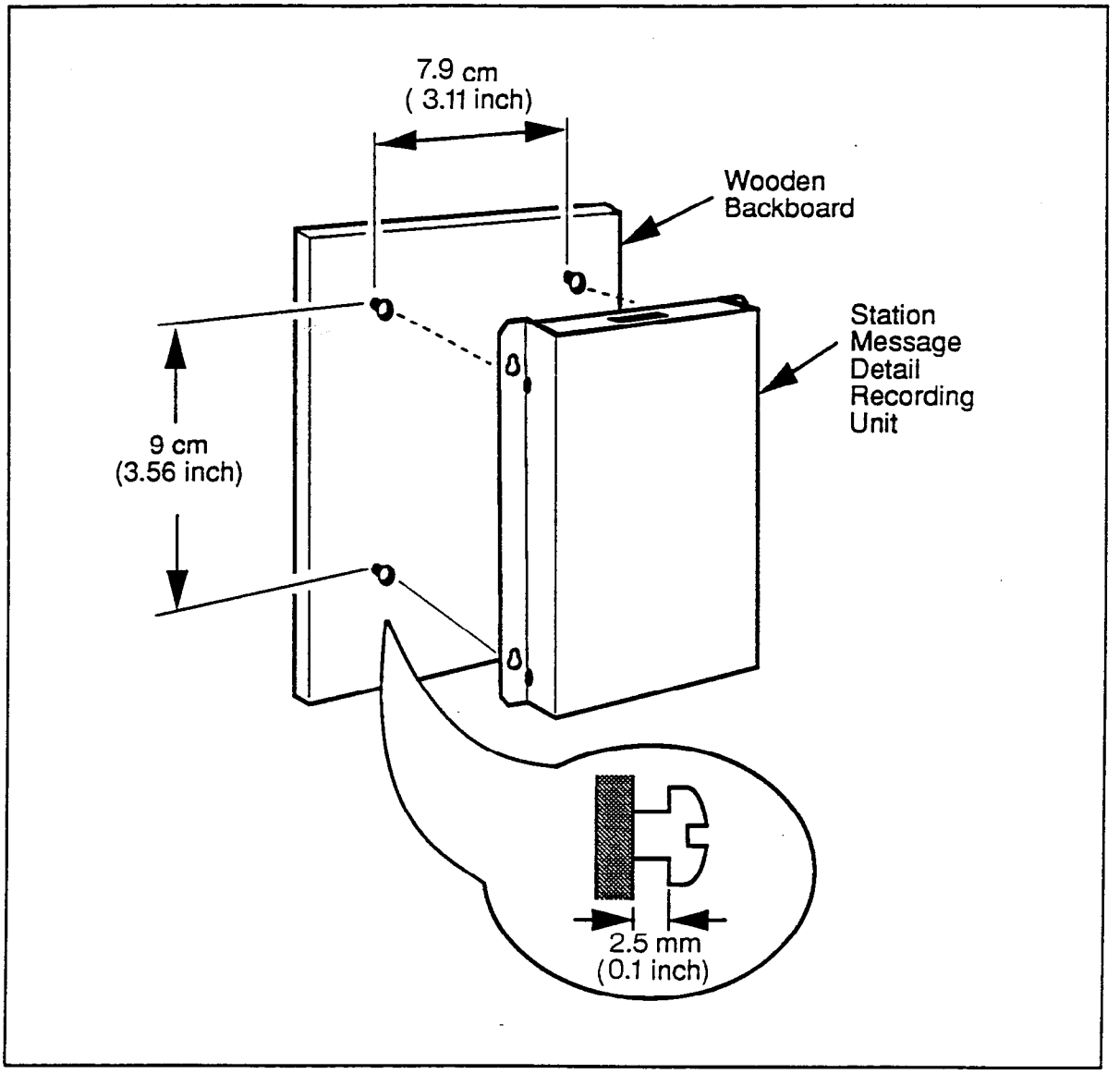


Figure 6-5 SMDR Unit Wall Mounting

Connect The Equipment To Ground

6.06 The KSU must be connected to ground through a single solid conductor.

> **Caution:** DO NOT rely on the third wire (Green) of the AC cord to connect the KSU to ground. A separate external ground lead must be connected.

Step 1. Using 12 AWG solid copper wire, connect the Ground Terminal on the KSU, marked with the 'ground' symbol, to an all metal cold water pipe or equivalent earth ground. It is recommended that a fastener be crimped to the end of the 12 AWG copper wire to facilitate connection to the Ground Terminal.

C.O. Line Connection

6.07 The incoming C.O. lines, installed by the telephone company, should be terminated in pairs at an RJ 21X connector, in accordance with the connections shown in Table 6-1. The procedure for connecting the C.O. lines to the KSU is as follows:

Step 1. Use a 25-pair cable (maximum length 25 ft.) terminated at one end with a 50-pin 'D' Amp male connector and at the other end with a 50-pin 'D' Amp female connector. Install the male end of the cable to the RJ 21X connector, and the female end of the cable to the KSU jack designated C.O. 1-8 on the Panther II 820 system, or C.O. 1-10 on the Panther II 1032 system. See Figure 6-1. When the Door Answering Unit forms part of the system configuration, do not connect C.O. line 10. (Refer to paragraph 6.09.) Secure the 25-pair cable to the KSU using a plastic 'tie wrap' (Included with KSU), as shown in Figure 6-6 (provides strain relief, secures connection).

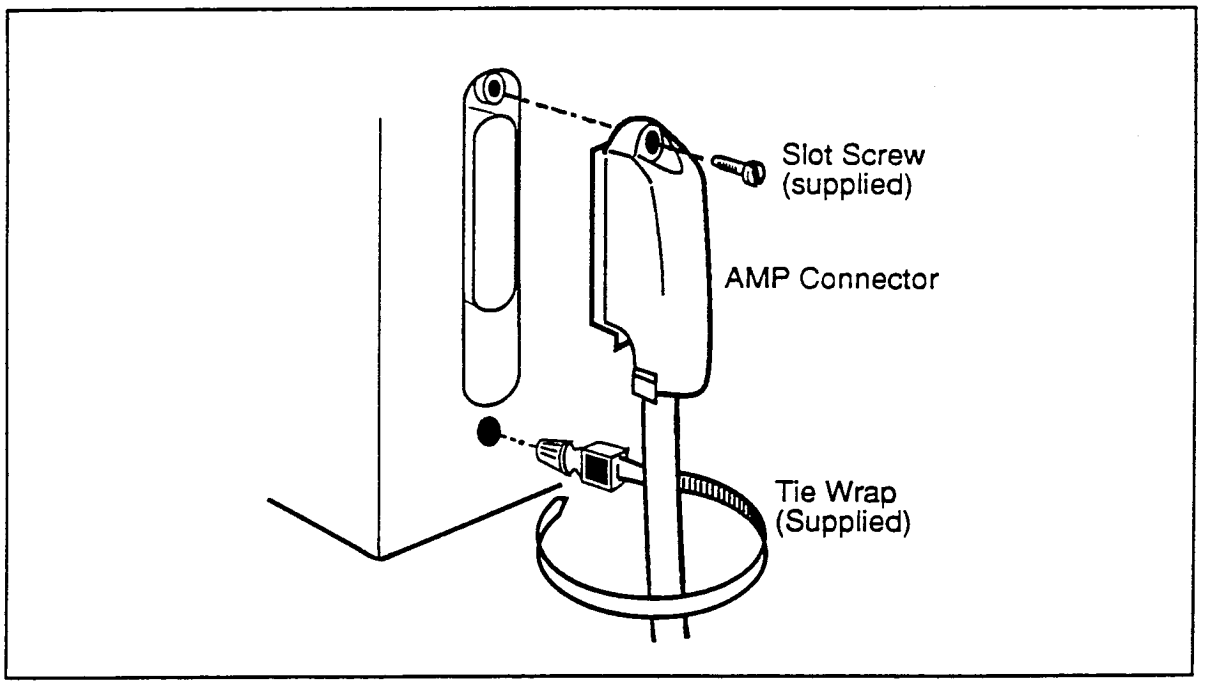


Figure 6-6 C.O. Cable Connection

Step 2. When the system comprises a 2064 KSU, repeat Step 1 for C.O. lines 11 through 20. When a second Door Answering Unit forms part of the system configuration, do not connect C.O. line 20.

Line	Lead Designation	Conductor Color	MDF Terminal	RJ21 Pin Number
1	Tip Ring	White-Blue Blue-White	1 2	26 1
2	Tip Ring	White-Orange Orange-White	3 4	27 2
3	Tip Ring	White-Green Green-White	5 6	28 3
4	Tip Ring	White-Brown Brown-White	7 8	29 4
5	Tip Ring	White-Slate Slate-White	9 10	30 5
6	Tip Ring	Red-Blue Blue-Red	11 12	31 6
7	Tip Ring	Red-Orange Orange-Red	13 14	32 7
8	Tip Ring	Red-Green Green-Red	15 16	33 8
9	Tip Ring	Red-Brown Brown-Red	17 18	34 9
10	Tip Ring	Red-Slate Slate-Red	19 20	35 10

DO NOT connect line 8 if the Door Answer Unit is being installed on the Panther II 820 system.

DO NOT connect line 10 if the Door Answer Unit is being installed on the Panther II 1032 system.

***Not required for the Panther II 820 system.**

Table 6-1 Pin-to-Pin Designations
(for Panther II 820/1032 KSU)
(RJ21X Connector)

Line	Lead Designation	Conductor Color	MDF Terminal	RJ21 Pin Number
11	Tip Ring	White-Blue Blue-White	1 2	26 1
12	Tip Ring	White-Orange Orange-White	3 4	27 2
13	Tip Ring	White-Green Green-White	5 6	28 3
14	Tip Ring	White-Brown Brown-White	7 8	29 4
15	Tip Ring	White-Slate Slate-White	9 10	30 5
16	Tip Ring	Red-Blue Blue-Red	11 12	31 6
17	Tip Ring	Red-Orange Orange-Red	13 14	32 7
18	Tip Ring	Red-Green Green-Red	15 16	33 8
19	Tip Ring	Red-Brown Brown-Red	17 18	34 9
20	Tip Ring	Red-Slate Slate-Red	19 20	35 10

DO NOT connect line 20 if the Door Answer Unit is being installed.

Table 6-1 (cont'd) Pin-to-Pin Designations
(for Panther II 2064 KSU)
(RJ21X Connector)

Station Wiring

6.08 The station wiring comprises up to three 25-pair cables (Panther II 820), four 25-pair cables (Panther II 1032) or eight 25-pair cables (Panther II 2064), which connect the KSU to the MDF, along with the number of 4-wire cables required to connect the Panther telephone sets to the MDF. The 25-pair cables are not supplied. Each cable must not exceed 25 feet in length and must be fitted with a 50-pin 'D' Amp connector (male) at one end. Install the station wiring as follows:

WARNING FOR DRY CONTACTS:

Do not connect ringer loads or AC power directly to the dry contact. The dry contact should be used in conjunction with a dry contact interface. Failing to do so, will result in serious PROGRAM CORRUPTION due to a Contact Arc. To avoid this problem, use a Dry Contact Interface or 24 Vdc supply and relay.

DRY CONTACT RATING

DC Current	DC Votage
2.0 amp	20 Volts
0.8 amp	30 Volts
0.6 amp	40 Volts

Step 1.(a) **Panther II 820 System:** Install the three 50-pin male 'D' Amp connectors at the KSU connectors designated 'Stations 10 to 17', 'Stations 18 to 25', and 'Stations 26 to 29'.

OR

(b) **Panther II 1032 System:** Install the four 50-pin male 'D' Amp connectors at the KSU connectors designated 'Stations 10 to 17', 'Stations 18 to 25', 'Stations 26 to 33', and 'Stations 34 to 41'.

Step 2. When the system comprises a Panther II 2064 KSU, repeat Step 1(b) for 'Stations 42 to 49', 'Stations 50 to 57', 'Stations 58 to 65' and 'Stations 66 to 73'.

Step 3 Connect the other end of the 25-pair cable to the MDF. The pin-to-signal designations for the 25-pair cables are given in Table 6-2.

Step 4. Use the 'punch-down' tool to connect 4-conductor station wiring to the MDF.

Note: *If the 'Off-Hook Voice Announce' feature is used on the Panther II Display Set, a 6-conductor cable and jack is required for that station. Remember that this feature occupies two station ports; for example, if Station 12 has 'Off-Hook Voice Announce, Station 13 will be unavailable for use as a station.*

Step 5 Install a RJ14C jack *within* 6 feet of the set location.

Step 6 At each station location, connect the 4-wire cable to the modular jack (RJ14C) as follows; green to green, red to red, black to black, yellow to yellow.

> **Caution:** DO NOT plug a Set into its jack until instructed to do so.

Step 7 Repeat Steps 4 through 6 for each of the remaining Panther telephone sets.

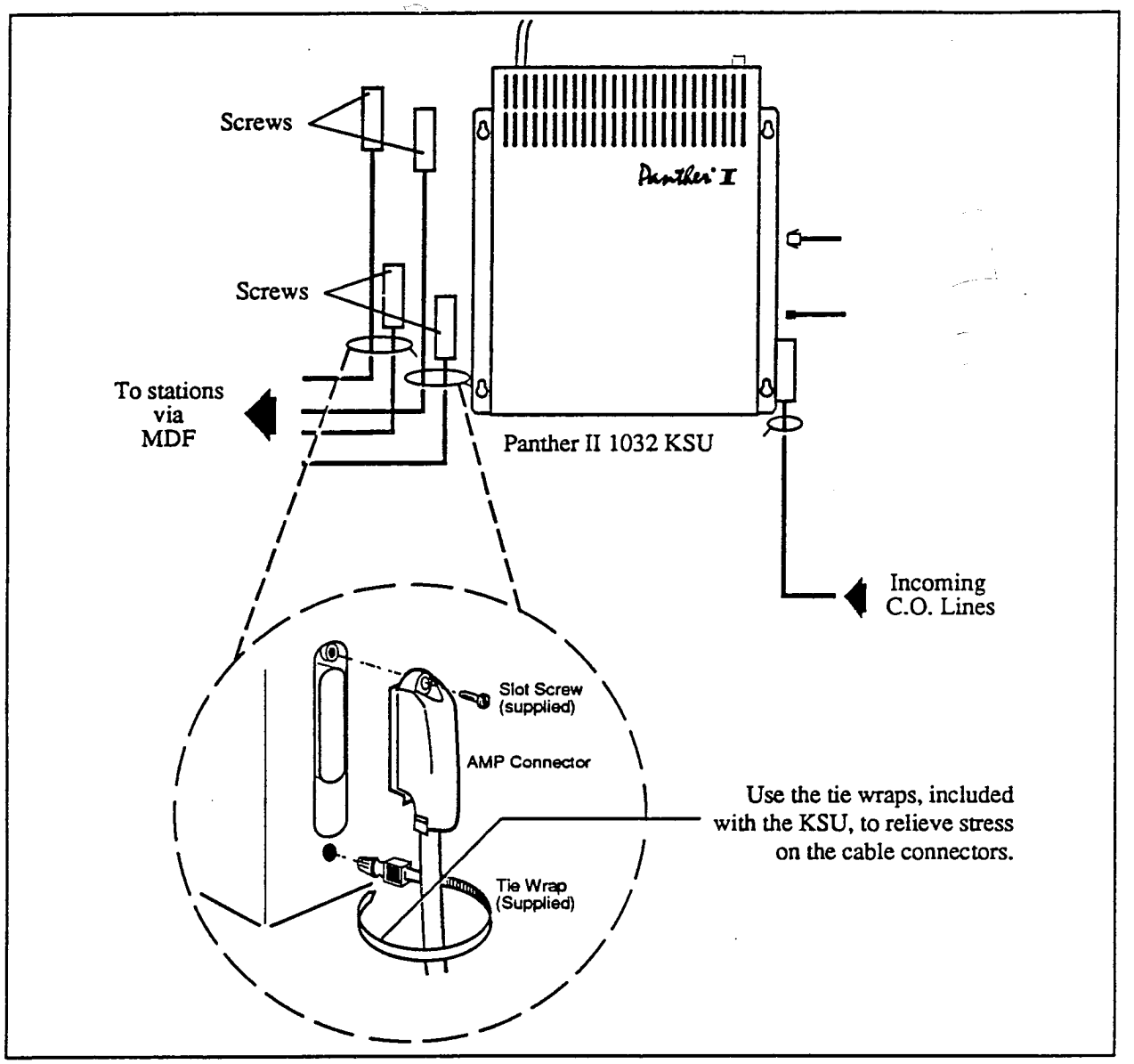


Figure 6-7 Connecting the Station Cables to the KSU

Remember that each MDF corresponds to a specific group of stations:
MDF 1 for Stations 10 to 17; MDF 2 for Stations 18 to 25; MDF 3 for Stations 26 to 33; MDF 4 for Stations 34 to 41.

STATION NUMBERS				STATION WIRE COLORS	25-PAIR WIRE COLORS	MDF TERMINAL	CONNECTOR PIN	LEAD FUNCTION
MDF 1	MDF 2	MDF 3	MDF 4					
10	18	26	34	(G) Green	White-Blue	1	26	VT
				(R) Red	Blue-White	2	1	VR
				(B) Black	White-Orange	3	27	DT
				(Y) Yellow	Orange-White	4	2	DR
11	19	27	35	G	White-Green	5	28	VT
				R	Green-White	6	3	VR
				B	White-Brown	7	29	DT
				Y	Brown-White	8	4	DR
12	20	28	36	G	White-Slate	9	30	VT
				R	Slate-White	10	5	VR
				B	Red-Blue	11	31	DT
				Y	Blue-Red	12	6	DR
13	21	29	37	G	Red-Orange	13	32	VT
				R	Orange-Red	14	7	VR
				B	Red-Green	15	33	DT
				Y	Green-Red	16	8	DR
14	22	30	38	G	Red-Brown	17	34	VT
				R	Brown-Red	18	9	VR
				B	Red-Slate	19	35	DT
				Y	Slate-Red	20	10	DR
15	23	31	39	G	Black-Blue	21	36	VT
				R	Blue-Black	22	11	VR
				B	Black-Orange	23	37	DT
				Y	Orange-Black	24	12	DR
16	24	32	40	G	Black-Green	25	38	VT
				R	Green-Black	26	13	VR
				B	Black-Brown	27	39	DT
				Y	Brown-Black	28	14	DR
17	25	33	41	G	Black-Slate	29	40	VT
				R	Slate-Black	30	15	VR
				B	Yellow-Blue	31	41	DT
				Y	Blue-Yellow	32	16	DR
The Dry Contacts for the Relay Contacts are on Main Distribution Frame number one (Stations 10 to 17)								
Dry Contacts					Violet-Slate	49	50	
					Slate-Violet	50	25	

VT: Voice Tip VR: Voice Ring DT: Data Tip DR: Data Ring

Table 6-2 Pin-to-Signal Designations (KSU to MDF)

Remember that each MDF corresponds to a specific group of stations:
MDF 5 for Stations 42 to 49; MDF 6 for Stations 50 to 57; MDF 7 for Stations 58 to 65; MDF 8 for Stations 66 to 73.

STATION NUMBERS				STATION WIRE COLORS	25-PAIR WIRE COLORS	MDF TERMINAL	CONNECTOR PIN	LEAD FUNCTION
MDF 5	MDF 6	MDF 7	MDF 8					
42	50	58	66	(G) Green	White-Blue	1	26	VT
				(R) Red	Blue-White	2	1	VR
				(B) Black	White-Orange	3	27	DT
				(Y) Yellow	Orange-White	4	2	DR
43	51	59	67	G	White-Green	5	28	VT
				R	Green-White	6	3	VR
				B	White-Brown	7	29	DT
				Y	Brown-White	8	4	DR
44	52	60	68	G	White-Slate	9	30	VT
				R	Slate-White	10	5	VR
				B	Red-Blue	11	31	DT
				Y	Blue-Red	12	6	DR
45	53	61	69	G	Red-Orange	13	32	VT
				R	Orange-Red	14	7	VR
				B	Red-Green	15	33	DT
				Y	Green-Red	16	8	DR
46	54	62	70	G	Red-Brown	17	34	VT
				R	Brown-Red	18	9	VR
				B	Red-Slate	19	35	DT
				Y	Slate-Red	20	10	DR
47	55	63	71	G	Black-Blue	21	36	VT
				R	Blue-Black	22	11	VR
				B	Black-Orange	23	37	DT
				Y	Orange-Black	24	12	DR
48	56	64	72	G	Black-Green	25	38	VT
				R	Green-Black	26	13	VR
				B	Black-Brown	27	39	DT
				Y	Brown-Black	28	14	DR
49	57	65	73	G	Black-Slate	29	40	VT
				R	Slate-Black	30	15	VR
				B	Yellow-Blue	31	41	DT
				Y	Blue-Yellow	32	16	DR

VT: Voice Tip VR: Voice Ring DT: Data Tip DR: Data Ring

Table 6-2 cont'd Pin-to-Signal Designations (KSU to MDF)

Panther Telephone Set Installation

6.09 Installation of a Panther telephone set simply requires the set to be connected, through the DBU4 (4-conductor mod-to-mod cord) supplied with the set, to the previously-installed RJ14C jack. *Note: If the 'Off-Hook Voice Announce' feature is used on the Panther II Display Set, a 6-conductor cable and jack is required for that station. Remember that this feature occupies two station ports; for example, if Station 12 has 'Off-Hook Voice Announce', Station 13 will be unavailable for use as a station. Figure 6-9 shows how to install 'Off-Hook Voice Announce' on a Panther II Display Set.*

The Panther telephone set may be wall mounted, or raised on the desk using the Desk/Wall Mount Unit (Part# 90-0059). *To mount a Panther telephone set on the wall complete the following instructions:*

Step 1. Place the Desk/Wall Mount Unit on the wall at the desired location. Mark the position of the keyhole slots.

Step 2. Install the appropriate mounting screws, allowing sufficient clearance for the Desk/Wall Mount Unit to slide between the head of the mounting screws and the wall.

Step 3 Before hanging the Panther telephone set on the screws, install a handset clip. This clip keeps the handset in the cradle in wall-mount applications (do not use handset clips on desk-top telephones). To install the clip, position it so that the flat side is facing you and the angled side is toward the set. Insert the clip. To remove, use a paper clip or similiar tool. Refer to Figure 6-8.

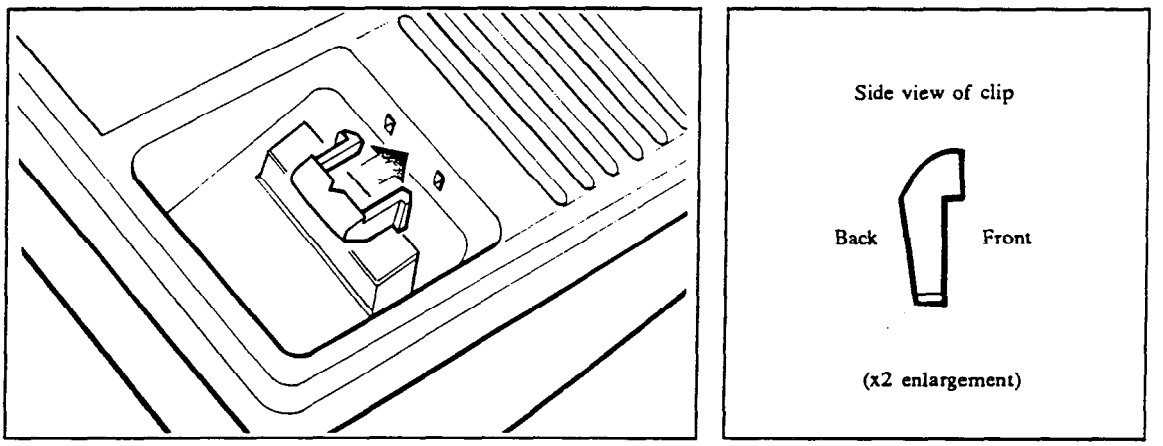


Figure 6-8 Handset Clip Installation

Step 4. Hang the Desk/Wall Mount Unit on the mounting screws. Tighten the mounting screws.

Step 5. Rest the Panther telephone set on the Desk/Wall Mount Unit. See Figure 6-10.

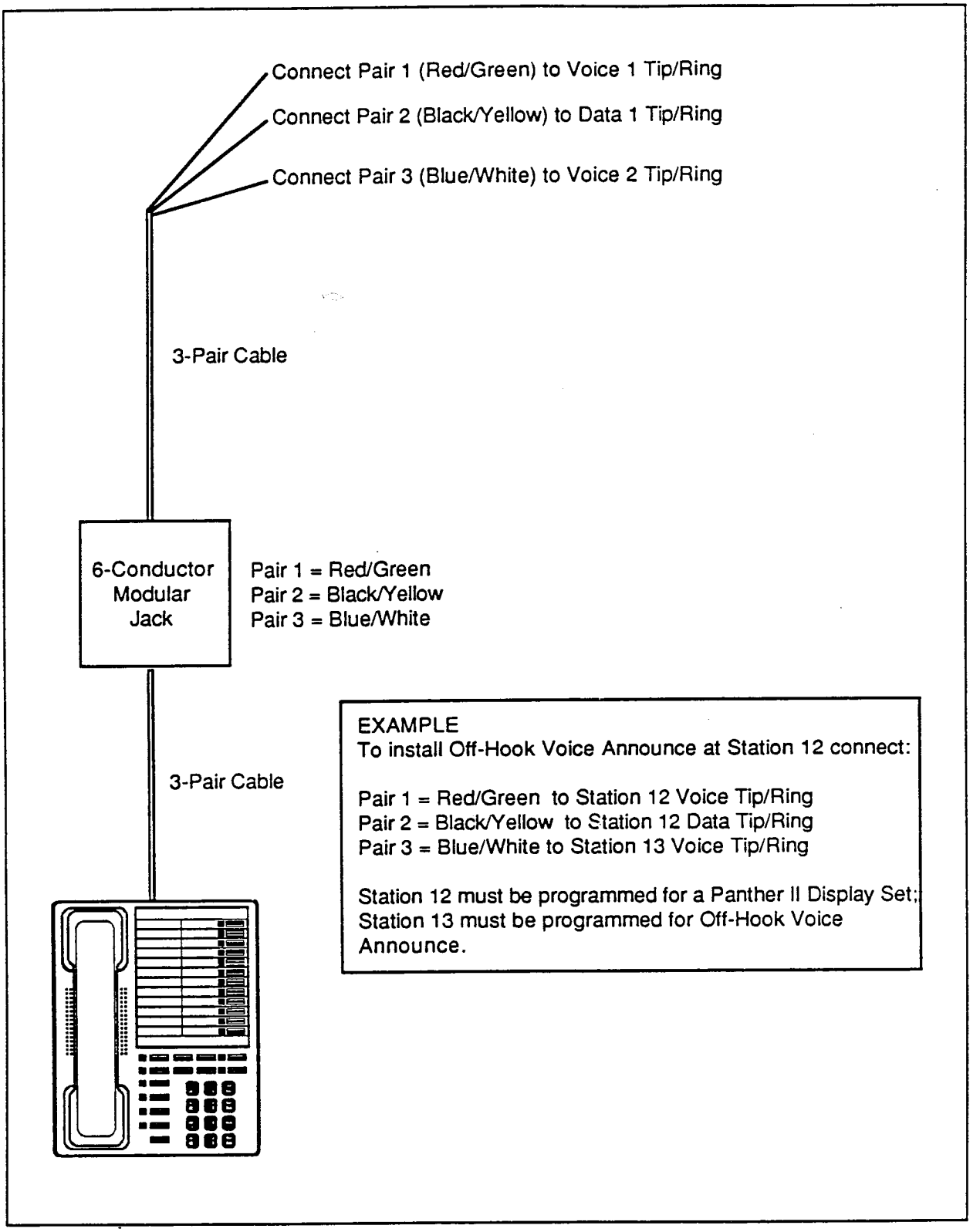


Figure 6-9 Installing 'Off-Hook Voice Announce'

Door Answer Unit Installation

6.10 The Door Answer Unit supports a maximum of two Door Modules. It is connected to the KSU via a 3-pair modular cord, supplied with the Door Answer Unit. One Door Answer Unit can be connected to a Panther II 820 or Panther II 1032 system, while two Door Answer Units can be connected to a Panther II 2064 system. When the Door Answer Unit is incorporated in the Panther II 820 system, C.O. line 8 must not be connected at the KSU. When the Door Answer Unit is incorporated in the Panther II 1032 system, C.O. line 10 must not be connected at the KSU. Similarly, when two Door Answer Units are incorporated in the Panther II 2064 system, C.O. line 10 and C.O. line 20 must not be connected at the KSU.

6.11 The Door Answer Unit should be wall mounted as described in the 'Mounting System Components' subsection of this Practice. To install the Door Modules, refer to Figure 6-11 and complete the following instructions:

Step 1. Separate the door box of the Door Module from the base by loosening the screw located on the front of the Door Module.

Step 2. Mount the base of the Door Module on the wall at the desired location using the two screws supplied.

Step 3. Pass one end of a 2-wire cable through the entry in the bottom of the base. Connect the two wires to terminal 1 and the other to terminal 2 on the inner face of the door box of the Door Module.

Step 4. Secure the door box to the base of the Door Module.

6.12 To connect the Door Module(s) to the Door Answer Unit and the Door Answer Unit to the KSU, refer to Figure 6-1 and complete the following instructions:

Step 1. Connect the 2-wire cable previously installed at the Door Module to the connector on the Door Answer Unit designated 'D1'. When applicable, connect the 2-wire cable from the second Door Module to connector on the Door Answer Unit designated 'D2'. There is no polarity to these connections.

Step 2. Connect one end of the 3-pair modular cord with the Door Answer Unit to the connector on the KSU designated 'DOOR', and the other end of the modular cord to the connector on the Door Answer Unit designated 'DA'.

Note: A Module connected to the D1 terminals on the Door Answer Unit can receive calls from Sets as well as place door calls to Sets; a Module connected to the D2 terminals can only place door calls to Sets. It can't receive calls. For operation of the Door Answer Unit, refer to the *Panther II User Guides*.

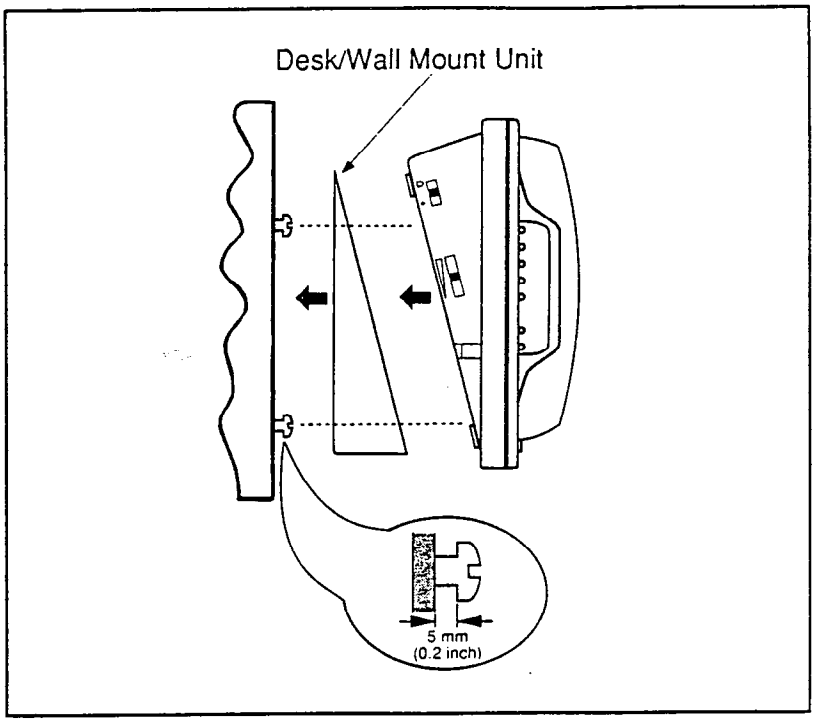


Figure 6-10 Panther Telephone Set Wall Mounting

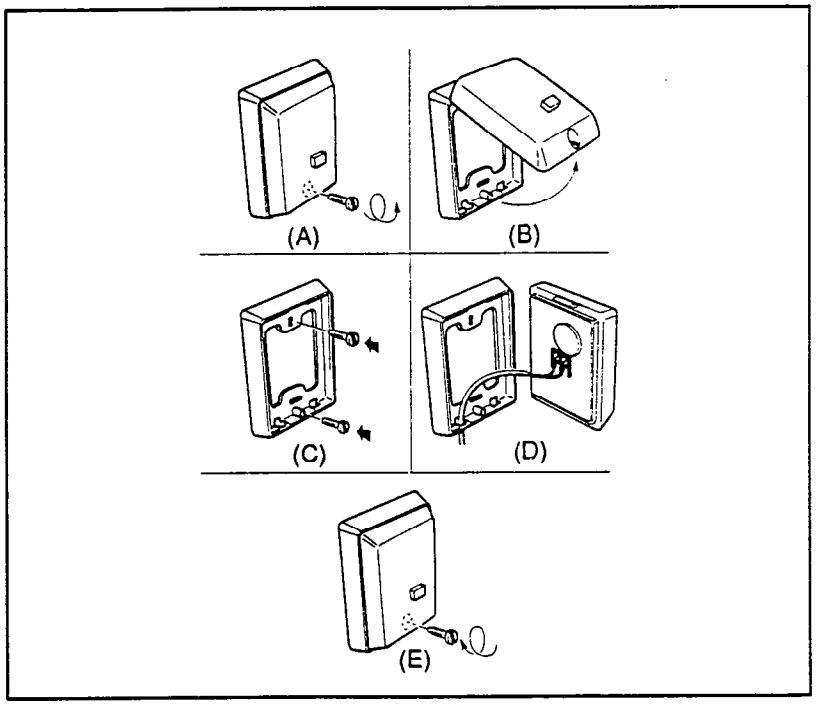


Figure 6-11 Door Module Installation

Power Fail Transfer Unit Installation

6.13 A Power Fail Transfer unit transfers up to four outside lines to four standard telephone sets (2500 or single line sets) in the event of a power failure at the KSU. A number of Power Fail Transfer units can be cascaded to allow the maximum number of C.O. lines to be switched to the corresponding number of standard telephone sets; i.e., two Power Fail Transfer units would be required to switch the eight C.O. lines of a Panther II 820 system; three Power Fail Transfer units would be required to switch the 10 C.O. lines of a Panther II 1032 system, and six Power Fail Transfer units would be required to switch the 20 C.O. lines of a Panther II 2064 system. (Three units maximum per KSU). This is shown in Figures 6-12 through 6-14 respectively.

6.14 The incoming telephone lines, and the KSU are connected to the Power Fail Transfer unit via two 50-pin-to-Modular Adapters (MOD V SM 6/2). To install one or more Power Fail Transfer units, refer to Figures 6-12 through 6-14 and complete the following instructions:

Step 1. Mount the Power Fail Transfer unit(s) in accordance with the instructions given in 'Mounting System Components'.

Step 2. If the system is operational, remove the power from the KSU by unplugging the ac power cord.

Step 3. Connect the 50-pin female connector carrying the incoming lines to 50-pin-to-Modular Adapter 1.

Step 4. Connect a 25-pair cable, having a 50-pin female connector at each end, between 50-pin-to-Modular Adapter 2 and the KSU jack assigned to C.O. lines 1 through 8 (Panther II 820 system), C.O. lines 1 through 10 (Panther II 1032 system) or C.O. lines 11 through 20 (Panther II 2064 KSU).

Step 5. Using modular cords, complete the connections shown in Figures 6-12 to Figure 6-14.

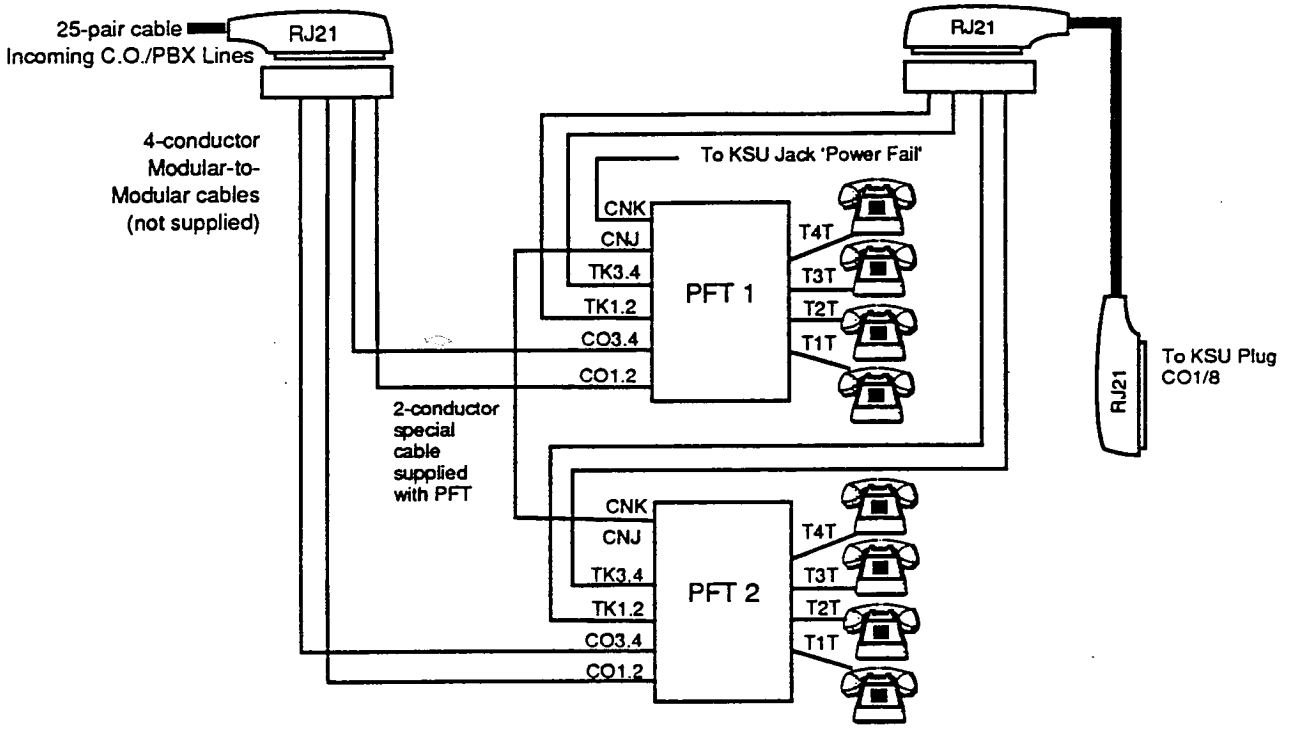


Figure 6-12 Power Fail Transfer Installation (Panther II 820 System)

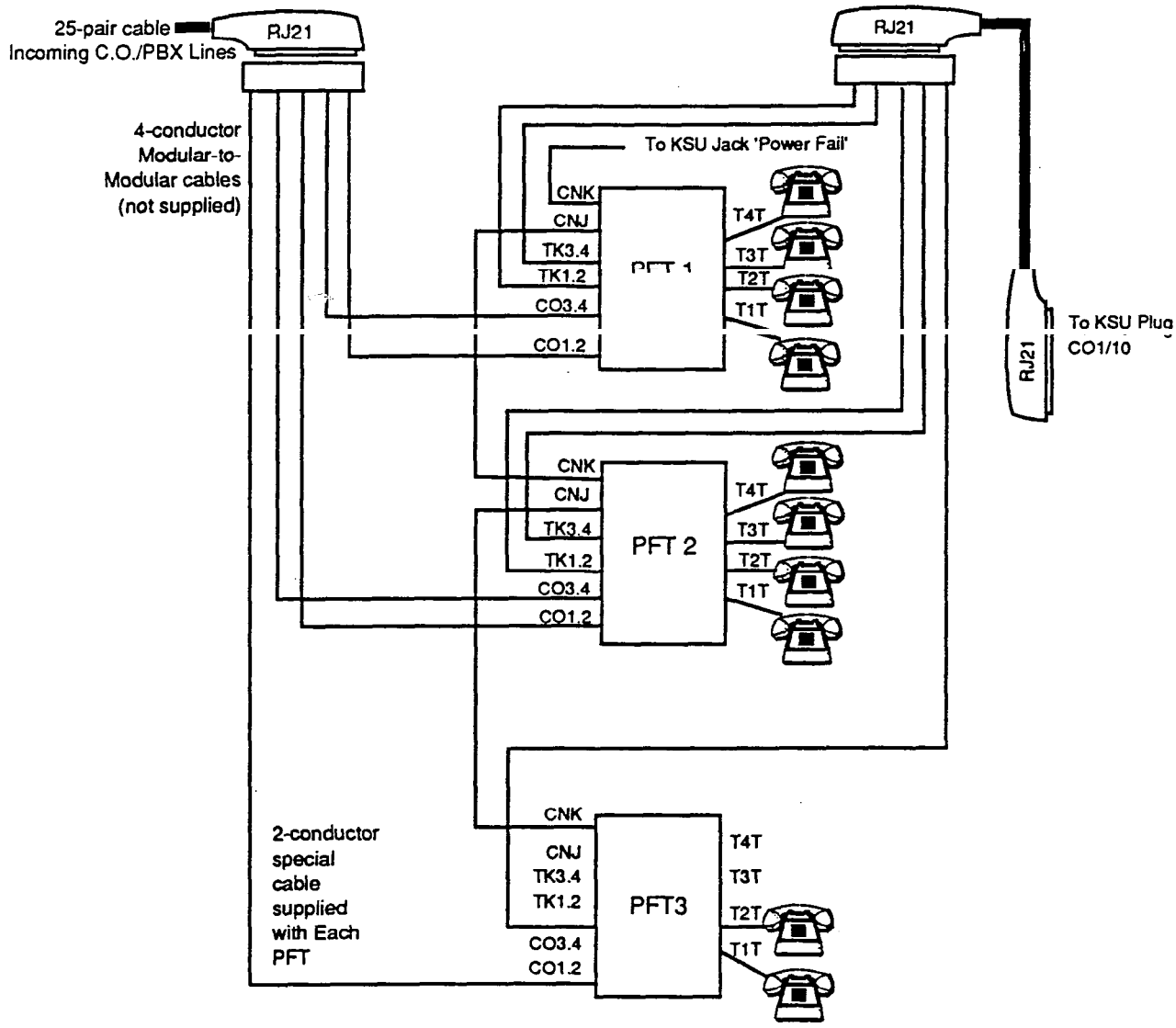
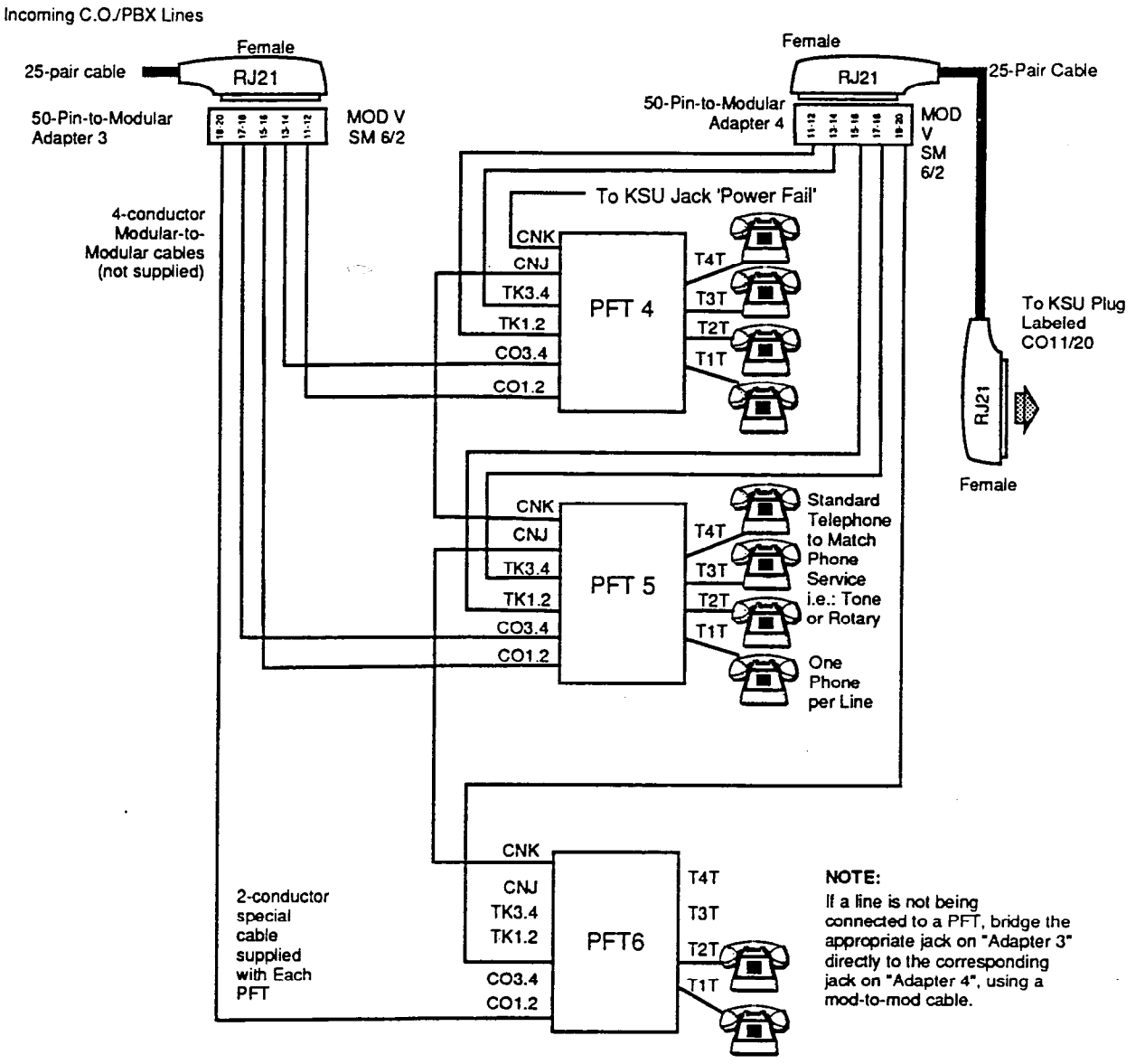


Figure 6-13 Power Fail Transfer Installation (Panther II 1032 System)



After installing the first three PFT units (using Figure 6-13), install PFT Units 4 to 6 using this diagram.

Figure 6-14 Power Fail Transfer Installation (Panther II 2064 System)

Station Message Detail Recording Unit Installation

6.15 The Station Message Detail Recording (SMDR) unit interfaces a standard 80-character serial ASCII printer or serial port on a terminal to the KSU. The printer or computer terminal is connected to the SMDR unit using an RS-232 connector. The baud rate for the Panther II system is set during system programming, and can be set to 150, 300, 600, 1200, 2400, 4800, or 9600 baud. The preprogrammed baud rate is 1200 baud. The system-programmed baud rate and the printer baud rate on the printer should match. The date and time used in the records generated by the SMDR unit are the system date and time. The SMDR unit should be wall mounted in accordance with the instructions given in the 'Mounting System Components' subsection (paragraph 6.04) of this Practice.

Step 1. With no ac power to the KSU, plug the SMDR unit into the connector on the KSU labeled "SMDR". Do not connect the SMDR unit while power is applied to the KSU.

Step 2. Plug the printer or computer terminal into the RS-232 connector on the SMDR unit. Set up the printer or terminal according to the manufacturer's instructions. Ensure the baud rates of the printer/terminal and the SMDR unit are the same.

The Printer Pin configuration requirements are: Pin 1 - Protective Ground, Pin 2 - Transmit Ground, Pin 3 - Receive Data, Pin 4 - Request to Send, Pin 5 - Clear to Send, Pin 6 - Data Set Ready, Pin 7 - Signal Ground, Pin 8 - Receive Line Signal Detector, Pin 20 - Data Terminal Ready.

Step 3. Plug in the KSU power cord.

Step 4. Plug in the printer power cord and turn on the power to the printer.

External Battery Backup Unit Connection

6.16 The KSU can be connected to an external 24 Volt dc battery backup unit to maintain full system operation during an electrical power failure. The battery backup unit should provide 24 Volts dc at 2.5 Amps for an extended period of time. Contact your nearest authorized dealer for details on the battery backup unit (Recommended Supplier: Alpha Technologies model Tri 24/2.5B). To install the battery backup unit, refer to Figure 6-1, and complete the following instructions:

Step 1. Connect the battery backup unit to the KSU plug as shown in Figure 6- 1. Connect the other end of the cable to the correct poles of the battery: The 'O' connector of the Molex is negative; the 'D' connector of the Molex is positive.

External Music Source Connection

6.17 Any low output music source (not to exceed 50 mV rms) can be connected to the KSU to provide both background music and music on hold. A radio with an earphone jack is ideal. To connect the music source to either the Panther II 820 or 1032

KSU, complete the following instructions (Note: Music to the Panther II 2064 system is controlled by the Panther II 1032 KSU):

Step 1. If the system is operational, remove the power by unplugging the KSU power cord. Leave Switch 3 on the KSU in the OFF position (during connection, and if two music sources are used).

Step 2. Use a cable with an 1/8 inch miniature mono plug to make the connection from the music source to the KSU jack labeled "Background Music (BGM)". Use another cable with an 1/8 inch miniature mono plug to make the connection from the music source to the KSU jack labeled "Music On Hold (MOH)". Set the volume of the music source to a moderate setting. The volume level can be determined by listening to music while on-hold at a set.

Note: If only one music source is used (plugged into the BGM jack), set Switch 3 on the KSU to the ON position after Step 2 is completed.

External Paging Amplifier Connection

6.18 An external paging amplifier and loudspeaker can be connected to the KSU for loudspeaker paging announcements. The output from the KSU is 200 mV rms into 600 ohms impedance. To connect the external paging amplifier to the KSU, complete the following instruction:

Step 1. Use a cable with an 1/8 inch miniature mono plug to make the connection from the amplifier input to the KSU jack labeled "Page".

7. POWER UP CHECKS

General

7.01 Power up checks are performed on the KSU and the Panther telephone sets after the aforementioned installation procedures are complete. As part of the Power Up Checks, a set of preprogrammed feature and system parameters are loaded into the memory within the KSU. Upon successful completion of the Power Up Checks, the system is operational. When it is desirable to modify any of the preprogrammed values refer to *Panther II 820/1032/2064-205, Programming* for assistance.

KSU Check

7.02 The procedure for applying power to the KSU and loading preprogrammed feature and configuration parameters is as follows:

If the KSU does not respond as stated, refer to *Panther II 820/1032/2064-320, Maintenance and Troubleshooting* for assistance.

Step 1. Ensure that the Feature Module Cartridge is installed (refer to Section 6.05) before plugging in the KSU power cord.

Step 2. Plug the KSU power cord into the grounded 110 Vac electrical outlet. The status lamp on the KSU flashes.

Step 3. Set the BATTERY switch (Switch 4) to the ON position. (Leave the BATTERY switch in the ON position for memory retention.)

Step 4. Set the PROGRAM 2 switch to the ON position.

Step 5. Press the RESET button.

Step 6. Set the PROGRAM 2 switch to the OFF position.

Step 7. Press the RESET button. The system is now set with the factory preprogrammed conditions (see the programming section for details).

Step 8. Before you proceed to the programming section of this manual, connect a Panther II Display Set to station 10. It is essential that you use a Panther II Display Set at station 10 when you program the system.

Set Check

7.03 To check the operation of the Panther telephone sets, plug each Panther telephone set into its modular station jack and perform the following test. Refer to *Panther II 820/1032/2064-320, Maintenance and Troubleshooting*, if a Set does not respond as stated.

Step 1. Press the Intercom or # key— a continuous tone is heard through the speaker and the Intercom indicator lamp lights. *This step indicates that an intercom path has been accessed.*

Note: When testing a Set with a corresponding DSS/BLF Console, the station lamp on the set and the DSS/BLF will be lit.

Step 2.(a) Lift the handset and press Line key 2 — the Internal indicator lamp turns OFF, dial tone is heard through the earpiece and the Line indicator lamp for line 2 lights.

OR

(b) On the Panther II Set (Basic Set), dial 302 while on-hook and listen for dial tone.

Step 3.(a) Replace the Handset — all indicator lamps turn OFF.

OR

(b) On the Panther II Set (Basic Set), press the SPEAKER key.

Step 4. Repeat Step 1 through Step 3 for each Panther telephone set in the system.

Note: If the data pair is reversed, the Panther set telephone will not function properly.

For Peripherals and Optional Equipment:

Use the procedures outlined in *Panther II 820/1032/2064-320, Maintenance and Troubleshooting* to perform a system check on peripherals and options such as Station Message Detail Recording.

Important Notice

Warning

The Panther II Electronic Key Telephone System generates and uses radio frequency energy and if not installed and used in strict accordance with the manufacturer's instructions, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules which are designed to provide reasonable protection against such interference in a commercial installation. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his/her own expense will be required to take whatever measures may be required to correct the interference.

If necessary, the user should consult the supplier or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful : "How to Identify and Resolve Radio-TV Interference Problems". This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock No. 004-000-00345-4.

FCC Requirements

The Federal Communications Commission (FCC) has established rules which permit the Trillium Telephone Systems, Panther II Electronic Key Telephone Systems to be connected to the telephone network. A jack is provided by the telephone company. Jacks for this type of customer provided equipment will not be provided on party lines or coin lines.

If the system is malfunctioning, it may also be causing harm to the telephone network; the system should be disconnected until the source of the problem can be determined and until repair has been made. If this is not done, the telephone company may temporarily disconnect service.

The telephone company may make changes in its technical operations and procedures; if such changes affect the compatibility or use of the system, the telephone company is required to give adequate notice of the changes.

Upon request the following information must be provided to the telephone company:

- The telephone number(s) that the system will be connected to.
- The FCC Registration Number (on the label located on the KSU).
- The Ringer Equivalence Number (on the label located on the KSU)*.
- The USOC jack(s) required are RJ21.
- The Facility Interface Code is 02LS2.
- The Service Code is 9.0F.

* The Ringer Equivalence Number (REN) is useful to determine the quantity of devices you may connect to your telephone line and still have all of those devices ring when your telephone number is called. In most, if not all areas, the sum of the RENs of all devices connected to one line should not exceed 5.0. To be certain of the number of devices you may connect to your line, as determined by the REN, you should contact your local telephone company to determine the maximum REN for your calling area.

Hearing-aid Compatibility

This telephone is hearing-aid compatible as defined in Section 68.316, Part 68 of FCC Rules.

Service Requirements

In the event of equipment malfunction, all repairs will be implemented by Mitel Corporation. It is the responsibility of users requiring service to report this need to Mitel Corporation or to one of their authorized agents.

ADDRESS FOR U.S. SERVICE
Mitel Corporation
1675 MacArthur Blvd.,
Costa Mesa, California 92626
Tel.: (714) 557-3300

NOTE TO CANADIAN CUSTOMERS:

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

The Canadian Department of Communications load number is 21.

ADDRESS FOR CANADIAN SERVICE
Mitel Corporation
350 Leggett Drive
P.O. Box 13089
KANATA, Ont. K2K 1X3
Tel.: (613) 592-2122

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

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

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

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

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