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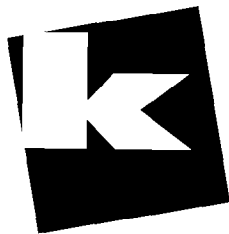
Panther 612

Electronic Key Telephone System

Technical Service Manual

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NORST

Topic *Page*

Section D — Connection Procedures

PREFACE

The Panther 612 Electronic Key Telephone System is a state-of-the-art system that incorporates sophisticated electronics to meet the communications needs of today's home, office, and small business user.

It connects six outside telephone lines (only five if the optional Door Answer Unit and Door Modules are installed) with up to twelve station Sets — which are all wired in a star configuration. Both a tone only key service unit (KSU) and a tone/rotary KSU are available. Also, both Handsfree and Non-Handsfree Sets are available; the Handsfree Sets also include Busy Lamp Field (BLF) indicators that show the status of all system stations.

Common and private speed call numbers, call transferring, door answering (with optional Door Answer Unit and Door Modules), internal monitoring, conferencing (up to 3 parties), internal intercom paging (station-to-station, zone, and all page paging), external loudspeaker paging, call detail and account code recording (through an optional SMDR interface unit), and last number redialing are just some of the many features offered.

The attractive, well-designed system makes feature programming and operation very easy. In addition, the Panther system is designed to allow easy interfacing with modems and answering devices through an optional OPX device.

The fully sealed Panther 612 Electronic Key Telephone System may be installed in either a standalone mode or behind a CENTREX or PBX. The microprocessor-controlled circuitry operates all system communications and the flexible programming.

An optional external backup 24 V battery can be connected to the system; the backup battery is automatically brought on line in the event of a power failure, thus preventing interruptions in telephone service.

Also, in the event of a total system failure, incoming lines will be transferred to standard sets if optional Power Transfer Units have been installed in the system.

ABOUT THIS CHAPTER

This chapter has also been designed specifically to enable technicians to install, operate, and maintain the Panther 612 Electronic Key Telephone System. Information is presented in a logical order, without undue wordiness — to help the technician find, understand, and use the relevant information, quickly and easily.

Therefore, for example, the Connection Procedures are separated into concise steps that have a logical and necessary sequence; and reference material (Technical Specifications, Feature Programming, Operating Instructions, and Troubleshooting) is presented in a variety of easy-to-follow, visible-at-a-glance tabular formats.

To acquaint yourself with this chapter, please review the Table of Contents and spend a few moments browsing through the different sections.

CAUTION

Panther equipment is sealed. Breaking the seal will void your warranty.

If you have an installation, operation, or troubleshooting problem that you cannot solve by using this chapter (and that your dealer cannot help solve), call TRILLIUM Customer Service at 1-800-848-2444 (inside California, call 1-800-422-7600).
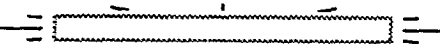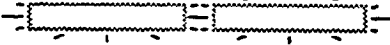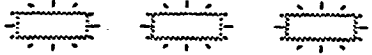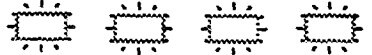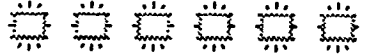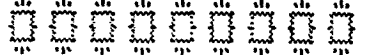
NOTE

For your ready reference, a chart summarizing indicator signals appears on the back of this page.

QUICK-REFERENCE CHART

The Panther 612 Electronic Key Telephone System lets users know what is happening with calls and lines through a series of indicator patterns. These indications are summarized in the chart on this page. Specific indications are described at the appropriate places throughout the procedural material in this chapter.

Line Indicator Action	Line Status
OFF	Line idle
ON	Line in use or on exclusive hold at another station
Slow WINKING	Line in use at your Set
Very slow FLASHING	Line on hold at another station
Slow FLASHING	Incoming call
Quick FLASHING	Line on hold at your Set
Very quick FLASHING	Line on exclusive hold at your Set

RADIO AND TELEVISION INTERFERENCE
WARNING

The Panther 612 Electronic Key Telephone System generates and uses radio-frequency energy and — if not installed and used in strict accordance with these instructions — may cause interference to radio and television reception.

The Panther 612 Electronic Key Telephone System has been certified to comply with the limits for a Class B computing device, pursuant to Subpart J of Part 15 of the Federal Communications Commission (FCC) Rules which are designed to provide reasonable protection from radio and television interference in a residential installation. However there is no guarantee that interference will not occur in a particular installation.

If interference is encountered, test to determine if the unit is at fault by unplugging the Key Service Unit (KSU) from the wall outlet.

If unplugging the KSU removes the interference, try the following corrective measures, singly or in combination, until the interference is eliminated:

- Change the location or position of the indoor receiving antenna of the radio or television.

- Relocate the Panther 612 Set or KSU in relation to the radio and television receivers experiencing interference.

- Plug the KSU into an outlet that does not also serve radio or television sets.

If further help is needed, consult your TRILLIUM dealer or an experienced radio/television technician — or refer to the FCC's booklet, "How to Identify and Resolve Radio-TV Interference Problems." It is available from the US Government Printing Office, Washington, DC 20402 (stock number 004-000-00345-4).

HEARING AID COMPATIBILITY
The Panther 612 Set is compatible for those requiring a hearing aid as defined in section 68.316, Part 68 of FCC Rules.

RESPONSIBILITIES

The FCC's rules permit the Panther 612 Electronic Key Telephone System to be connected to the telephone network via a jack or jacks provided by the telephone company (telco). These jacks are not provided for coin or party lines.

User Responsibilities

Before connecting your Panther 612 Electronic Key Telephone System to the telephone lines, you must contact the telephone company and provide them with the following information:

- Telephone numbers of the lines to which the Panther 612 Electronic Key Telephone System is to be connected (lines 1 through 6)

- FCC Registration Number (found on the side of the Key Service Unit or KSU: the number for either the tone only KSU is **EBS78T-71738-KF-T**; or, for the tone/rotary KSU, the number is **EBS78T-71738-KF-E**)

- Ringer Equivalence Number (also found on the side of the KSU: the number for either version of the Panther KSU is **1.1B**)*

- USOC jacks required (usually three 4-conductor, RJ14 modular jacks)

You also have the responsibility to disconnect a malfunctioning Panther 612 Electronic Key Telephone System from the telephone lines until the cause of the malfunctioning is identified and repaired. Otherwise, the telephone company may temporarily disconnect service.

* The Canadian Department of Communications load number for the Panther 612 Electronic Key Telephone System is 16B.

Telco Responsibilities

The telephone company is required to give you adequate notice of any changes it makes in its technical operations or procedures that may affect the compatibility or use of your Panther 612 Electronic Key Telephone System.

STANDARD COMPONENTS

One Key Service Unit (KSU)
Part Number 90-0166 (tone only)
or
Part Number 90-0084 (tone/rotary

The *tone/rotary* key service unit (KSU) for the Panther 612 Electronic Key Telephone System can be programmed to operate with either dual-tone, multi-frequency (DTMF) or rotary (pulse) signaling. The signaling on each Central Office (CO) line can be programmed independently. The *tone only* KSU operates only with DTMF signaling. Other than signaling differences, both KSU models look alike and operate identically.

The KSU has three connectors on its left side (labeled CO1.2, CO3.4, and CO5.6) to attach the six incoming telephone company (telco) CO lines — one connector for each pair of lines (line 6 must be left vacant if the optional Door Answer Unit is installed). Also on the left side of the KSU are connectors labeled DOOR (used for the optional Door Answer Unit), PAGE (used for external paging equipment), MUSIC (used for an external background and on-hold music source), POWER FAIL (used for the optional Power Fail Transfer Unit).

Next, the KSU has one recessed light-emitting diode (LED) indicator (labeled STATUS), four miniature dual in-line package (DIP) switches (labeled, from top to bottom, 1 PROGRAM [used to return features to their default, factory preprogrammed conditions], 2 PROGRAM [used to program system features], 3 [not used], and 4 BATTERY [used to save feature programming]), and one recessed pushbutton (labeled RESET).

Near the bottom left of the KSU is a 50-pin connector, labeled STATIONS 10 TO 21/LOUD BELL, that is used to connect the KSU to the station wiring main distribution frame (MDF) — and, through the MDF, to all the system stations. The last pair is also optionally available for connecting an external loud bell or other sounding device through an external dry contact interface unit.

On the bottom of the KSU is a connector labeled SMDR (used for the optional SMDR Interface unit).

The KSU's power cord (at the top of the KSU) plugs into a 110 V ac outlet (but only at the appropriate time; see the Connection Procedures section). A grounding wire (12 AWG, solid copper) which connects to the top of the KSU must be attached to a ground clamp, usually on a water pipe.

An input connector (labeled EXTERNAL BATTERY) for an optional 24 V backup battery is also provided at the top of the KSU. If ac power is lost, the switchover to backup battery power is automatic when the optional backup battery is connected.

The unit comes with 4 screws for mounting the KSU on a backboard.

Up to Twelve Telephone Sets
Part Number 90-0266
(non-handsfree)
or
Part Number 90-0168
(handsfree with busy lamp field)

Other than the handsfree operation and the busy lamp field, these two models look alike and operate identically. For example, both have an attractive black matte finish.

Each Set's base has twelve dual-function station select/speed call keys (labeled **10** through **21** — the top key is also used for last number **Redial**), six line select keys (labeled **1, 2, 3, 4, 5,** and **6**), seven dedicated function keys (labeled **Hold, Flash/Cancel, Conference, Intercom, Speed, Speaker,** and **Mic.on/off**) and a tone dial keypad.

The line **1, 2, 3, 4, 5,** and **6** keys, the **Intercom** key, and the **Mic.on/off** key have accompanying status indicators. And, only on handsfree/busy lamp field (HF/BLF) Sets, each station select key (**10** through **21**) also has an accompanying status indicator.

Finally, the base has a speaker volume control (a sliding adjustment) and a ringer control switch (a 3-position switch, for low, medium, and high volume ringing).

Each Set also includes a telephone handset and two modular cords — a 4-conductor, coiled cord for connecting the handset to the Set, and a 4-conductor modular cord for connecting the Set to the station wiring jack.

OPTIONAL COMPONENTS

One Door Answer Unit, Part Number 90-0058, With One or Two Door Modules, Part Number 90-0057

The Door Answer Unit (also known as the Door Answer Control) is installed next to, and connects with, the KSU. It serves as the interface between the system's stations and the one or two installed Door Modules (also know as the Door Answer Boxes) at the desired doors or entryways.

Together, these units enable signaling and conversation between Set users and visitors. Like the KSU, these units come equipped with mounting screws.

A visitor, by pressing the door bell button on a Door Module, generates a distinctive tone (four groups of 4 short tones for Door Module 1, four groups of 2 long tones for Door Module 2) that will sound at all Sets programmed to ring on line 6 and causes the indicator for line 6 on all Sets to WINK. Also, each Set user can generate a calling tone that will sound at Door Module 1 only.

Up to Two Power Fail Transfer Units Part Number 90-0052

The Power Fail Transfer Unit automatically takes over in the event of an electrical power failure, allowing for continued telephone service during the emergency. One Power Fail Transfer Unit can handle up to 4 incoming lines.

When power fails, the Power Fail Transfer Units transfer incoming CO lines (up to all 6 of them — or the 5 lines in use, if the optional Door Answer Unit with Door Modules is installed) to pre-installed *standard* telephone sets (*not* to Panther 612 Sets).

Up to Eleven Off Premises Extension/ Data Interface (OPX) units Part Number 90-0308

The OPX unit converts a 4-wire interface to a 2-wire interface, allowing a single line telephone to be connected to any spare station jack — except station 10. It also allows 2-wire devices to be connected at a distance greater than the system 2000 feet limit for Sets. The OPX unit also simulates CO line characteristics, allowing a modem or an answering machine to be connected to the system. Finally, the OPX unit allows a remote device to be connected to your system at any distance via a CO line.

When the user lifts the single-line telephone's handset, an intercom connection is made to the Panther system. Also, by dialing a special code, the off-premise user can access any of the Panther system's outside lines.

One Station Message Detail Recorder (SMDR) Interface Part Number 90-0169 only

This unit allows information on system, line, and station usage to be captured and recorded.

Set Stands/Wall-Mounts
Part Number 90-0087

Each Set may be placed on a desk — or mounted on a wall using the Set Stand/Wall-Mount Bracket (available in packages of 10).

The same bracket can also be used to provide a heightened viewing angle when used with the Set on a desk- or table-top.

Designation Cards
Part Number 90-0192
(for non-handsfree Sets)
or
Part Number 90-0193
(for handsfree/busy lamp field Sets)

Designation Cards are used to list the eleven private speed call numbers and identify the assignment or location of the twelve system stations.

Although each Set comes equipped with one installed and one spare Designation Card, you may order additional cards (in packages of 10) for your system.

Notice that each type of Set uses a *different* Designation Card.

Face Plates
Part Number 70-0171
(for non-handsfree Sets)
or
Part Number 70-0172
(for handsfree/busy lamp field Sets)

Face Plates cover and protect the Designation Cards. You may order spare Face Plates for your system.

Notice that each type of Set uses a *different* Face Plate.

CONNECTORS

Equipment	Jacks/Connections	Cable Pairs
CO or PBX lines	Modular RJ14C	A total of 6 (one per line)
KSU:		
CO1.2, CO3.4, and CO5.6	Modular RJ14C	2 each
STATIONS 10 TO 21 (to station wiring MDF)	50-pin RJ21C to 66-block	25
DOOR (to Door Answer Unit jack DA)	Modular RJ25C	3
POWER FAIL (to first Power Fail Transfer Unit)	Special connector	(See first Power Fail Transfer Unit)
PAGE (output — 200 mV rms into 600 Ω)	Mini-Jack 1/8-inch, phono)	1
MUSIC (music input — 50 mV rms)	Mini-Jack (1/8-inch, phono)	1
SMDR (to SMDR Interface unit)	Special	(See SMDR Interface)
EXTERNAL BATTERY	Molex connector	1
Ground	Screw terminal	Single 12 AWG wire
Station wiring MDF:		
To station jacks	66-block to modular RJ14C	2 each*
To dry contact interface (2 A, maximum)	66-block to screw terminals	1
Panther 612 Sets (to station jacks)	Modular RJ14C (or RJ25C**)	2 each, cord supplied (or 3**)
Door Module (to Door Answer Unit D1 and D2)	Screw terminals	1 for each module
First Power Fail Transfer Unit (optional):		
CO1.2 & CO3.4 (from incoming lines 1-4)	Modular RJ14C	2 each
TK1.2 & TK3.4 (to KSU jacks CO1.2 & CO3.4)	Modular RJ14C	2 each
CNJ (to KSU jack POWER FAIL)	Special connector	1 (cable supplied)
CNK (to 2nd Power Fail Transfer Unit jack CNJ)	Special connector	(See 2nd Power Fail Transfer Unit)
Second Power Fail Transfer Unit (optional):		
CO1.2 (from incoming lines 5 & 6)	Modular RJ14C	2 each
TK1.2 (to KSU jack CO5.6)	Modular RJ14C	2 each
CNJ (to 1st Power Fail Transfer Unit jack CNK)	Special connector	1 (cable supplied)
SMDR Interface unit:		
To KSU connector SMDR	Special	Special (cable supplied)
To printer, terminal, or personal computer	DB-25	RS-232 cable

SMDR INTERFACE UNIT (optional)

Data code	ASCII
Data rates (SMDR switch-selectable)	300, 600, or 1200 bits per second
Output device (user supplied)	80-character, serial printer
Time before recording starts (programmable)	1 to 61 seconds
Grace period before timer starts (programmable)	1 to 16 seconds
Account Codes (as they appear in SMDR printout)	"A" + 4 user-entered digits

* Length of each station cable should not exceed 2000 feet of 24 AWG; all station runs are star (home run) configurations
** Sets may alternatively use a 6-conductor modular cord-to-RJ25C jack (to gain access to the Set's speaker terminals)

ENVIRONMENTAL REQUIREMENTS

Operating Temperature	0 to 40 °C (32 to 104 °F)
Relative Humidity	Less than 90%, non-condensing

POWER REQUIREMENTS

Voltage	115 V ac (± 10%), 50/60 Hz
Current	1.0 A, maximum load

STATION NUMBERING PLAN

Panther 612 Sets or OPX Units	10 through 21 (OPX unit not allowed on station 10)

SYSTEM CAPABILITIES

CO or PBX Lines	6 (only 5 with Door Answer Unit)
Signaling:	
Tone only KSU (part number 90-0166)	DTMF (tones) only
Tone/rotary KSU (part number 90-0084 — each line independently programmable)	DTMF (tones) or rotary (pulses)
Intercom Speech Paths	3
OPX unit (optional — used with modem, answering machine, or remote *standard* set)	Up to 11
Stations (including both non-handsfree and handsfree/BLF Sets or OPX Units)	Up to 12
Non-handsfree Sets	Up to 12
Handsfree/BLF Sets	Up to 8 or 9†
Speed Call Numbers (up to 26 digits, pauses, or flashes each):	
Common (system-wide)	Up to 34
Private	Up to 11 at *each* Set
Door Answer Unit (optional)	1 (with 1 or 2 Door Modules)
Power Fail Transfer Units (optional)	Up to 2††

†   Depending on system load

†† 1st unit transfers up to 4 incoming lines; 2nd unit transfers up to 2 more incoming lines; all transferred lines are routed to pre-installed *standard* telephone sets (*not* Panther 612 Sets)
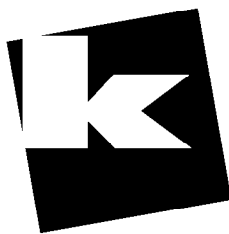
STEP 1
INSTALLING THE KSU

Site Preparation

Because the KSU is at the heart of the operation of the Panther 612 Electronic Key Telephone System, ensure that its installation site meets the following criteria:

- Clean, dry, and well ventilated (should meet the environmental requirements listed in Section C)

- Within seven feet of the incoming CO, CENTREX, or PBX line terminations

WARNING

If you are in area subject to power transients, install a surge protector on the dedicated outlet.

- Within five feet of a *dedicated* 110 V ac, 60 Hz, 3-wire grounded outlet — an outlet that is *not* on a wall switch

- Not too distant from station terminations (the maximum distance to each station is 2000 feet, using 24 AWG wiring)

- A 30" by 30" area of wall space should be reserved, allowing room for Power Fail Transfer Units, the SMDR Interface unit, and the Door Answer Unit (whether they are being installed now or might be in the future)

Backboard Installation

If the KSU is to be mounted on a concrete or masonry wall, a 1/2-inch thick plywood backboard is recommended.

Depending on the wall's construction and your method of installing the backboard, you might need screwdrivers (various kinds and sizes), drills and bits (various sizes), # 10 masonry screws with plastic anchors (4 of each), or 1/4" screws with wall grip screw anchors (4 of each).

Mount the backboard at least 12 inches above the floor.

System Uncrating

a   Carefully unpack the System and confirm that all ordered parts are present by checking them off against the Customer's order sheet and the packing list.

b.   Make sure that the customer's feature requirements have been documented on a Customer Feature Selection Form.

KSU Installation

a.   Mark the position of the 4 screw holes needed to mount the KSU on the backboard.

b.   Drive four screws (supplied) until their heads are within 1/8-inch of the board's surface.

c.   Using the four keyhole slots (narrow end up) in the side flanges of the KSU cabinet, hang the unit on the four screws and tighten them securely.

CAUTION

Failure to properly ground the KSU may void your Panther 612 Electronic Key Telephone System warranty.

d.   Connect the ground lug at the top of the KSU to a cold water metal pipe or ground stake, using copper wire that is 12 AWG or heavier (not supplied).

Be sure that the cold water pipe's metal continuity is not broken by the use of plastic pipe.

A ground stake should also meet the installation requirements of your local electrical code.

e .   At the electrical service panel, equip the electrical breaker for this outlet with a locking clip — or mark it with a label to serve notice that this unit should not be disconnected or shut off.

STEP 2
CONNECTING
INCOMING TELEPHONE LINES

WARNING

Do not plug in the KSU's power cord until in-
structed to do so in Step 4.

NOTES

1. If the incoming telephone lines are not yet
installed, ask the telco that they be terminated,
each 2 lines in a single 4-conductor RJ14 jack.

2. If optional Power Fail Transfer Units are to
be installed, follow the instructions in Step 12
to connect the incoming lines.

3. If the optional Door Answer Unit is to be in-
stalled, line 6 must be left vacant.

If the incoming lines are terminated in RJ14 jacks — with
each 2 lines terminated in a *single* RJ14 jack — simply in-
stall one 4-conductor, modular line cord between the single
RJ14 jack at which incoming lines 1 and 2 both terminate
and the jack labeled CO1.2 on the left side of the KSU.

Similarly, install a 4-conductor, modular line cord between
the single RJ14 jack at which incoming lines 3 and 4 both
terminate and the jack labeled CO3.4 on the left side of the
KSU.

Finally, install a 4-conductor, modular line cord between the
single RJ14 jack at which incoming lines 5 and 6 both termi-
nate and the jack labeled CO5.6 on the left side of the KSU.

STEP 3
INSTALLING STATION WIRING

WARNING

To prevent damage to the KSU while wiring,
make sure that the KSU's power cord is not
plugged in. Do not apply power to the KSU
until instructed to do so in Step 4.

NOTES

1. Because much of the feature programming is
performed from station 10, choose a conven-
ient or strategic location for station 10.

2. If an external amplifier/speaker is to be used
at any of the station locations, mount a 6-
conductor RJ25 jack at the station location in-
stead of a 4-conductor RJ14 jack. See Step 13.

3. Refer to the Typical System Layout
Diagram (on page E-1) and the Station Wiring
Table (that starts on the facing page) for wiring
details.

a. Decide on the location and station number (from 10
up through 21) for each Set.

b. Mount a 4-conductor RJ14 jack within 6 feet of the
desired Set location at each station.

c. On the backboard, mount a 66-block with a female
50-pin connector.

d. Install a 25-pair cable — with male 50-pin connec-
tors at both ends — between the 66-block's 50-pin
connector and the KSU 50-pin connector labeled
STATIONS 10 TO 21. Secure the KSU end of the
cable with the screw and plastic tie-wrap provided
with the unit.

e. For each station, install a length (not to exceed
2000 feet) of 4-conductor, 24 AWG cable from the
66-block terminals to the station wiring jack.

Station Number	Circuit Function	4-Conductor Station Jack†	66-Block Terminal	50-Pin Connector	25- Pair Cable*
10	voice (tip)	green (GN)	1	26	white/blue
	voice (ring)	red (RD)	2	1	blue/white
	data (tip)	black (BK)	3	27	white/orange
	data (ring)	yellow (YL)	4	2	orange/white
11	voice (tip)	green (GN)	5	28	white/green
	voice (ring)	red (RD)	6	3	green/white
	data (tip)	black (BK)	7	29	white/brown
	data (ring)	yellow (YL)	8	4	brown/white
12	voice (tip)	green (GN)	9	30	white/slate
	voice (ring)	red (RD)	10	5	slate/white
	data (tip)	black (BK)	11	31	red/blue
	data (ring)	yellow (YL)	12	6	blue/red
13	voice (tip)	green (GN)	13	32	red/orange
	voice (ring)	red (RD)	14	7	orange/red
	data (tip)	black (BK)	15	33	red/green
	data (ring)	yellow (YL)	16	8	green/red
14	voice (tip)	green (GN)	17	34	red/brown
	voice (ring)	red (RD)	18	9	brown/red
	data (tip)	black (BK)	19	35	red/slate
	data (ring)	yellow (YL)	20	10	slate/red
15	voice (tip)	green (GN)	21	36	black/blue
	voice (ring)	red (RD)	22	11	blue/black
	data (tip)	black (BK)	23	37	black/orange
	data (ring)	yellow (YL)	24	12	orange/black

† Use matching color codes for the 4-conductor station wiring cables.
* The first color listed is the predominant color; the second color listed is the tracer or stripe color.

Station Wiring Table (Sheet 1 of 2)

Station Number	Circuit Function	4-Conductor Station Jack†	66-Block Terminal	50-Pin Connector	25- Pair Cable*
16	voice (tip) voice (ring)	green (GN) red (RD)	25 26	38 13	black/green green/black
	data (tip) data (ring)	black (BK) yellow (YL)	27 28	39 14	black/brown brown/black
17	voice (tip) voice (ring)	green (GN) red (RD)	29 30	40 15	black/slate slate/black
	data (tip) data (ring)	black (BK) yellow (YL)	31 32	41 16	yellow/blue blue/yellow
18	voice (tip) voice (ring)	green (GN) red (RD)	33 34	42 17	yellow/orange orange/yellow
	data (tip) data (ring)	black (BK) yellow (YL)	35 36	43 18	yellow/green green/yellow
19	voice (tip) voice (ring)	green (GN) red (RD)	37 38	44 19	yellow/brown brown/yellow
	data (tip) data (ring)	black (BK) yellow (YL)	39 40	45 20	yellow/slate slate/yellow
20	voice (tip) voice (ring)	green (GN) red (RD)	41 42	46 21	violet/blue blue/violet
	data (tip) data (ring)	black (BK) yellow (YL)	43 44	47 22	violet/orange orange/violet
21	voice (tip) voice (ring)	green (GN) red (RD)	45 46	48 23	violet/green green/violet
	data (tip) data (ring)	black (BK) yellow (YL)	47 48	49 24	violet/brown brown/violet

† Use matching color codes for the 4-conductor station wiring cables.
* The first color listed is the predominant color; the second color listed is the tracer or stripe color.

Station Wiring Table (Sheet 2 of 2)

STEP 4
CONDUCTING THE INITIAL
SYSTEM AND STATION TESTS

NOTES

1. If the indications described below do not occur, refer to the Troubleshooting section.

2. If the SMDR Interface unit is to be installed, it should be installed *prior* to conducting these tests. See Step 11.

a. Connect the KSU power cord to the surge protector previously installed at the 110 V ac power outlet: the recessed STATUS indicator goes ON (with a slight flicker) indicating that the KSU is operative.

b. Set KSU switch 4 BATTERY to ON (if necessary, use a paper clip or other pointed object such as a pen or pencil to set the KSU miniature DIP switches).

c. Set KSU switch 1 PROGRAM to ON.

d. Push the recessed RESET pushbutton once.

e. Set KSU switch 1 PROGRAM to OFF.

f. Push the recessed RESET pushbutton again: the system is now set the factory preprogrammed conditions (for details on what those conditions are, see the Feature Programming section).

g. At station 10, plug in the 4-conductor modular cord supplied with the Set between the Set and the station wiring jack.

h. Press the Set's **Intercom** key: the Set's speaker emits a continuous tone and the **Intercom** indicator goes ON.

i. Lift the handset and press the line **2** key: dial tone is heard; the **Intercom** indicator goes OFF; if yours is a BLF Set, *your* station indicator goes ON; and the line **2** indicator WINKS slowly.

j. Hang up the handset: dial tone is removed; and all indicators go OFF.

k. Repeat steps i and j for lines 1, 3, 4, and 5 — and line 6 as well, if not used for the Door Answer Unit.

l. Repeat steps g through k for the remaining stations.

Unless you have optional items to install (the Door Answer Unit, the OPX unit, the SMDR Interface unit, the Power Fail Transfer Unit, external paging equipment, a dry contact interface, or a music source), your Panther 612 Electronic Key Telephone System is now ready for programming or operation.

STEP 5
CONNECTING
THE BACKUP BATTERY

The KSU has a white plastic Molex connector at its top for connecting an external backup battery. The backup battery used (such as the TRI 24/2.5B from Alpha Technologies) should provide 24 V dc at 2 Amps for an extended period of time.

a. Connect the positive (+) terminal of the battery (usually the red lead) to the left side of the KSU connector.

b. Connect the negative (-) terminal of the battery (usually the black lead) to the right side of the KSU connector.

Once connected, switchover to the backup battery occurs automatically when power fails.

STEP 6
CONNECTING
DOOR ANSWER UNIT
AND DOOR MODULES

NOTE

If you have chosen to install the Door Answer Unit with its one or two Door Modules, line 6 must be left vacant.

Door Answer Unit Installation

a   Mount the Door Answer Unit on the backboard along with the KSU, using the four screws supplied with the equipment.

b. Connect a 6-conductor modular cord (not supplied) to the connector labeled DOOR on the KSU and the connector labeled DA on the Door Answer Unit.

Door Module Installation

a   Remove the screw securing the Door Modules' front cover, and separate the front from the back.

b. Mount the backs of the Door Modules at the desired entryway locations, using the two mounting screws furnished with each Door Module.

c. Run a length (not to exceed 2000 feet) of 2-conductor, 24 AWG wire from the Door Answer Unit to each Door Module.

d. Feed the wire through the hole in the base of the back of the Door Module.

e. Strip the cable end and secure it to the screw terminals found on the backside of the Door Module's front assembly.

f. Replace the Door Module's cover and tighten the screw to secure the front to the back.

g. At the Door Answering Unit, strip the cable ends and secure the cable from Door Module 1 to the screw terminals labeled D1 and the cable from Door Module 2 to the screw terminals labeled D2.

Door Answer Unit Test

NOTE

If the indications described below do not occur, refer to the Troubleshooting section.

a. Door Module 1-initiated calling:

   i. At Door Module 1's entryway, have someone press the door button: four groups of 4 short tones are heard at all Sets programmed to ring on line 6; and the line 6 indicator FLASHES slowly.

   ii. At any Set, pick up the handset and press the line 6 key: the line 6 indicator WINKS; if yours is a BLF Set, *your* station indicator goes ON; and you and the person at the entryway are connected.

   iii. At the Set, hang up the handset: all indicators go OFF; and the call is terminated.

b. Set-initiated calling:

NOTE

Set-initiated door module intercom calls can only be *placed* to Door Module 1, not to Door Module 2.

   i. Alternatively, at any Set, pick up the handset and press the line 6 key: the line 6 indicator WINKS; if yours is a BLF Set, *your* station indicator goes ON; and the person at Door Module 1 hears a burst of ringing.

   ii. At the entry way where Door Module 1 is installed, the person responds by speaking in the direction of the Door Module: you and the person at the entryway are connected.

   iii. At the Set, hang up the handset: all indicators go OFF; and the call is terminated.

c. Door Module 2-initiated calling:

   i. At Door Module 2's entryway, have someone press the door button: four groups of 2 long tones are heard at all Sets programmed to ring on line 6; and the line 6 indicator FLASHES slowly.

   ii. At any Set, pick up the handset and press the line 6 key: the line 6 indicator WINKS; if yours is a BLF Set, *your* station indicator goes ON; and you and the person at the entryway are connected.

   iii. At the Set, hang up the handset: all indicators go OFF; and the call is terminated.

STEP 7
CONNECTING THE MUSIC SOURCE
Music Connection

a. Connect one end of the cable (not supplied) into the music source's output jack.

b. Connect the other end, which terminates in a 1/8-inch mini-jack (phono, not stereo or attenuator), into the KSU connector labeled MUSIC.

Music Test

NOTE

If the indications described below do not occur, refer to the Troubleshooting section.

a. Turning background music on at a Set:

　i. At any station, with the handset in its cradle, press the **Intercom** Key: the **Intercom** indicator WINKS slowly; and a continuous tone is heard over the Set's speaker.

　ii. With the handset still in its cradle, dial * **4**: the **Intercom** indicator goes OFF; and the continuous tone is replaced by background music coming from the Set's speaker.

　iii. At the music source, adjust the level of the background music for the desired loudness.

b. Turning background music off at a Set:

　i. At any station, with the handset in its cradle press the **Intercom** Key: the **Intercom** indicator WINKS slowly; and a continuous tone is heard over the Set's speaker.

　ii. With the handset still in its cradle, dial * **4**: the **Intercom** indicator goes OFF; and neither the continuous tone nor the background music is heard over the Set's speaker.

c. Testing the background music on hold:

　i. Have someone call in on outside line 1 (alternatively, you can call line 1 from line 2): ringing is heard at all stations programmed to ring on line 1; and the line **1** indicator FLASHES slowly.

　ii. At any station, pick up the handset and press the line **1** Key: the line **1** indicator WINKS slowly; if yours is a BLF Set, *your* station indicator goes ON; and a connection is made with the outside caller.

　iii. After informing the outside caller of your intentions, press the **Hold** key and hang up the handset: the line **1** indicator FLASHES quickly; if yours is a BLF Set, *your* station indicator goes OFF; and the outside caller hears the background music.

　iv. After a few seconds, retrieve the call by picking up the handset and pressing the line **1** key: the line **1** indicator WINKS slowly; if yours is a BLF Set, *your* station indicator goes ON; the outside caller no longer hears the background music; and the connection with the outside caller is restored.

　v. Confirm the success of the background music on hold test with the outside caller.

　vi. Hang up the handset: all indicators go OFF; and the call is terminated.

STEP 8
CONNECTING
THE EXTERNAL
PAGING EQUIPMENT

Equipment Connection

a. Connect one end of the cable (not supplied) into the external paging equipment's input jack.

b. Connect the other end, which terminates in a 1/8-inch mini-jack (phono, not stereo or attenuator), into the KSU connector labeled PAGE.

Paging Test

NOTE

If the indications described below do not occur, refer to the Troubleshooting section.

a. At any station, pick up the handset and press the **Intercom** Key: the **Intercom** indicator WINKS slowly; if yours is a BLF Set, *your* station indicator goes ON; and a continuous tone is heard.

b. Dial **69**: a double tone burst is heard over the external paging loudspeaker.

c. Make a test announcement: the test announcement is heard over the external paging loudspeaker.

d. Hang up the handset: all indicators go OFF; and the external paging loudspeaker falls silent.

STEP 9
CONNECTING
AN EXTERNAL LOUD BELL

Equipment Connection

Connect a 2-conductor cable between terminals 49 and 50 of the 66-block (the violet/slate pair in the 25-pair cable) and an external dry contact interface unit, such as the Wheeloch model 24-24 (not supplied). Connect an external loud bell or other sounding device to the dry contact interface unit.

Loud Bell Test

NOTES

1. If the indications described below do not occur, refer to the Troubleshooting section.

2. The factory preprogrammed condition for the loud bell is both day and night bell. If you are installing a new system, the loud bell should ring on all incoming calls.

3. See Feature Programming for details on how to program the loud bell.

a. Have someone call in on outside line **1** (alternatively, call line 2 from line 1): the line **1** indicator FLASHES slowly; and the external loud bell rings.

b. At any station, pick up the handset and press the line **1** key: the line **1** indicator WINKS slowly; if yours is a BLF Set, *your* station indicator goes ON; a connection is made with the outside caller; and the loud bell stops ringing.

d. Hang up the handset: all indicators go OFF; and the loud bell remains silent.

STEP 10
CONNECTING THE OPX UNIT
OPX Unit Connection
NOTES

1. The OPX unit may be installed at any station location — except station 10.

2. See also Typical System Layout Diagram on page E-2.

a. Mount the OPX unit next to the desired station location, using the four screws supplied with the equipment.

b. Plug the small dc connector into the OPX unit's POWER connector and plug the wall connector into an unswitched, grounded 115 V ac outlet.

c. Connect the modular cord (not supplied) between the station wiring jack and the KSU jack on the OPX unit.

NOTE

If the device to be used is remotely located (not to exceed 2 miles on a direct connection), a 2-conductor, RJ11 jack can be mounted and wired to the remote device.

Alternatively, the remote device can be accessed through a CO line (with no limits on distance). FCC rules require that you tell the telco that the OPX's Facility Interface Code is 0L13B and its Service Code is 9.0F.

In either case, the 2-conductor cord in step d will then be connected between the RJ11 jack and the TEL jack on the OPX unit.

d. Connect a 2-conductor cord between the TEL jack on the OPX unit and the 2-line device to be used (such as a standard set, answering machine, or modem).

e. If access to an outside line is desired in the event of a power failure, connect a spade-to-modular, 2-conductor cord between one of the incoming lines (in parallel with the normal system connection) and the PFT jack on the OPX unit.

f. Set the A–B switch on the OPX unit to B.

OPX Unit Test
NOTE

If the indications described below do not occur, refer to the Troubleshooting section.

a   Originating internal calls:

i.   At the standard set connected to the OPX unit, pick up the handset: a continuous tone is heard.

ii. Call another station by dialing its 2-digit number, such as **13**: at the called station, repeated long tones are heard.

iii. The called party picks up the handset: the tones stop; and you and the called party are connected.

iv. Hang up the handset to terminate the call.

b. Receiving internal calls:

i.   Have someone place an internal call to the station at which the OPX unit is installed: your set rings .

ii. Pick up the handset: the ringing stops; and you and the calling party are connected.

iii. Hang up the handset to terminate the call.

c. Placing outside calls:

i.   At the standard set connected to the OPX unit, pick up the handset: a continuous tone is heard.

ii. Request outside line 1 by dialing *01: an external dial tone is heard.

iii. Complete the outside call by dialing the desired number. Hang up, when finished, to terminate the call.

iv. Test access to outside lines 2 through 5 and outside line 6 (unless the optional Door Answer Unit is installed) by repeating steps i through iii above for outside lines 2 through 6.

STEP 11
CONNECTING
THE SMDR INTERFACE UNIT
(part number 90-0169 only)

CAUTION

Power should not be applied to the KSU when installing the SMDR Interface unit.

NOTES

1. At a minimum, pin 3 (Received Data) and pin 7 (Signal Ground) must be wired in the cable connecting the SMDR Interface unit and the recording device.

2. Also, depending on the characteristics of the recording device, other pins may need to be be jumpered, grounded, or raised — consult your recording device's technical manual or your recording device manufacturer's customer service.

3. See also the specifications on page C-1 and the Typical System Layout Diagram on page E-2.

SMDR Interface Unit Installation

a. Mount the SMDR Interface unit below the KSU on the plywood backboard.

b. Connect the special ribbon cable (supplied with the SMDR Interface unit) between the connector at the bottom of the KSU and the connector at the top of the SMDR Interface unit.

c. Connect an RS-232 cable between the connector at the bottom of the SMDR Interface unit and the recording device (terminal or printer).

d. Set the appropriate baud rate switch (300, 600, or 1200 bps) on the SMDR Interface unit top match the requirements of your recording device.

e. Set the BATTERY switch on the SMDR Interface unit to ON.

f. If not performed already, go to Step 4 to apply power to the system and to conduct the initial system tests. When Step 4 is completed, return and perform the SMDR Interface unit test procedure (found below).

SMDR Interface Unit Test

NOTE

The time of day, date, month, and year are all programmed into the SMDR from station 10. See the Operating Instructions section.

a. Place an outside call: verify that the call information is recorded, as shown below.

b. Have someone place an incoming call and —during the incoming call — enter an account number (see Operating Instructions section): verify that the call information and account number is recorded, as shown below.

Typical Outgoing Call Format (all recorded on one line)

[month]/[date]	[time of day]	[length of call]	[station]	[not used]	[telephone number]	[outside line]	[account]
07/23	02:25P	00:02:24	014	000	17145573300	T001	

Typical Incoming Call Format (all recorded on one line)

[month]/[date]	[time of day]	[length of call]	[outside line]	[seconds to answer]	[station]	[account]
07/23	03:22P	00:11:53	T003	029	011	A1234

SMDR Printout Formats

STEP 12
CONNECTING THE
POWER FAIL TRANSFER UNITS
NOTE

Perform the following procedure only if you wish to install the optional Power Fail Transfer Unit. If such is the case, then this procedure should be followed *in lieu of* Step 2.

CAUTION

Power should not yet be applied to the KSU.

Power Fail Transfer Unit Installation
NOTE

See also the Power Fail Transfer Unit diagram in the System and Set Layout section.

a. Mount two Power Fail Transfer Units in the upper right corner of the plywood backboard.

b. Connect the 2-conductor special cable supplied with the 1st Power Fail Transfer Unit, as follows:

   i. At the KSU, connect one end of the special cable to the connector labeled POWER FAIL.

   ii. At the 1st Power Fail Transfer Unit, connect the other end of the special cable into the connector labeled CNK.

c. Connect the 2-conductor special cable supplied with the 2nd Power Fail Transfer Unit, as follows:

   i. At the 1st Power Fail Transfer Unit, connect one end of the special cable to the connector labeled CNJ.

   ii. At the 2nd Power Fail Transfer Unit, connect the other end of the special cable into the connector labeled CNK.

d. Route the incoming lines to the Power Fail Transfer Units:

   i. Connect a 4-conductor modular cord between the single RJ14 jack at which incoming lines 1 and 2 are terminated and the 1st Power Fail Transfer Unit jack labeled CO1.2.

   ii. Connect a 4-conductor modular cord between the single RJ14 jack at which incoming lines 3 and 4 are terminated and the 1st Power Fail Transfer Unit jack labeled CO3.4.

   iii. Connect a 4-conductor modular cord between the single RJ14 jack at which incoming lines 5 and 6 are terminated and the 2nd Power Fail Transfer Unit jack labeled CO1.2.

e. Route the lines from the Power Fail Transfer Units to the KSU:

   i. Connect a 4-conductor modular cord between the 1st Power Fail Transfer Unit jack labeled TK1.2 and the KSU jack labeled CO1.2.

   ii. Connect a 4-conductor modular cord between the 1st Power Fail Transfer Unit jack labeled TK3.4 and the KSU jack labeled CO3.4.

   iii. Connect a 4-conductor modular cord between the 2nd Power Fail Transfer Unit jack labeled TK1.2 and the KSU jack labeled CO5.6.

f. Install six *standard* telephones (2-wire sets) in convenient or strategic locations.

g. Using 2-conductor, modular cords, connect the standard sets to the jacks labeled T1T through T4T on the 1st Power Fail Transfer Unit and to the jacks labeled T1T and T2T on the 2nd Power Fail Transfer Unit.

Power Fail Transfer Unit Test

a. With power still removed from the KSU, the standard sets just installed should all be receiving dial tone — and be able to originate and receive outside calls. If not, refer to the Troubleshooting section.

b. Proceed to Step 3.

STEP 13
INSTALLING
AN EXTERNAL
AMPLIFIER/SPEAKER

If an external amplifier/speaker is to be installed at a given station, the the standard station wiring and Set installation procedures must be modified for that station as follows (see also the diagram to the right):

a. Instead of mounting a 4-conductor RJ14 jack at the station location (see Step 3 b), mount a 6-conductor RJ25 jack.
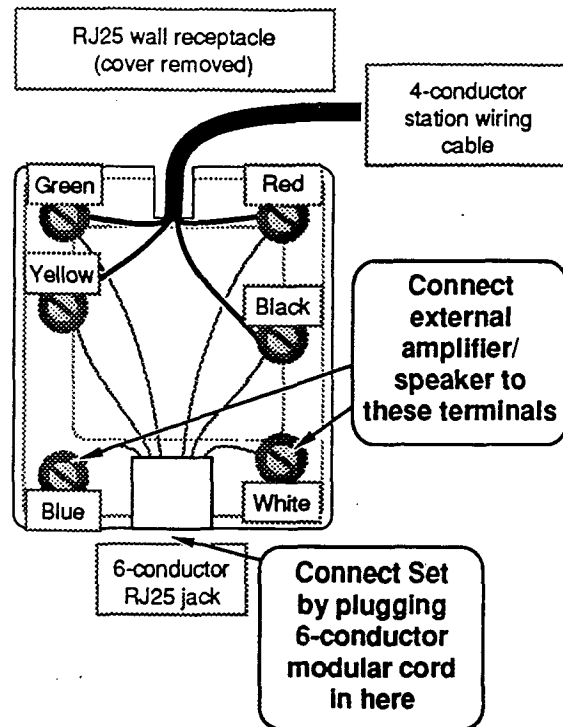
NOTE

The 4-conductor station wiring cable between the 66-block terminals and the station wiring jack still follows the details given in the station wiring table on pages D-3 and D-4 — with the 4 wires still running from the same 66-block terminals and being installed color-to-color on the jack, green-to-green, red-to-red, black-to-black, and yellow-to-yellow.
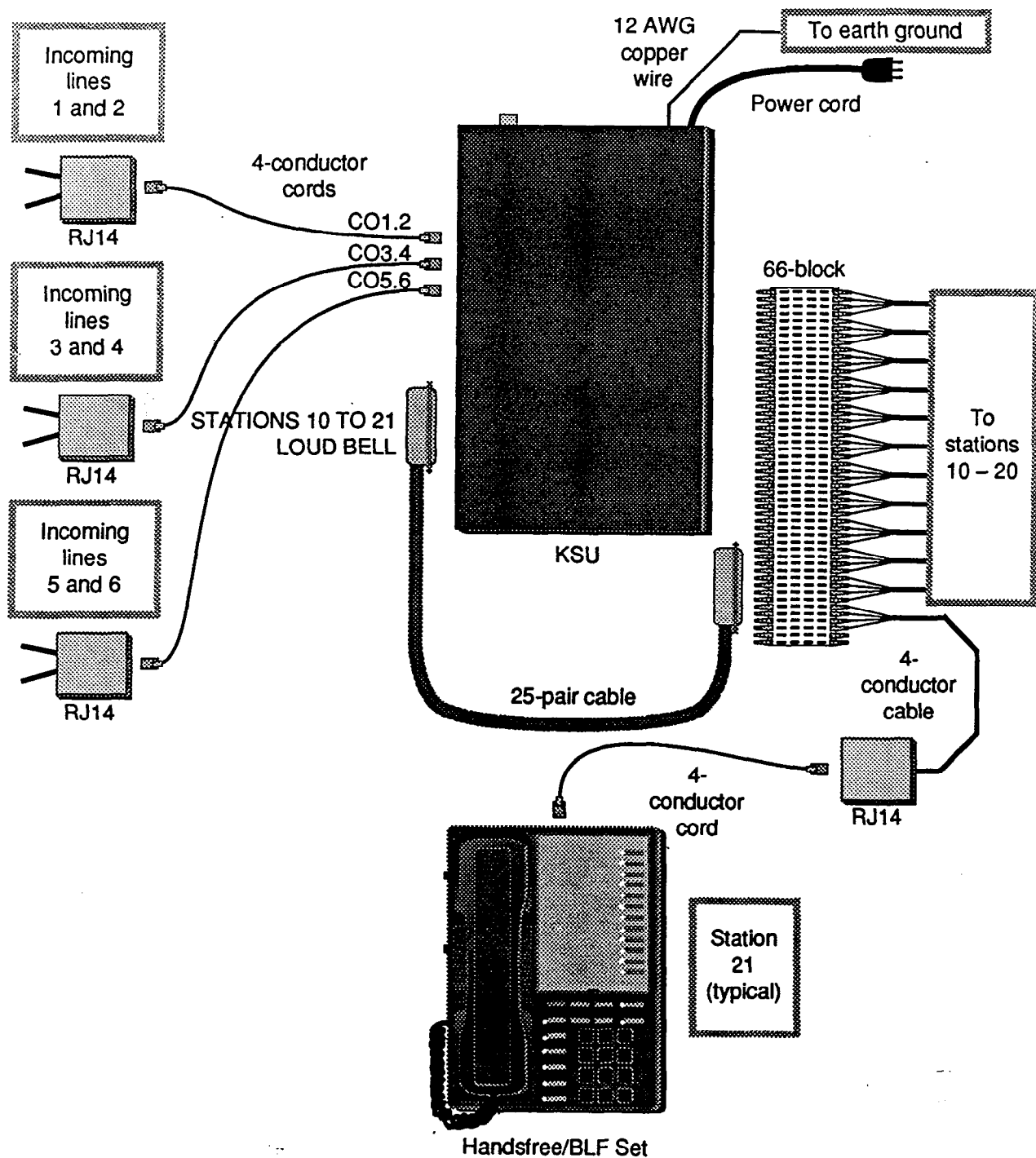
b. Connect the external amplifier to the blue and white terminals of the RJ25 station wiring jack.

c. Instead of using the 4-conductor modular cord supplied with the Set (see Step 4 g), use a standard 6-conductor modular cord to connect the Set to the station wiring jack.
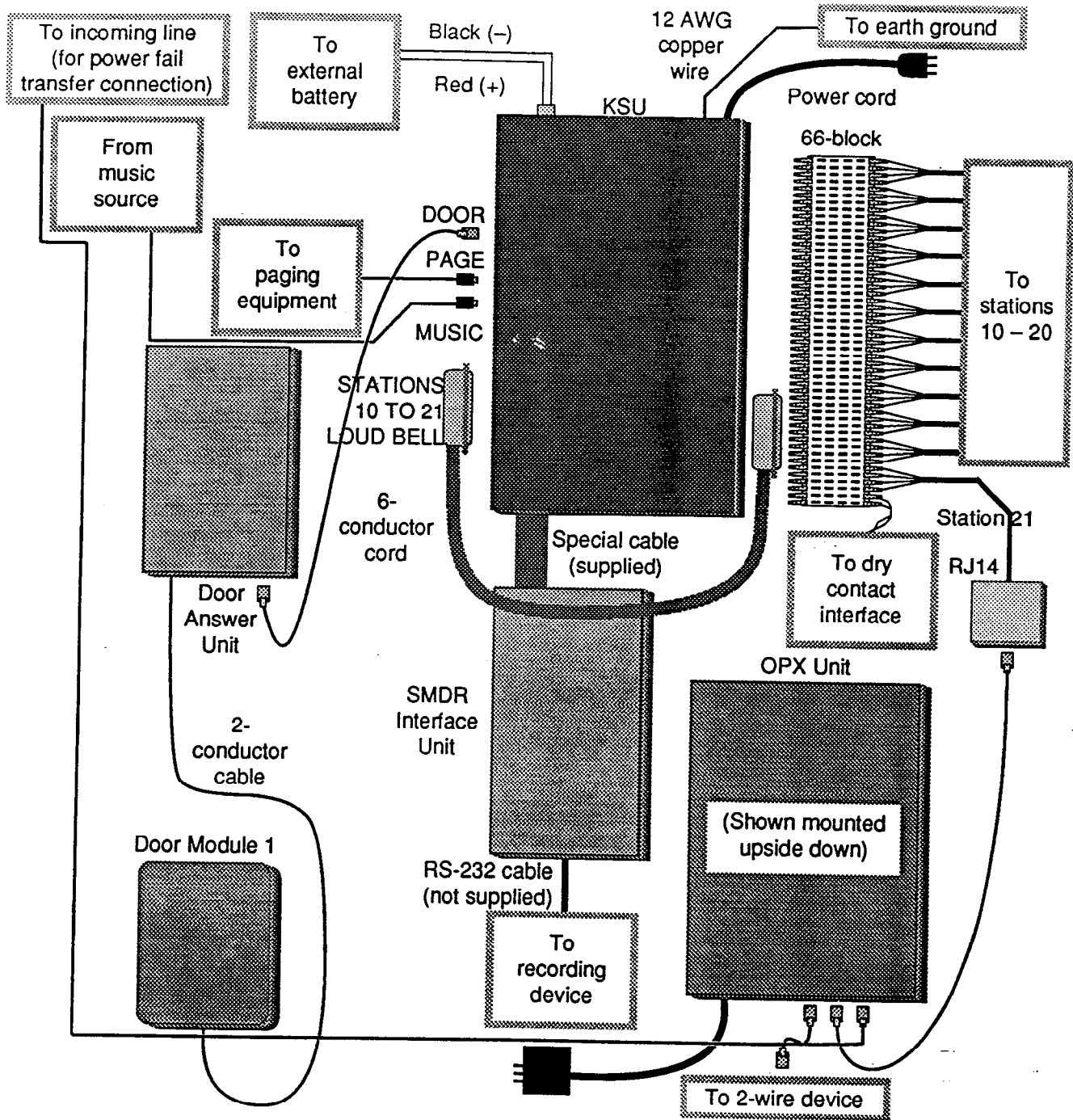
NOTE

The external amplifier/speaker is now connected to the Set's speaker terminals.

d. Check to see that signaling and voice messages normally heard over the Set's speaker will now be heard over the external amplifier/speaker.

e. To return the Set to its normal operation, simply replace the 6-conductor cord between the Set and the station wiring jack with the 4-conductor that was originally supplied with the Set.

RJ25 wall receptacle (cover removed)

4-conductor station wiring cable

Green   Red

Yellow

Black

Connect external amplifier/ speaker to these terminals

Blue   White

6-conductor RJ25 jack

Connect Set by plugging 6-conductor modular cord in here

12 AWG
copper
wire

To earth ground

Power cord

Incoming
lines
1 and 2

RJ14

4-conductor
cords

CO1.2

CO3.4

CO5.6

Incoming
lines
3 and 4

RJ14

STATIONS 10 TO 21
LOUD BELL

Incoming
lines
5 and 6

RJ14

KSU

66-block

To
stations
10 – 20

25-pair cable

4-
conductor
cable

4-
conductor
cord

RJ14

Station
21
(typical)

Handsfree/BLF Set

TYPICAL SYSTEM LAYOUT DIAGRAM (Standard Components only)

To incoming line
(for power fail
transfer connection)

To
external
battery

Black (−)

Red (+)

12 AWG
copper
wire

To earth ground

KSU

Power cord

From
music
source

66-block

To
paging
equipment

DOOR

PAGE

MUSIC

To
stations
10 – 20

STATIONS
10 TO 21
LOUD BELL

6-
conductor
cord

Special cable
(supplied)

Station 21

Door
Answer
Unit

To dry
contact
interface

RJ14

OPX Unit

2-
conductor
cable

SMDR
Interface
Unit

(Shown mounted
upside down)

Door Module 1

RS-232 cable
(not supplied)

To
recording
device

To 2-wire device

TYPICAL SYSTEM LAYOUT DIAGRAM (Optional and External Components only)
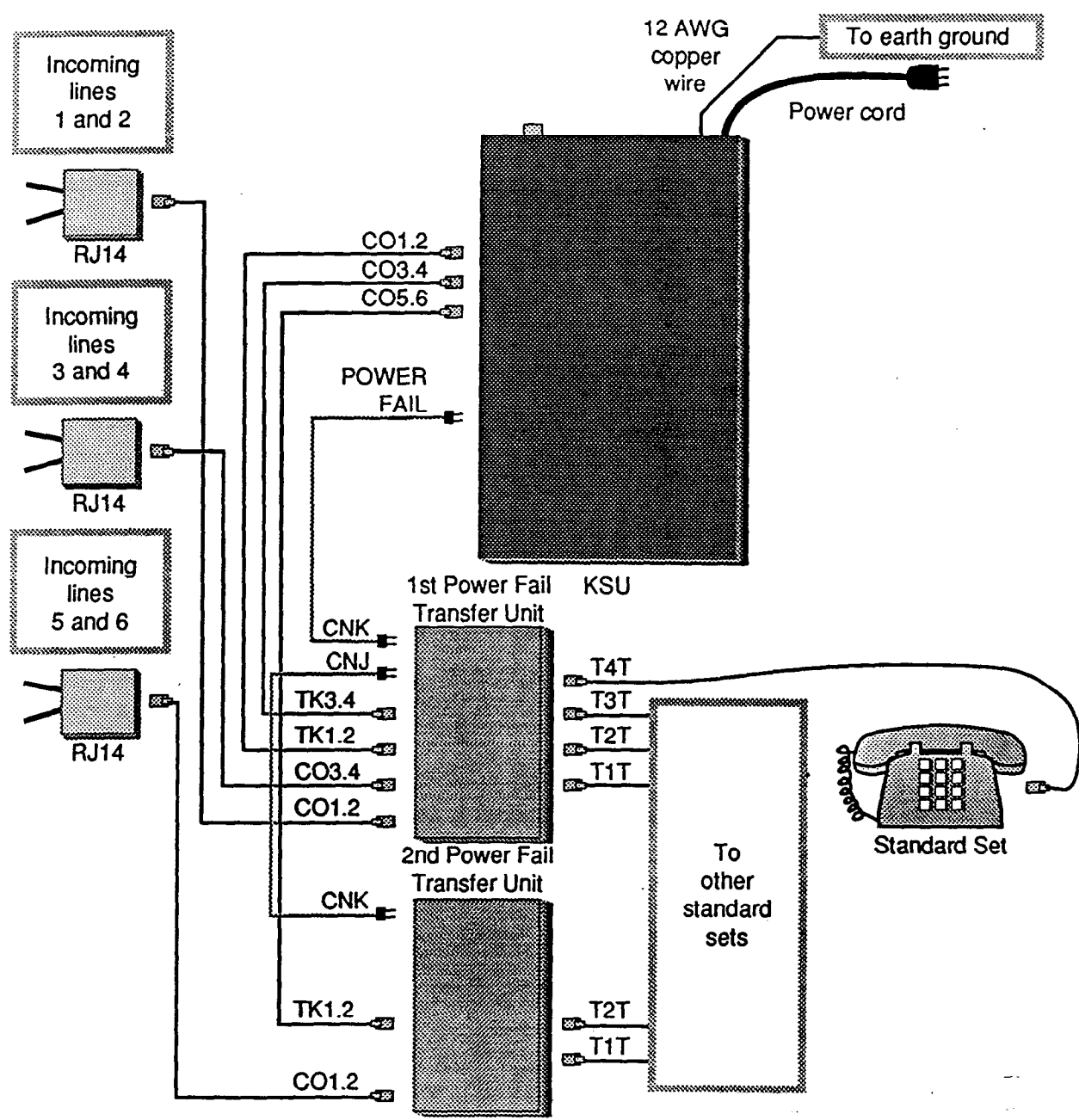
TYPICAL POWER FAIL TRANSFER UNIT LAYOUT DIAGRAM

19. Hold Key

18. Station Wiring Jack (back of set)

17. Plastic Cover & Designation Card

20. Ringer Volume Switch

16. Redial Key

1. Speaker

15. Direct Station Select (DSS)/Speed Dial Keys & Indicators

2. Speaker Volume Control

14. Flash/ Cancel Key

3. Speaker Key

13. Conference Key

12. Intercom Key & Indicator

4. Jacks for Handset Cord

11. Microphone On/Off Key & Indicator

10. Speed Key

5. Handset Cord

6. Handset

7. Line Keys & Indicators

8. Tone Dial Pad

9. Microphone (front of set)

SET LAYOUT DIAGRAM

SET LAYOUT

1. The speaker allows the user to monitor the progress of outside calls — and, with the Handsfree/Busy Lamp Field (HF/BLF) Set (as illustrated), to operate in a handsfree (speakerphone) mode. The speaker may also be used to listen to background music, when available, on both non-handsfree and handsfree Sets.

2. The speaker volume control (not labeled) adjusts the loudness of sounds emitted by the speaker.

3. The **Speaker** key is used to turn the Set's speaker on and off — and, with handsfree Sets, to conclude a handsfree call.

   With handsfree Sets, in auto line, the **Speaker** key selects CO line; in auto intercom, the **Speaker** key selects intercom (see Manual/Auto Select feature).

4. Two jacks (one on the base of the handset and the other on the left side of the Set) accept the plugs on the handset cord supplied with the Set.

5. The handset cord (supplied) connects the handset with the Set

6. The handset transmits and receives voice signals.

7. The line keys (**1** through **6**) select the indicated outside lines (unless programmed differently), and the corresponding indicators show the status of the outside lines.

   The keys and indicators are also used in feature programming.

   NOTE: Line **6** is used for door answering, rather than as an outside line, when the Door Answer Unit is installed.

8. The tone dial pad is used in making calls and feature programming.

   In addition, two of these keys — when dialed first *with the handset in its cradle* — have special operating significance:

   # automatically selects the internal intercom line.

   * automatically selects the last outside line used at your Set.

9. The microphone detects and amplifies voice conversation to enable handsfree operation (not present on non-handsfree Sets).

10. The **Speed** key is used to dial common speed call numbers; it also used to enter both private and common speed call numbers into system memory.

11. The **Mic.on/off** key turns the Set's microphone off and on. The indicator goes ON (lights) when the microphone is turned on; the indicator is also used in feature programming.

12. The **Intercom** key and indicator are used together or independently in setting the Do Not Disturb feature, making All Page, Zone Page, and other intercom calls, monitoring rooms, and activating the Barge-In feature.

    They are also used in feature programming and setting the call detail record (CDR) clock.

13. The **Conference** key sets up 3-party calls.

14. The **Flash/Cancel** key is used as either a precise length (programmable) hookswitch flash or as cancel key— but not both:

    As a hookswitch flash, it is used for accessing PBX, CENTREX, and other network features.

    As a cancel key, it terminates external calls in progress and returns a dial tone to the user — without having to hang up the handset.

15. The station select/speed dial keys are used for selecting the indicated internal stations — and, except for the top key (see 16, below), for dialing private speed call numbers.

    The indicators show the status of the other system stations but appear only on HF/BLF Sets.

16. The **Redial** key redials the last number manually dialed from your Set and serves as the key for station 10.

17. The plastic cover (Face Plate) protects the Designation Card, which is used to keep track of private speed call numbers and station assignments. HF/BLF and non-handsfree sets use *different* Designation Cards and Face Plates.

18. The station wiring jack is used to connect your Set to the station wiring; use the modular cord supplied with your Set.

19. The **Hold** key is used to place calls on temporary hold.

20. The ringer volume switch is a 3-position slide switch used to control the loudness of ringing at your Set.

FEATURE CATEGORIES

You may program five different categories of features on your Panther 612 Electronic Key Telephone System: system-wide features that apply to all sets and all lines, such as Hold Recall Time and Auto Hold; individual Set features that apply only to selected stations, such as Ringing Assignments and Night Transfer Ringing; individual line features that apply only to selected lines, such as Tone or Pulse dialing and Loud Bell Ringing; individual group features that apply only to selected groups, such as Line Grouping; and, finally, speed call numbers divided into 34 common speed call numbers (codes 20-53), available at all Sets, and 11 private speed call numbers, unique to each individual Set.

System-wide features, individual Set features, individual Set features, individual line features, individual group features, and common speed call numbers can only be programmed from the Set assigned as station 10.

Individual speed call numbers, on the other hand, may be programmed by Set users from their own individual Sets.

Categories Versus Codes

Programmable features are assigned to program codes — and sometimes more than one feature is assigned to a given program code. For example, the Hold Recall Time and Loud Bell programmable features are both assigned to program code 0000.

Programming all features that have the same program code *at the same time* is an efficient way to program the Panther 612 Electronic Key System *when it is first installed.*

However, as system requirements change, programming only the individual feature or features that need modification becomes the most straightforward approach.

The feature programming procedures and tables in this section are organized by *feature category* and, within each category, *alphabetically by feature name* — not numerically by program code. (The feature descriptions located at the end of this section are arranged simply in alphabetical order by feature name.) Thus, all these materials are designed to support system *changes*, rather than system installation.

Referencing Categories to Codes

However, to help during system installation, a table — organized by program code numbers — is provided on the next two pages, that provides references to the feature programming procedures, feature programming tables, and feature descriptions that make up the balance of this section.

Interrelated Features

Moreover, as listed below (in program code sequence within each group), certain features are directly or indirectly interrelated (features *not* listed in any group below are judged to be relatively *independent* of other features).

Whenever you program or reprogram one of the features in one of these interrelated groups, you should consider whether a corresponding change is required to the other features found in the same group.

Behind PBX/CENTREX-Related Features
Flash or Cancel (0011), Pause on Number (0020), Pause Time (0050), Flash or Cancel Duration (0060), and Telephone or PBX Line (5XX0)

Group-Related Features
Line Group Type (0011), Line Group Assignment (3YY0), and Line Grouping (6ZZ0 & 6ZZ1)

Hold-Related Features
Auto Hold (0001) and Hold Recall Time (0000)

Restriction-Related Features
Digits-to Deny (0051), Call Restrictions (1YY1), Barge-In (4YY0), Incoming Calls Only (5XX0), and Flexible Call Restrictions (7000-7900)

Ringing-Related Features
Loud Bell (0000), Ringing Assignment (2YY0 & 2YY1), Night Transfer Ringing (4YY0), and Loud Bell Ringing (5XX0)

SMDR-Related Features
Account Code (0001), Start Data Recording (0061), and Interdigit Timing (0070)

Tone/Pulse-Related Features
Interdigit Pause (0010), Pulse Rate (0010), Make-Break Ratio (0010), Tone Duration (0011), and Tone or Pulse (5XX0)

Feature Name	Program Code	Feature Category	Preprogrammed Condition	Programming and Description Page References
Common (20-53)	None	Speed Calling	None	Programming: F-18/Description: see Section G
Private Numbers	None	Speed Calling	None	Programming: F-19/Description: see Section G
Hold Recall Time	0000	System-wide	No recall	Programming: F-4 & F-6/Description: F-20
Loud Bell	0000	System-wide	Day and night bell	Programming: F-4 & F-7/Description: F-20
Account Code	0001	System-wide	No printout	Programming: F-4 & F-5/Description: F-19
Auto Hold	0001	System-wide	No auto hold	Programming: F-4 & F-5/Description: F-19
Manual/Auto Select	0001	System-wide	Auto intercom	Programming: F-4 & F-7/Description: F-21
Interdigit Pause	0010	System-wide	800 milliseconds	Programming: F-4 & F-6/Description: F-20
Make-Break Ratio	0010	System-wide	40%	Programming: F-4 & F-7/Description: F-20
Pulse Rate	0010	System-wide	10 pulses per second	Programming: F-4 & F-8/Description: F-21
Flash or Cancel	0011	System-wide	Cancel	Programming: F-4 & F-5/Description: F-20
Line Group Type	0011	System-wide	Type A	Programming: F-4 & F-7/Description: F-20
Tone Duration	0011	System-wide	100 milliseconds	Programming: F-4 & F-8/Description: F-21
Pause on Number	0020	System-wide	No pause	Programming: F-4 & F-7/Description: F-21
Pause Time	0050	System-wide	3 seconds	Programming: F-4 & F-8/Description: F-21
Digits-to-Deny	0051	System-wide	8th digit	Programming: F-4 & F-5/Description: F-19
Flash or Cancel Duration	0060	System-wide	1 second	Programming: F-4 & F-5/Description: F-20
Start Data Recording	0061	System-wide	5 seconds	Programming: F-4 & F-8/Description: F-21
Interdigit Timer	0070	System-wide	10 seconds	Programming: F-4 & F-6/Description: F-20

Feature Programming Cross-Reference Table (Sheet 1 of 2)

Feature Name	Program Code*	Feature Category	Preprogrammed Condition	Programming and Description Page References
Call Restrictions	1YY1	Individual Set	Class A	Programming: F-10 & F-11/Description: F-19
Ringing Assignment	2YY0 (part 1)	Individual Set (lines 01 – 04)	No ringing†	Programming: F-10 & F-11/Description: F-21
Ringing Assignment	2YY1 (part 2)	Individual Set (lines 05 & 06)	No ringing†	Programming: F-10 & F-11/Description: F-21
Line Group Assignment	3YY0	Individual Set	No group	Programming: F-10 & F-11/Description: F-20
Zone Paging	3YY1	Individual Set	No zones	Programming: F-10 & F-12/Description: F-21
Barge-In	4YY0	Individual Set	No barge-in	Programming: F-10 & F-11/Description: F-19
Night Transfer Ringing	4YY0	Individual Set	No ringing	Programming: F-10 & F-11/Description: F-21
Incoming Calls Only	5XX0	Individual line	No	Programming: F-14 & F-15/Description: F-20
Loud Bell Ringing	5XX0	Individual line	Ring	Programming: F-14 & F-15/Description: F-20
Telephone or PBX Line	5XX0	Individual line	Telephone	Programming: F-14 & F-15/Description: F-21
Tone or Pulse	5XX0	Individual line	Tone	Programming: F-14 & F-15/Description: F-21
Line Grouping	6ZZ0 (part 1)	Individual group (lines 01 – 04)	All lines††	Programming: F-16 & F-17/Description: F-20
Line Grouping	6ZZ1 (part 2)	Individual group (lines 05 & 06)	All lines††	Programming: F-16 & F-17/Description: F-20
Flexible Call Restrictions	None or 7000-7900	System-wide	None	Programming: F-4 & F-6/Description: F-20

* YY stands for desired station number (10 through 21); XX stands for desired line number (01 through 06); and ZZ stands for desired group number (01 through 12).

† Station 10 is preprogrammed to ring on all lines; all other stations are preprogrammed not to ring on any line.

†† If the Line Group Assignment feature (code 3YY0) is programmed for any condition other than no group (its preprogrammed condition) -- that is, if any Sets have been assigned to any group — then the preprogrammed condition is for all outside lines to be assigned to each active group.

Feature Programming Cross-Reference Table (Sheet 2 of 2)

SYSTEM-WIDE FEATURES
CAUTION

Set BATTERY to ON at the KSU to prevent
loss of entered feature programming selections.

**To program system-wide features from station
10, ...**

Step	Action	Response
First enter the programming mode:		
1	At the KSU, set PROGRAM 2 to ON.	...
2	At the KSU, press RESET.	At station 10, the **Mic.on/off** indicator FLASHES after a few seconds.
Then, to program a selected feature:		
3*	Dial the selected program code.	The **Mic.on/off** indicator goes OFF.
4*	Program the desired condition for the selected feature by pressing the line 1, 2, and 3 keys and the **Intercom** key — or by dialing a specified number, using the key pad, if so instructed.	The indicators for lines 1, 2, and 3 and the indicator for **Intercom** display the pattern shown in the table that starts on the facing page.
5	Press the **Hold** key.	The **Mic.on/off** indicator FLASHES.
Then, to program another feature (if all desired features have been programmed, go to step 7):		
6	Return to step 3.	...

**Finally, to exit the programming mode and
save all your programming selections:**

7	At the KSU, set PROGRAM 2 to OFF.	...
8	At the KSU, press RESET.	At station 10, the **Mic.on/off** indicator goes OFF.

**To return all features to their preprogrammed
(factory default) conditions ...**

Step	Action	Response
1	At the KSU, set PROGRAM 1 to ON.	...
2	At the KSU, press RESET.	...
3	At the KSU, set PROGRAM 1 to OFF.	...
4	At the KSU, press RESET again.	...

NOTE

System-wide features may be programmed in
any order. Also, you may program as many or
as few features as you desire. Therefore, in the
table that starts on the facing page, features are
listed in alphabetical order to help you find the
features you want quickly.

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* See the **Program Code, Condition Description,**
and **Indicator Status** column entries in the feature programming table that starts on the facing page

Feature Name	Program Code	Feature Category	Condition Description*	Indicator Status
Account Code	0001	System-wide	No printout Printout	Intercom off Intercom on
Auto Hold	0001	System-wide	No auto hold Auto hold	Line 1 off Line 1 on
Digits-to-Deny	0051	System-wide	No digits (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)**	Intercom and lines 1, 2, and 3 off Line 1 on; Intercom and lines 2 and 3 off Line 2 on; Intercom and lines 1 and 3 off Lines 1 and 2 on; Intercom and line 3 off Line 3 on; Intercom and lines 1 and 2 off Lines 1 and 3 on; Intercom and line 2 off Lines 2 and 3 on; Intercom and line 1 off Lines 1, 2, and 3 on; Intercom off Intercom on; lines 1, 2, and 3 off Intercom and line 1 on; lines 2 and 3 off Intercom and line 2 on; lines 1 and 3 off Intercom and lines 1 and 2 on; line 3 off Intercom and line 3 on; lines 1 and 2 off Intercom and lines 1 and 3 on; line 2 off Intercom and lines 2 and 3 on; line 1 off Intercom and lines 1, 2, and 3 on
Flash or Cancel	0011	System-wide	Cancel Flash	Line 2 off Line 2 on
Flash or Cancel Duration	0060	System-wide	20 milliseconds (00)** 40 milliseconds (01)** 60 milliseconds (02)** 80 milliseconds (03)** 100 milliseconds (04)** 200 milliseconds (05)** 300 milliseconds (06)** 400 milliseconds (07)** 500 milliseconds (08)** 600 milliseconds (09)** 700 milliseconds (10)** 800 milliseconds (11)** 900 milliseconds (12)** 1 second (13)** 2 seconds (14)** 3 seconds (15)**	Intercom and lines 1, 2, and 3 off Line 1 on; Intercom and lines 2 and 3 off Line 2 on; Intercom and lines 1 and 3 off Lines 1 and 2 on; Intercom and line 3 off Line 3 on; Intercom and lines 1 and 2 off Lines 1 and 3 on; Intercom and line 2 off Lines 2 and 3 on; Intercom and line 1 off Lines 1, 2, and 3 on; Intercom off Intercom on; lines 1, 2, and 3 off Intercom and line 1 on; lines 2 and 3 off Intercom and line 2 on; lines 1 and 3 off Intercom and lines 1 and 2 on; line 3 off Intercom and line 3 on; lines 1 and 2 off Intercom and lines 1 and 3 on; line 2 off Intercom and lines 2 and 3 on; line 1 off Intercom and lines 1, 2, and 3 on

* Preprogrammed (factory default) conditions are shown in bold type.

** Dial the number in parentheses using the key pad; observe that the desired indicator pattern appears (see Indicator Status column).

System-Wide Feature Programming Table (Sheet 1 of 4)

Feature Name	Program Code	Feature Category	Condition Description*	Indicator Status
Flexible Call Restrictions	None	System-wide	None	(Ignore indicator pattern)
	7100		(_ _ _)†	(Ignore indicator pattern)
	7200		(_ _ _)†	(Ignore indicator pattern)
	7300		(_ _ _)†	(Ignore indicator pattern)
	7400		(_ _ _)†	(Ignore indicator pattern)
	7500		(_ _ _)†	(Ignore indicator pattern)
	7600		(_ _ _)†	(Ignore indicator pattern)
	7700		(_ _ _)†	(Ignore indicator pattern)
	7800		(_ _ _)†	(Ignore indicator pattern)
	7900		(_ _ _)†	(Ignore indicator pattern)
	7000		(_ _ _)†	(Ignore indicator pattern)
Hold Recall Time	0000	System-wide	**No recall**	Lines 1 and 2 off
			1.5 minutes	Line 1 on; line 2 off
			3 minutes	Line 2 on; line 1 off
			3 minutes; release @ 5	Lines 1 and 2 on
Interdigit Pause	0010	System-wide	**800 milliseconds**	**Intercom** and line 3 off
			1100 milliseconds	Line 3 on; **Intercom** off
			700 milliseconds	**Intercom** on; line 3 off
			500 milliseconds††	**Intercom** and line 3 on
Interdigit Timer	0070	System-wide	1 second (00)**	**Intercom** and lines 1, 2, and 3 off
			1 second (01)**	Line 1 on; **Intercom** and lines 2 and 3 off
			2 seconds (02)**	Line 2 on; **Intercom** and lines 1 and 3 off
			3 seconds (03)**	Lines 1 and 2 on; **Intercom** and line 3 off
			4 seconds (04)**	Line 3 on; **Intercom** and lines 1 and 2 off
			5 seconds (05)**	Lines 1 and 3 on; **Intercom** and line 2 off
			6 seconds (06)**	Lines 2 and 3 on; **Intercom** and line 1 off
			7 seconds (07)**	Lines 1, 2, and 3 on; **Intercom** off
			8 seconds (08)**	**Intercom** on; lines 1, 2, and 3 off
			9 seconds (09)**	**Intercom** and line 1 on; lines 2 and 3 off
			10 seconds (10)**	**Intercom** and line 2 on; lines 1 and 3 off
			11 seconds (11)**	**Intercom** and lines 1 and 2 on; line 3 off
			12 seconds (12)**	**Intercom** and line 3 on; lines 1 and 2 off
			13 seconds (13)**	**Intercom** and lines 1 and 3 on; line 2 off
			14 seconds (14)**	**Intercom** and lines 2 and 3 on; line 1 off
			15 seconds (15)**	**Intercom** and lines 1, 2, and 3 on

* Preprogrammed (factory default) conditions are shown in bold type.

† After dialing the Program Code, dial a 3-digit sequence *not* to be called (to be restricted), such as 411, a specific area code, or an exchange prefix; to keep track of entered call restrictions, write them down (in pencil) in the space provided between parentheses. Cancel an entry by pressing the Conference key after dialing the indicated Program Code.

†† This value is not permitted when the Panther system is to be installed in Canada or connected to the Canadian Telephone Network.

System-Wide Feature Programming Table (Sheet 2 of 4)

Feature Name	Program Code	Feature Category	Condition Description*	Indicator Status
Line Group Type	0011	System-wide	Type A	**Intercom** and line **3** off
			Type B	Line **3** on; **Intercom** off
			Type C	**Intercom** on; line **3** off
			Type D	**Intercom** and line **3** on
Loud Bell	0000	System-wide	Neither bell	**Intercom** and line **3** off
			Day bell	Line **3** on; **Intercom** off
			Night bell	**Intercom** on; line **3** off
			Day and night bell	**Intercom** and line **3** on
Make-Break Ratio	0010	System-wide	**40%**	Line **1** off
			30%††	Line **1** on
Manual/Auto Select	0001	System-wide	**Auto intercom**	Lines **2** and **3** off
			Manual select	Line **2** on; line **3** off
			Auto line	Line **3** on; line **2** off
Pause on Number	0020	System-wide	**No pause**	**Intercom** and lines **1, 2,** and **3** off
			Pause on 7	Line **1** on†
			Pause on 8	Line **2** on†
			Pause on 9	Line **3** on†
			Pause on 0	**Intercom** on†

* Preprogrammed (factory default) conditions are shown in **bold type**.

† Any combination of numbers 7 through 0 to pause on can be programmed by pressing the indicated keys; observe that the corresponding indicators go ON.

†† This value is not permitted when the Panther system is to be installed in Canada or connected to the Canadian Telephone Network.

System-Wide Feature Programming Table (Sheet 3 of 4)
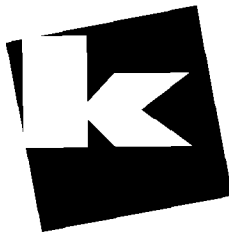
Feature Name	Program Code	Feature Category	Condition Description*	Indicator Status
Pause Time	0050	System-wide	1 second (00)**	**Intercom** and lines **1, 2**, and **3** off
			1 second (01)**	Line **1** on; **Intercom** and lines **2** and **3** off
			2 seconds (02)**	Line **2** on; **Intercom** and lines **1** and **3** off
			3 seconds (03)**	Lines **1** and **2** on; **Intercom** and line **3** off
			4 seconds (04)**	Line **3** on; **Intercom** and lines **1** and **2** off
			5 seconds (05)**	Lines **1** and **3** on; **Intercom** and line **2** off
			6 seconds (06)**	Lines **2** and **3** on; **Intercom** and line **1** off
			7 seconds (07)**	Lines **1**, **2**, and **3** on; **Intercom** off
			8 seconds (08)**	**Intercom** on; lines **1, 2**, and **3** off
			9 seconds (09)**	**Intercom** and line **1** on; lines **2** and **3** off
			10 seconds (10)**	**Intercom** and line **2** on; lines **1** and **3** off
			11 seconds (11)**	**Intercom** and lines **1** and **2** on; line **3** off
			12 seconds (12)**	**Intercom** and line **3** on; lines **1** and **2** off
			13 seconds (13)**	**Intercom** and lines **1** and **3** on; line **2** off
			14 seconds (14)**	**Intercom** and lines **2** and **3** on; line **1** off
			15 seconds (15)**	**Intercom** and lines **1, 2**, and **3** on
Pulse Rate	0010	System-wide	**10 pulses per second**	Line **2** off
			20 pulses per second††	Line **2** on
Start Data Recording	0061	System-wide	1 second (00)**	**Intercom** and lines **1, 2**, and **3** off
			5 seconds (01)	Line **1** on; **Intercom** and lines **2** and **3** off
			9 seconds (02)**	Line **2** on; **Intercom** and lines **1** and **3** off
			13 seconds (03)**	Lines **1** and **2** on; **Intercom** and line **3** off
			17 seconds (04)**	Line **3** on; **Intercom** and lines **1** and **2** off
			21 seconds (05)**	Lines **1** and **3** on; **Intercom** and line **2** off
			25 seconds (06)**	Lines **2** and **3** on; **Intercom** and line **1** off
			29 seconds (07)**	Lines **1**, **2**, and **3** on; **Intercom** off
			33 seconds (08)**	**Intercom** on; lines **1, 2**, and **3** off
			37 seconds (09)**	**Intercom** and line **1** on; lines **2** and **3** off
			41 seconds (10)**	**Intercom** and line **2** on; lines **1** and **3** off
			45 seconds (11)**	**Intercom** and lines **1** and **2** on; line **3** off
			49 seconds (12)**	**Intercom** and line **3** on; lines **1** and **2** off
			53 seconds (13)**	**Intercom** and lines **1** and **3** on; line **2** off
			57 seconds (14)**	**Intercom** and lines **2** and **3** on; line **1** off
			61 seconds (15)**	**Intercom** and lines **1, 2**, and **3** on
Tone Duration	0011	System-wide	**100 milliseconds**	Line **1** off
			75 milliseconds	Line **1** on

* Preprogrammed (factory default) conditions are shown in bold type.

** Dial the number in parentheses using the key pad; observe that the desired indicator pattern appears (see *Indicator Status* column).

†† This value is not permitted when the Panther system is to be installed in Canada or connected to the Canadian Telephone Network.

System-Wide Feature Programming Table (Sheet 4 of 4)

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INDIVIDUAL SET FEATURES
CAUTION

Set BATTERY to ON at the KSU to prevent
loss of entered feature programming selections.

**To program individual Set features from
station 10, ...**

Step	Action	Response
First enter the programming mode:		
1	At the KSU, set PROGRAM 2 to ON.	...
2	At the KSU, press RESET.	At station 10, the **Mic.on/off** indicator FLASHES after a few seconds.

Then, to program a selected feature at a selected station:

Step	Action	Response
3*	Dial the selected program code: dial the first digit, then the 2-digit number of the selected Set (10 through 21 — represented by YY), and finally the last digit.	The **Mic.on/off** indicator goes OFF.
4*	Program the desired condition for the selected feature by pressing the line **1, 2,** and **3** keys and the **Intercom** key — or by dialing a specified number, using the key pad, if so instructed.	The indicators for lines **1, 2,** and **3** and the indicator for **Intercom** display the pattern shown in the table on the facing page.
5	Press the **Hold** key.	The **Mic.on/off** indicator FLASHES.

Then, to program another Set — or another feature (if all desired features have been programmed, go to step 7):

6	Return to step 3.	...

Finally, to exit the programming mode and save all your programming selections:

7	At the KSU, set PROGRAM 2 to OFF.	...
8	At the KSU, press RESET.	At station 10, the **Mic.on/off** indicator goes OFF.

To return all features to their preprogrammed (factory default) conditions ...

Step	Action	Response
1	At the KSU, set PROGRAM 1 to ON.	...
2	At the KSU, press RESET.	...
3	At the KSU, set PROGRAM 1 to OFF.	...
4	At the KSU, press RESET again.	...

NOTE

Individual Set features may be programmed in any order. Also, you may program as many or as few features or Sets as you desire. Therefore, in the table that starts on the facing page, features are listed in alphabetical order to help you find the features you want quickly.

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* See the **Program Code, Condition Description,** and **Indicator Status** column entries in the feature programming table that starts on the facing page.

Feature Name	Program Code†	Feature Category	Condition Description*	Indicator Status
Barge-In	4YY0	Individual Set	No barge-in Barge-in	**Intercom** off **Intercom** on
Call Restrictions	1YY1	Individual Set	Class A Class B Class C	Lines **1** and **2** off Line **1** on; line **2** off Line **2** on; line **1** off
Line Group Assignment	3YY0	Individual Set	No group (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 9 (09)** Group 10 (10)** Group 11 (11)** Group 12 (12)**	**Intercom** and lines **1, 2,** and **3** off Line **1** on; **Intercom** and lines **2** and **3** off Line **2** on; **Intercom** and lines **1** and **3** off Lines **1** and **2** on; **Intercom** and line **3** off Line **3** on; **Intercom** and lines **1** and **2** off Lines **1** and **3** on; **Intercom** and line **2** off Lines **2** and **3** on; **Intercom** and line **1** off Lines **1 , 2,** and **3** on; **Intercom** off **Intercom** on; lines **1, 2,** and **3** off **Intercom** and line **1** on; lines **2** and **3** off **Intercom** and line **2** on; lines **1** and **3** off **Intercom** and lines **1** and **2** on; line **3** off **Intercom** and line **3** on; lines **1** and **2** off
Night Transfer Ringing	4YY0	Individual Set	No transfer Transfer	Line **2** off Line **2** on
Ringing Assignment (part 1)	2YY0	Individual Set	**No ringing†††** Ring on line 1 calls Ring on line 2 calls Ring on line 3 calls Ring on line 4 calls	**Intercom** and lines **1, 2,** and **3** off Line **1** on†† Line **2** on†† Line **3** on†† **Intercom** on††
Ringing Assignment (part 2)	2YY1	Individual Set	**No ringing†††** Ring on line 5 calls Ring on line 6 calls***	Lines **1** and **2** off Line **1** on†† Line **2** on††

† YY stands for desired station number (10 through 21).

†† A Set may be programmed to ring on any or all of the incoming lines by pressing the indicated keys; observe that the corresponding indicators go ON.

††† Station 10 is preprogrammed to ring on all lines; all other stations are preprogrammed not to ring on any line.

* Preprogrammed (factory default) conditions are shown in bold type.

** Dial the number in parentheses using the key pad; observe that the desired indicator pattern appears (see Indicator Status column).

*** Rings when door button is pressed on Door Module 1 or 2 (if optional Door Answer Unit is installed).

Individual Set Feature Programming Table (Sheet 1 of 2)

Feature Name	Program Code†	Feature Category	Condition Description*	Indicator Status
Zone Paging	3YY1	Individual Set	No zones (00)**	**Intercom** and lines **1**, **2**, and **3** off
			Zone 1 (01)**	Line **1** on; **Intercom** and lines **2** and **3** off
			Zone 2 (02)**	Line **2** on; **Intercom** and lines **1** and **3** off
			Zone 3 (03)**	Lines **1** and **2** on; **Intercom** and line **3** off
			Zone 4 (04)**	Line **3** on; **Intercom** and lines **1** and **2** off
			Zone 5 (05)**	Lines **1** and **3** on; **Intercom** and line **2** off
			Zone 6 (06)**	Lines **2** and **3** on; **Intercom** and line **1** off
			Zone 7 (07)**	Lines **1**, **2**, and **3** on; **Intercom** off
			Zone 8 (08)**	**Intercom** on; lines **1**, **2**, and **3** off
			Zone 9 (09)**	**Intercom** and line **1** on; lines **2** and **3** off
			Zone 10 (10)**	**Intercom** and line **2** on; lines **1** and **3** off
			Zone 11 (11)**	**Intercom** and lines **1** and **2** on; line **3** off
			Zone 12 (12)**	**Intercom** and line **3** on; lines **1** and **2** off
			Zone 13 (13)**	**Intercom** and lines **1** and **3** on; line **2** off
			Zone 14 (14)**	**Intercom** and lines **2** and **3** on; line **1** off
			Zone 15 (15)**	**Intercom** and lines **1**, **2**, and **3** on

† YY stands for desired station number (10 through 21).

* Preprogrammed (factory default) conditions are shown in **bold type**.

** Dial the number in parentheses using the key pad; observe that the desired indicator pattern appears (see **Indicator Status** column).

Individual Set Feature Programming Table (Sheet 2 of 2)

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INDIVIDUAL LINE FEATURES
CAUTION

Set BATTERY to ON at the KSU to prevent
loss of entered feature programming selections.

To program individual line features from station 10, ...

Step	Action	Response
First enter the programming mode:		
1	At the KSU, set PROGRAM 2 to ON.	...
2	At the KSU, press RESET.	At station 10, the **Mic.on/off** indicator FLASHES after a few seconds.

Then, to program a selected feature for a selected line:

Step	Action	Response
3*	Dial the selected program code: dial the first digit, then the 2-digit number of the selected line (01 through 06 — represented by XX), and finally the last digit.	The **Mic.on/off** indicator goes OFF.
4*	Program the desired condition for the selected feature by pressing the line **1, 2,** and **3** keys and the **Intercom** key.	The indicators for lines **1, 2,** and **3** and the indicator for **Intercom** display the pattern shown in the table on the facing page.
5	Press the **Hold** key.	The **Mic.on/off** indicator FLASHES.

Then, to program another line — or another feature (if all desired features have been programmed, go to step 7):

| 6 | Return to step 3. | ... |

Finally, to exit the programming mode and save all your programming selections:

| 7 | At the KSU, set PROGRAM 2 to OFF. | ... |
| 8 | At the KSU, press RESET. | At station 10, the **Mic.on/off** indicator goes OFF. |

To return all features to their preprogrammed (factory default) conditions ...

Step	Action	Response
1	At the KSU, set PROGRAM 1 to ON.	...
2	At the KSU, press RESET.	...
3	At the KSU, set PROGRAM 1 to OFF.	...
4	At the KSU, press RESET again.	...

NOTE

Individual line features may be programmed in any order. Also, you may program as many or as few features or lines as you desire. Therefore, in the table on the facing page, features are listed in alphabetical order to help you find the features you want quickly.

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* See the **Program Code, Condition Description,** and **Indicator Status** column entries in the feature programming table on the facing page.

Feature Name	Program Code†	Feature Category	Condition Description*	Indicator Status
Incoming Calls Only	5XX0	Individual line	No Yes	Line **3** off Line **3** on
Loud Bell Ringing	5XX0	Individual line	No ringing **Ring**	**Intercom** off **Intercom** on
Telephone or PBX Line	5XX0	Individual line	**Telephone** PBX	Line **2** off Line **2** on
Tone or Pulse	5XX0	Individual line	**Tone** Pulse	Line **1** off Line **1** on

† XX stands for desired line number (01 through 06).
* Preprogrammed (factory default) conditions are shown in bold type.

Individual Line Feature Programming Table

INDIVIDUAL GROUP FEATURES
CAUTION

Set BATTERY to ON at the KSU to prevent
loss of entered feature programming selections.

To program individual group features from station 10, ...		
Step	Action	Response
First enter the programming mode:		
1	At the KSU, set PROGRAM 2 to ON.	...
2	At the KSU, press RESET.	At station 10, the **Mic.on/off** indicator FLASHES after a few seconds.
Then, to program a selected feature for a selected group:		
3*	Dial the selected program code: dial the first digit, then the 2-digit number of the desired group (01 through 12 — represented by ZZ), and finally the last digit.	The **Mic.on/off** indicator goes OFF.
4*	Program the desired condition for the selected feature by pressing the line **1, 2,** and **3** keys and the **Intercom** key .	The indicators for lines **1, 2,** and **3** and the indicator for **Intercom** display the pattern shown in the table on the facing page.
5	Press the **Hold** key.	The **Mic.on/off** indicator FLASHES.

Then, to program another group — or another feature (if all desired features have been programmed, go to step 7):		
6	Return to step 3.	...

Finally, to exit the programming mode and save all your programming selections:		
7	At the KSU, set PROGRAM 2 to OFF.	...
8	At the KSU, press RESET.	At station 10, the **Mic.on/off** indicator goes OFF.

To return all features to their preprogrammed (factory default) conditions ...		
Step	Action	Response
1	At the KSU, set PROGRAM 1 to ON.	...
2	At the KSU, press RESET.	...
3	At the KSU, set PROGRAM 1 to OFF.	...
4	At the KSU, press RESET again.	...

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* See the **Program Code, Condition Description,** and **Indicator Status** column entries in the feature programming table on the facing page.

Feature Name	Program Code†	Feature Category	Condition Description*	Indicator Status
Line Grouping (part 1)	6ZZ0	Individual group	All lines** Remove line 1 Remove line 2 Remove line 3 Remove line 4	**Intercom** and lines **1, 2,** and **3** on†† Line **1** off†† Line **2** off†† Line **3** off†† **Intercom** on††
Line Grouping (part 2)	6ZZ1	Individual group	All lines** Remove line 5 Remove line 6	Lines **1** and **2** on†† Line **1** off†† Line **2** off††

† ZZ stands for desired group number (01 through 12).

†† Any line or combination of lines may be assigned to a group by not pressing the desired line keys; observe that the corresponding indicators are ON.

* Preprogrammed (factory default) conditions are shown in **bold type**.

** If the Line Group Assignment feature (code 3YY0) is programmed for any condition other than no group (its preprogrammed condition) — that is, if any Sets have been assigned to any group — then the preprogrammed condition is for all outside lines to be assigned to each active group.

Individual Group Feature Programming Table
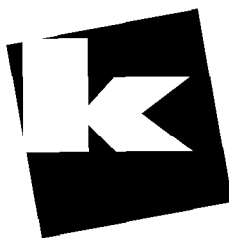
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NORST

SPEED CALL NUMBERS

Speed Call Programming Notes

NOTES

1. Entries up to 26 digits long may be stored as speed call numbers.

2. Pressing the **Hold** key as part of the speed call number programming sequence inserts a halt in the dialing sequence; pressing the **Flash/Cancel** key inserts a hookswitch flash; and pressing the **Conference** key inserts a pause.

You may insert as many halts, flashes, and pauses as you wish as long as the total key entry count does *not* exceed 26.

3. Up to 34 common speed call numbers may be programmed into the system — but only from station 10.

Additionally, up to 11 private speed call numbers may be programmed at each individual station.

Common Speed Call Numbers

NOTE

During common speed call number programming, the user at station 10 will leave the station's handset in its cradle and listen to the indicated aural responses over the speaker.

To program up to 34 common speed call numbers into the system from station 10 ...

Step	Action	Response
1	Press the **Speed** key.	A continuous tone is heard over the Set's speaker; and the **Intercom** indicator WINKS slowly.
2	Dial the desired speed call code (from 20 to 53).	The **Intercom** indicator FLASHES.
3	Dial the number you wish to store for the selected speed call code.	The continuous tone stops; and the **Intercom** indicator continues to FLASH.

To program another speed call number:

4.	Return to step 1.	...

To stop speed call number programming:

5.	Press the **Speaker** key.	The **Intercom** indicator goes OFF; and the Set returns to normal operation.

Private Speed Call Numbers

NOTE

During private speed call number programming, the station user will leave the station's handset in its cradle and listen to the indicated aural responses over the speaker.

To program up to 11 private speed call numbers into the system ...

Step	Action	Response
1	Press the **Speed** key.	A continuous tone is heard over the Set's speaker; and the **Intercom** indicator WINKS slowly.
2	Press the desired station/speed call key.	The **Intercom** indicator FLASHES.
3	Dial the number you wish to store for the selected speed call key.	The continuous tone stops; and the **Intercom** indicator continues to FLASH.

To program another speed call number:

4.	Return to step 1.	...

To stop speed call number programming:

5.	Press the **Speaker** key.	The **Intercom** indicator goes OFF; and the Set returns to normal operation.

FEATURE DESCRIPTIONS

Account Code (program code 0001, preprogrammed for no printout) — allows user-entered account codes to be part of the station message detail report (SMDR) printout when the optional SMDR Interface unit is installed.

NOTE

Since the same 11 keys are used to select stations and to select one of the 11 private speed call numbers, the SPEED key must be pressed before pressing the desired private speed call key when dialing one of your private speed call numbers *with auto hold enabled.*

Auto Hold (program code 0001, preprogrammed for no auto hold) — allows a call to be simultaneously placed on hold and transferred by pressing the desired station select key.

Barge-In (program code 4YY0, preprogrammed for no barge-in) — allows selected stations to override the privacy feature and enter an outside call that is in progress; an intrusion tone is sounded to alert the call-in-progress parties of the barge-in.

Call Restrictions (program code 1YY1, preprogrammed for Class A) — assigns stations to one of three call restriction classes:

Class A = no restrictions

Class B = prevented from dialing 0 or 1 as the first digit, from dialing the number of digits to deny (see **Digits-to-Deny**), or from dialing any of the specific restriction entries (see **Flexible Call Restrictions**)

Class C = no outside calls can be placed (but intercom calls can be placed or received, and incoming outside calls can be received, depending on line group programming).

Digits-to-Deny (program code 0051, preprogrammed for the 8th digit) — determines which digit will be denied on a dialing attempt under Class B restrictions (see **Call Restrictions**).

Flash or Cancel (program code 0011, preprogrammed for cancel) — defines the function of the **Flash/Cancel** key, hookswitch flash or cancel signal for ending calls. (The length of this signal must be properly set to provide the desired function; refer to **Flash or Cancel Duration**).

NOTE

Generally, a flash signal is 500 milliseconds long, and a cancel signal is 1 second long; to make sure you choose the correct length, check the specifications for your PBX .

Flash or Cancel Duration (program code 0060, preprogrammed for 1 second) — sets the length of the flash or cancel signal (see **Flash or Cancel**).

Flexible Call Restrictions (no program code when not programmed, which is the factory default condition; program codes 7000 through 7900 are available for entering up to ten user-defined 3-digit sequences) — allows 3-digit sequences, such as 411 or specific area codes, to be denied for Class B stations (see **Call Restrictions**).

Hold Recall Time (program code 0000, programmed for no recall) — enables reminders that you have a call on hold.

Incoming Calls Only (program code 5XX0, preprogrammed no — to allow outgoing calls) — allows (no) or prevents (yes) outgoing calls on the indicated lines.

Interdigit Pause (program code 0010, preprogrammed for 800 milliseconds) — sets the time between dialed *pulses* on a Tone/Rotary KSU only (see also **Tone or Pulse**).

Interdigit Timer (program code 0070, preprogrammed for 10 seconds) — sets the time before the Start Data Recording feature (0061) starts.

Line Group Assignment (program code 3YY0, preprogrammed for no group) — assigns the line groups defined under **Line Grouping** to be assigned to the indicated station (see also **Line Group Type**).

Line Grouping (program codes 6ZZ0 & 6ZZ1, preprogrammed for all lines) — assigns outside lines to one of 12 groups, thereby defining each group. (See also **Line Group Assignment** and **Line Group Type**.)

Line Group Type (program code 0011, preprogrammed for Type A) — assigns one of four sets of characteristics to line groups.

NOTE

The more commonly chosen line group types are Type A and Type D.

Type A = Sets assigned to a line group can only make and answer calls on lines within the group.

Type B = Sets assigned to a line group can make and answer calls on lines within the group — *plus* they can answer calls ringing in another group.

Type C = Sets assigned to a line group can make and answer calls on lines within the group — *plus* they can receive calls transferred from another group.

Type D = Sets assigned to a line group can make and answer calls on lines within the group — *plus* they can answer calls ringing in another group *and* can receive calls transferred from another group.

(See also **Line Group Assignment** and **Line Grouping**.)

Loud Bell (program code 0000, preprogrammed for day and night bell) — determines when the dry contacts will close to activate the optional external loud bell, if installed.

Day bell activates the ringer for all lines selected in **Loud Bell Ringing**.

Night bell activates the ringer for all lines if at least one station has been chosen for **Night Transfer Ringing**.

Day and night bell activates the ringer in both of the above cases.

Loud Bell Ringing (program code 5XX0, preprogrammed for ringing) — determines which lines will activate the optional external loud bell ringer when day bell or day and night bell is selected under **Loud Bell**. In the night bell mode, the loud bell rings on all lines.

Make-Break Ratio (program code 0010, preprogrammed for 40 %) — sets the on/off ratio of *pulses* on a Tone/ Rotary KSU only (see also **Tone or Pulse**).

Manual/Auto Select (program code 0001, prepro-
grammed for auto intercom) — determines whether an
intercom or external line is selected automatically when the
handset is lifted or whether the selection must be made man-
ually when the handset is lifted.

NOTE

Night transfer ringing should be assigned to at
least one station.

Night Transfer Ringing (program code 4YY0, prepro-
grammed for no transfer) — assigns ringing to all lines at
the indicated station after business hours, and to the loud
bell contacts when night bell is selected under **Loud Bell**.

Pause on Number (program code 0020, preprogrammed
for no pause) — sets the system for a pause after a specific
number or numbers are dialed as the first digit. This feature
is used behind a PBX to allow for a second dial tone.

Pause Time (program code 0050, preprogrammed for 3
seconds) — sets length of pause for the **Pause on
Number** feature and for a pause inserted by the
Conference key when programming a speed call
number.

Pulse Rate (program code 0010, preprogrammed for 10
pulses per second) — sets the speed at which *pulses* are
transmitted on a Tone/Rotary KSU only (see also **Tone or
Pulse**).

Ringing Assignment (program codes 2YY0 & 2YY1,
preprogrammed for no ringing, except station 10 which is
preprogrammed to ring on all lines) — chooses which line
or lines ring at which station or stations. When the optional
Door Answer Unit is installed, line 6 must be programmed
to ring at one or more stations.

NOTE

When choosing a value for the **Start Data
Recording** parameter, consider the time it
typically takes to dial *and* answer a call.

Start Data Recording (program code 0061, prepro-
grammed for 5 seconds) — sets the length of time before the
Station Message Detail Recorder (SMDR) starts to record
information.

Telephone or PBX Line (program code 5XX0, prepro-
grammed for telephone line) — tells the KSU which lines
are central office (CO) lines and which are PBX/CENTREX
lines.

Tone Duration (program code 0011, preprogrammed for
100 milliseconds) — sets the length of each tone digit dialed
(see also **Tone or Pulse**).

Tone or Pulse (program code 5XX0, preprogrammed for
tone) — selects a tone or a pulse signalling for each CO
Line on Tone/Rotary KSUs only.

Zone Paging (program code 3YY1, preprogrammed for no
zones) — places stations into specific zones for receiving
zone paging announcements. Zone paging announcements
are heard only at stations assigned to a designated zone. A
station can be assigned to no more than one zone.

Function	User Action	Set/System Response
Account Codes (SMDR Interface Unit) The Account Code feature must be programmed (enabled) for account codes to show up in SMDR printout.	Anytime during a call, press **Conference.** Dial 4-digit account code. (If account code is entered incorrectly, start over by pressing **Conference** again.)	... Account code appears in SMDR printout (see page D-11). Distant party will not hear dialed digits.
Background Music The optional external music source must be connected.	To turn on background music at your Set, press **Intercom.** Dial *4. To cancel background music at your Set, press **Intercom.** Dial *4.	Continuous tone is heard, and **Intercom** indicator WINKS slowly. **Intercom** indicator goes OFF, and music is heard through your Set's speaker. Continuous tone is heard, and **Intercom** indicator WINKS slowly. **Intercom** indicator goes OFF, and music is no longer heard through your Set's speaker.
Barge-In The Barge-In feature must be programmed (enabled) for your Set.	[Non-handsfree*] To enter a call already in progress at another station, lift handset and press **Intercom.** Press * and the line key of the line you wish to barge in on. [Handsfree*] To enter a call already in progress at another station, press **Intercom.** Press * and the line key of the line you wish to barge in on.	Continuous tone is heard, and **Intercom** indicator WINKS slowly. An intrusion tone sounds on the existing call's line to alert the parties to the barge-in, and you are connected to the call on that line. Continuous tone is heard, and **Intercom** indicator WINKS slowly. An intrusion tone sounds on the existing call's line to alert the parties to the barge-in, and you are connected to the call on that line.

* Throughout this Section, where there is an operating difference, the non-handsfree step precedes the *equivalent* handsfree step — perform only one version. The handsfree step requires a Handsfree Set that is *already* in the handsfree operating mode (see Handsfree on page G-9).

Function	User Action	Set/System Response
Busy Override (responder is on an internal call) Busy override has no effect on a Set that has activated Do Not Disturb. In any event, responder may ignore busy override signals.	*Initiator:* After dialing another station and encountering a broken tone (indicating that the dialed station is busy), press **#**. *Responder:* [Non-handsfree] Hang up and then lift handset. [Handsfree] Press **Speaker** twice.	*At the busy station:* 3 ringing bursts are heard each time **#** is pressed. *At the busy station:* Existing internal call is disconnected, and you are automatically connected to station initiating busy override signal. Existing internal call is disconnected, and you are automatically connected to station initiating busy override signal.
Busy Override (responder is on an outside call) Busy override has no effect on a Set that has activated Do Not Disturb. In any event, responder may ignore busy override signals. If optional external music source is connected, outside party will hear background music while on hold.	*Initiator:* After dialing another station and encountering a broken tone (indicating that the dialed station is busy), press **#**. *Responder:* Press **Hold**. To retrieve outside call, press appropriate line key.	*At the busy station:* 3 ringing bursts are heard each time **#** is pressed. *At the busy station:* Outside party is placed on hold, line indicator FLASHES quickly, and you are automatically connected to station initiating busy override signal. Line indicator WINKS slowly, and connection is re-established.
Call Hold (outside call) If optional external music source is connected, outside party will hear background music while on hold. If so programmed, Hold Recall Time feature sounds reminder signal through speaker *after* call has been on hold for program-selected period*.	While on outside call, press **Hold**. [Non-handsfree] To retrieve call, lift handset and press appropriate line key. [Handsfree] To retrieve call, press appropriate line key. [Non-handsfree] To end call, hang up handset. [Handsfree] To end call, press **Speaker**.	Outside party is placed on hold, and line indicator FLASHES quickly. Line indicator WINKS slowly, and connection is re-established. Line indicator WINKS slowly, and connection is re-established. Line indicator goes OFF, and connection is terminated. Line indicator goes OFF, and connection is terminated.

* Options include no reminder — or reminder after 1.5 minutes, 3 minutes, or 3 minutes with call release after 5 minutes.

Function	User Action	Set/System Response
Call Transfer (outside call) — *voice announce* method If so programmed, Auto Hold feature eliminates need to press **Hold** since call will automatically be placed on hold when station select key is pressed. If optional external music source is connected, outside party will hear background music while on hold.	*Transferring party:* While on an outside call, press **Hold**. Press desired station select key. Announce which line call is on. Hang up. [Non-handsfree] To retrieve call (if receiving party does not respond), lift handset and press appropriate line key. [Handsfree] To retrieve call (if receiving party does not respond), press appropriate line key. *Receiving party:* [Non-handsfree] Lift handset and press appropriate line key. [Handsfree] Press appropriate line key.	*At transferring station:* Outside party is placed on hold, and line indicator FLASHES quickly. Desired station is dialed. (At dialed station, one tone burst is heard, **Intercom** indicator goes ON, and line indicator FLASHES very slowly.) (Receiving party acknowledges call transfer announcement.) Line indicator WINKS slowly, and connection is re-established. Line indicator WINKS slowly, and connection is re-established. *At receiving station:* Line indicator WINKS slowly, and connection is established. Line indicator WINKS slowly, and connection is established.

Function	User Action	Set/System Response
Call Transfer (outside call) — *internal dialing* method If optional external music source is connected, outside party will hear background music while on hold. If so programmed, Hold Recall Time feature sounds reminder signal through speaker *after* call has been on hold for program-selected period*.	*Transferring party:* While on an outside call, press **Hold**. Press **Intercom**. Dial desired station (10-21). Announce which line call is on. Hang up. [Non-handsfree] To retrieve call (if receiving party does not respond), lift handset and press appropriate line key. [Handsfree] To retrieve call (if receiving party does not respond), press appropriate line key. *Receiving party:* [Non-handsfree] Lift handset and press appropriate line key. [Handsfree] Press appropriate line key.	*At transferring station:* Outside party is placed on hold, and line indicator FLASHES quickly. Continuous tone is heard, and **Intercom** indicator WINKS slowly. (At dialed station, repeating intercom ringing is heard, **Intercom** indicator goes ON, and line indicator FLASHES very slowly. Receiving party answers internal call and acknowledges announcement.) Line indicator WINKS slowly, and connection is re-established. Line indicator WINKS slowly, and connection is re-established. *At receiving station:* Line indicator WINKS slowly, and connection is established. Line indicator WINKS slowly, and connection is established.
Common speed calls In handsfree operation, pressing * (as first entry in telephone number sequence) automatically selects last outside line used at station making call.	[Non-handsfree] Lift handset and press outside line key. [Handsfree] Press * or outside line key. Press **Speed** and dial 2-digit code (20 to 53) for desired speed call.	Dial tone is heard, and line indicator WINKS slowly. Dial tone is heard, and line indicator WINKS slowly. Desired number is automatically dialed.

* Options include no reminder — or reminder after 1.5 minutes, 3 minutes, or 3 minutes with call release after 5 minutes.

Function	User Action	Set/System Response
Conferencing (initiator plus 2 outside parties)	While on outside call, press **Hold**.	Outside party is placed on hold, and line indicator FLASHES quickly.
If optional external music source is connected, outside party will hear background music while on hold.	Press another outside line key.	Dial tone is heard and selected line indicator WINKS slowly.
Only one additional outside party can be added.	Dial (or speed call) third party's telephone number.	Call is placed to third party.
	If third party answers, press **Conference**, and then press line key of party on hold.	Conference call is established, and both line indicators WINK slowly.
	Alternatively, to retrieve original call (if third party does not respond), press line key of party on hold.	Line indicator WINKS slowly, and connection is re-established.
	Once conference call is established, to place both outside parties on hold, press **Hold**.	Both outside parties are placed on hold, and both outside line indicators FLASH quickly.
	To return to conference call once both parties were placed on hold:	...
	• Press line key of either outside party.	• Connection with selected outside party is re-established, and selected line indicator WINKS slowly.
	• Press **Conference** and line key of remaining outside party.	• Conference call is re-established, and both line indicators WINK slowly.
	To change to 2-party call once conference call is established, press line key of party you wish to keep.	Connection with selected outside party remains established (corresponding line indicator continues to WINK slowly), and connection with other outside party is terminated (other line indicator goes OFF).

Function	User Action	Set/System Response
Conferencing (initiator plus 2 internal parties)	While on internal call, press **Conference.**	**Intercom** indicator WINKS slowly, and continuous tone is heard.
Only one additional internal party can be added.	Press desired station select key or dial desired 2-digit station number.	Desired station is dialed. (At dialed station, one tone burst is heard, and **Intercom** indicator goes ON.)
Any internal party can end participation in conference call by hanging up handset.	Make announcement.	Called internal party answers, and conference call is established.
Conferencing (initiator plus 1 outside and 1 internal party)	While on outside call, press **Hold.**	Outside party is placed on hold, and line indicator FLASHES quickly.
If so programmed, Auto Hold feature eliminates need to press **Hold** since call will automatically be placed on hold when station select key is pressed.	Press desired station select key.	Desired station is dialed. (At dialed station, one tone burst is heard, and **Intercom** indicator goes ON.)
If optional external music source is connected, outside party will hear background music while on hold.	Make announcement.	...
	If internal party answers, press **Conference,** and then press line key of party on hold.	A 3-party mixed conference call is established.
Only one additional internal party can be added.		
Any party can end participation in call by hanging up handset.	To retrieve call (if internal party does not respond), press line key of party on hold.	Original 2-party call with outside party is re-established, and line indicator WINKS slowly.
Do Not Disturb	To activate Do Not Disturb, press **Intercom.**	Continuous tone is heard, and **Intercom** indicator WINKS slowly.
Do Not Disturb prevents all calls and paging announcements from ringing at your station. Anyone trying to call will receive broken tone.	Dial *6.	Tone stops, **Intercom** indicator FLASHES, and Do Not Disturb is activated.
The **Intercom** indicator continues to FLASH while Do Not Disturb is activated.	To cancel Do Not Disturb, press **Intercom.**	Continuous tone is heard, and **Intercom** indicator WINKS slowly.
	Dial *6.	Tone stops, **Intercom** indicator FLASHES, and Do Not Disturb is canceled.

Function	User Action	Set/System Response
Door Answering For station to receive signals from Door Answer Unit, station must be programmed (via Ringing Assignment feature) to receive ringing signals on line 6.	(Visitor presses door button at entryway.)	Line 6 indicator FLASHES slowly, and appropriately programmed stations will hear signals indicating which entryway visitor is calling from: four groups of 4 short bursts each, if visitor is at Door Module 1; four groups of 2 long bursts each, if visitor is at Door Module 2.
Do Not Disturb must also be deactivated.	[Non-handsfree] To answer call from either door module, lift handset and press line 6.	Line 6 indicator WINKS slowly, and connection is made with visitor who needs only respond by talking in direction of door module.
	[Handsfree] To answer call from either door module, press line 6.	Line 6 indicator WINKS slowly, and connection is made with visitor who needs only respond by talking in direction of door module.
	[Non-handsfree] To end call with either door module, hang up handset.	Line 6 indicator goes OFF, and connection with visitor is terminated.
	[Handsfree] To end call with either door module, press **Speaker**.	Line 6 indicator goes OFF, and connection with visitor is terminated.

Function	User Action	Set/System Response
Door Calling (to Door Module 1 only) Calls *cannot* be placed to Door Module 2.	[Non-handsfrce] To place call to Door Module 1, lift handset and press line **6**.	Line **6** indicator WINKS slowly, and one ringing burst is heard at entryway where Door Module 1 is installed. Person being called responds by talking in direction of Door Module 1.
	[Handsfree] To place call to Door Module 1, press line **6**.	Line **6** indicator WINKS slowly, and one ringing burst is heard at entryway where Door Module 1 is installed. Person being called responds by talking in direction of Door Module 1.
	[Non-handsfrce] To end call with Door Module 1, hang up handset.	Line **6** indicator goes OFF, and connection with visitor is terminated.
	[Handsfree] To end call with Door Module 1, press **Speaker**.	Line **6** indicator goes OFF, and connection with visitor is terminated.

Function	User Action	Set/System Response
Exclusive Call Hold (outside call) While line is on **Exclusive Call Hold** at your station, the corresponding line indicator at other stations is ON steadily. If optional external music source is connected, outside party will hear background music while on hold. If so programmed, Hold Recall Time feature sounds reminder signal through speaker *after* call has been on hold for program-selected period*.	While on outside call, press **Hold** twice. [Non-handsfree] To retrieve call, lift handset and press appropriate line key. [Handsfree] To retrieve call, press appropriate line key. [Non-handsfree] To end call, hang up handset. [Handsfree] To end call, press **Speaker.**	Outside party is placed on hold, and line indicator FLASHES very quickly. Line indicator WINKS slowly, and connection is re-established. Line indicator WINKS slowly, and connection is re-established. Line indicator goes OFF, and connection is terminated. Line indicator goes OFF, and connection is terminated.
Flash/Cancel **Flash/Cancel** can be programmed as flash or as cancel — but not both. See Flash or Cancel feature.	While on an outside call, to use flash, press **Flash/Cancel.** While on an outside call, to use cancel, press **Flash/Cancel.**	Call is put on hold; and dial tone is returned. Call is terminated; and dial tone is returned.
Handsfree (requires Handsfree Set) When **Mic.on/off** indicator is ON and handset is in cradle, Set is in handsfree operating mode. To end a call while in handsfree mode, press **Speaker.** To end a call on a Handsfree Set that is operating in a non-handsfree mode — or on a non-handsfree Set — hang up handset.	To enter handsfree mode from non-handsfree mode *while handset is in cradle,* press **Mic.on/off.** To enter non-handsfree mode from handsfree mode *while handset is in cradle,* lift handset. To enter handsfree mode from non-handsfree mode *when a call is in progress,* press **Speaker,** make sure that **Mic.on/off** indicator is ON (press **Mic.on/off** key if necessary), and hang up handset.	**Mic.on/off** indicator goes ON, and you converse with called parties through the speaker and microphone. You converse with called parties through the handset. **Mic.on/off** indicator stays or goes ON, and you converse with called parties through the speaker and microphone.

* Options include no reminder — or reminder after 1.5 minutes, 3 minutes, or 3 minutes with call release after 5 minutes.

Function	User Action	Set/System Response
Incoming Call The Ringing Assignment feature determines which stations will ring in response to incoming calls — each station can be assigned to anywhere from no outside lines to all outside lines. A station with Do Not Disturb activated will not ring in any event.	(A call comes in on an outside line.)	Corresponding line indicator FLASHES slowly, and ringing is heard.
	[Non-handsfree] To answer incoming call, lift the handset and press the appropriate line key.	Ringing stops, corresponding line indicator WINKS slowly, and you are connected to the outside caller.
	[Handsfree] To answer incoming call, press the appropriate line key.	Ringing stops, corresponding line indicator WINKS slowly, and you are connected to the outside caller.
Intercom Call Pickup Unless prevented from doing so because of your line group type (see Line Group Type feature), you can answer intercom pages and internal calls intended for *other* stations from your own Set.	[Non-handsfree] Lift handset, and press **Intercom**.	Continuous tone is heard, and **Intercom** indicator WINKS slowly.
	[Handsfree] Press **Intercom**.	Continuous tone is heard, and **Intercom** indicator WINKS slowly.
	Dial *3.	Tone stops.
	Press station select key for paged or called station.	You are connected to paging or calling party.
Intercom Paging (to a single station) Also, see **Internal Calling.**	*To issue page to individual station:*	...
	[Non-handsfree] Lift handset, press **Intercom** and desired station select key.	At both stations, single tone is heard, and **Intercom** indicator WINKS slowly.
	[Handsfree] Press desired station select key.	At both stations, single tone is heard, and **Intercom** indicator WINKS slowly.
	Make your announcement.	Announcement is heard at paged station.
	To answer individual page:	...
	[Non-handsfree] Lift handset.	You are connected to paging party.
	[Handsfree] Speak in direction of Set.	You are connected to paging party.

Function	User Action	Set/System Response
Intercom Paging (to all stations — also known as All Page) Also, see **Loudspeaker** (paging) and **Zone Paging**.	*To issue page to all stations:*	...
	[Non-handsfree] Lift handset, press **Intercom** and *your own* station select key.	At all stations, double tone is heard, and **Intercom** indicator WINKS slowly.
	[Handsfree] Press *your own* station select key.	At all stations, double tone is heard, and **Intercom** indicator WINKS slowly.
	Make your announcement.	Announcement is heard at all stations.
	To answer All Page from your station:	...
	[Non-handsfree] Lift handset, press **Intercom**, and dial *1.	You are connected to paging party.
	[Handsfree] Dial *1.	You are connected to paging party.
Internal Calling Also, see **Intercom Paging** (to a single station)	*To issue page to individual station:*	...
	[Non-handsfree] Lift handset, and press **Intercom**.	Continuous tone is heard, and **Intercom** indicator WINKS slowly.
	[Handsfree] Press **Intercom**.	Continuous tone is heard, and **Intercom** indicator WINKS slowly.
	Dial 2-digit number (10-21) of desired station.	Tones stops, and repeating ringing is heard at called station.
	To answer internal call:	...
	[Non-handsfree] Lift handset.	Ringing stops, and you are connected to calling party.
	[Handsfree] Press **Speaker**.	Ringing stops, and you are connected to calling party.
Last Number Redial If auto hold is activated (see Auto Hold feature), **Speed** must be pressed *before* **Redial** — otherwise, outside line will be placed on hold, and **Redial** will have no effect.	[Non-handsfree] Lift handset, and press desired line key.	Dial tone is heard, and line indicator WINKS slowly.
	[Handsfree] Press * or desired line key.	Dial tone is heard, and line indicator WINKS slowly.
	Press **Redial** (if auto hold is activated, press **Speed** first).	Last number dialed from your station is redialed.

Function	User Action	Set/System Response
Loudspeaker (background music) This procedure must be performed from station 10 only. This procedure requires that both optional external paging equipment (loudspeaker) and optional external music source be installed.	*To play background music over external loudspeaker:*	...
	At station 10, press **Intercom**.	Continuous tone is heard, and **Intercom** indicator WINKS slowly.
	At station 10, dial ***7**.	Tone stops, and music is heard over external loudspeaker.
	To cancel background music over external loudspeaker:	...
	At station 10, press **Intercom**.	Continuous tone is heard, and **Intercom** indicator WINKS slowly.
	At station 10, dial ***7**.	Tone stops, and music is no longer heard over external loudspeaker.
Loudspeaker (paging) This procedure requires that optional external paging equipment (loudspeaker) be installed. Also, see **Intercom Paging** (to all stations) and **Zone Paging**.	*To issue page over external loudspeaker:*	...
	[Non-handsfree] Lift handset, and press **Intercom**.	Continuous tone is heard, and **Intercom** indicator WINKS slowly.
	[Handsfree] Press **Intercom**.	Continuous tone is heard, and **Intercom** indicator WINKS slowly.
	Dial **69**.	Tone stops, and double tone burst is heard over external loudspeaker.
	Make your announcement.	Announcement is heard over external loudspeaker.
	To respond to loudspeaker page from your station:	...
	[Non-handsfree] Lift handset, press **Intercom**.	Continuous tone is heard, and **Intercom** indicator WINKS slowly.
	[Handsfree] Press **Intercom**.	Continuous tone is heard, and **Intercom** indicator WINKS slowly.
	Dial ***2**.	You are connected to paging or calling party.

Function	User Action	Set/System Response
Night Transfer (must be activated from station 10)	*To activate night transfer ringing:*	...
	At station 10, press **Intercom**.	Continuous tone is heard, and **Intercom** indicator WINKS slowly.
Stations selected by the Night Transfer Ringing feature will — when activated as described in this procedure — ring during any incoming call, regardless of the ringing pattern determined by the Ringing Assignment feature.	At station 10, dial *9.	Tone stops, and preselected stations will ring during incoming calls.
	To cancel night transfer ringing:	...
If the external loud bell is programmed for night bell (or day and night bell) by the Loud Bell feature, it too will ring during any incoming call when night transfer is activated.	At station 10, press **Intercom**.	Continuous tone is heard, and **Intercom** indicator WINKS slowly.
	At station 10, dial *8.	Tone stops, and stations revert to their normal ringing assignments.
OPX Procedures	1. To make an internal call:	...
The OPX Unit allows a 2-wire device (such as an answering machine, a modem, or a standard set) to be connected to the Panther 612 Electronic Key Telephone Set. The OPX Unit also allows such devices to be located up to 2 miles away from the KSU over a user-installed circuit. Finally, the OPX Unit also allows such devices to be located at any distance from the KSU through an outside CO line.	• Lift handset on standard 2-wire set. • Dial 2-digit (10-21) number of desired station. 2. To make an outside call:	• Continuous tone is heard. • Call is made to desired station: if invalid or unassigned number was dialed, broken tone is heard; if desired station is busy, slow broken tone is heard. ...
When redialing last number dialed or when dialing common speed call numbers, the last outside line used by your set is selected. If this line is unavailable, the next available, lowest-numbered line is used instead.	• Lift handset. • Press * and dial 2-digit (01-06) number of desired outside line. • Within 10 seconds, start dialing outside party's telephone number. 3. To redial last number dialed:	• Continuous tone is heard. • Outside dial tone is heard. • Call is made to desired outside party. ...
	• Lift handset. • Dial #0.	• Continuous tone is heard. • Last number dialed at your set is redialed.

[continued on next page]

Function	User Action	Set/System Response
OPX Procedures [continued from previous page] If optional external music source is connected, outside party will hear background music while on hold. If so programmed, Hold Recall Time feature sounds reminder signal *after* call has been on hold for program-selected period*: when handset is in cradle, OPX reminder signal is 4 bursts of ringing, repeated every 10 seconds; when handset is lifted, OPX reminder signal is double beep, repeated every 60 seconds. Many OPX procedures — such as placing calls on hold or retrieving calls you placed on hold — involve the hookswitch. Holding the hookswitch down too long will result in an undesired termination of a call; holding it down for too short a time will not produced the desired (or any other) effect. Practice using the hookswitch so that you can hold it down for the proper length of time.	4. To place an outside call on hold: • Press hookswitch temporarily. You may now hang up. 5. To retrieve an outside call that *you* placed on hold — *before* reminder signal occurs: • If handset is in its cradle, lift it up; press hookswitch temporarily. • If handset is already lifted, press hookswitch temporarily. 6. To retrieve an outside call that *you* placed on hold — *after* reminder signal occurs: • If handset is in its cradle, lift it up. • If your are on an outside call: •• Press hookswitch temporarily and hang up. •• Lift handset in response to ringing of reminder signal. • If your are on an inside call (or an outside call you have nearly completed): •• Hang up handset. •• Lift handset in response to ringing of reminder signal.	... • Broken tone is heard, followed by continuous tone; outside party is placed on hold. ... • Connection with outside party placed on hold is re-established. • Connection with outside party placed on hold is re-established; existing outside party, if any, is placed on hold. ... • Connection with calling party placed is established. • ... •• Current outside party is placed on hold, and your set rings. •• Connection with previous party placed on hold is re-established. • ... •• Connection with current party is terminated, and your set rings. •• Connection with previous party placed on hold is re-established.

[continued on next page]

* Options include no reminder — or reminder after 1.5 minutes, 3 minutes, or 3 minutes with call release after 5 minutes.

Function	User Action	Set/System Response
OPX Procedures [continued from previous page] As is the case with Panther Sets, outside lines ring on your OPX-connected set in accordance with Ringing Assignment feature programming. If more than one such outside line has an incoming call for your set, a call on the last used outside line will be answered first — or on the lowest-numbered outside line. To place both outside parties on an external conference call on hold, press your hookswitch temporarily. To retrieve *both* parties on hold, press your hookswitch again. (You cannot go directly back to 2-party call from a 3-party conference call.) During an attempt to form any 3-party conference call, if the third party does not answer, simply hang up, lift handset, and press hookswitch to retrieve the original party placed on hold.	7. To answer any call while handset is in cradle: • Lift handset. 8. To answer an incoming call while busy on another call: • Press hookswitch temporarily and hang up (alternatively, you can terminate your current call instead of placing it on hold by simply hanging up). • Lift handset in response to ringing. 9. To form an external conference call: • While on outside call, press hookswitch temporarily. • Press * and dial 2-digit (01-06) number of desired outside line. • Dial desired outside third party's telephone number. • When third party answers, press hookswitch temporarily. 10. To form an internal conference call: • While on inside call, press hookswitch temporarily. • Dial 2-digit (10-21) number of desired station. • When third party answers, press hookswitch temporarily.	... • You are connected to calling party. Double beep is heard through handset. • If hookswitch pressed, current outside party is placed on hold; your set rings. • Connection with calling party is established. ... • Current outside party is placed on hold; continuous tone is heard. • Outside dial tone is heard; if desired line is unavailable, broken tone is heard. • Call is made to desired outside third party. • 3-party external conference call is established. ... • Current inside party is placed on hold; continuous tone is heard. • Call is made to desired station: if invalid or unassigned number is dialed, broken tone is heard; if dialed station is busy, slow broken tone is heard. • 3-party internal conference call is established.

Function	User Action	Set/System Response
OPX Procedures [continued from previous page] Just like with regular Panther Sets, Do Not Disturb prevents all calls from ringing at your station. Anyone trying to call will receive broken tone. When you pick up your handset, you will hear a broken tone followed by a continuous tone while Do Not Disturb is activated at your set. To make page announcement over external loudspeaker, optional external paging equipment (loudspeaker) must be installed.	11. To form a mixed conference call: • While on outside call, press hookswitch temporarily. • Dial 2-digit (10-21) number of desired station. • When third party answers, press hookswitch temporarily. 12. To activate Do Not Disturb: • Lift handset. • Dial #1. 13. To cancel Do Not Disturb: • Lift handset. • Dial #1. 14. To make a page over the external speaker: • Lift handset. • Dial #69. • Make your announcement.	... • Current outside party is placed on hold; continuous tone is heard. • Call is made to desired station: if invalid on unassigned number is dialed, broken tone is heard; if dialed station is busy, slow broken tone is heard. • 3-party mixed conference call is established. ... • Continuous tone is heard. • Tone stops, and Do Not Disturb is activated. ... • Continuous tone is heard. • Tone stops, and Do Not Disturb is cancelled. ... • Continuous tone is heard. • Double tone is heard over external loudspeaker. • Announcement is heard over external loudspeaker.

Function	User Action	Set/System Response
OPX Procedures [continued from previous page] Busy override has no effect on a Set that has activated Do Not Disturb. In any event, responder may ignore busy override signals.	15. To make a zone page: • Lift handset. • Dial # plus desired 2-digit zone number (51 to 65 — or 50 for all zones). • Make your announcement.	... • Continuous tone is heard. • At both calling and called stations, double tone is heard (triple tone if all zones paged). • Announcement is heard by all called stations.
	16. To activate busy override: • When busy station (slow broken tone) is encountered, press #.	... • Busy station hears three ringing bursts every time you press #.
	17. To respond to busy override signal: • Press hookswitch temporarily. • When finished with busy override party, hang up, lift handset, and press hookswitch temporarily.	While on a call, three beeps are heard (and repeat every 60 seconds that current party remains on line). • Current party is placed on hold, and you are connected to party activating busy override signal. • Connection with party on hold is re-established .
	18. To retrieve an outside call that *another station* placed on hold: • After receiving notification from other station — but without hanging up handset — press hookswitch *for at least 1 second*, then release it. • Dial ** and the indicated line number (01 to 06).	Typically, the other station calls you and lets you know which outside line the call is on. — and then hangs up. • Dial tone is heard. • Dial tone stops, and you are connected with the party on hold. (To put this party on hold again, press hookswitch only temporarily; subsequently, to retrieve this party form the second hold, press hookswitch temporarily again.)
[end of OPX procedures]		

Function	User Action	Set/System Response
Outgoing Call In handsfree operation, pressing * (as first entry in telephone number sequence) automatically selects last outside line used at station making call.	[Non-handsfree] Lift handset, and press desired line key.	Dial tone is heard, and selected line indicator WINKS slowly.
	[Handsfree] Press * or desired line key.	Dial tone is heard, and selected line indicator WINKS slowly.
	Dial desired outside number.	Call is made to desired outside party.
Private Speed Calls If auto hold is activated (see Auto Hold feature), **Speed** must be pressed *before* pressing desired speed dial key — otherwise, outside line will be placed on hold, and speed call key will have no effect.	[Non-handsfree] Lift handset, and press desired line key.	Dial tone is heard, and selected line indicator WINKS slowly.
	[Handsfree] Press * or desired line key.	Dial tone is heard, and selected line indicator WINKS slowly.
	Press desired speed call key (11 to 21) — press **Speed** first if auto hold is activated.	Desired number is dialed automatically.
Room Monitoring For this procedure to work properly, the monitoring Set must have its microphone turned off, and the monitored Set must have its microphone turned on.	At monitoring station, press station select key for station to be monitored.	At both sets, single tone is heard, and **Intercom** indicator WINKS slowly; sounds made in vicinity of monitored station are heard over monitoring station's speaker.
	To cancel room monitoring, press **Speaker** at monitoring station.	Room monitoring is cancelled, and **Intercom** indicator goes OFF at both stations.

Function	User Action	Set/System Response
SMDR Date and Time (must be performed from station 10)	At station 10, press **Intercom** key.	Continuous tone is heard, and **Intercom** indicator WINKS slowly.
This procedure requires that the optional SMDR Interface Unit be installed.	At station 10, dial ***5**.	Tone stops, and time and date setting can proceed.
See page D-11 for example of date and time as they appear on SMDR printout.	**NOTE** You may enter as many or as few of the following parameters as desired.	
	To enter the year, at station 10, dial the 2-digit number representing the desired year, and press **Flash/Cancel**.	SMDR year is set.
	To enter the month, at station 10, dial the 2-digit number representing the desired month, and press **Conference**.	SMDR month is set.
	To enter the date, at station 10, dial the 2-digit number representing the desired date, and press **Intercom**.	SMDR date is set.
	To enter the hour, at station 10, dial the 2-digit number representing the desired hour (using 24-hour clock — 5 pm becomes 17), and press **Speed**.	SMDR hour is set.
	To enter the minute at station 10, dial the 2-digit number representing the desired minute; press **Flash/Cancel**.	SMDR minute is set.
	To start timer, at station 10, press **Mic.on/off**.	SMDR timer is activated.

Function	User Action	Set/System Response
Zone Paging (to a specific zone) Also, see **Intercom Paging** (to all stations)	[Non-handsfree] Lift handset, and press **Intercom**. [Handsfree] Press **Intercom** Dial the desired zone number (51 to 65). Make your announcement.	Continuous tone is heard, and **Intercom** indicator WINKS slowly. Continuous tone is heard, and **Intercom** indicator WINKS slowly. Triple tone is heard at calling and at all called stations . Announcement is heard at all called stations.
Zone Paging (to all zones) Also, see **Intercom Paging** (to all stations) and **Loudspeaker** (paging)	*To issue an all zone page:* Lift handset, and press **Intercom** — or *your own* station select key. Dial **50**. Make your announcement. *To respond to an all zone page:* [Non-handsfree] List handset, and dial *1. [Handsfree] Dial *1.	... Continuous tone is heard, and **Intercom** indicator WINKS slowly. Double tone is heard at calling and at all called stations . Announcement is heard at all called stations. ... You are connected to paging party. You are connected to paging party.

Problem	Probable Cause	Probable Solution
No dial tone, but indicators go ON, and intercom tone is heard at your Set	Reversed tip and ring on intercom (data) pair	Correct station wiring (refer to Station Wiring Table on pages D-3 and D-4).
When **Intercom** pressed, continuous tone not heard and **Intercom** indicator stays OFF.	a. Incorrect station wiring	a. Make sure station wiring is correct (refer to Station Wiring Table on pages D-3 and D-4); check for opens, shorts, wire reversals, and incorrect color code matches.
	b. Improperly connected modular cord	b. Make sure 4-wire modular cord is plugged securely into Set and into station wiring jack (6-wire cord is used at stations with external amplifier — see page D-14).
	c. MDF connection	c. Check wiring of 66-block; again, refer to Station Wiring Table on pages D-3 and D-4.
	d. Static discharge	d. Disconnect modular cord from Set and re-connect (this action resets the Set); if problem persists, remove and re-apply power to KSU (this action resets the KSU).
	e. Loss of power to KSU	e. Verify that KSU is connected to un-switched outlet; check that the ground wire is still connected to true earth ground; make sure breaker for outlet is not tripped; and, if using a surge protector, make sure that the surge protector is operational.
At all Sets, when line key is pressed, the indicator lights but no dial tone is heard.	Faulty Central Office line connection to the KSU.	Make sure 4-conductor modular cord between RJ-14 jack (where incoming line terminates) and KSU is good and is properly installed. (If you are using Power Fail Transfer Units, check all connections between incoming lines, Power Fail Transfer Units, and KSU — refer to page D-12 and see the diagram on page E-3.) If problem persists, notify your local telephone company.

Problem	Probable Cause	Probable Solution
KSU does not retain feature programming	KSU BATTERY switch is OFF	Set KSU BATTERY switch to ON; re-program system as necessary.
Outside calls cannot be made	a. Incorrect KSU	a. Make sure you are not trying to use a tone only KSU (part number 90-0166) on rotary lines; you need a tone/rotary KSU (part number 90-0084) to use with rotary lines.
	b. Error in tone/rotary programming	b. Verify that the Tone or Pulse and Telephone or PBX features (program code 5XX0) are properly programmed (see Section F).
	c. Incorrectly programmed call restrictions	c Verify correct programming for the Line Group Type feature (program code 0011), Digits-to-Deny feature (program code 0051), Call Restrictions feature (program code (1YY1), Line Group Assignment feature (3YY0), Line Grouping feature (program codes 6ZZ0 & 6ZZ1), and Flexible Call Restrictions feature (program codes 7000-7900), as appropriate (see Section F).
Line indicator FLASHES slowly during an incoming call, but no ringing is heard	Incorrectly programmed Ringing Assignment feature (program codes 2YY0 & 2YY1)	For your Set to ring, it must be programmed to do so by the Ringing Assignment feature — for each incoming line you wish to ring at your Set (see Section F).
SMDR Interface unit produces no print-out — or produces erratic data	a. Incorrect baud rate setting	a. Verify that the baud rate setting of the SMDR Interface Unit matches that of the printout device.
	b. Incorrectly programmed Start Data Recording feature (program code 0061) or Interdigit Timer feature (program code 0070)	b. Check programming of Start Data Recording and Interdigit Timer features for selection of desired time to wait until recording starts (see Section F).
	c. Improper printout device	c. Printout devices that send data back to the source computer (or SMDR Interface unit, in this case) will not work properly; replace printout device or disable return signals.

Problem	Probable Cause	Probable Solution
Background music and on-hold music not heard on any set	a. Incorrect connector on cable from music source	a. Make sure that jack is 1-8-inch phono mini-jack — not stereo or attenuator.
	b. Malfunctioning music source	b. Make sure music source is plugged in, turned on, and operating properly. Refer to manual supplied with music source equipment or call music source equipment manufacturer's customer service.
External loud speaker not operational	a. Incorrect connector on cable to paging equipment	a. Make sure that jack is 1-8-inch phono mini-jack — not stereo or attenuator.
	b. Malfunctioning paging equipment or loudspeaker	b. Make sure paging equipment is plugged in, turned on, and operating properly. Refer to manual supplied with paging equipment or call paging equipment manufacturer's customer service.
Neither Door Module is operational	a. Wiring between Door Answer Unit and KSU	a. Check continuity of 6-conductor cord between DA connector on Door Answer Unit and DOOR connector on KSU.
	b. KSU not operating properly	b. Press RESET button on KSU.
	c. Defective Door Answer Unit	c. Replace Door Answer Unit.
Individual Door Module not operating properly	a. Wiring between Door Module and Door Answer Unit	a. Check continuity of 2-wire cable between Door Module and Door Answer Unit.
	b. Defective Door Module	b. Replace Door Module.
	c. Defective Door Answer Unit	c. Replace Door Answer Unit.

Problem	Probable Cause	Probable Solution
2-wire set or other device connected to OPX unit not working properly	a. Station wiring defective or KSU working improperly	a. Temporarily install Panther 306 Set at OPX unit station jack: if installed Set doesn't work properly, check station wiring and/or reset KSU. Re-install OPX unit at station jack once trouble is cleared.
	b. Defective OPX unit	b. Replace OPX unit.
	c. Defective 2-wire device	c. Make sure 2-wire device is plugged in, turned on, and operating properly. Refer to manual supplied with 2-wire device or call 2-wire device manufacturer's customer service.
External loud bell does not ring	a. Incorrect programming	a. Make sure that Loud Bell (program code 0000), Ringing Assignment (2YY0 & 2YY1), Night Transfer Ringing (4YY0), and Loud Bell Ringing (5XX0) features are programmed correctly (see Section F).
	b. Faulty wiring	b. Make sure that dry contact interface unit is wired to pins 49 and 50 of 66-block (see Section D) — and that loudspeaker is properly wired to dry contact interface unit (see technical manual for dry contact interface unit).
	c. Malfunctioning dry contact interface unit	c. Make sure dry contact interface unit is plugged in, turned on, and operating properly. Refer to manual supplied with dry contact interface unit or call dry contact interface unit manufacturer's customer service.

How To Use This Chart

The Feature Description column provides an explanation of the feature to help you make the desired selection...

Step 1 To Enter The Preprogrammed Features

- At the KSU, set the PROGRAM 1 switch to the ON position.
- Press the RESET button.
- Set the PROGRAM 1 switch to the OFF position.

Step 2 To Program Feature Selections

Step 3 To Put The System Into Operation

- Place PROGRAM switch 1 in the OFF position.
- Press the RESET button at the KSU. The Mic indicator at station 10 turns off.
- Make sure the BATTERY switch is ON.

Troubleshooting

This section will help to locate and correct any faults which may occur during the installation and programming of your Panther 612 System.

Problem – When the intercom key is present, continuous tone is heard and the...

Probable Cause	Incorrect wiring.
Probable Solution	

Main Distribution Frame connection.

Static discharge.

Problem – When a line key is pressed, the line indicator lights but dial tone is not heard.

Problem – The KSU is not retaining the programmed features.

Problem – KSU BATTERY switch is OFF.

Problem – Can't place an outside telephone call.

Problem – Incorrect Rotary/Tone KSU.

Problem – The Call Data Recorder displays irregular data or no data at all.

Problem – The line indicator flashes during an incoming call but ringing tone is not heard.

Problem – Printer/terminal intelligence is not transmitting any kind of data back to the CDR.

Program Code ZYY0 and ZYY1

Line Ringing

Code												

Station Number

Program Code 6ZZ0 and 6ZZ1

Group Type & Line Group Assignment

Group Number	
no group	
group 01	
group 02	
group 03	
group 14	
group 05	
group 06	
group 07	
group 08	
group 09	
group 10	
group 11	
group 12	

Lines

	1	2	3	4	5	6

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Feature Programming Instructions

Feature Description	Program Code
Hold Recall Time: Hold recall reminds you of a call on hold.	0000
Loud Bell:	0001
Auto Hold:	0010
Manual/Auto Select:	0011
Make/Break Ratio:	0020
Pulse Rate:	
Interdigit Pause:	
Tone Duration:	
Flash or Cancel:	
Line Group Type:	
Pause on Number:	
Tone or Pulse:	
Telephone or PBX Line:	
Incoming Calls Only:	
Loud Bell Ringing:	

Feature Selection

	Program Code
Hold Recall Time	0000
no recall	
3 minutes	
Loud Bell	0001
october bell	
day bell	
night bell	
day & night bell	
Make/Break Ratio	0020
40%	
33%	

Indicator Chart

Intercom		
L3	L2	L1

Feature Programming Instructions

Feature Description	Program Code
Pause Time:	0050
Digits-to-Delay:	0051
Flash or Cancel Timing:	0060
Start Data Recording:	0061
Line Group Assignment:	ZYY0
Zone Paging:	ZYY1
Flexible Call Restrictions:	7000 to 7900

Feature Selection

Feature Description	Program Code 0050	0051	0060	0061	3YY0	3YY1	7000 to 7900
1 sec (14)							
2 sec (02)							
4 sec (04)							
6 sec (06)							
8 sec (08)							
10 sec (10)							
12 sec (12)							
14 sec (14)							

Indicator Chart

Intercom		
L3	L2	L1