Infinite

816

Key Telephone System

General Description
Installation and
Maintenance Manual

For *infinite* GK-816

Vodavi
Communications
Systems

QUICK REFERENCE TABLE OF CONTENTS

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

INFINITE 816 ISSUE CONTROL SHEET

ISSUE	DATE	CHANGE
1	JANUARY 1992	First Release of Infinite 816 General Description, Installation and Maintenance Manual.

SECTION 100
INTRODUCTION

100.1 PURPOSE

This manual provides the information necessary to program, install, operate, and maintain the *Infinite* 816 Key Telephone System (Figure 100-1).

100.2 SYSTEM COMPONENTS

The following components make up the *Infinite* 816 Key Telephone System:

- Key Service Unit
- Key Telephone
- Wall Mount Kit
- Program Module
- Phone Box

100.3 REGULATORY INFORMATION

The Federal Communications Commission (FCC) has established rules which allow the direct connection of the *Infinite* 816 Key Telephone System to the telephone network. Certain actions must be undertaken or understood before the connection of customer provided equipment is completed.

A. Telephone Company Notification

Before connecting the *Infinite* 816 Key Telephone System to the telephone network, the local serving telephone company must be given advance notice of intention to use customer provided equipment (CPE) and provided with the following information:

- The telephone numbers to be connected to the system.
- The FCC Registration Number located on the Key Service Unit (KSU): DLP82V-71202-KF-E
- The Ringer Equivalence Number, also located on the KSU: 0.2A
- The Universal System Ordering Code (USOC) jack required for direct interconnection with the telephone network: RJ-21X

B. Incidence of Harm

If the telephone company determines that customer provided equipment is faulty and possibly causing harm or interruption to the telephone network, it should be disconnected until repair can be made. If this is not done, the telephone company may temporarily disconnect service.

C. Changes In Service

The local telephone company may make changes in its communications facilities or procedures. If these changes should affect the use of the 816 System or compatibility with the network, the telephone company must give written notice to the user to allow uninterrupted service.

D. Maintenance Limitations

Maintenance on the 816 System is to be performed only by the manufacturer or its authorized agent. The user may not make any changes and/or repairs except as specifically noted in this manual. If unauthorized alterations or repairs are performed, any remaining warranty may be voided.

E. Notice of Compliance

The 816 System complies with rules regarding radiation and radio frequency emission by Class A computing devices. In accordance with FCC Standard 15 (Subpart J), the following information must be supplied to the end user:

CAUTION

"This equipment generates and uses R.F. energy, and if not installed and used in accordance with the Instruction Manual, it may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device, pursuant to Subpart J of Part 15 of the FCC Rules, which are designed to provide reasonable protection against such interference, when operated in a commercial environment. Operation of this equipment in a residential area could cause inter-

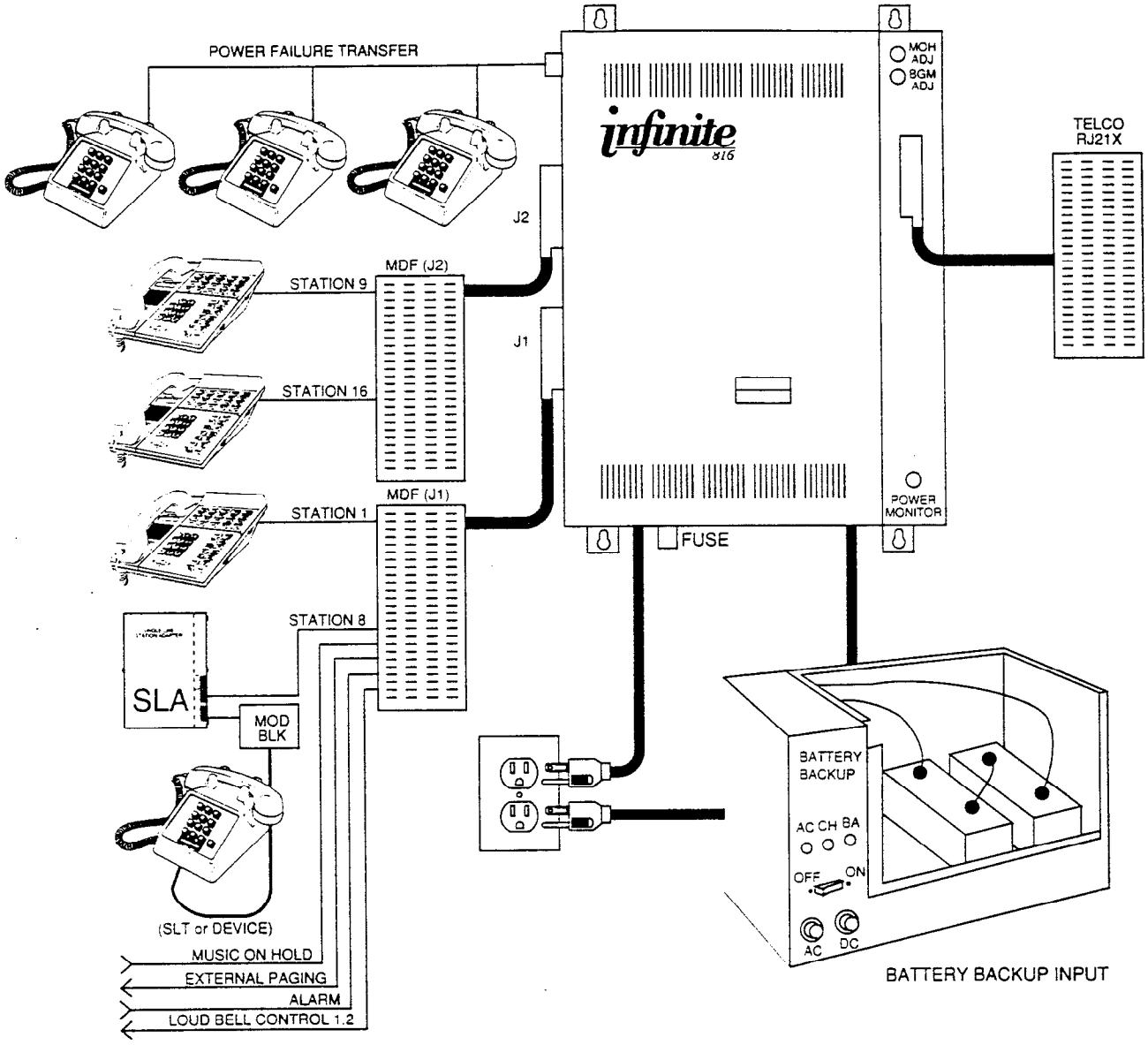


Figure 100-1 *Infinite 816* Key Telephone System

ference, in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference."

F. Hearing Aid Compatibility

The 816 Key Telephone is Hearing Aid Compatible, as defined in Section 68.316 of Part 68 FCC Rules.

G. UL Safety Compliance

The *Infinite* 816 Key System has met safety requirements and was found to be incompliance with the United Laboratories (UL) 1459 Second Edition standards for telecommunications equipment. The 816 is authorized to bear the UL mark.

100.4 REGULATORY INFORMATION (Canadian)

Department of Communications (DOC)

Certification Number: 676-1856-A

Load Number: 19

Ancillary Equipment Number: CA21A

Canadian Standards (CSA)

File Number: LR57228

A. Incidence of Harm

If the telephone company determines that the customer provided equipment (CPE) is faulty and possibly causing harm or interruption to the telephone network, it should be disconnected until repair can be effected. If this is not done, the telephone company may temporarily disconnect service.

B. Changes In Service

The local serving telephone company may make changes in its communications facilities or procedures. If these changes should affect the use of the 816 or compatibility with the network, the serving telephone company must give written notice to the user to allow uninterrupted service.

C. Maintenance Limitations

Maintenance on the 816 Key Telephone System is to be performed only the manufacturer or its authorized agent. The user may not make any changes and/or repairs except as specifically noted in this manual. If unauthorized alterations or repairs are performed, any remaining warranty may be voided.

D. Notice of Compliance

The 816 Key Telephone complies with rules regarding radiation and radio frequency emission by Class A computing devices. The *Infinite 816* Key Telephone system does not exceed the Class A limits for radio noise emissions as set out in the radio interference regulations of the Canadian Department of Communications.

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

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company.

The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above condition may not prevent degradation of service in some situations.

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

Users should ensure for their own protection that the electrical ground connections of the power utility, telecommunications lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

CAUTION

Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

SECTION 200
GENERAL DESCRIPTION

200.1 TECHNOLOGY

The *Infinite* 816 Key Telephone System is a microprocessor controlled, solid state electronic switching system which distributes communications in a non-blocking format. All control, switching, and interface circuitry is condensed onto a single printed circuit board (PCB) located inside the *Infinite* 816 Key Service Unit. Refer to Figures 200-1 and 200-2.

Switching is accomplished through a solid state crosspoint matrix that provides voice path connections for eight central office lines, sixteen Key Telephones, and eight intercom paths.

The central processor unit (CPU) is a Z-80 microprocessor that controls the crosspoints and central office line relays. It also controls communications between slave microprocessors located in each *Infinite* 816 Key Telephone Refer to Figure 200-3.

The 816 Key Service Unit (KSU) contains all system memory which is composed of 16K of Read Only Memory (ROM) and 4K of Random Access Memory (RAM). The RAM is subdivided so that 2K is used as CPU working area and 2K is used for customer database. The customer data base memory is protected from loss by a long life lithium battery. The system generic memory (ROM) is contained in a Program Module (PM) that is interfaced to the 816 KSU through a modular connecting arrangement. This allows easy access for removal of system software when upgrading software feature packages.

The system power is regulated by a switching power supply. This technology provides high efficiency with low heat. A shielded transformer converts the 117V ac into logic voltages on a separate power supply PCB, mounted within the KSU cabinet.

Each Key Telephone contains a microprocessor and circuitry to monitor button activity and control lamp indications. A built-in speaker permits voice or tone calling to the station. Every telephone has a Busy Lamp Field (BLF) to monitor station activity in the system.

Key Telephones are equipped with ten function buttons, eight CO line buttons, and sixteen Direct Station Selection (DSS) buttons, which also store Station Speed Dial numbers. A three-position rocker switch is provided for easy selection of intercom signaling modes, along with separate tone ringing and voice volume controls.

For emergency applications, a stand-alone battery backup (BBU) assembly may be connected to the battery output terminals on the 816 KSU. This retains system power in the event of commercial power failure.

The system provides automatic cut-through of central office (CO) lines to optionally provided single line telephones. These instruments can make and receive calls during a commercial power outage or following a CPU failure.

200.2 SYSTEM COMPONENTS

The following components make up the *Infinite* 816 Key Telephone System:

- Enhanced Key Service Unit
- Enhanced Key Telephone
- Executive Key Telephone
- Wall Mount Kit
- Program Module
- Phone Box
- Real Time Clock Unit (Replacement)
- Serial Interface Unit (Replacement)
- Battery Back Up Unit (BBU)
- Single Line Adapter (SLA)

A. Enhanced 816 Key Service Unit (KSU)

The Enhanced 816 KSU (Figures 200-1 and 200-2) is a sealed, self-contained unit that has no user-serviceable parts inside. All connections are accomplished externally through Amphenol-type plugs and modular connections. A Program Module (PM) allows easy expansion of software features. A Serial Interface Unit (SIU) and a Real Time Clock Unit (RCU) are installed as standard equipment. They support Station Message Detail Recording (SMDR) and display phone capability. SMDR allows a customer to track incoming and/or outgoing, and local and/or long distance calls by CO line, number dialed, time of

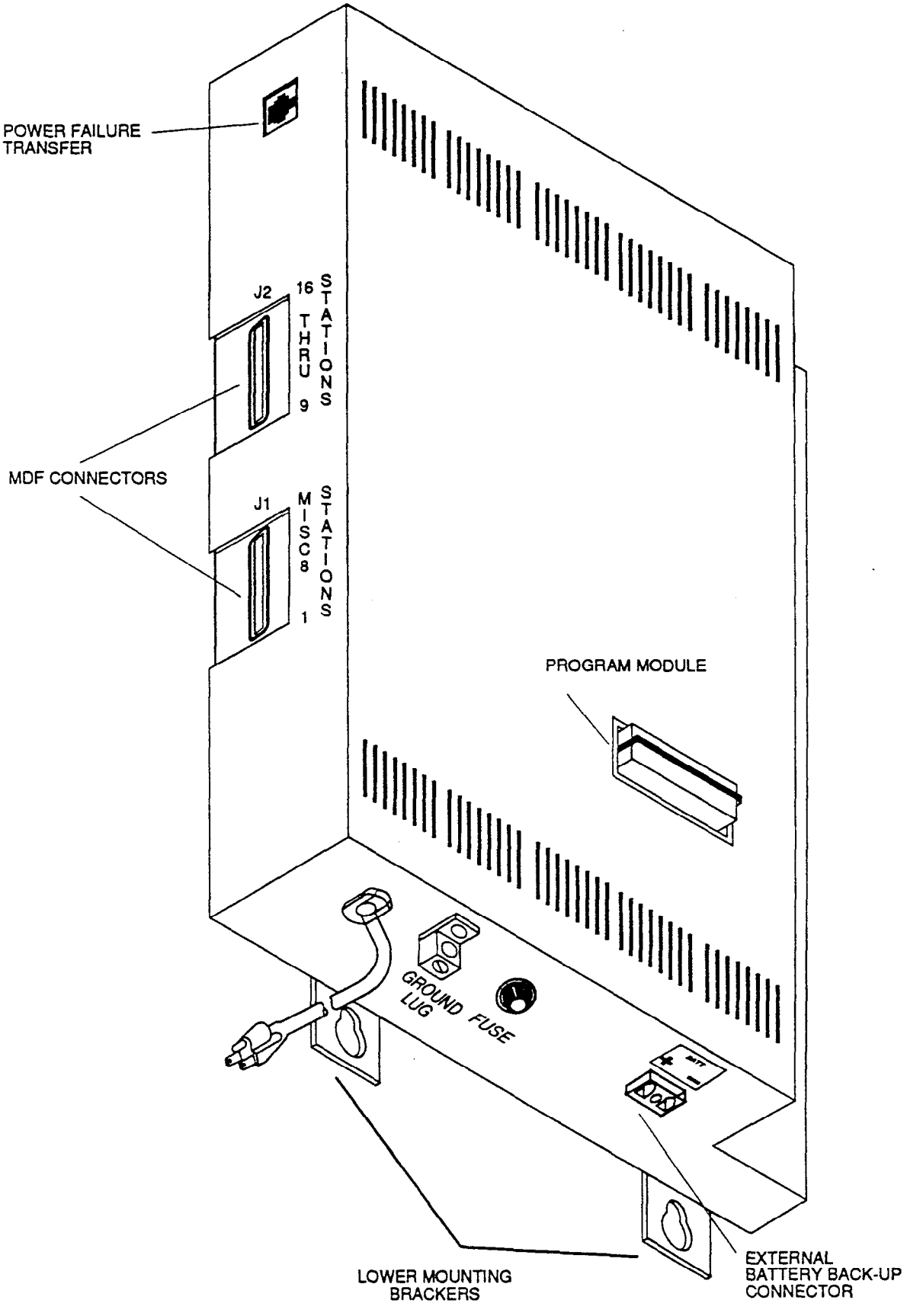


Figure 200-1 *Infinite 816* Key Service Unit

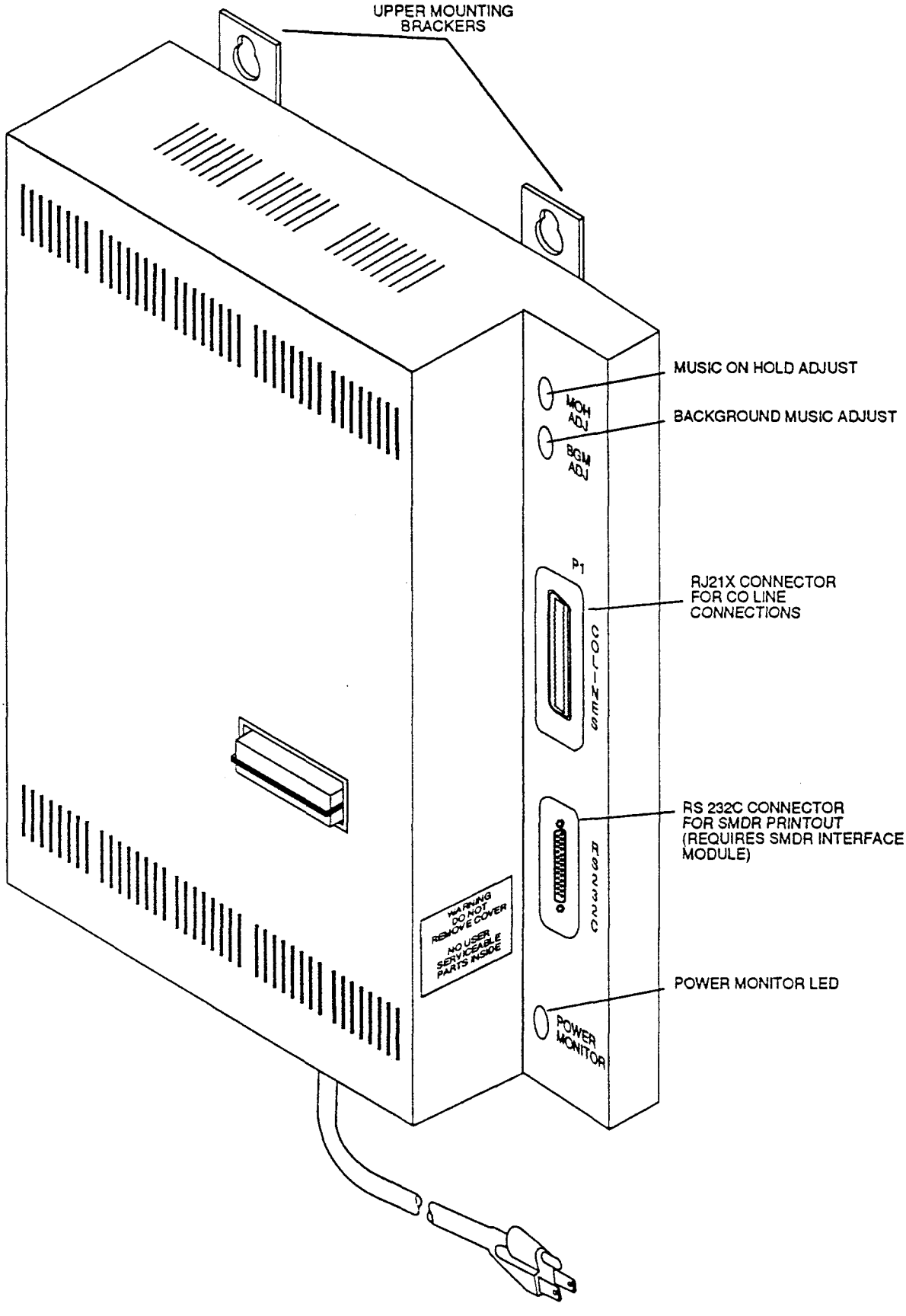


Figure 200-2 *Infinite 816* Key Service Unit

day and date, station that placed the call, duration of the call, and account code. The Real Time Clock Unit provides Executive telephones with an LCD time and date display and a backup system keeps the time clock functioning in case of commercial power failure.

B. Enhanced Model Key Telephone

The Enhanced Key Telephone (Figure 200-3) is a fully modular, multi-line keyset with voice and tone ringing volume controls. It contains eight central office line buttons, ten feature buttons, sixteen Direct Station Select/Station Speed Dial buttons, a dial pad, and an intercom mode selection switch. All buttons are of the non-locking type with easy to see LEDs for quick identification.

C. Executive Model Key Telephone

The Executive Key Telephone (Figure 200-3) is identical to the Enhanced Key Telephone with the addition of a 48 character interactive LCD display to provide the user with visual indication of call status.

D. Wall Mount Kit

The 816 Wall Mount Kit provides an attractive, modular means of attaching 816 Key Telephones to any vertical surface.

E. Program Module

The plug-in Program Module (PM) provides the system instructions for feature and operating data.

F. Phone Box

The Phone Box allows handsfree conversations to and from locations that do not need dialing privileges. Phone Boxes may be substituted for Key Telephones on a one-for-one basis. Refer to Figure 200-3.

G. Real Time Clock Unit (Replacement)

The Real Time Clock Unit is installed as standard equipment to provide telephones with LCD, with a time and date display and to protect the time and date from commercial power failure.

H. Serial Interface Unit (Replacement)

The Serial Interface Unit is installed as standard equipment to allow the customer to track incoming and outgoing, local and/or long distance calls (SMDR).

I. Single Line Adapter (SLA)

The Single Line Station Adapter (SLA) is a device which acts as a command translator and hardware interface for two (2) DTMF single line telephones (2500 type) or compatible devices (cordless phones, fax machines, modems, etc...). This allows connection of these devices to the *Infinite* family of "flatpack" key systems. Refer to Figure 200-3.

There is NO limit to the number of SLA adapters that can be installed behind any one system.

The SLA adapter is not designed to directly support off-premise extensions (OPX) applications. If an OPX is desired on an *Infinite* "flatpack" KSU, additional customer provided equipment, with an FCC registered interface is required.

J. Battery Back-up Unit (BBU)

This optional Battery Charging Unit (BBU) and cabling can be directly connected to the 816 KSU to maintain complete system operation in the event of an AC power failure. (Batteries must also be provided separately as they are not included with the BBU). Calls in progress will continue without interruption when commercial power fails. The BBU will maintain complete system operation during a power outage for up to 24 hours depending on system configuration, and battery size.

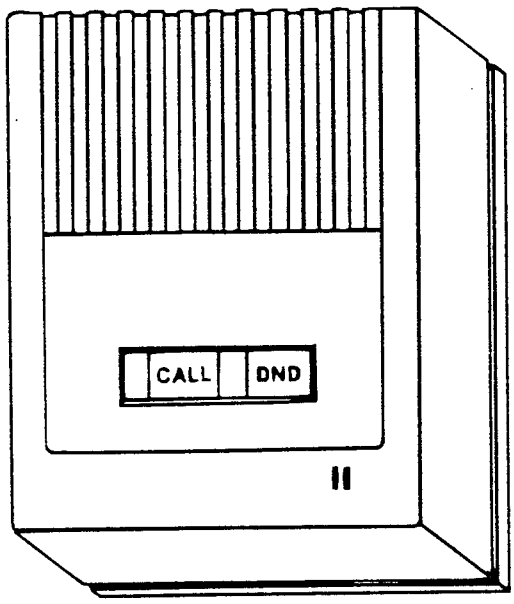
200.3 CAPACITY

The 816 Key Service Unit (KSU) is housed in a wall mountable cabinet that contains the Key Service Board (KSB), power supply assembly, and pre-wired connectors for eight CO lines, sixteen Key Telephones, and eight intercom channels. One external page port provides two-way external paging capability. Two Loud Bell Control ports offer programmable external signaling. One Music-On-Hold (MOH) input allows connection of an external music source for MOH and Background Music. Separate Music-On-Hold and Background Music volume adjustments are provided on the KSU. One alarm input allows connection of an external alarm or other sensing device. Low cost Phone Boxes may be substituted for Key Telephones on a one-for-one basis. An RS-232C port is provided for SMDR and data base printouts.

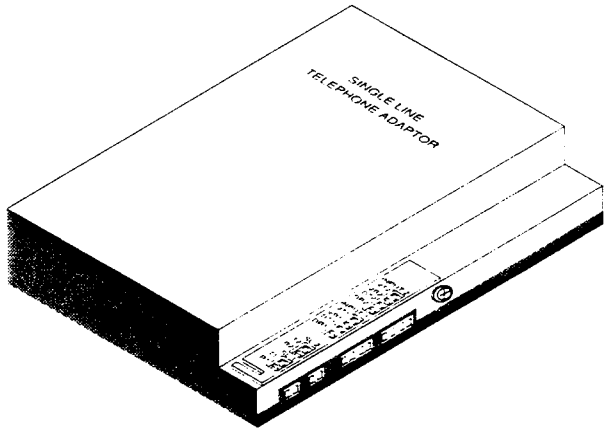
The system contains the necessary interface circuitry to enable complete system battery backup operation. In the event of commercial AC power interruption, a 24 volt DC battery

Enhanced Model

Executive Model



Phone Box



Single Line Station Adapter (SLA)

Figure 200-3 *Infinite* Station Apparatus

assembly provided by the customer will ensure uninterrupted system operation. A separate Battery Back-up Unit (BBU) must be provided for this option.

200.4 SYSTEM SPECIFICATIONS

System Capacity is listed in Table 200-1. Electrical, environmental, and Loop Limit specifications are listed in Tables 200-2, 200-3, and 200-4. Dialing Specifications are listed in Table 200-5. Regulatory Information is listed in Table 200-6. Dimensions and weight are listed in Table 200-7. Miscellaneous Specifications are listed in Table 200-8. Key telephone Audible Indications are listed in Table 200-9. Key Telephone Visual Indications are listed in Tables 200-10 and 200-11.

Table 200-1 System Capacity

Ports:	
CO/PBX/Centrex	8 max
Key Telephone Stations	16max
Single Line Telephones	15max (via 8 Single Line Station Adapters)
Attendants:	1 station can be designated as an Attendant
Phone Boxes:	Up to 15 phone boxes can be operated on the system. (Each phone box reduces station capacity by 1)
SMDR Ports:	1 RS-232C port located on the right side of the KSU
Page Zones:	
Internal:	2 internal page zones
External:	1 external page zone (two-way talk path)

Table 200-2 Electrical Specifications

AC Input to Power Supply	117V ac ± 10%, 60 Hz single phase
Power Consumption	90 watts
Power Supply Fuse - AC input	1A , 250V Time Lag
Music Source (input)	Input at 2K ohms impedance from music source
Contact Rating:	
External Page Control	1.0A, 24V dc
Loud Bell Control	1.0A, 24V dc
Alarm	1.0A, 24V dc
External Page Port:	
Output Impedance	600 ohms @ 0 dBm
Output Power	5 mW Maximum
UL File Number:	42U5

Table 200-3 Environmental Specifications

Operating Temperature	32° to 104° F
Recommended Operating Temperature	70° to 78° F
Storage Temperature	-40° to 140° F
Relative Humidity	5% to 90% non-condensing
Heat Dissipation (BTU's)	307 BTU's Maximum

Table 200-4 Loop Limits

Electronic Telephone: (including Single Line Telephone and Phone Box)	500 feet of 26 AWG Cable 1000 feet of 24 AWG Cable 1500 feet of 22 AWG Cable

Table 200-5 Dialing Specifications

DTMF Dialing	
Frequency Deviation	±1.5%
Rise Time	5 msec.
Duration of DTMF Signal	100 msec. minimum
Interdigit Time	100 msec. minimum
PULSE Dialing	
Pulse Dialing Rate	10 or 20 pps.
Pulse Break/Make Duration	60/40 or 66/33
Dialing Memory	
System Speed Dialing	40 numbers (16 digits)
Station Speed Dialing	16 numbers (16 digits)
Save Number Redial	1 number (32 digits)
CO Type	Loop Start

Table 200-6 Regulatory Number

FCC Registration Number:	DLP82V-71202-KF-E
Ringer Equivalence:	0.2A
USOC Jack	RJ21X
DOC Certification Number	676-1856-A
DOC Load Number	19
Ancillary Equipment Jack	CA21A
UL File Number	42U5/109461
CSA File	LR57228

Table 200-7 Dimensions and Weight

BASIC KEY SERVICE UNIT		PHONE BOX	
Height	18.7"	Height	1.75"
Width	13.4"	Width	5.5"
Depth	3.0"	Depth	4"
Weight	14 lbs.	Weight	1 lb.
KEY TELEPHONE			
Height	3.5"		
Width	8"		
Depth	9.125"		
Weight	2.6 lbs.		

Table 200-8 Miscellaneous Specifications

Memory:	
Random Access Memory (RAM):	32K
Programmable Read-Only-Memory (PROM)	96K
Telephone Transmitter:	Electret mic compatible.
Talk Paths:	
CO/PBX/Centrex paths:	8 CO/PBXCentrex talk paths (non-blocking)
Intercom Paths:	8 talk paths
Music Channels:	1 channel provides music for music-on-hold and background music
Account Codes:	
Number of digits per code:	up to 8 unverified digits
Number of Account Codes:	unlimited
Speed Dialing Capacity:	296 total bins in system
System Speed	40 bins per system
Station Speed	16 bins per station

Table 200-9 -Key Telephone Audible Signals

TYPE OF SIGNAL	FREQUENCY	SIGNAL DURATION
Key Telephone Signals:		
Incoming CO Line	1215/1471	0.8s on/2.4s off; repeated
Intercom Tone Ringing	1215/1471	0.4s on/0.4s off/0.4s on/2.0s off
Intercom Call Announce (H-P)	935	0.2s on/0.2s off (2 bursts)
Transferred CO Line	1215/1471	0.8s on/2.4s off
CO Line Recall	1215/1471	0.2s on/.6s off, repeated
Message Wait Call Back	1215/1471	0.4s on/0.4s off/0.4s on/2.0s off
Message Wait Reminder Tone	771	0.6s on (timed)
CO Queue Call Back	1215/1471	0.2s on/0.6s off; repeated
Camp-on	muted 1215/1471	0.2s on/0.2s off/ (once)
Paging Alert Tone	935	1 sec. (burst)
Key Telephone Confidence Tones:		
Intercom Ringback	701	0.4s on/0.4s off/0.4s on/2.0s off
Busy Tone	701	0.4s on/0.4s off, repeated
Error Tone	701	0.2s on/0.2s off, repeated
Intercom Dial Tone	701	Continuous
DND Tone	701	0.2s on/0.2s off, repeat 3x's. pause, 0.5s repeat
Paging Confirmation	935	1 sec burst
Programming Confirmation	1471	1.4 sec burst
Programming Error	1471	0.2s on/0.2s off, 6x's
Confirmation Tone	1471	1 sec burst, 1 time

Table 200-11 CO Line Button Visual Indicators

TYPE OF SIGNAL	INDICATOR FLASH RATES
Incoming CO Ring	30 ipm flash
Transferred CO Ring	240 ipm flash
Recall	480 ipm flutter
Queued Line	30 ipm flash
Exclusive Hold	240 ipm flash
System Hold	60 ipm flash
I-Hold (only when hold preference is system)	30 ipm double flash
In Use	Steady

Table 200-10 Function Button Visual Indicators

TYPE OF SIGNAL	INDICATOR FLASH RATES
Call Forward (active)	Steady
Message Waiting (active)	15 ipm flash
Camp-on (active)	60 ipm flash
CO Line Queue (active)	Steady
Do Not Disturb (DND active)	Steady
Mute (microphone off, handset xmit off)	Steady
ON/OFF (speakerphone on/on-hook dialing	Steady
Conference (active)	Steady
Speed (momentarily ON until bin address dialed)	Steady
PIntercom Call (Hold Button)	15 ipm flash
Transfer	Steady until transfer complete

SECTION 300
FEATURE DESCRIPTION

The features of the *Infinite* 816 Key Telephone System are listed and described below in alphabetical order. An abbreviated feature index is provided in Table 300-1.

300.1 ACCOUNT CODE

An account code is the last field within Station Message Detail Recording (SMDR), that provides the ability to track specific calls by entering a non-verified, variable length (up to eight (8) digits) identifier. The use of account codes is optional and can be entered by the user during a call. Account codes can be used with SMDR information for client bill back purposes.

300.2 ALARM SIGNALING

The system can recognize either an open or closed loop from an external relay and transmit an alarm signal to all available (non-busy) Key Telephone stations with a continuous or single tone. The type of alarm tone is selected in system programming.

300.3 ALL CALL VOICE PAGING

Any station may make voice paging announcements to all idle stations, Phone Boxes, and external paging ports simultaneously. Paging is a programmable feature and is assigned on a per-station basis.

300.4 ATTENDANT POSITION

The system allows any Key Telephone station to be assigned as the system attendant. The assigned system attendant will receive unattended line recalls and will initiate Night Service.

300.5 ATTENDANT OVERFLOW

System programming allows the attendant station to be programmed so that if the attendant is busy or not there, the call will be automatically forwarded to another predetermined station after a programmed period of time. (Refer to Call Forward-Preset)

300.6 ATTENDANT RECALL

A CO line placed on hold or transferred will initiate the recall timer if the associated timer has been enabled in programming. When the timer expires, the CO line will ring the station that placed it on hold. If not answered and the timer cycles again, the attendant will ring. If still not answered and the timer cycles again, then all telephones programmed with direct access of that CO line will ring and flash the CO line LED at the recall rate. If still unanswered and the recall timer expires again, the CO line will be dropped.

300.7 AUTOMATIC HOLD

Pressing the STA/SPD, CONF, or CAMP/ON button while on an outside line will automatically place the CO line on hold. This allows quick internal consultation and call transfer.

300.8 AUTOMATIC PAUSE INSERTION

A pause is automatically inserted into station and system speed dial numbers and save redial numbers after a programmed flash in speed dial numbers or after recognizing and dialing a programmed PBX dialing code assigned in the customer data base.

300.9 AUTOMATIC PRIVACY

Privacy is automatically provided on all communication in the system. If desired, the system may be programmed to eliminate privacy, allowing another station to join in on existing CO line conversations.

300.10 BACKGROUND MUSIC

Key Telephones may receive music over their integrated speaker when an optional music source is connected to the system. The music can be turned on or off and the volume adjusted at each individual station. Maximum loudness level can be adjusted on the 816 KSU.

300.11 BATTERY BACK-UP (MEMORY)

A long life lithium battery is provided in the KSU to retain the system data base in the event of a power outage or the system power being turned off. Features such as system and station speed dial numbers are also retained during power outages.

300.12 BATTERY BACK-UP (SYSTEM)

The optional *Infinite* Battery Back-up Unit (BBU) can be directly connected to the *Infinite* 816 KSU to provide full system operation in the event of a commercial power outage. Calls in progress will continue without interruption when the power fails. The batteries are recharged via an external battery charger when

Table 300-1 Alphabetical Feature Index

FEATURE	AVAILABLE	INTERNAL EQUIPMENT REQUIRED	EXTERNAL EQUIPMENT REQUIRED
Account Code	S	N	N
Alarm Signaling	S	N	Alarm System
All Call Voice Paging	S	N	N
Attendant Position	S	N	N
Attendant Overflow	S	N	N
Attendant Recall	S	N	N
Automatic Hold	S	N	N
Automatic Pause Insertion	S	N	N
Automatic Privacy	S	N	N
Background Music	S	N	Music Source
Battery Backup (Memory)	S	N	N
Battery Backup (System)	O	BBU	Batteries
Busy Lamp Field	S	N	N
Call Announcing	S	N	N
Call Forward (Preset)	S	N	N
Call Forward (Station)	S	N	N
Call Pickup	S	N	N
Call Transfer	S	N	N
Camp-On	S	N	N
Centrex Compatibility	S	N	N
Chaining Speed Bins	S	N	N
CO Line Access	S	N	N
CO Line Grouping	S	N	N
CO Line Queuing	S	N	N
CO Ring Assignments	S	N	N
Common Audible Ringing	S	N	N
Conference	S	N	N
Data Base Printout (Dump)	S	N	N
Dial Pulse-To-Tone Switch	S	N	N
Dial Pulse/DTMF Signaling	S	N	N
Direct Station Select	S	N	N
Do Not Disturb	S	N	N
DSS/CO Auto Line Select	S	N	N
Emergency Transfer	S	N	SLT's
End-to-End Signalling	S	N	N
Executive/Secretary Transfer	S	N	N
External Paging	S	N	Paging Equip
Flash	S	N	N
Flexible DSS Assignment	S	N	N
Headset Compatibility	S	N	N
Hold Provision	S	N	N
Incoming Intercom Signal.Select	S	N	N

S = Standard Feature; O=Optional: Requires additional hardware; N=No additional hardware required

Table 300-1 Alphabetical Feature Index (Cont'd)

FEATURE	AVAILABLE	INTERNAL EQUIPMENT REQUIRED	EXTERNAL EQUIPMENT REQUIRED
Internal Zone Page	S	N	N
LCD Display	S	RCU	Exec Key Telephone
Loud Bell Control	S	N	Bell/Ring Gen.
Meet Me Page	S	N	N
Message Waiting	S	N	N
Music On Hold	S	N	Music Source
Mute	S	N	N
Night Service	S	N	N
Off-hook Signaling	S	N	N
On-Hook Dialing	S	N	N
On-Line Programming	S	N	N
Pause Timer	S	N	N
PBX Transfer	S	N	N
PBX Dialing Codes	S	N	N
Phone Box	O	N	Phone Box
Preferred Line Answer	S	N	N
Private Line	S	N	N
Real Time Clock	S	N	N
Save Number Redial	S	N	N
SLA Compatibility	S	N	N
Speakerphone	S	N	Enh/Exec Phone
Station Class of Service	S	N	N
Station Message Detail Recording (SMDR)	S	SIU/RCU	Printer
Station Speed Dial	S	N	N
System Speed Dial	S	N	N
Toll Restriction (override)	S	N	N
Toll Restriction (table driven)	S	N	N
Transfer Recall	S	N	N
Universal Night Answer	S	N	N
Volume Controls	S	N	N
Wall Telephone	O	N	Wall Mount Kit

S = Standard Feature; O=Optional: Requires additional hardware; N=No additional hardware required

the system returns to normal AC operation. (Batteries must be provided separately.)

300.13 BUSY LAMP FIELD

Each Key Telephone is equipped with an LED indicator under each Direct Station Selection (DSS) button to denote the status of all other keysets in the system.

300.14 CALL ANNOUNCING

Through a rocker switch on the Key Telephone, users can select the mode that allows calls to their phone to be voice announced.

300.15 CALL FORWARD (PRESET)

The system data base may be configured so that incoming CO lines, which are programmed to ring a particular station, can be forwarded to another station predetermined in programming. This feature is active if the station normally receiving the CO ring is busy or does not answer the call.

300.16 CALL FORWARD (STATION)

Each Key Telephone user may direct intercom calls, transferred CO line calls, and outside line ringing to be forwarded to another station in the system. A forwarded call will signal the receiving station in the Tone mode, regardless of the intercom signaling switch mode selection.

300.17 CALL PICK-UP (GROUP)

Tone ringing intercom calls and transferred CO lines can be picked up by telephones within the same group.

300.18 CALL TRANSFER

An outside CO line can be transferred from one keyset to another. By pressing the STA/SPD button of the desired party, screened (announced) transfers or unscreened transfers can be made. The line being transferred rings and gives a flash indication to the receiving party's keyset. A line can be transferred to a busy party, and a line may be retained in transfer if several attempts are made to find someone at different keysets.

300.19 CAMP-ON (CALL WAITING)

A station may alert a busy party that an outside line is on hold and waiting for them by use of the Camp-On feature. To Camp-On a call; transfer the call to the desired busy station, then press the CAMP-ON button. The called station will receive an off-hook ring, hold flash indication on the waiting line, and a flashing HOLD button if the Camp-On initiator is still off-hook. The busy party can press the CAMP-ON button, automatically placing the first outside line on hold, to confer with the Camp-On initiator. Or in the event the initiator has left the call (no flashing HOLD), the party can press the waiting outside line button, automatically placing their first outside line on Hold. A station may Camp-On another busy station without having a CO line connection, if desired. A CO line camped-on a station will recall the Camp-On initiator if not picked up after the programmable period of time expires. Only the attendant station can Camp-On to a station in the DND mode with a visual indication only. A Camp-On cannot be made to a station in conference. The station designated Executive in an Executive/Secretary pair can be camped-on only by the corresponding Secretary.

300.20 CENTREX COMPATIBILITY

The 816 system provides features that are Centrex compatible, such as the ability to program Flash into Speed dial numbers and other general features that help to enhance a Centrex environment. The 816 is compatible with Centrex Lines (1ML).

300.21 CHAINING SPEED BINS

Speed dial bins may be chained together by simply accessing one speed bin, then another and another as required. This is helpful for accessing Long Distant carriers or banking services when Account Codes may be required.

300.22 CO LINE ACCESS

Each telephone can be programmed to be allowed or denied access to outside lines on an individual basis. Telephones denied access can have that line transferred to them by another station and the call will appear on its associated button.

Any station may be programmed to ring for any combination of lines during the day and different stations can be programmed to ring on those lines at night.

300.23 CO LINE GROUPING

CO lines can be in one of up to eight groups to separate line types such as local, FX, PBX, etc. This allows ease of line access assignment at the station level in the system data base.

300.24 CO LINE QUEUING

When CO lines are busy, stations can be placed in queue awaiting that CO line or a CO line in the same line group to become available. When a CO line becomes available, the system signals the waiting station. If the waiting sta-

tion is busy when the queued CO line becomes available, the station is placed at the bottom of the queue list. Three attempts will be made to reach a busy station before that station is dropped from the queue list. If a station does not answer the queue signal in 15 seconds, that station will be dropped from the queue list.

300.25 CO RING ASSIGNMENTS

CO lines are assigned to ring on a per-station basis according to system programming. Any station may be programmed to ring for any line(s) in the Day and/or Night mode.

300.26 COMMON AUDIBLE RINGING (LOUD BELL CONTROL)

Incoming CO line ringing can be directed to relay controlled contacts. There are 2 sets of dry contacts that can be assigned to stations as Loud Bell Control or to CO lines for CO Line Control.

An external power source and ringing device or other ancillary equipment is required.

300.27 CONFERENCE

- Multi-line Conference. One internal station can engage in a conference with two external parties. An external party can be excluded from the conference by pressing the CO line button of the party wishing to remain. The internal station may place the conference on Hold by pressing the HOLD button.
- Add-On Conference. Two internal stations can engage in a conference with one external party. There is no limit on the number of add-on conferences, except the total number of CO lines connected to the system.

300.28 DATA BASE PRINTOUT (DUMP)

Through a system programming command, either portions of, or a complete data base dump can be printed using the RS-232C connector on the 816 KSU.

300.29 DIAL PULSE-TO-TONE SWITCHOVER

The system will change the signaling on a CO line from dial pulse to DTMF (Tone), allowing the use of common carriers behind a dial pulse CO line. This can be done manually through dial access or automatically by storing the feature in speed dial numbers.

300.30 DIAL PULSE/DTMF SIGNALING

The *Infinite* 816 System can be programmed to provide pulse or tone sending on a per-line basis.

300.31 DIRECT STATION SELECTION

Sixteen buttons are dedicated at each 816 Key Telephone for immediate signaling and connection to other stations.

300.32 DO NOT DISTURB (DND)

Placing a Key Telephone in DND will eliminate incoming CO line ringing, intercom calls, CO line transfers, All Call Page announcements, and Camp-Ons. The attendant position can override a station in DND using the Camp-On feature. The designated Secretary in the Executive/Secretary pair can call an Executive who is busy or in DND by use of the Camp-On feature. Normal outgoing activity may occur when a station is in the DND mode. By programming, a station can be denied this feature.

300.33 DSS/CO AUTOMATIC LINE SELECT

A DSS or CO line can be selected by pressing the associated button, automatically placing the phone in the dialing mode. CO lines will bring up dial tone and DSS stations are automatically signaled.

300.34 EMERGENCY TRANSFER

In the event of commercial power failure or central processor failure, the system can automatically connect the first three CO lines to pre-connected single line telephones.

300.35 END TO END SIGNALING

This feature indicates the capability of the system to accept DTMF tones from stations, send them through the public network and have them received at the distant end for computer access, a variety of control functions or inward call completion at a distant switching system

300.36 EXECUTIVE/SECRETARY TRANSFER

Four pairs of Key Telephones can be designated to have the ability of Executive/Secretary Transfer. Whenever the "Executive" phone is in DND or busy, transferred CO lines and intercom calls will be directed to the "Secretary" station. The "secretary" of an Exec/Secretary can "camp-on" to an Executive that is busy or in DND. There are three combination types possible:

- Four pairs of "Executive- Secretary" pools.
- One Executive with one-to-four Secretaries.
- One Secretary for one-to-four Executives.

300.37 EXTERNAL PAGING

Any station, except one assigned as COS 6, can make voice paging announcements to the external paging port.

300.38 FLASH

The FLASH button is used to reestablish dial tone or transfer a PBX/Centrex call. Flash can be programmed in speed dial for PBX/Centrex feature operation. The Flash duration is programmed on a per CO line basis.

300.39 FLEXIBLE DSS ASSIGNMENT

The order of appearance of DSS buttons assigned to telephones can be changed to meet customer requirements.

300.40 HEADSET COMPATIBILITY

The key telephones are designed to allow the connection of a modular headset. The user connects the modular headset to the handset jack on the telephone leaving the handset in place. The ON/OFF button is then used to activate the headset.

300.41 HOLD PROVISIONS

The following hold conditions are available in the 816 system:

A. **Hold - System**
   Any call can be placed on hold and retrieved by any station with access to that line.

B. **Hold - Exclusive**
   Any call can be placed on hold and retrieved only by the initiating station.

C. **Hold - Preference**
   The system can be programmed to have either system hold or exclusive hold assigned as the hold preference.

D. **Hold Recall Timers**
   Calls placed on hold are capable of being timed to recall. The exclusive and system hold recall timers are separately programmed.

300.42 INCOMING INTERCOM SIGNALING SELECTION

The Key Telephone user can select the method of receiving intercom calls at that station. The mode can be easily changed by the individual user. A rocker switch located on the Key Telephone is used to select the mode. The choices are:

- Tone Ringer (T). A standard tone ring notifies the party of an incoming call. The party answers by going off-hook.
- Page (P). The station user receives a short tone burst and a voice announcement over the integrated keyset speaker, while the microphone is deactivated, providing privacy. The called party must go off-hook to pick up the call, or switch the selector to Handsfree.
- Handsfree (H). The station user, upon hearing a short tone burst and a voice announcement over the integrated speaker, can reply Handsfree.

300.43 INTERNAL ZONE PAGE

Any station can make voice paging announcements to idle stations in both internal zones simultaneously or to either of the two internal zones.

300.44 LCD-INTERACTIVE DISPLAY

An optional Executive Key Telephone with DISPLAY provides the user with visual indication of call status. Calls to and from other extensions, number dialed, line used and camp-on are among the many features displayed.

300.45 LOUD BELL CONTROL (CONTACT)

Incoming CO line ringing of a station can be directed to Loud Bell Control contacts. There are two sets of dry contacts that may be assigned individually. An external power source and ringing device is required.

300.46 MEET ME PAGE

Any Key Telephone station may answer a Meet Me Page request on internal or external pages. This allows a user to answer the page from any station and be connected to the paging party via an intercom channel.

300.47 MESSAGE WAITING

Unattended Key Telephones can be notified of missed calls. Up to five messages of incoming intercom calls can be received. Upon return to the keyset, the user presses the flashing MSG WAIT button to ring each party leaving a message.

300.48 MUSIC-ON-HOLD

An optional music source can be connected directly to the system to provide all held calls with music.

300.49 MUTE

During handsfree speakerphone operation, the Key Telephone microphone can be disabled

for situations requiring privacy of transmission or in areas where there are high ambient-noise levels.

300.50 NIGHT SERVICE

The attendant places the system in night service by pressing her DND button.* This allows specific phones to ring at night that may or may not ring during the day. A dial code is provided for Universal Night Answer; a direct CO line button appearance or a loop key is required for this feature.

* The attendant does not have the DND feature.

300.51 OFF-HOOK SIGNALING

If a station has been programmed to receive direct outside line ringing and is busy on another call, that station will receive muted ring to indicate another call is ringing in.

300.52 ON-HOOK DIALING

A speakerphone equipped Key Telephone user can place calls without lifting the handset, and monitor the call while the called party's phone is ringing or on Hold.

300.53 ON LINE PROGRAMMING

Changes to the system data base can be made without interrupting normal system operation. Programming is done at statio port 01, regardless of intercom number assigned to it.

300.54 PAUSE TIMER

When dialing a speed number, a timed pause in digit sending can be inserted into the number. When the [#] button is pressed while entering digits into a speed dial bin, it serves as a command to the KSU to provide a timed pause before resuming digit sending. The length of the pause is controlled by the pause timer. Successive entries of the [#] button will provide successive timed pauses. Each programmed pause utilizes one of the 16 digit spaces for speed dialing.

When a timed pause is detected during speed dialing, the LCD will display the letter "P" for each pulse. Automatic pauses that occur as a result of detecting a dialed PBX code in last number redial or a Pulse-to-Tone switch-over in speed dial will not display a "P" in the LCD display.

300.55 PBX/CENTREX TRANSFER

When Centrex or PBX Lines are connected to the 816 system, users may, by using the Flash button, transfer callers to other Centrex or PBX extensions.

300.56 PBX DIALING CODES

The system will allow four two-digit PBX access codes to be entered into memory. When one of these codes is dialed, this signals the 816 KSU that toll restriction is to be applied at the next dialed digit after the code. If one of the codes is not dialed, toll restriction does not apply. This allows the dialing of PBX extensions 100, 110, 111, etc.

300.57 PHONE BOX

A Phone Box may be substituted on a one-to-one basis for any Key Telephone in the 816 System to provide intercom announcements and handsfree talkback at desired locations. The user can also originate a call to stations preassigned in the data base by pressing the CALL button. This will signal all stations for which alarm receive has been enabled. One of these stations can respond to this signal by pressing the DSS button of the Phone Box station. Two-way conversation is then possible. The box is assigned a DSS key, and when called, responds Handsfree to the call. A station can be programmed as a Phone Box by assigning COS 6 in station programming.

300.58 PREFERRED LINE ANSWER

A station with Preferred Line Answer can answer any assigned ringing CO line by lifting the handset.

300.59 PRIVATE LINE

Private Line programming allows certain line(s) to provide flash and ring at a specific station only. When placed on hold, these line(s) are active at the indicated (programmed) station only. Night Service will not affect lines programmed as Private Lines. A Private Line can be transferred to other stations.

300.60 REAL TIME CLOCK

Provides Executive Key Telephones and SMDR records with an accurate Time and Date. The system clock recording time and date is protected from commercial power failure to the system and continues to function. This unit is included with the Enhanced 816 Key Service Unit (KSU) as standard equipment.

300.61 SAVE NUMBER REDIAL

A number dialed by a station on a CO line can be saved permanently to be used at any time.

300.62 SLA COMPATIBILITY

A Single Line Adapter (SLA) may be substituted for a key telephone on a one-for-one basis. This allows connectivity of industry standard

2500 type (DTMF) single line telephone, and other devices such as FAX machines, modems, automatic attendant, and Voice Mail systems. There is no limit on the number of 816 ports that can be programmed to SLA units.

300.63 SPEAKERPHONE

Each Key Telephone contains circuitry enabling two-way Handsfree conversations for either internal or external calls.

300.64 STATION CLASS OF SERVICE (COS)

Each station is assigned a Class of Service which governs that station's dialing privileges. Six uniquely defined Classes of Service are available for assignment to station on a per station basis. The system provides a flexible means of providing Toll or dialing restrictions through the use of two (2) programmable Allow and Deny Tables.

300.65 STATION MESSAGE DETAIL RECORDING (SMDR)

SMDR allows a customer to track both incoming and outgoing calls by CO line, number dialed, time of day, date, station that placed the call, and duration of call. The SMDR module is included with the Enhanced 816 Key Service Unit (KSU) as standard equipment.

300.66 STATION SPEED DIAL

Each station has sixteen user programmable private speed dial numbers of up to sixteen digits in length. These numbers may contain pauses, Flash commands, and "No Display" characters. The numbers are accessed by going off-hook, pressing the AUTO/SAVE button, and press the STA/SPD button desired.

300.67 SYSTEM SPEED DIAL

A total of forty numbers can be assigned as common system speed dial numbers. The numbers can be up to sixteen digits in length, with pauses taking up digit space. The numbers are accessed by going off-hook, pressing the AUTO/SAVE button, and dialing the two-digit access code (10 to 49). The last twenty speed dial bins will not be monitored by toll restriction. The system speed numbers are entered at the attendant station.

300.68 TOLL RESTRICTION OVERRIDE

An outside line can be programmed to allow toll restricted stations to dial on that line.

300.69 TOLL RESTRICTION (TABLE DRIVEN)

The system provides a flexible means of providing toll restriction to individual stations. By assigning a "class of service" to each station, long distance calls can be limited at certain stations through entries into the Allow/Deny Tables.

300.70 TRANSFER RECALL

When a CO transfer is completed to another station, the Transfer Recall timer is initiated. If the line is not answered within a specified amount of time, the CO line will recall the initiator within a specified amount of time, the CO line will recall to the Attendant. If still unanswered by the Attendant and the recall timer expires again, the CO line will recall to all stations in the system. If the CO line still goes unanswered and the recall timer expires again, the CO line will be dropped from the system.

300.71 UNIVERSAL NIGHT ANSWER

CO lines not marked as a Private Line have Universal Night Answer (UNA), which provides key telephones access to incoming CO calls when the system is in night service.

300.72 VOLUME CONTROLS

Each Key Telephone user can adjust both speaker and ring volume independently by using the two volume slide switches located on the right side of the Key Telephone.

300.73 WALL TELEPHONE

Any Key Telephone can be adapted for wall mounting using the Wall Mount Kit.

SECTION 400
OPERATION

400.1 INTRODUCTION

The *Infinite 816* Key Telephone System has a wide variety of features and flexible programming, allowing each telephone user to program his/her telephone to meet his/her own individual needs.

This section of the manual contains the operating instructions for key telephones and includes an illustration of the key telephone used in the 816 system and description of the keys on the telephones and their functions. It is designed to provide step-by-step instructions for operating the key telephones in the system. Visual and audible cues which accompany the various steps in the operation of the features are also included.

Literature similar to these operating instructions has been prepared for use by the customer in the form of the *Infinite 816* Station User's Guide.

400.2 PLACING AN OUTSIDE CALL (AUTOMATIC LINE SELECTION)

a. Press outside line button.
b. ON/OFF button will light and dial tone will be heard.
c. Dial desired party.
d. When called party answers, lift handset to converse or use speakerphone.

400.3 ANSWERING AN OUTSIDE CALL

a. Lift handset.
b. Press slow flashing outside line button. (If your telephone is programmed with Preferred Line Answer, you may answer an outside line by lifting the handset.)

400.4 SPEAKERPHONE

a. Press station key of desired party, or press available outside line button and dial number.
b. Speakerphone is activated.
c. Press ON/OFF button to end call.

400.5 VOLUME CONTROLS

There are two volume control slide switches on the right side of the Key Telephone. Sliding the switch toward you decreases the volume. The front switch is for voice, background music, and speakerphone volume. The back switch is for tone ringing volume.

400.6 MUTE BUTTON

The MUTE button provides privacy during speakerphone or handset operation by disabling the microphone.

a. Press while off-hook to activate (LED lights).
b. Press again to deactivate.

400.7 BACKGROUND MUSIC

a. Press [9] on the dial pad (music is heard).
b. Press [9] again and music is discontinued. (When you pick up the handset or press the ON/OFF button, music is discontinued automatically.)

400.8 PLACING OUTSIDE LINE ON HOLD

a. If your system is programmed for Exclusive Hold Preference, press HOLD button once for Exclusive Hold and twice for System Hold.
b. If your system is programmed for System Hold Preference, press HOLD button once for System Hold and twice for Exclusive Hold.

400.9 ANSWERING A RECALL

When an outside line has remained on hold for an extended period of time, you will be reminded with a recalling ring.

a. Press outside line button flashing at very fast rate.
b. Lift handset to converse.

400.10 FLASH

When connected to an outside line, press FLASH button to disconnect outside line and reseize outside line dial tone.

400.11 PBX/CENTREX TRANSFER

a. While connected to an outside line (PBX or Centrex), press FLASH button.
b. Receive PBX/Centrex transfer dial tone.
c. Dial PBX/Centrex station number.
d. Hang up to complete transfer.

Note: The CO line Flash Timer must be programmed for proper PBX/Centrex operation.

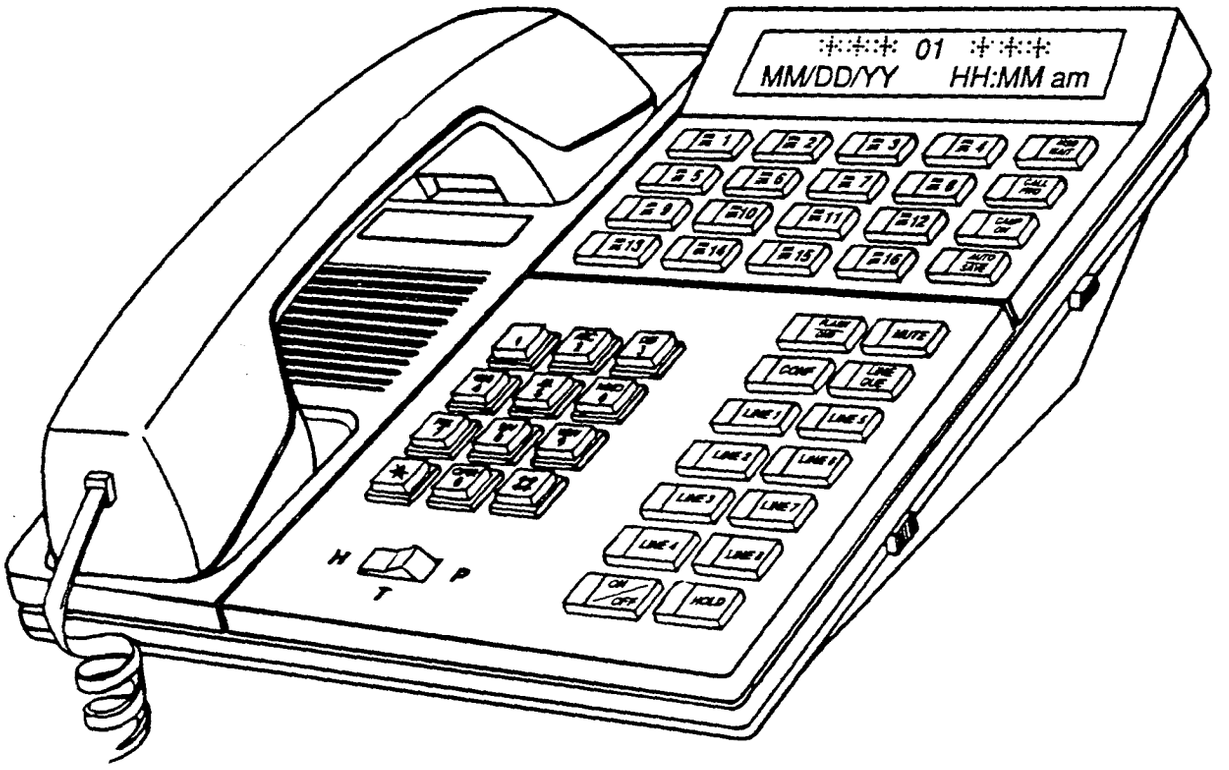


Figure 400-1 *Infinite* 816 Executive Key Telephone

Table 400-1 816 Numbering Plan

10 TO 49	System Speed Dial preceded by AUTO/SAVE button
2	Alarm Reset
3	External Page
4	Meet Me Page Answer
6	Call Pickup
70	Internal All Call Page
71	Internal Zone 1 Page
72	Internal Zone 2 Page
73	External Zone Page (Can also use 3)
74	All Call Page (Can also use #)
9	Music
0	Attendant
*	Save Number Redial (preceded by AUTO/SAVE button)
#	All Call

400.12 CALL PICKUP

When intercom tone ringing, transferred outside line ringing, or recall ringing is heard at an unattended telephone, lift the handset and dial [6] on the dial pad to be connected to the calling party. You must be in the same pick-up group as the ringing telephone to pick up the call.

400.13 PLACING AN INTERCOM CALL

a. Press station key of party to be called (if programmed at your phone); or dial station number (01 to 15).
b. You will hear ringing if called station is in "T" answering mode; or three bursts of tone if called station is in "H" or "P" position.
c. Lift handset or use speakerphone, tone bursts stop.
d. Hang up to end call.

400.14 ANSWERING AN INTERCOM CALL

With your intercom signal switch in the:

— **T mode**, you will hear repeated intercom tone ringing & your HOLD button will slow flash. Lift handset or press ON/OFF button to answer. Hang up or press ON/OFF button to end call.

— **P mode**, you will hear 3 bursts of tone & a one way announcement. The HOLD button will slow flash. Lift handset or press ON/OFF button to reply. Hang up to end call.

— **H mode**, you will hear 3 bursts of tone and an announcement. Reply hands-free or lift handset for privacy. Hand up or press ON/OFF button to end call.

NOTE: The station button of the calling party button will flash. If you receive a call from a phone box, you must press that station button to answer the call.

400.15 CAMP ON

If you call a station that is busy and wish to alert them to your call:

a. Press the CAMP ON button.
b. Called station will receive two bursts of ringing.
c. Wait for their response.

If a station is in DND, only the attendant can Camp-On.

400.16 ANSWERING A CAMP ON

If you are on a connected call, hear two bursts of muted ringing, and your CAMP ON button is flashing, you have a call waiting for you.

a. To answer, press the CAMP ON button.

b. Any outside line you are connected to will be placed on hold. You may converse with the station placing the call.

400.17 LEAVING A MESSAGE WAITING INDICATION

Up to five messages can be left at any Key Station. If you dial a station that is busy, unattended, or in DND, you can leave a message waiting indication.

a. Press the MSG WAIT button.

b. Called party's MSG WAIT button will slow flash.

c. Hang up.

400.18 ANSWERING A MESSAGE WAITING INDICATION

If your MSG WAIT button is flashing at a slow rate, you have a message waiting for you. The first message left will be the first one called.

a. Pick up handset.

b. Press flashing MSG WAIT button.

c. Station that left message will be signaled with tone ringing.

d. If called station does not answer, press MSG WAIT button once to leave message.

400.19 CALL TRANSFER

Outside lines can be transferred from one phone to another within the system. The transfer can be either screened (announced) or unscreened to either an idle or busy station.

Screened Transfer

While connected to an outside line:

a. Press station button where call is to be transferred.

b. The called extension signals according to the intercom signal switch position.

c. When that extension answers, announce the transfer.

d. Hang up to complete transfer.

Unscreened Transfer

When the called extension begins to signal:

a. Hang up to transfer the call (Recall timer starts).

Transfer Search

When attempting to locate a party:

a. Press a station key to signal a station.

b. If the party is not located, press another station key to continue the search or repeat if necessary.

c. If the party is not located, press another station.

d. When the called party answers, hang up to complete the transfer.

Answering A Screened Transfer

Your intercom will be signaling according to the intercom signal switch position.

a. Answer the intercom and receive the transfer notice.

b. Press the outside line button flashing on hold.

400.20 EXECUTIVE/SECRETARY TRANSFER

If you are designated the Executive station and your phone is busy or in DND, all calls will be routed to the Secretary station.

If you are the designated Secretary station, you can signal the Executive that is busy or in DND by using the Camp On feature.

400.21 CONFERENCE COMBINATIONS

- Two internal and one external or three party internal - Add-On.
- One internal and two external - Multi-Line Conference.

Establishing a Conference

A maximum of three parties can be included in a conference. The internal party must lift the handset.

a. Lift handset.

b. Select intercom station or dial desired outside party.

c. When called party answers, press CONF button.

d. Add next conference party by selecting another outside line or intercom station.

e. When party answers, press CONF button.

f. All parties are connected.

Exiting a Conference (controller only)

There are three methods of exiting a conference:

a. Press the ON/OFF button to ON and replace handset (to monitor a conference).

b. Press HOLD button to place outside parties on hold. Hold timer starts. If one of the two parties is internal, that party will be dropped.

c. Press CONF and hang up or press the ON/OFF button to leave the other conference parties still connected in an unsupervised conference. CONF button will flash and timer will start. There will be a warning tone before the other parties are dropped.

Re-entering a Conference

When the controller re-enters the conference, the disconnect timer is reset.

a. Lift handset to re-enter a monitored conference.

b. To re-enter a conference placed on hold, repeat steps for establishing a conference.

c. To re-enter an unsupervised conference, lift handset (multi-line); or to re-enter an unsupervised conference, lift handset and press flashing CONF button (add-on). The CONF button lights steady and confirmation tone will be heard.

Terminating a Conference:

a. Replace handset or push ON/OFF button to off. You must be actively in the conference.

400.22 DO NOT DISTURB

Activating Do Not Disturb

If you have been given the ability to place your phone in Do Not Disturb:

a. Press the DND button.

b. DND button lights steady.

The DND button can be pressed while the phone is ringing to stop the ringing.

Removing Do Not Disturb

1. Press DND button.
2. The button LED extinguishes.

400.23 QUEUING

A station can queue only one line at a time. If you see that a particular outside line is busy and you wish to be placed on a list waiting for that line to become available:

To place a Queue

a. Press LINE QUE button

b. Press desired busy outside line button.

c. Hang up.

To Cancel a Queue

a. Lift handset or press ON/OFF button.

b. Press LINE QUE button.

c. Intercom dial tone will be heard.

To Answer a Queue

If you hear ringing and an outside line of the line group you queued is slow flashing:

a. Lift handset.

b. Press flashing outside line button to answer.

If your station has been programmed for Preferred Line Answer, you will have the line automatically upon lifting the handset.

400.24 STORING STATION SPEED NUMBERS

Station Speed numbers can be entered by keyset users. System Speed numbers must be entered by the first programmed attendant. If no attendant is specified, enter at Station 1.

a. Lift handset or press ON/OFF button.

b. Press AUTO/SAVE button twice.

c. Press STA/SPD button where number is to be stored. (LED will not light).

d. Select desired outside line or one will be chosen automatically.

e. Dial telephone number.

f. Press HOLD button.

g. Hang up.

- Dialing an [*] initiates a Pulse-To-Tone switchover.
- Pressing the [#] during number storage inserts a Pause.
- Pressing the FLASH key inserts a Flash into the speed number.
- Pressing the CONF button inserts a no-display character causing any numbers put into the bin after the CONF button is pressed not to appear on the Key Telephones display when the bin is accessed.

NOTE: It is important to ensure unused CO lines are programmed into a separate line group so the system will not choose an undesired CO line when attempting to dial a speed bin number.

400.25 DIALING A STATION SPEED NUMBER

If no outside line has been specified in programming, one will be chosen automatically or you can choose one now.

a. Press AUTO/SAVE button.

b. Press STA/SPD button desired.
c. When called party answers, pick up handset or use speakerphone.

400.26 STORING SYSTEM SPEED NUMBERS (ASSIGNED ATTENDANT ONLY)

a. Lift handset or press ON/OFF button.
b. Press AUTO/SAVE button twice.
c. Dial desired bin location (10 to 49).
d. Select desired outside line or one will be chosen automatically.
e. Dial telephone number.
f. Press HOLD button.
g. Hang up.

- Dialing an [*] initiates a Pulse-To-Tone switchover.
- Pressing the [#] during number storage inserts a Pause.
- Pressing the FLASH key inserts a Flash into the speed number.
- Pressing the CONF button inserts a no-display character causing any numbers put into the bin after the CONF button is pressed not to appear on the Key Telephones display when the bin is accessed.

NOTE: It is important to ensure unused CO lines are programmed into a separate line group so the system will not choose an undesired CO line when attempting to dial a speed bin number.

400.27 DIALING A SYSTEM SPEED NUMBER

If no outside line has been specified in programming, one will be chosen automatically or you can choose one now.

a. Press AUTO/SAVE button.
b. Dial desired bin location (10 to 49).
c. When called party answers, pick up handset or use speakerphone.

400.28 SAVE NUMBER REDIAL

If you wish to save the last number you dialed:

a. Keep handset off-hook.
b. Press AUTO/SAVE button twice.

To Dial a Saved Number

a. Press AUTO/SAVE button.
b. Dial asterisk [*] key.

400.29 PAGING

Stations off-hook or in DND will not hear the page.

a. Lift handset and dial two digit paging code
   70 Internal All Call
   71 Internal Zone 1
   72 Internal Zone 2
   73 External Zone
   74 All Call
b. Speak in normal tone of voice to deliver message:
c. Hang up.

400.30 MEET ME PAGE

If you wish to have another party call you:

a. Pick up handset and dial [74].
b. Request that party meet you on the page.
c. Do not hang up; wait for the requested party to answer.

Answering a Meet Me Page

a. Go to the nearest Key Telephone and dial [4].
b. You will be connected to the party that paged you.

400.31 CALL FORWARDING

If you have been given the ability to forward your calls:

a. Lift handset (intercom dial tone is heard).
b. Press CALL FWD button.
c. Press STA/SPD button where your calls are to be forwarded.
d. Hang up.

To Remove Call Forwarding

a. Lift handset.
b. Press CALL FWD button.
c. Hang up.

400.32 NIGHT SERVICE

a. Attendant presses DND button at that station.
b. To remove, press DND button again.

400.33 SETTING SYSTEM TIME AND DATE

System Time and Date must be set at the attendant station.

a. Press AUTO/SAVE button twice.
b. Dial [50].
c. Enter date and time as follows:
   YYMMDDHHMM

d. YY = year 80 to 99
MM = month 01 to 12
DD = day 01 to 31
HH = hour 00 to 23
MM = minute 00 to 59

e. Press Hold to enter.

400.34 ALARM

If you hear alarm signals on your telephone:

To reset alarm condition.

a. Go off-hook.

b. Dial [2].

400.35 USING ACCOUNT CODES

If you are on an existing call:

a. Press AUTO/SAVE button.

b. Press pound [#].

c. Dial account code up to eight digits. (The other party will not hear the digits being dialed.)

400.36 PHONE BOX SIGNALING

If you hear signals on your telephone, it may be a signal from a phone box.

a. Press station button of that phone box.

b. Lift handset or use speakerphone to converse.

c. Hang up to end call.

400.37 UNIVERSAL NIGHT ANSWER

You hear an outside line ringing at another station, or common audible ringer, and wish to answer it:

a. Lift handset.

b. Press slow flashing outside line button.

c. You will be connected to the ringing outside line.

400.38 ATTENDANT OVERRIDE (CAMP-ON)

If the Attendant calls a station that is either busy or in DND and wishes to alert them of a call:

a. Press the Camp-On button. Called station will receive 2 bursts of ringing.

b. Wait for their response.

410.1 LCD DISPLAYS

The display is arranged into an upper and lower field. The upper field displays the current activity of the telephone. The lower field is divided into two sections. The left section of the lower field displays the date, speed bin number, connected intercom station or outside line number. The right section of the lower field displays the current time or elapsed time on an outside call. Table 410.1 shows what will appear on the LCD displays based on the function performed.

Table 410.1 Liquid Crystal Display (LCD)

FUNCTION	CALLING STATION'S DISPLAY	CALLED STATION'S DISPLAY
Idle Station	***01*** MM/DD/YY HH:MM am	
Manually Dialing Outgoing Calls	18005551212 LINE 5 HH:MM am	
Recalling Line from Hold	LINE RECALLING LINE 1 HH:MM am	
Recalling Line from Another Station	RECALL FROM XX LINE 1 HH:MM am	
Connected to an Incoming CO Line		***01*** LINE 2 00:00:10
Intercom Call	CALL TO STA 1 MM/DD/YY HH:MM am	CALL FROM STA 3 MM/DD/YY HH:MM am
Camp-on		CAMP-ON FROM 12 LINE 2 HH:MM am

FUNCTION	CALLING STATION'S DISPLAY	CALLED STATION'S DISPLAY
Conference	CONFERENCE MM/DD/YY HH:MM am	CONFERENCE MM/DD/YY HH:MM am
Internal Page	INTERNAL PAGE ZONE 1 HH:MM am	PAGE FROM 1 MM/DD/YY HH:MM am
External Page	EXTERNAL PAGE MM/DD/YY HH:MM am	
All Call Page	ALL CALL PAGE MM/DD/YY HH:MM am	PAGE FROM 1 MM/DD/YY HH:MM am
Message Waiting		MSG: 1 9 15 4 2 MM/DD/YY HH:MM am
Reply to a Message Waiting (Call Back)	CALL TO 12 MM/DD/YY HH:MM am	CALL FROM 3 MM/DD/YY HH:MM am
Station Call Forward (Originating Station)	*** FORWARD TO 6 *** MM/DD/YY HH:MM am	
Forwarded Call	FORWARD TO 6 FROM 3 MM/DD/YY HH:MM am	STA 9 FORWARD FROM 3 MM/DD/YY HH:MM am
Preset Forwardl		FORWARD FROM 3 LINE 2 HH:MM am

FUNCTION	CALLING STATION'S DISPLAY	CALLED STATION'S DISPLAY
CO Line Queuing	QUEUED ON LINE LINE 2 HH:MM am QUEUE CALL BACK LINE 2 HH:MM am	
Outside Line Transfer		TRANSFER FROM 9 LINE 2 HH:MM am
Programmed Flash Command (F)	F*12 STA SPEED 15 HH:MM:SS	
Programmed Pause Command (P)	950777P1234567 SPEED 10 HH:MM:SS	
Programmed Pulse-To-Tone Switchover (*)	950777*1234567 SPEED 10 HH:MM:SS	
Call Pickup	PICKUP FROM 9 MM/DD/YY HH:MM am	PICKUP FROM 9 MM/DD/YY HH:MM am PICKUP FROM 9 LINE 1 HH:MM:SS
Ringing CO Lines		LINE RINGING LINE 7 HH:MM am

FUNCTION	CALLING STATION'S DISPLAY	CALLED STATION'S DISPLAY
Display Security Feature	***NO DISPLAY*** MM/DD/YY HH:MM:SS	
Meet Me Page	ALL CALL PAGE MM/DD/YY HH:MM am CALL FROM 9 MM/DD/YY HH:MM am	PAGE FROM 1 MM/DD/YY HH:MM am CALL TO 1 MM/DD/YY HH:MM am
Alarm	ALARM MM/DD/YY HH:MM:SS	

SECTION 500
INSTALLATION

500.1 SITE PLANNING

The *Infinite* 816 Key Telephone System, like most electronic office equipment, should not be subjected to harsh environmental conditions. To assure easy servicing and reliable operation, the following factors must be considered when planning the system installation:

- The KSU is designed for wall-mounting only.
- The internal power supply operates on 117V ac, 60 Hz, single phase electricity. A 3-wire (parallel blade with ground) receptacle must be provided on a dedicated, separately fused 15 ampere circuit.
- Location(s) of telephone conduits or cable runs.
- The KSU should be within 25 feet of the telephone company RJ21-X. The KSU should be centrally located and assurances should be made to stay within prescribed cable lengths.

— 500 ft. 26 AWG twisted pair
— 1000 ft. 24 AWG twisted pair
— 1500 ft. 22 AWG twisted pair

- A well ventilated area having a recommended temperature range of 70 to 78 degrees Fahrenheit, and a humidity range of 5 to 90% (non condensing).
- Lighting and accessibility of KSU for servicing.
- Protection from flooding, flammable materials, excessive dust and vibration.
- Proximity of radio transmitting equipment, arc-welding devices, copying machines, and other electrical equipment that are capable of generating electrical interferences.
- Access to a good earth ground such as a metallic COLD water pipe. Inspect the pipe for non-metallic joints.

500.2 UNPACKING THE KSU

a. Remove the KSU from the shipping carton and place it on a level working surface, face up.
b. Inspect the KSU for physical damage. The KSU has no user-serviceable parts.

500.3 KSU GROUNDING

To ensure that the system will operate properly, a good earth ground is recommended. Use of the Telco ground (source not "D" mark) or a metallic COLD water pipe will usually provide a reliable ground path. Carefully check that the pipe does not contain insulated joints that could isolate the ground. In the absence of the cold water pipe, a ground rod or other source may be used. A no. 8 AWG copper wire should be used between the ground source and the KSU.

NOTE: The ground wire should be kept as short as possible and can be connected to the ground lug located on the bottom of the KSU (Figure 200.2).

500.4 KSU INSTALLATION

The KSU is designed for wall mounting only. It should not be mounted directly on a masonry surface. If the KSU must be mounted on a masonry surface, a wooden backboard of sufficient size should be attached to the wall and the KSU mounted on the backboard.

1. Mount the KSU on the backboard using four fasteners. (The fasteners should be selected carefully to be capable of supporting the KSU.) Refer to Figure 500-1 for KSU dimensions.
2. Install the ground using an insulated 8 AWG copper wire. Attach one end to the ground lug on the KSU cabinet and the other end to a good earth ground. See Figure 200-2.

The KSU power supply is located within the KSU, and all electrical connections are provided externally. The power cord exits the KSU on the bottom. Also on the bottom is a fuse holder that contains a 1.0 ampere slow-blow fuse. Power for the system is distributed internally.

The power cord should not be used with a

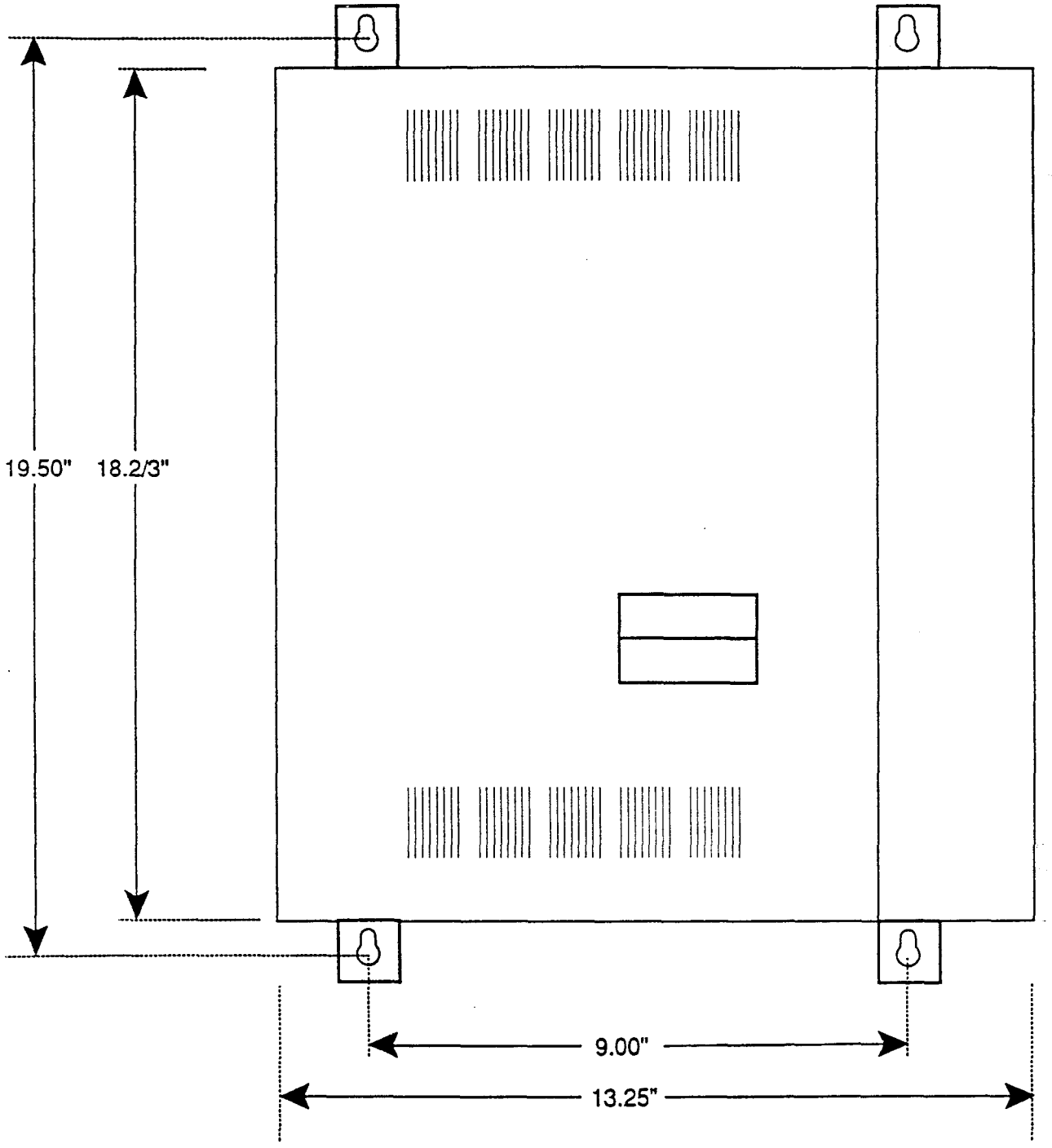


Figure 500-1 KSU Mounting Dimensions

3-wire-to-2-wire plug adapter. A power line surge protector should be used to protect the power supply from electrical surges. The surge protector should be installed in accordance with the manufacturer's instructions and applicable electrical codes.

WARNING

Do not plug in the power cord at this time.

500.5 KSU CABLING

Three (3) Amphenol-type connectors are provided on the outside surface of the KSU (Refer to Figure 200-2).

On the right edge of the front surface is the P-1 connector which requires a female ended cable for proper attachment. Table 500-1 lists the pin function for P-1. On the left side surface of the 816 KSU are two connectors marked J-1 and J-2. The J-1 connector is located just below the J-2 connector. J-1 and J-2 require 90 degree male ended plug cables for proper attachment. Tables 500-2 and 500-3 list the pin functions for J-1 and J-2. When connecting cable tails to the KSU, make sure the designation on the AMP hood matches the designation at the connector's input on the KSU.

After plugging in the required cables, a "horse shoe" fastener should be placed around the mated AMP connectors to secure the cable to the KSU connector provided.

Verify that the wires are properly cross-connected. Observe telephone standard wiring color codes where ever necessary.

Cabling should be routed to avoid fluorescent light fixtures, electric motors and generators, welding equipment, and radio transmitters. Additionally, care should be taken to avoid hot locations such as steam pipes and furnaces, and areas where wiring is subject to abrasion.

CAUTION

It is NOT recommended that power be applied to the system during the cable termination process.

500.6 LIGHTNING PROTECTION

The *Infinite* 816 Key Telephone System should have central office lines protected with proper lightning surge arrestors. The central office lines are exposed to damaging surges induced by direct or non-direct lightning strikes. The protection should contain a complement of three-element gas discharge tubes which ground high potential surges, and associated circuits to absorb and filter lower-level surge potentials. Care should be taken to ensure that not more than one set of protectors be installed on central office lines at installation premises. Improper installation of line protection can present a serious safety hazard.

500.7 KEY TELEPHONE INSTALLATION

A maximum of 16 Key Telephones may be installed with the 816 Key Telephone System. Each Key Telephone requires 2 pair (4 wires) for proper wiring. It is recommended that 3 pair twisted pair cable be used to connect the telephones to the system on a "home run" basis. The telephone end of the cable should be terminated on a modular jack as shown in Figure 500-2. At the MDF end of the home run, the cable should be terminated on a separate station connecting block (66M1-50) for cross connection to the "J" cables. This method of cabling will allow for easy isolation of station equipment during troubleshooting procedures.

500.8 WALL MOUNT KIT INSTALLATION

All connections to the Key Telephones are fully modular. To wall mount the Key Telephone, it is necessary to have one Wall Mount Kit and one 630-A type modular wall mount jack assembly equipped with two mounting lugs (See Figure 500-3).

a. Remove the mounting cord from the Key Telephone. This cord will no longer be needed, but should be retained for maintenance purposes.

b. Substitute the short modular cord on the wall mount baseplate for the removed mounting cord.

c. Rotate the plastic number retainer upwards to expose the screw underneath. Remove the screw, and slide the cover plate under the number retainer towards the hookswitch.

d. Replace the cover plate with the handset retainer tab that is mounted in the wall mount baseplate and secure with the screw from Step c. above.

e. Rotate the plastic number retainer downward and snap into place.

f. Align the mounting tab on the outer edges of the wall mount base with the holes on the Key Telephone base. Snap shut and fasten with the screw.

Table 500-1 CO Connecting Block Layout

CO Line #	Function	MDF Cable	Connector Pin
1	T1	WH/BL	26
	R1	BL/WH	1
2	T2	WH/OR	27
	R2	OR/WH	2
3	T3	WH/GN	28
	R3	GN/WH	3
4	T4	WH/BN	29
	R4	BN/WH	4
5	T5	WH/SL	30
	R5	SL/WH	5
6	T6	RD/BL	31
	R6	BL/RD	6
7	T7	RD/OR	32
	R7	OR/RD	7
8	T8	RD/GN	33
	R8	GN/RD	8

Table 500-2 J-1 Connecting Block Layout

Station #	Telephone Line Cord	2 pr. Twisted Station Cable	Function	MDF Cable	PIN #
Station 1	GREEN	WH/BL	VT 1	WH/BL	26
	RED	BL/WH	VR 1	BL/WH	1
	BLACK	WH/OR	DT 1	WH/OR	27
	YELLOW	OR/WH	DR 1	OR/WH	2
Station 2	GREEN	WH/BL	VT 2	WH/GN	28
	RED	BL/WH	VR 2	GN/WH	3
	BLACK	WH/OR	DT 2	WH/BN	29
	YELLOW	OR/WH	DR 2	BN/WH	4
Station 3	GREEN	WH/BL	VT 3	WH/SL	30
	RED	BL/WH	VR 3	SL/WH	5
	BLACK	WH/OR	DT 3	RD/BL	31
	YELLOW	OR/WH	DR3	BL/RD	6
Station 4	GREEN	WH/BL	VT 4	RD/OR	32
	RED	BL/WH	VR 4	OR/RD	7
	BLACK	WH/OR	DT 4	RD/GN	33
	YELLOW	OR/WH	DR 4	GN/RD	8
Station 5	GREEN	WH/BL	VT 5	RD/BN	34
	RED	BL/WH	VR 5	BN/RD	9
	BLACK	WH/OR	DT 5	RD/SL	35
	YELLOW	OR/WH	DR 5	SL/RD	10
Station 6	GREEN	WH/BL	VT 6	BK/BL	36
	RED	BL/WH	VR 6	BL/BK	11
	BLACK	WH/OR	DT 6	BK/OR	37
	YELLOW	OR/WH	DR 6	OR/BK	12
Station 7	GREEN	WH/BL	VT 7	BK/GN	38
	RED	BL/WH	VR 7	GN/BK	13
	BLACK	WH/OR	DT 7	BK/BN	39
	YELLOW	OR/WH	DR 7	BN/BK	14
Station 8	GREEN	WH/BL	VT 8	BK/SL	40
	RED	BL/WH	VR 8	SL/BK	15
	BLACK	WH/OR	DT 8	YL/BL	41
	YELLOW	OR/WH	DR 8	BL/YL	16
MUSIC-ON-HOLD			MOH	YL/OR	42
			MOH	OR/YL	17
EXTERNAL PAGE (VOICE)			EPVT	YL/GN	43
			EPVR	GN/YL	18
EXTERNAL PAGEDRY CONTACTS			EPCTL	YL/BN	44
			EPCTL	BN/YL	19
ALARM			ALMT	YL/SL	45
			ALMR	SL/YL	20
LOUD BELL CONTROL 1			LBC1T	VI/BL	46
			LBC1R	BL/VI	21
LOUD BELL CONTROL 2			LBC2T	VI/OR	47
			LBC2R	OR/VI	22
SPARE				VI/GN	48
				GN/VI	23
SPARE				VI/BN	49
				BN/VI	24
SPARE				VI/SL	50
				SL/VI	25

Table 500-3 J-2 Connecting Block Layout

Station #	Telephone Line Cord	2 pr. Twisted Station Cable	Function	MDF Cable	Connector Pin
Station 9	GREEN	WH/BL	VT 9	WH/BL	26
	RED	BL/WH	VR9	BL/WH	1
	BLACK	WH/OR	DT9	WH/OR	27
	YELLOW	OR/WH	DR9	OR/WH	2
Station 10	GREEN	WH/BL	VT 10	WH/GN	28
	RED	BL/WH	VR 10	GN/WH	3
	BLACK	WH/OR	DT 10	WH/BN	29
	YELLOW	OR/WH	DR 10	BN/WH	4
Station 11	GREEN	WH/BL	VT 11	WH/SL	30
	RED	BL/WH	VR 11	SL/WH	5
	BLACK	WH/OR	DT 11	RD/BL	31
	YELLOW	OR/WH	DR11	BL/RD	6
Station 12	GREEN	WH/BL	VT 12	RD/OR	32
	RED	BL/WH	VR12	OR/RD	7
	BLACK	WH/OR	DT12	RD/GN	33
	YELLOW	OR/WH	DR 12	GN/RD	8
Station 13	GREEN	WH/BL	VT 13	RD/BN	34
	RED	BL/WH	VR13	BN/RD	9
	BLACK	WH/OR	DT 13	RD/SL	35
	YELLOW	OR/WH	DR 13	SL/RD	10
Station 14	GREEN	WH/BL	VT 14	BK/BL	36
	RED	BL/WH	VR14	BL/BK	11
	BLACK	WH/OR	DT 14	BK/OR	37
	YELLOW	OR/WH	DR 14	OR/BK	12
Station 15	GREEN	WH/BL	VT 15	BK/GN	38
	RED	BL/WH	VR 15	GN/BK	13
	BLACK	WH/OR	DT15	BK/BN	39
	YELLOW	OR/WH	DR15	BN/BK	14
Station 16	GREEN	WH/BL	VT 16	BK/SL	40
	RED	BL/WH	VR16	SL/BK	15
	BLACK	WH/OR	DT16	YL/BL	41
	YELLOW	OR/WH	DR16	BL/YL	16

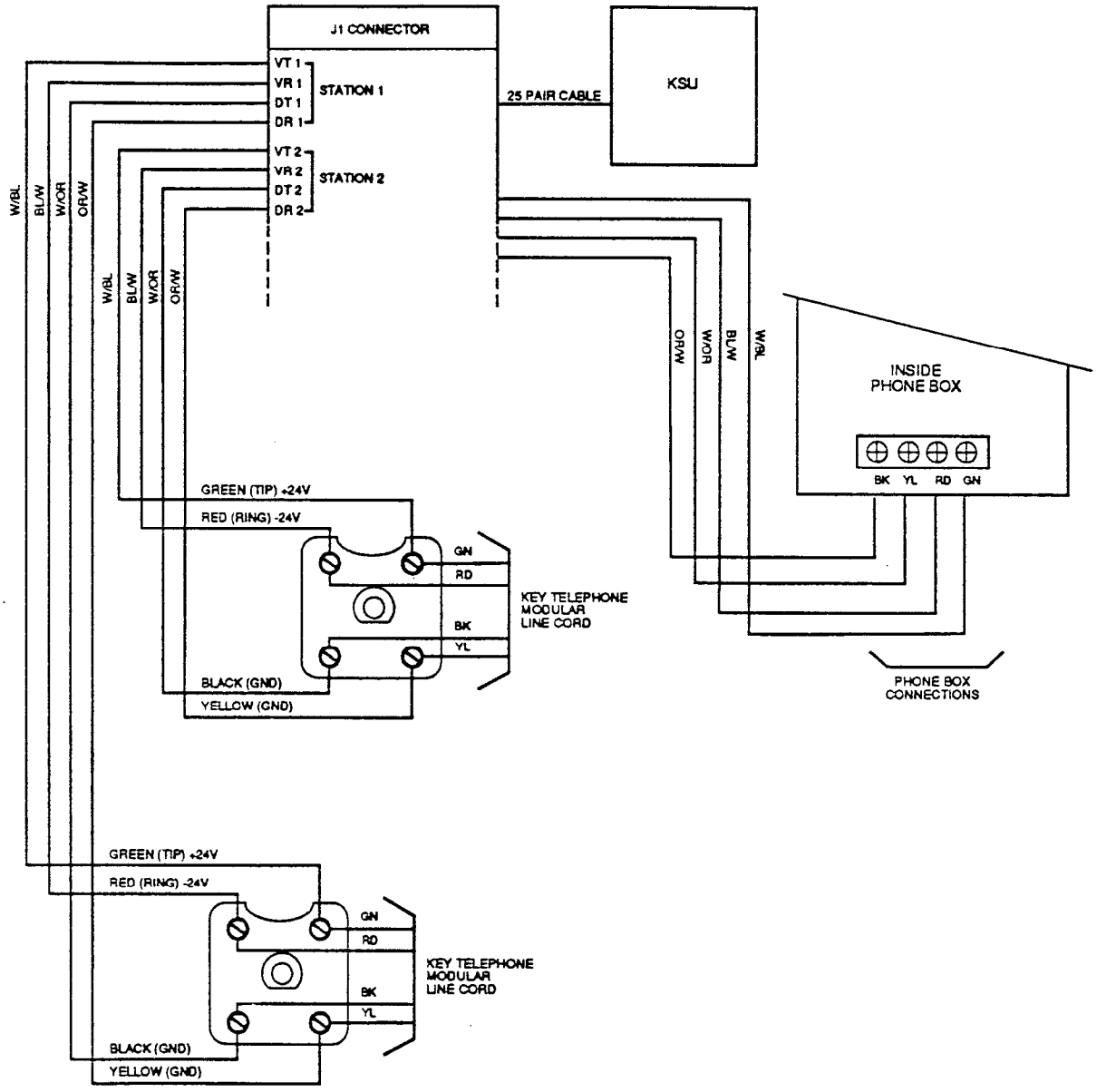


Figure 500-2 Key Telephone Wiring

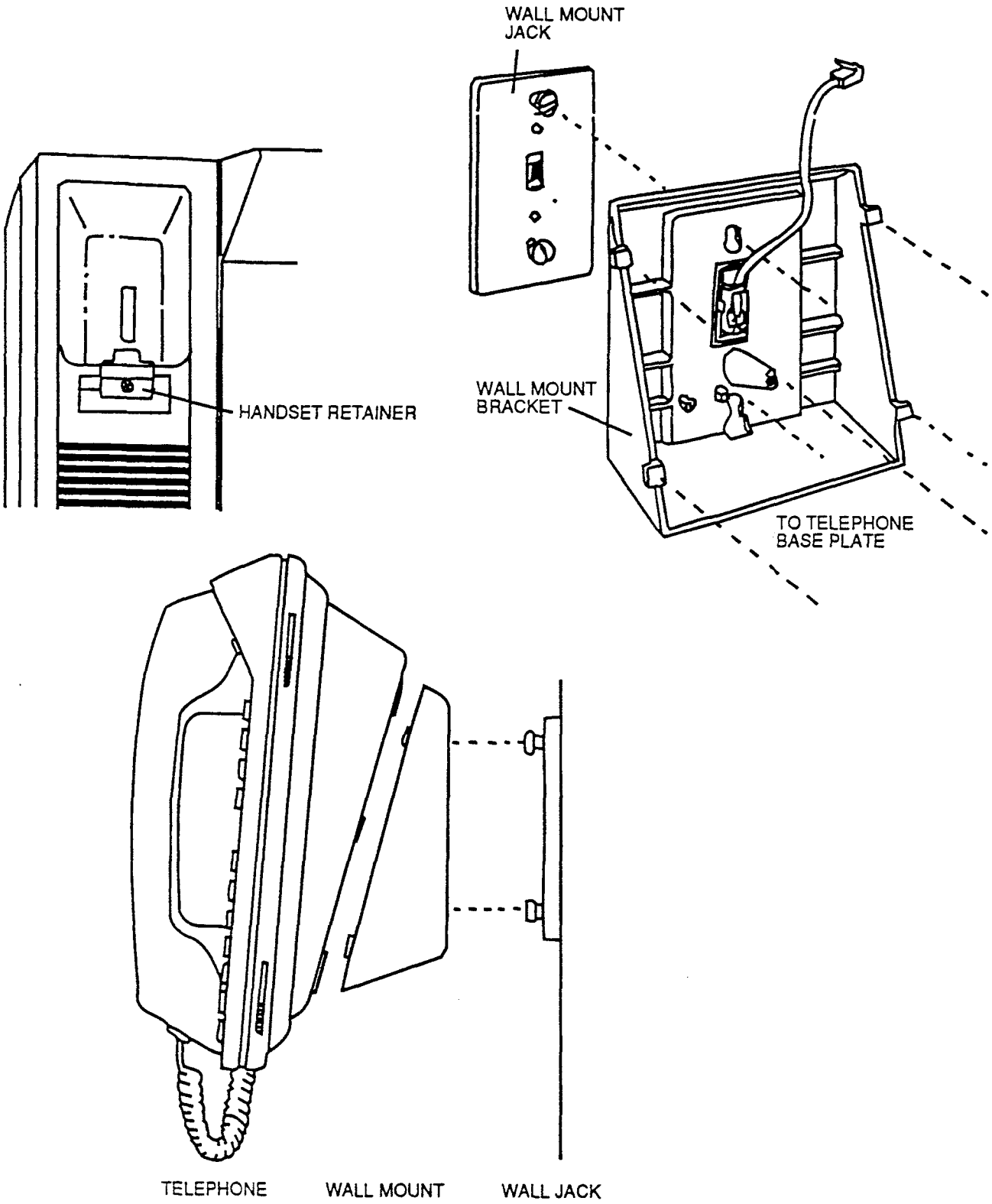


Figure 500-3 Wall Mounting the Key Telephone

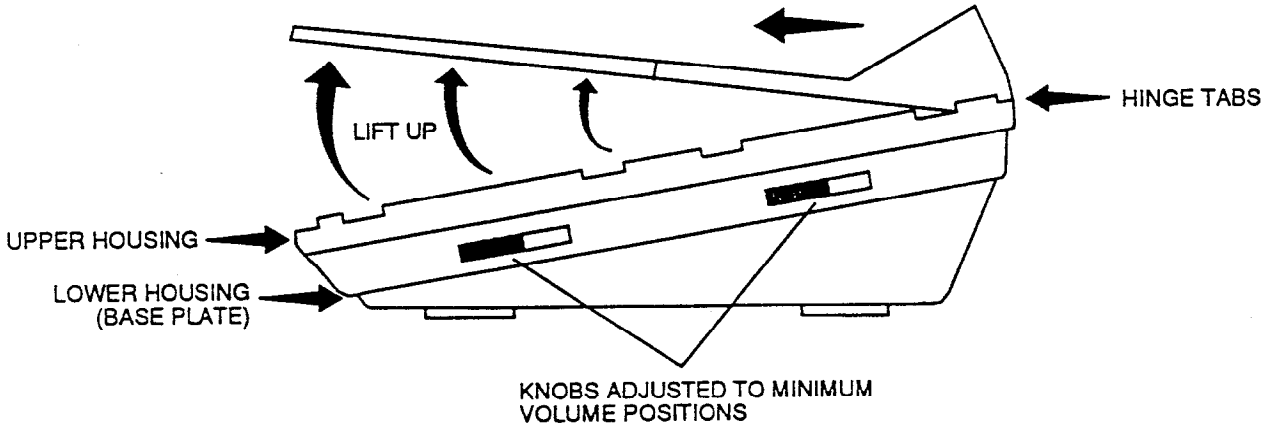


Figure 500-4 Side View of Key Telephone

g. The telephone can now be mounted to the wall by matching the two keyhole slots on the baseplate with the lugs on the modular cover assembly. Check to make sure that the modular connector on the baseplate has a firm connection with the wall jack.

500.9 PHONE BOX INSTALLATION

The *Infinite* 816 Phone Box can make calls to preassigned stations as well as receive intercom calls. The unit should be located in weather protected areas where paging or monitoring is required.

The Phone Box consists of a top housing and bottom mounting plate. The top housing has a speaker, microphone, wire terminals and electronic circuitry. The housings are separated by inserting a thin, flat-edged tool at the bottom rim of the assembly. By pressing inward on the recessed retaining tab, the assembly will open.

The connection of the Phone Box(es) to the KSU is identical to that of the Key Telephone. Refer to the Key Telephone Installation paragraph.

The bottom plate of the Phone Box assembly is fastened to the wall by mounting with no. 8 or larger pan-head screws. The cable is routed through the cable-entry holes provided on the bottom plate and is connected to the screw terminal strip on the upper housing. Four screw terminals are identified by wire color on the silk-screened printed circuit board to correspond with the wiring sequence at the punchdown connector at the Main Distribution Frame (MDF).

The slack wiring should be pulled back through the bottom mounting plate and the top housing snapped shut. Refer to Section 710.1, Station Class of Service to program Phone Boxes.

500.10 EXTERNAL MUSIC SOURCE

Music-On-Hold, as well as Background Music, can be connected using a customer provided music source. Separate Music-On-Hold (MOH) and Background Music (BGM) volume adjustments are provided on the KSU.

Background Music levels are also adjustable at each Key Telephone set. Connections are made on the J-1 connector, the MOH pair. Refer to Table 500-2.

500.11 ALARM INSTALLATION

An alarm signal can be transmitted to each station (except Phone Boxes) in the system. When activated by an external alarm system, a continuous tone is transmitted to the station speakers. Leads from the external alarm are connected to the J-1 terminals, ALMT and ALMR. Refer to Table 500-2. Also refer to Section 710.1 for programming alarm states. After the alarm has sounded, the system must be reset by first clearing the alarm condition on the external system and then at any station by dialing [2].

500.12 EXTERNAL PAGING

An amplifier for external paging may be connected to the *Infinite* 816 Key Telephone System. Any telephone in the system can access this paging equipment by using a dial code. There is one External Paging Zone (without amplifier) provided in the 816 System. Paging can be two-way.

The output impedance of the paging zone is 600 Ohms at 0 dBm. The low-level voice signal output is specified at 5 milliwatts. Dry contact control is provided to switch on the external amplifier equipment or to momentarily remove Background Music, if externally supplied to the paging device.

All connections are made on the J-1 punchdown connector. Refer to Table 500-2. The voice output from the Key Telephone System is provided on the EPVT and EPVR pair. The "make" contacts are identified as pair EPCTL.

500.13 LOUD BELL CONTROL

The *Infinite* 816 System provides relay contact closure for activation of external signaling equipment during incoming CO line ringing. The Loud Bell Control is selected by programming in the customer database.

Either or both of the Loud Bell Control circuits may be assigned to a station. The Loud Bell Control dry contacts will follow the ringing condition of that station. Locate the LBC1T and LBC1R terminals on the connecting block. Two wires are connected to these terminals and routed to customer provided signaling equipment (Refer to Figure 500-5).

All incoming CO lines assigned to ring for the programmed Loud Bell Control station will activate the Loud Bell Control, causing the LBC contacts to sequence in a 1 second ON/3 seconds OFF rate until all lines have been answered by Key Telephone users. The LBC contacts are current-rated at 1 ampere/24V dc.

500.14 EMERGENCY TRANSFER

In the event of a commercial AC power inter-

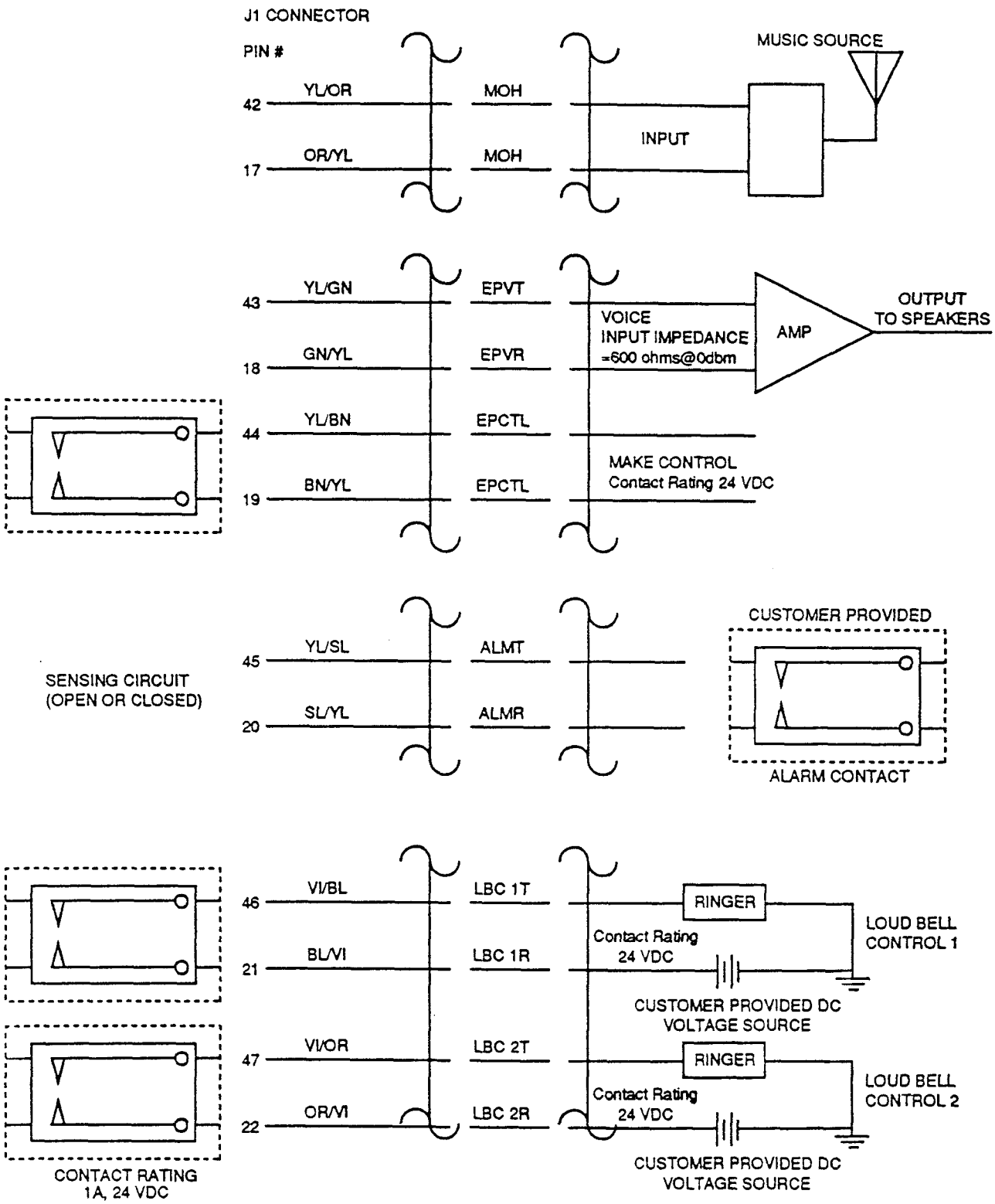
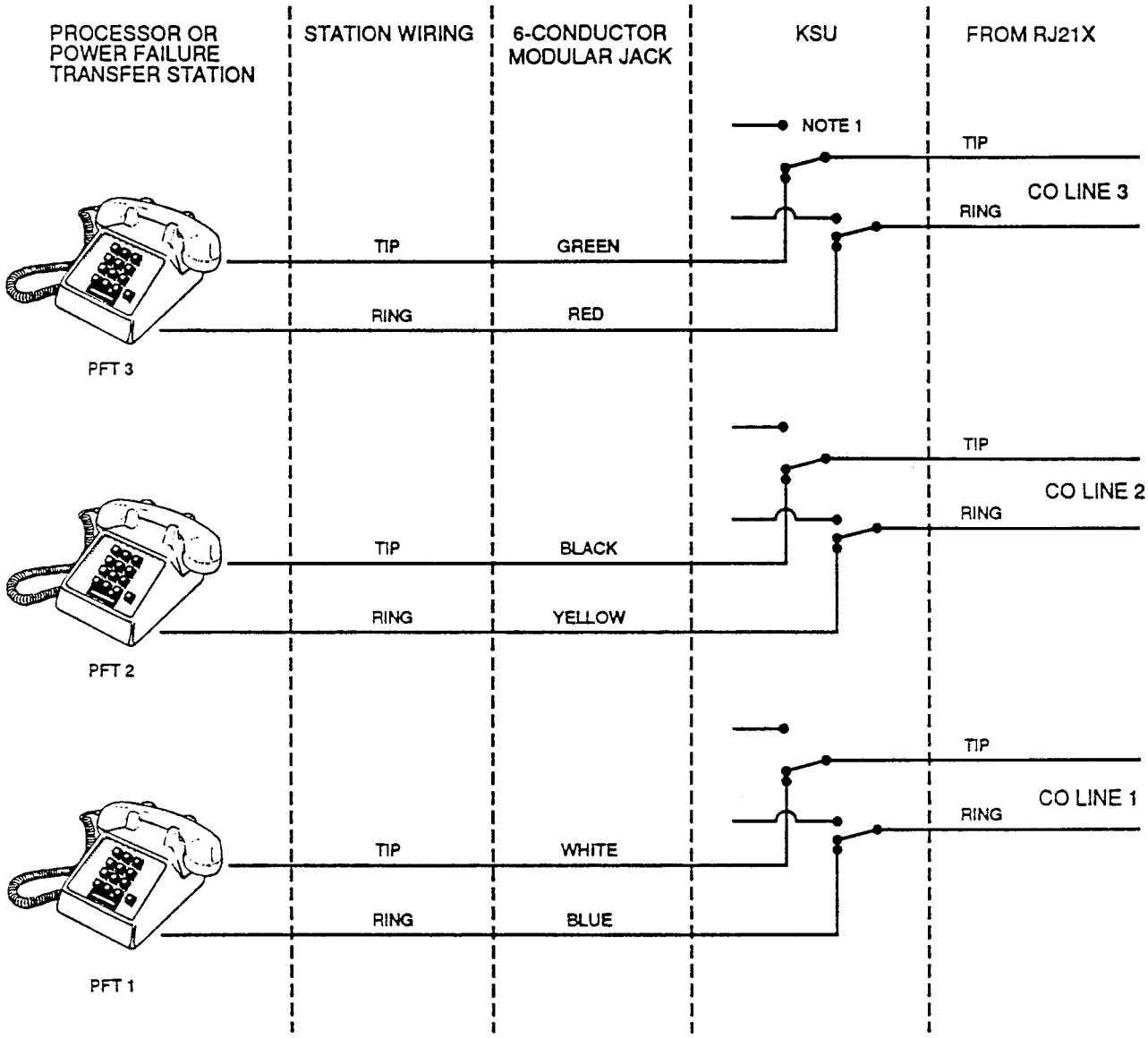


Figure 500-5 External Connections



NOTE 1: Contacts are shown in power failure mode.

Figure 500-6 Power Failure Transfer Circuit

ruption, the first three CO/PBX lines will automatically transfer to single line telephones (if installed) for emergency communications (Refer to Figure 500-6). These single line telephones should be equipped with ringers. They can be DTMF-type instruments or rotary dial. Connection is made on the Power Failure Transfer jack located on the side of the KSU.

500.15 HEADSET INSTALLATION

The Key Telephone is designed to operate with industry standard modular headset adapters and operator headsets. To modify a Key Telephone to support an external headset, plug the headset adapter cord into the handset jack on the Key Telephone base. Plug the telephone handset cord into the headset adapter box where indicated by the headset manufacturer's instructions.

Then turn to the Programming section of this manual, station configuration (Program Code 02). When the headset option has been enabled for a particular station, speakerphone operation is automatically disabled and such features as On-Hook Dialing and Handsfree speakerphone are rendered inoperable. However, incoming page/voice announcements, tone ringing and background music will still be heard over the keyset speaker.

500.16 BATTERY BACK-UP UNIT (BBU)

The Battery Backup Unit (BBU) houses two 12 Volt batteries connected in series which provide 24 Volts of DC power. The BBU contains an AC input cord which provides charging power when the batteries are not in use. Batteries are not included.

A 10 inch 14 gauge jumper wire is provided for interconnection of the two batteries. Four adapter wires (approximately 2 inch) are provided for matching the exact battery terminal size. The BBU will interface batteries with 187 or 250 size male faston-type tab connectors. A plastic tiewrap is provided for securing the batteries once installed.

Any UL recognized battery may be used with the BBU, gel type batteries are recommended. The larger ampere hour the battery, the longer it will take to recharge.

A. Capacity

The following table shows approximate Battery Backup times for a fully charged battery to discharge to 90 percent voltage under different load conditions:

Battery Amperage Hour Rating	Configuration	
	4x8	8x16
9 AH	4 Hrs.	2 Hrs.
24 AH	8 Hrs.	4 Hrs.

All Electronic Key Systems will begin to operate intermittently below a certain input voltage. Typically reliable operation will be maintained to 90 percent of full voltage.

B. Dimensions and Weight

- 8 in.high, 13.5 in.wide, 7.75 in.deep
- Weight without batteries: 11 lb.

C. Specifications

- Output fused at 4A, 250 V
- Current limited, constant
- voltage charger
- Gel-type batteries
- Charger float voltage is 27.6 V
- Cut off voltage point is 21 V

D. Power Requirements

- Input: 117V ac, 60 Hz
- Fused at 0.5 A, 250 V

E. Environment

- Temperature: 70 to 78 F
- Humidity: 5 to 90%

F. Recharge Time

- Time Required to Recharge batteries that have been discharged completely:
- 7AH Batteries = 24 hours
- 14AH Batteries = 48 hours

G. Installation

- Introduction

Refer to Figure 500-7 for the location of the input socket. The input socket of the key system must be a female Mate-N-Lok type connector.

- Installation Checklist
- The following items are required to install the BBU:

1. One BBU with wire kit (5 wires) and tiewrap.
2. Four no. 12 pan-head screws (if wall mounted).
3. Screwdriver.
4. Backboard or wall shelf, if applicable.

H. Mounting

The BBU must be located within 6 feet of an AC receptacle and 2 feet of the KSU. Check clearances to ensure that both cords will extend to their proper locations.

The BBU is designed to be mounted on a backboard, (either a backboard of its own, or mounted on the KSU backboard).

1. Mark for screw placement, either by measuring (the 2 top keyhole mounting slots are 8 3/4" on center) or by placing the BBU against the backboard (before installing batteries) and marking the location of the two top slots.
2. Partially insert two no. 12 pan-head sheet metal screws into the backboard.
3. Suspend the BBU on these two screws. The large section of the keyhole will allow the unit to easily pass over the screw-head.
4. Slowly lower the BBU so the small section of the keyhole is directly behind the screw head.
5. Tighten each screw so the unit fits snugly against the backboard.
6. Insert two more screws into the bottom of the BBU where two more keyhole mounting slots are located.

I. Grounding

To ensure that the BBU will operate properly, a good earth ground is recommended. A metallic COLD water pipe will usually provide a reliable ground path. Carefully check that the pipe does not contain insulated joints that could isolate the ground. In the absence of the cold water pipe, a ground rod or other source may be used. A No. 8 AWG copper wire should be used between the ground source and the BBU. A ground lug is provided on the lower-left side of the BBU.

The ground wire should be kept as short as possible and should be connected to the ground lug located on the bottom of the 816 KSU.

J. Battery Installation and Connections

WARNING

Before connecting the batteries, ensure the BBU is unplugged from the AC outlet and the ON/OFF switch on the BBU is turned off.

1. Remove the BBU cover by turning the 4 screw locks and lifting the cover.
2. Install the two 12V dc batteries in the battery compartment. Thread the plastic tiewrap through the vent holes in the side of the battery compartment and fasten around both batteries. Cinch the tiewrap tight.
3. Connect one of the adapter wires to the black 10 in. jumper wire. Now install this jumper wire assembly between the NEG (-) terminal of battery 1 and the POS (+) terminal of battery 2.
4. Connect another adapter wire to the BBU red battery wire. Now connect this wire to the POS (+) terminal of battery 1.
5. Connect the BBU black battery wire to the NEG (-) terminal of battery 2.
6. Make sure the Key System being connected is plugged into the ac outlet and turned on. Then connect the BBU dc output cable to the battery input of the KSU.
7. Make sure the BBU power switch is in the OFF position. Then plug in the ac power cord.
8. Turn the power switch on the BBU to ON.

500.17 RS-232C CONNECTIONS

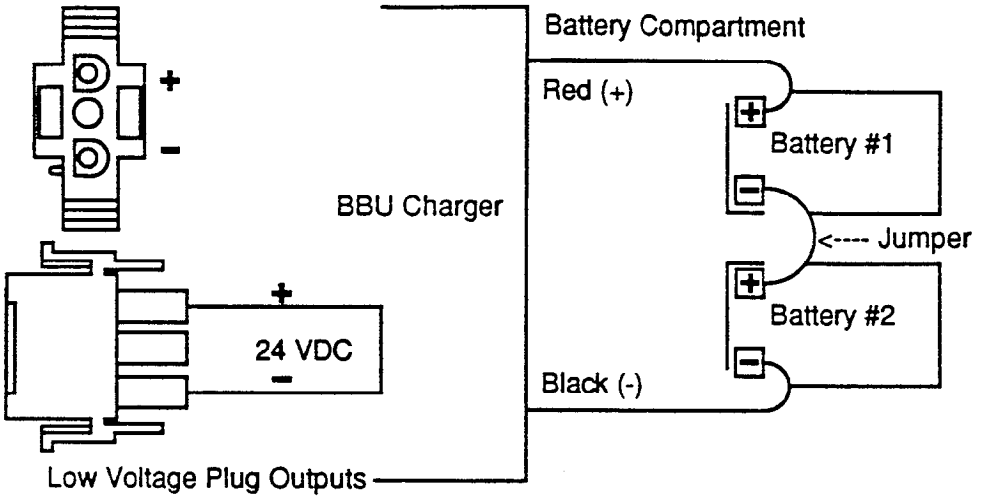
Figure 500-8 illustrates the standard pin configuration used with the *Infinite* 816 Key Telephone System in connecting display devices. The 816 System is fully compatible with standard RS-232C devices.

An RS-232C port is provided for quick connection of an available 80-character printer or other receiving device. The receive transmission speed of the connected terminal should be set at either 300 baud or 1200 baud, to match the programmable data output speed of the *Infinite* 816 Key Telephone System. The system output speed is set in Customer Data Base Programming. Refer to Table 500-4 for sample SMDR printouts.

500.18 SMDR REPLACEMENT

The SMDR module and RCU module can be replaced in the field should they fail to operate. The instructions below describe the installation procedures for replacing the units.

a. Unplug the KSU.
b. Remove KSU program module.
c. Remove the 6 screws holding the KSU cover. Remove the cover.
d. Open the SMDR module box. It should



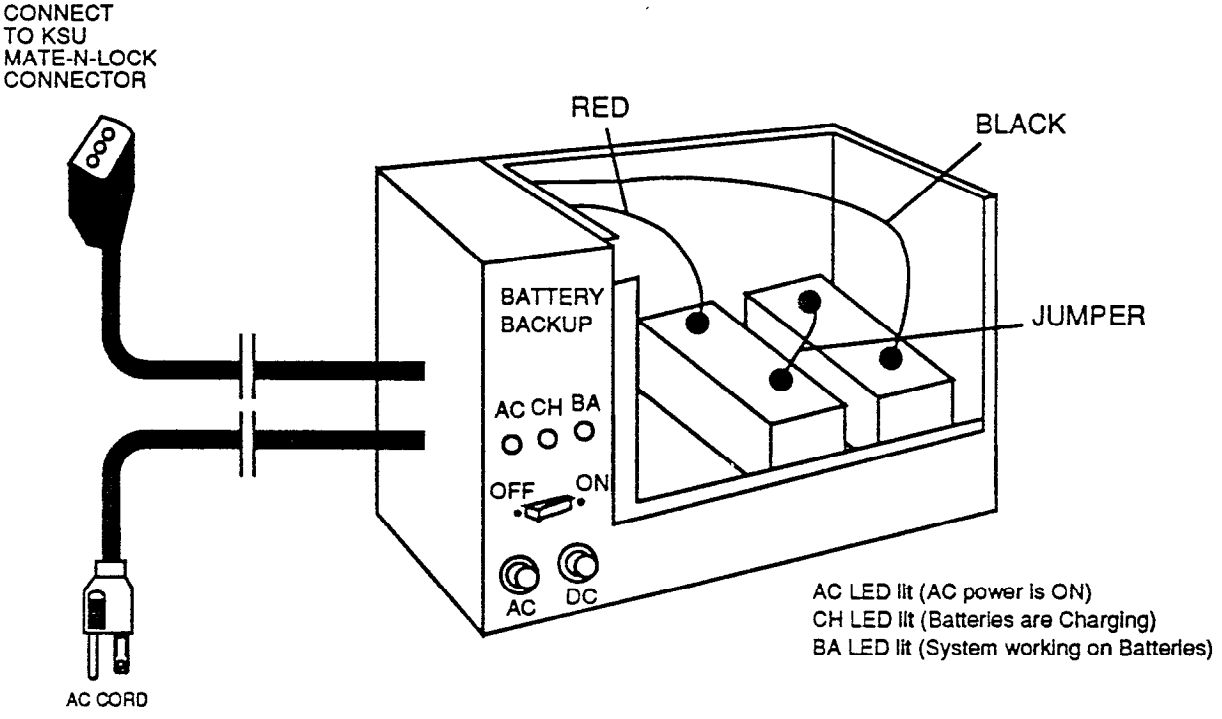
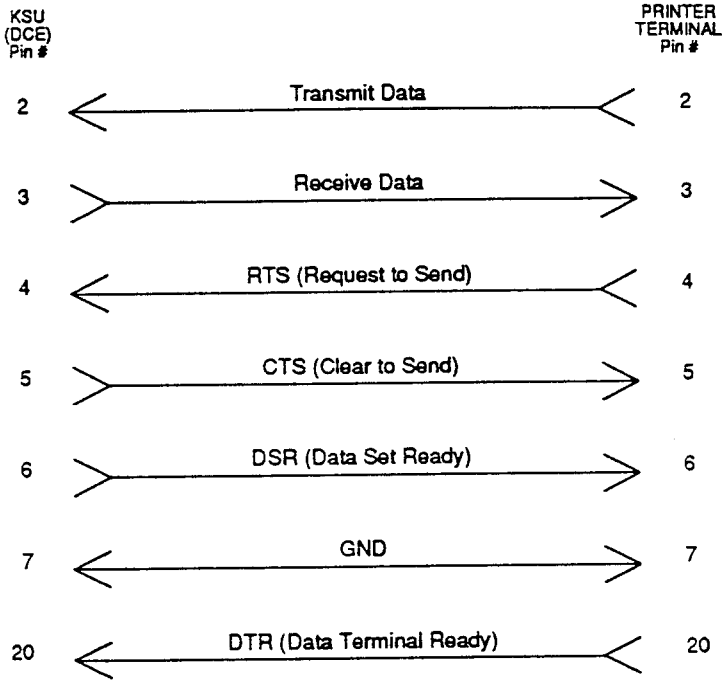


Figure 500-7 BBU Installation



RS-232C PINOUT
Data Communication Requirements are:
A) Serial Port Compatible
B) ASCII Code Compatible
C) 8 Data Bits and 1 Stop Bit
D) No Parity

Figure 500-8 RS-232C Connections

Table 500-4 SMDR Call Record Format

The SMDR feature provides detailed records of all outgoing and/or incoming, long distance only or all calls exceeding 30 seconds. This feature is enabled or disabled in system programming. By default, SMDR is not enabled and is set to record long distance calls only. A printout format of 80 characters maximum or 29 character maximum may be selected in system programming. The standard format is 69 characters on a single line. A 29 character format will generate 3 lines per message. If the SMDR feature is enabled, the system starts collecting information about the call as soon as it starts and terminates when the call ends. If the call was longer then 30 seconds, the following information is printed:

29 character format selected

```
STA CO TOTAL START   DATE
03 01 00:03 09:20:57 03/13/89
12035551212
12345678
.........1.........2.........3
12345678901234567890123456789O
AA BB DD:DD EE:EE:EE FF/FF/FF (CR)(LF)
CCCCCCCCCCCCCCCCCCCCCCCCC (CR) (LF)
GGGGGGGG (CR)(LF)
```

80 character format selected

```
STA CO TOTAL START   DATE       DIALED                    ACCOUNT CODE
03 01 00:03 09:20:57 03/13/89 12035551212                :12345678
.........1.........2.........3.........4.........5.........6.........7
12345678901234567890123456789012345678901234567890123456789012345678901234567890
AA BB DD:DD EE:EE:EE FF/FF/FF CCCCCCCCCCCCCCCCCCCCCCCCC:GGGGGGGG (CR)(LF)
```

- AA = A 2-digit station call originator field (range 01-15)
- BB = A 2-digit CO line accessed field (range 01-08)
- CC..CC= A 24-digit collected dial digit field
- DD:DD= A 5-digit call duration field (HH:MM)
- EE:EE:EE= An 8-digit time of day call origination (HH:MM:SS)
- FF/FF/FF= An 8-digit month,day, and year of call origination (MM/DD/YY)
- GG..GG = An 8-digit account code filed
- (CR)= Carriage Return
- (LF)= Line Feed

contain:

— 1 S.I.U. Printer Circuit Board

— 1 24-conductor ribbon cable

— 2 Plastic standoffs

e. Push ribbon cable into the socket on the underside (solder side) of the S.I.U. board. Ensure the metal fingers of the ribbon cable are in contact with the contacts of the connector.

f. Locate the 2 plastic standoffs. With the base (large tab end) facing down, push the standoffs into their mounting holes.

g. Hold the S.I.U. so that the ribbon cable is on the right bottom side with the ribbon cable extending down. Gently push the free end of the ribbon cable into the S.I.U. socket on the KSU.

h. Bending the middle of the ribbon cable toward the inside of the KSU, gently push the S.I.U. down until it locks onto both of the plastic standoffs. Refer to Figure 500-9 for location of SIU connector.

NOTE: Any RS232-C compatible printer may now be connected to the RS232C port. Refer to Figure 500-8 for SMDR pinout configuration.

500.19 R.C.U. REPLACEMENT

a. Unplug the KSU.

b. Remove the KSU program module.

c. Remove the 6 screws holding the KSU cover. Remove the cover.

d. Open the RCU box. It should contain:

— 1 RCU

— 1 Battery

— 1 Plastic beaded tie-wrap

e. Locate the battery. The end with the color ring is negative. Install the battery into the battery socket of the RCU taking care to match the polarity of the battery with the polarity of the battery socket.

f. Push the beaded tie-wrap through the hole in the RCU next to the battery. Pull the tie-wrap around the battery and through the cinch end to secure the battery.

g. Locate the RCU socket and note the top (notched end) of the socket.

h. Hold the RCU so the battery socket end is facing toward you (battery on the bottom of the RCU) and away from the top of the RCU socket.

i. Insert the pins on the bottom of the RCU into the RCU socket being careful to align all of the pins with the socket. Apply pressure in the middle of the RCU (not the ends) to avoid breakage while seating the RCU into the socket. Refer to Figure 500-9.

j. Replace KSU cover.

500.20 SETTING TIME AND DATE DISPLAY (ATTENDANT STATION ONLY)

At the assigned attendant:

a. Press AUTO/SAVE button twice.

b. Dial [5][0] on the dial pad.

c. Enter time and date as follows:
YY MM DD HH MM

- YY = year 80-99
- MM = month 01-12
- DD = day 01 -31
- HH = hour 00-23
- MM = minute 00-59

d. Press HOLD.

500.21 SINGLE LINE STATION ADAPTER (SLA)

A. Site Planning and Unpacking

The SLA adapter is housed in a self contained wall mounted enclosure that houses all the necessary circuitry and programmed instructions for complete operation of a SLT or compatible device to a Infinite "flatpack" type key service unit. Refer to Figure 500-11 for a typical installation layout.

B. Option Strap

For proper operation, the SLA option strap must be set to correspond to the system in which the SLA is intended to operate. To set this option the cover must be removed. Loosen the two screws (one on each side) and lift the cover. SW1 must be set to indicate the system the SLA will be connected to. Refer to Figure 500-10. Do no replace the cover until the unit is mounted on the wall.

C. Wall Mounting the SLA

Locate a suitable area for wall mounting the SLA that is within 100 ft. of the KSU and is in close proximity to the MDF. Mount the SLA to the wall, using the SLA as a guide mark the wall in the location of the two snowman holes. Drill two holes in the backboard and drive the mounting screws into each drilled hole, leaving the screw heads approximately 3/16" from the wall. Align the snowman holes on the

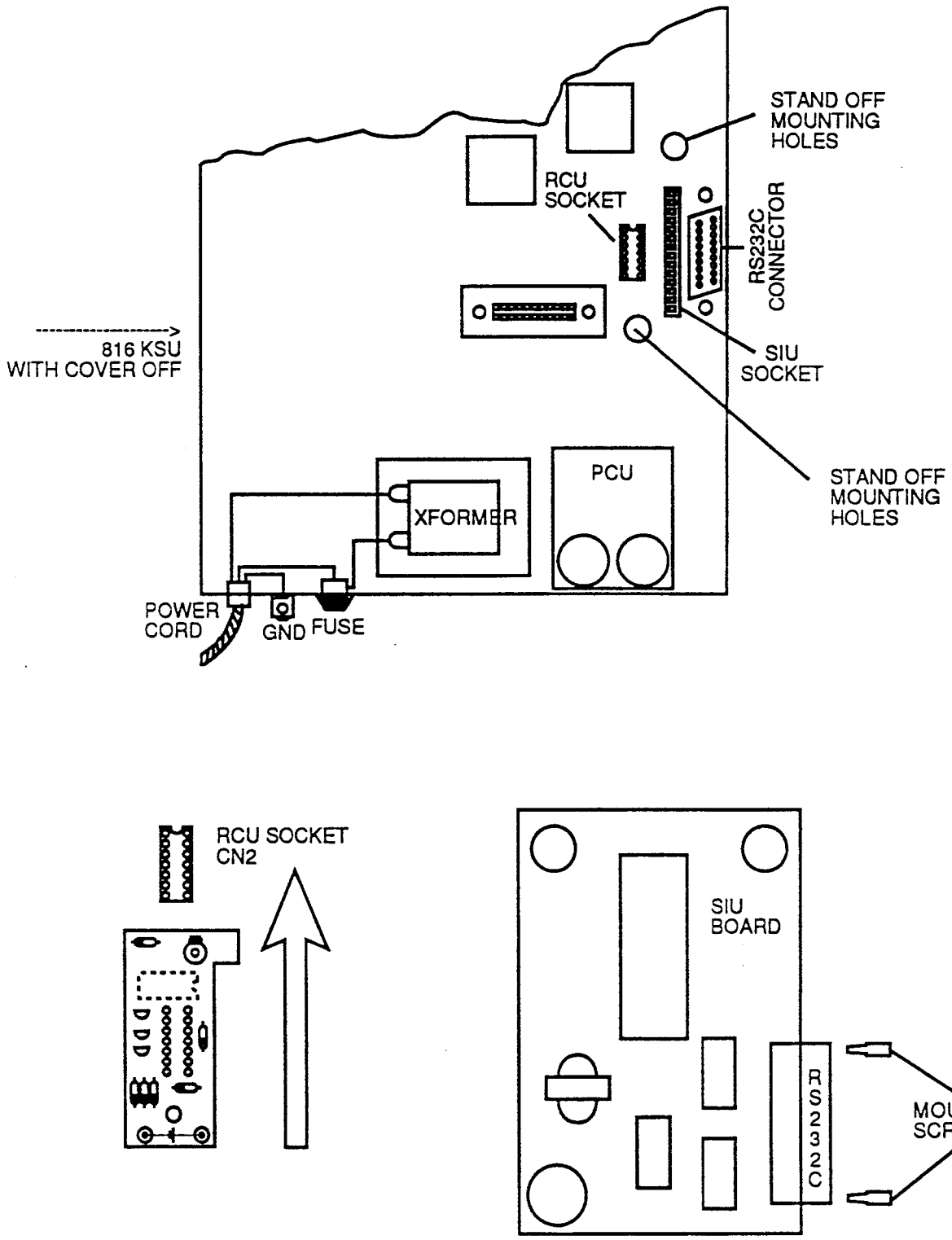


Figure 500-9 SMDR and RCU Module Installation

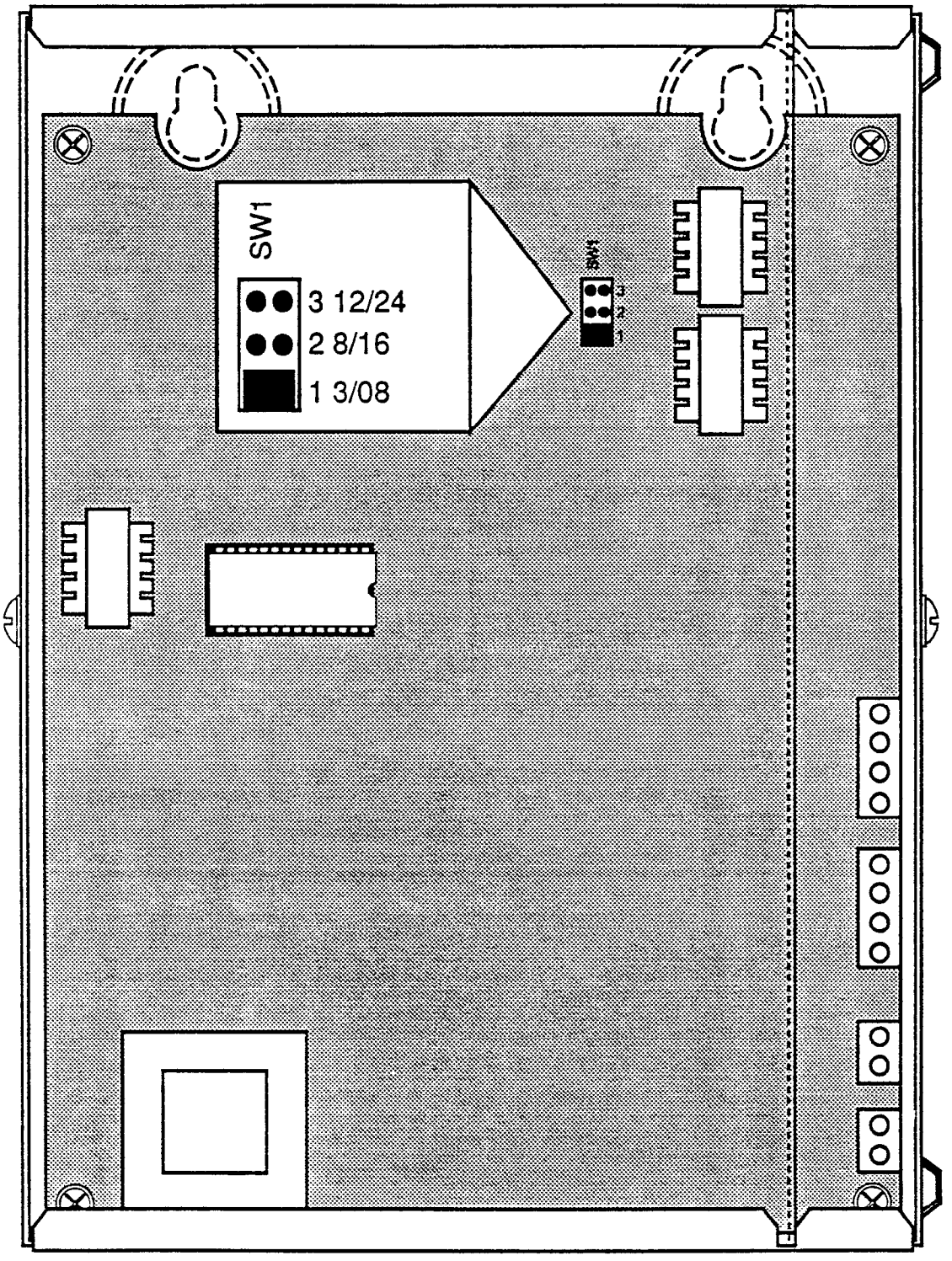


Figure 500-10 SLA Strap Options

back of the SLA with the screws and slide the SLA on the wall. Tighten the screws to secure the SLA to the wall. Replace the cover removed above. Refer to Figure 500-12 for size and dimensions.

D. Wiring

The SLA is designed with screw terminals to make connection to the KSU via the MDF simple. This can be done right at the MDF using cross connect wire to make connection between the punch down blocks and the SLA. Before attempting to make connections remove the plastic safety strip from the terminals. Refer to Figure 500-13 for wiring connections.

CAUTION

The installer should exercise caution when connection a SLA while system power is ON. Also the proper polarity of the wired connections must be maintained for proper operation.

KSU Station (input)

Using Cross connect wire connect from the station block (J1 or J2) to the INPUT 1" or INPUT 2". Connect all four (4) leads from a station circuit (VT, VR, DT, DR leads) to the corresponding input screw terminal. When connecting the leads into the SLA, strip 1/4 of an inch of wire before inserting into the screw terminal.

The SLA communicates to the KSU on the INPUT 1 port only, therefore when installing only one port the SLA Input 1 connector must be used. When installing both SLA ports KSU sister station ports must be used (i.e. KSU station port 03 and 04 or 05 and 06 or 07 and 08 etc.) It is not recommended that KSU station port 01 be used for SLA applications, as this port serves as the system programming port.

Single Line Telephone wiring (output)

From the SLA adapter cross connect the SL leads (Tip and Ring) to the station block where the home run cable of the SLT device is terminated.

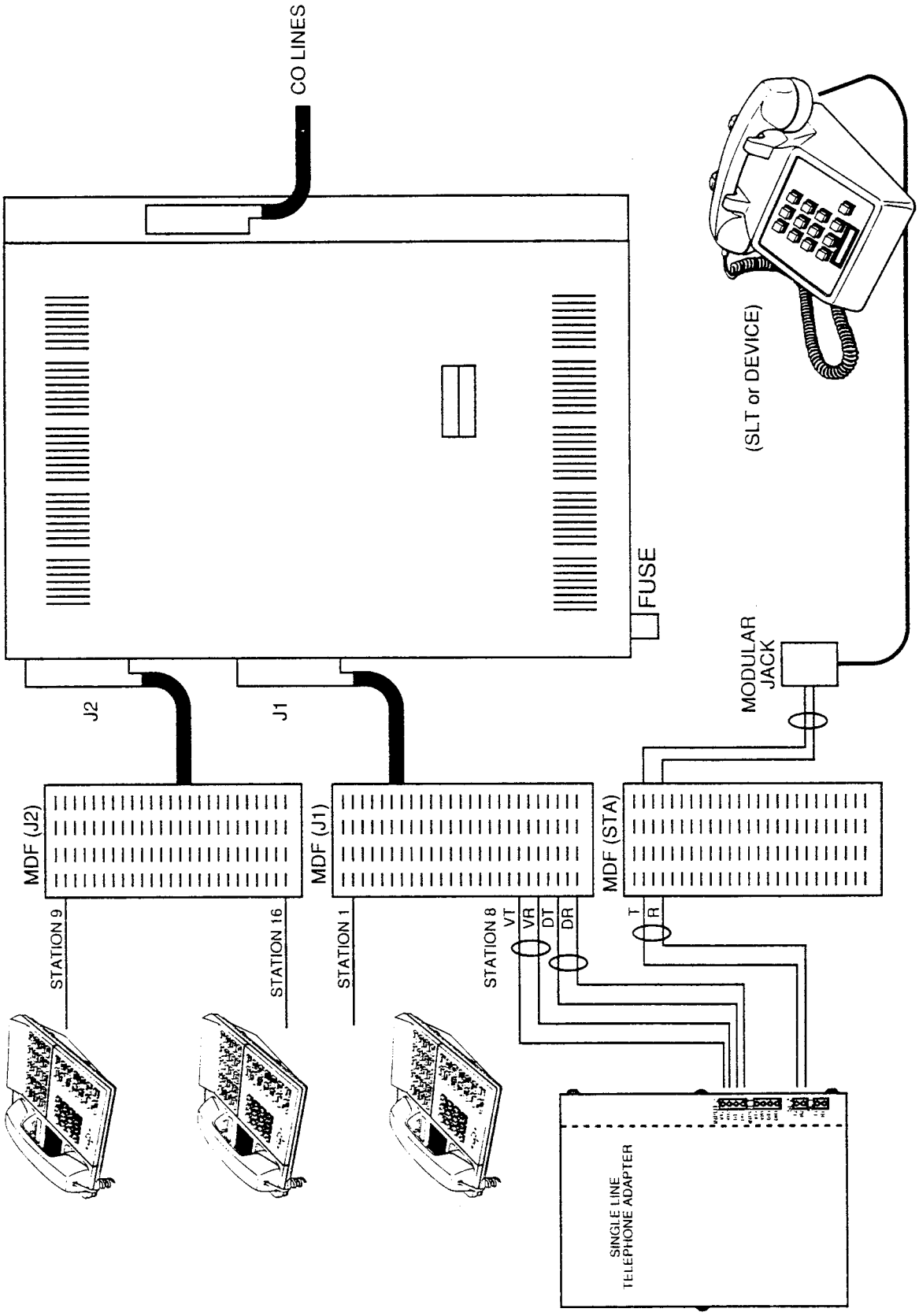


Figure 500-11 Typical SLA Layout

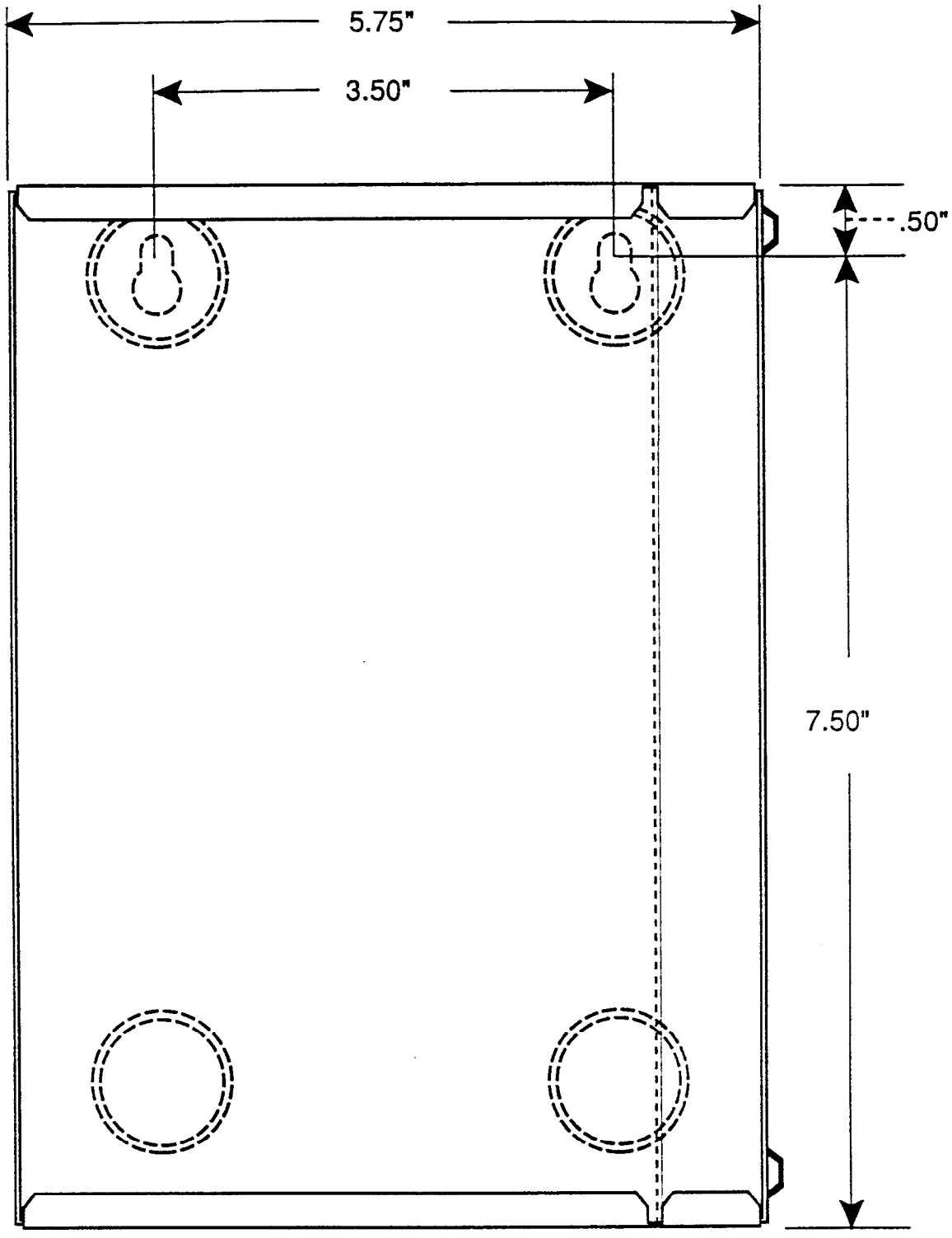


Figure 500-12 SLA Mounting Dimensions

KSU "SISTER" STATION PORTS					
PAIRED STATION PORTS	PAIRED STATION #'S		PAIRED STATION PORTS	PAIRED STATION #'S	
	3/08 8/16	12/24		3/08 8/16	12/24
PORT 01 PORT 02	STA 01 STA 02	STA 10 STA 11	PORT 13 PORT 14	STA 13 STA 14	STA 22 STA 23
PORT 03 PORT 04	STA 03 STA 04	STA 12 STA 13	PORT 15 PORT 16	STA 15 STA 16	STA 24 STA 25
PORT 05 PORT 06	STA 05 STA 06	STA 14 STA 15	PORT 17 PORT 18		STA 26 STA 27
PORT 07 PORT 08	STA 07 STA 08	STA 16 STA 17	PORT 19 PORT 20		STA 28 STA 29
PORT 09 PORT 10	STA 09 STA 10	STA 18 STA 19	PORT 21 PORT 22		STA 30 STA 31
PORT 11 PORT 12	STA 11 STA 12	STA 20 STA 21	PORT 23 PORT 24		STA 32 STA 33

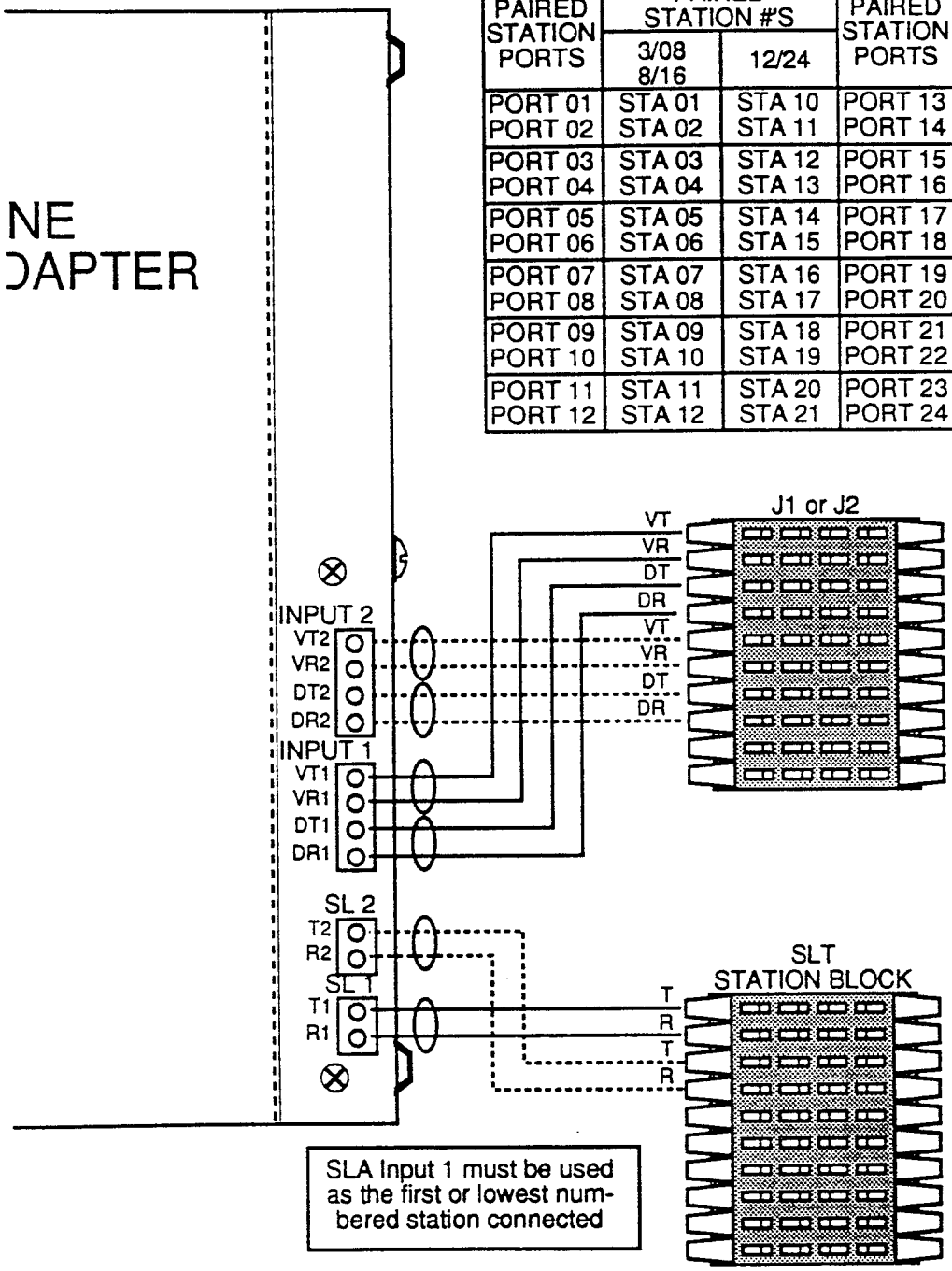


Figure 500-13 SLA Cross-Connect Wiring

SECTION 600
POWER UP AND SYSTEM CHECKOUT

600.1 POWER-UP AND INSTALLATION CHECKLIST

Prior to actual power-up and initialization, the *Infinite 816* Key Telephone System should be checked over to avoid start up delays or improper loading. The following checklist is provided for this purpose:

a. Make sure that the KSU is properly grounded according to the instructions in Paragraph 5.3.

b. Inspect the MDF for shorted wiring or improper polarity that would affect the Key Telephones.

c. Make sure that plug-ended MDF cables to the KSU are secure and are plugged into the correct position.

d. Plug the AC power cord into the dedicated 117V ac outlet

e. Initialize the system according to instructions in 700.5.

600.2 FUNCTIONAL TEST PROCEDURES

This section describes the test procedures that should be followed during system start-up. The installer will also find these tests helpful in the event of system malfunction and troubleshooting. System troubleshooting is confined to replacement of Key Telephone sets and fuses.

After performing the Preliminary Checklist, perform the operational tests in Tables 800-2, 800-3, and 800-4.

600.3 PRELIMINARY CHECKLIST

Before starting the functional test procedures, it is recommended that the following checklist be completed. This is designed to save time and possibly eliminate the need for more detailed troubleshooting.

Check:

— Station cables for proper connections and polarity.

— Central office line connections.

— Earth ground connections.

— AC power cable.

— Music source connections (if provided)

— Alarm connections (if provided).

— RS-232C connections.

SECTION 700
CUSTOMER DATA BASE PROGRAMMING

700.1 INTRODUCTION

The *Infinite* 816 Key Telephone System can be programmed to meet each customers individual needs. All programming is done at station 01 (port 01) using the Enhanced (non-display) or Executive (display) Key Telephone as the programming instrument.

When the Programming mode is entered, the Key Telephone being used no longer operates as a telephone but as a programming instrument with all of the buttons redefined. The keys of the dial pad are used to enter data fields (program codes) associated with system, station, and CO line features. CO line buttons and station buttons are used to determine CO line access, assign class of service, determine station features, indicate stations, line group numbers, CO line configuration, system features, toll tables, etc.

At the time the system is installed it must be initialized to load default data into memory. Refer to Table 700-1 for default data. If the default programming suits the customer, initialization is all that is needed.

Any time data is to be changed, the Programming mode must be entered and the individual data field (program code) must be selected. A data field can be entered to determine current programming or to change a specific feature within that field.

During programming, the other Key Telephones in the system operate normally. If a data field is entered but nothing is changed, or changed but not entered into memory, the previous data will remain intact upon leaving that data field. Data fields can be entered at random.

In many of the data fields, programming is sequential, i.e., upon completing the programming of one CO line or one station, the next line or station will automatically light for programming. If no changes are to be made in the next line or station, exit the data field by either leaving the Programming mode (pressing the ON/OFF button to OFF) or entering another data field. This is done by pressing the asterisk [*] and entering that program code.

During feature programming, tones are provided to help the programmer determine if a correct or incorrect entry has been made. A solid one-second tone indicates the data was accepted. An interrupted tone means an error was made. When this occurs, re-enter the data and try again. Until new data is entered and accepted, the system continues to operate under default or previously entered values.

When the HOLD button is pressed to enter data, that data is stored in a temporary buffer area. Data is not entered into system memory and has no effect on telephone operation until the Programming mode is exited. This is done by pressing the ON/OFF button to OFF. Then the data in the temporary buffer is copied into permanent memory. It is at this point that programming affects telephone operation. Until the Programming mode has been exited, the system operates under default or previously programmed data.

Some features must have more than one data field programmed for that feature to work. Where this is the case, it is stated in the instructions.

700.2 CUSTOMER DATA WORKSHEETS

Before any attempt at programming is made, it is recommended that customer data worksheets (Appendix A) be prepared. These worksheets should become part of the permanent record of customer programming. Refer to the following paragraphs when preparing the worksheets.

700.3 DATA BASE FIELDS

The data base fields are used to set system timers, central office line features, and Key Telephone features. Table 700-1 lists the default values, which are pre-programmed into the system, as well as the data fields (program codes). When entering CO line data and station data, be sure to enter the exact number of digits specified. The data fields and features are further described in the following paragraphs.

Table 700-1 Default Values

FEATURE	PROGRAM CODE	FLEX BUTTON	DEFAULT ENTRY
Station Configuration			
Station Class of Service	01		All stations assigned COS 1
Station Features			
Do Not Disturb	02	1	Allowed at all stations
System Speed Dial		2	Access allowed at all stations
Alarm/Phone Box Signal		3	No stations assigned
Preferred Line Answer		4	Disabled at all stations
Call Forward		5	Allowed at all stations
Auto Select		6	Enabled at all stations
Headset		7	Disabled at all stations
Flexible Station Numbers	03		Sequential, Sta 1 on DSS Btn 1
CO Line Access	04		Access allowed at all stations
Page/Pickup Groups	05		All stations in group 1
CO Line Configuration			
CO Line Groups	11		All CO lines in group 1
CO Line Features			
Line Type	12	1	All lines are CO lines
Line Signaling		2	All lines DTMF
Toll Override		3	Disabled on all lines
Private Line		4	None assigned
CO Line Ringing (Day)	13		All lines ring at Attendant sta
CO Line Ringing (Night)	14		All lines ring at Attendant sta
Flash Timer	15		All lines 2 seconds
CO Ring Detect	16		All lines 300 msec
Dial Pulse	17		All lines 10 pps and 60/40
System Configuration			
Line Queuing	21	1	Enabled
Hold Preference		2	System Hold
Alarm Detection		3	Closed loop
Alarm Signaling		4	Continuous Tone
Automatic Privacy		5	Enabled
Alarm Enable		6	Disabled
Background Music		7	Disabled
Exclusive Hold Recall Timer	22		060 seconds
System Hold Recall Timer	23		060 seconds
Transfer Hold Recall Timer	24		030 seconds
Message Wait Reminder Tone	25		Disabled
Pause Timer	26		2 seconds
Executive/Secretary Pairs	27		None Assigned
Loud Bell Control	28		None Assigned
PBX Dialing Codes	30		None Assigned
Attendant Position	31		Station 10 (port 01)
Preset Forward Ring Timer	32		30 seconds
Preset Call Forward	33		None Assigned

Table 700-1 Default Values (Cont'd)

FEATURE	PROGRAM CODE	FLEX BUTTON	DEFAULT VALUE
Conference Timer	34		15 minutes
SMDR	35		Enabled for all lines
SMDR/Call Type	36	1	All calls
SMDR/Baud Rate		2	300 Baud
SMDR/Print Format		3	29 Characters
Toll Table Allow A	41		None Assigned
Toll Table Deny A	42		None Assigned
Toll Table Allow B	43		None Assigned
Toll Table Deny B	44		None Assigned

700.4 PROGRAM MODE ENTRY

Programming is always done at station port 01 using either the Enhanced or Executive Key Telephone. Programming is always done at this station regardless of the class of service or intercom number assigned to this station or which station has been assigned as the attendant.

To enter the Programming mode, the programmer must first verify that the Key Telephone is properly connected to station port 01.

a. On the dial pad, press the asterisk [*] twice. Dial tone is removed.
b. On the dial pad, enter [5-6-2-3] (LOAD). Confirmation tone is heard.
c. The HOLD button and the ON/OFF button will be lit.
d. The system is ready to program. (Other Key Telephones connected to the system continue to operate normally.)

NOTE: Initialize here if necessary. (Refer to Paragraph 700.5.)

e. Press the asterisk [*] once.
f. Dial the two-digit program code for the desired data field.
g. Enter customer data.
h. To load the entered data into the temporary buffer, press the HOLD button. A burst of one-second confirmation tone should be heard. If an interrupted (error) tone is heard, re-enter the data starting with step f.
i. Repeat from step f until all data has been stored.

To exit the Programming mode, press the ON/OFF button (light will extinguish). All new data is now loaded from the temporary buffer to the system memory and becomes effective and operational.

The system must be in the Programming Mode to perform the programming functions described in Sections 710 through 755.

700.5 INITIALIZATION

The system has been pre-programmed with certain features which are called default data (Table 700-1). These features are loaded into memory when the system is initialized. The system should be initialized when installed or at any time the data base has been corrupted.

To initialize the system and set all parameters to their default values:

a. Enter the programming mode.
b. Press the asterisk [*] once.
c. On the dial pad, enter the numbers [4-6-4-8] (INIT).

WARNING

Proper initialization is required when installing a new system.

d. Press the HOLD button. Confirmation tone is heard.

Default data is now loaded.

To default portions of the data base, use the following program codes instead of the initialization code [*4648].

- [*] 00 for station data only
- [*] 10 for CO line data only
- [*] 20 for system data only
- [*] 40 for toll tables only

To load default data into system memory, leave the Programming mode (press ON/OFF button to OFF).

700.6 RESET FUNCTION (Software Version 3.4 or Higher)

From time to time, it may be necessary to reset the system to clear meantime errors. As with any computer device, errors can build up and occasionally cause erratic operation. This procedure DOES NOT initialize the system database. To clear accumulated errors and reset the system:

a. Enter program mode.
b. Press the asterisk [*] once.
c. On the dial pad, enter the numbers [7-3-7-8] (REST).
d. Press the HOLD button. Confirmation tone will be heard, then the system will perform a reset.

NOTE: The programming station will return to normal keyset operation after the reset.

SECTION 710
STATION ATTRIBUTES PROGRAMMING

710.1 STATION CLASS OF SERVICE

Programming Steps

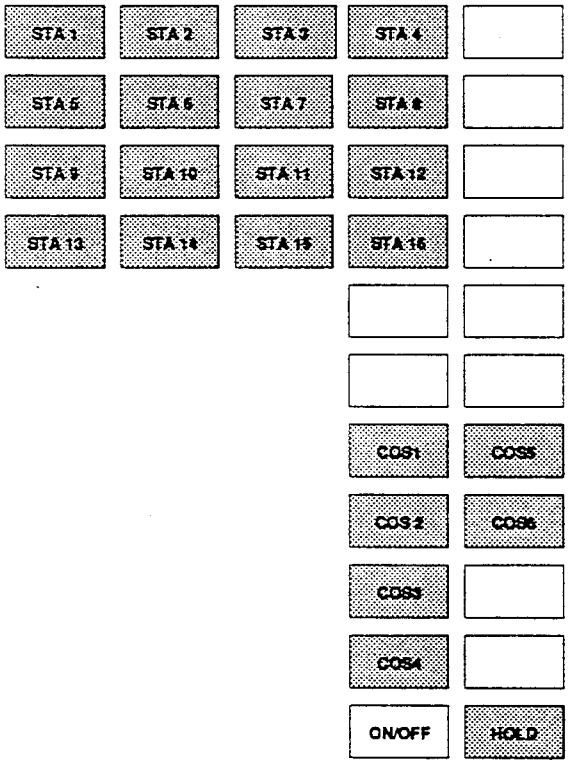
Make sure you have entered the programming mode (See Paragraph 700.4).

To change the class of service of a station:

a. Dial an asterisk [*] and [01] on the dial pad.

b. Press the button of the station to be assigned a class of service.

c. Then press appropriate button for the class of service being assigned to that station.



d. Press HOLD to enter data. Continue programming by pressing another station button or by entering another data field.

Description

Each station must be assigned a Class Of Service (COS) which governs that station's outgoing dialing privileges and toll restriction. The six classes of service are:

- COS1 = unrestricted
- COS2 = governed by Table A
- COS3 = governed by Table B
- COS4 = seven digits maximum, no "0" or "1" as first digit
- COS5 = intercom
- COS6 = receive only/phone box

Default: By default, all stations are assigned COS 1 (unrestricted).

Tables A and B must be programmed in order for COS 2 and 3 to function.

When a CO line is marked PBX, COS restrictions apply to the station only if one of four PBX codes are dialed first. Refer to Section 730.5.

Phone boxes must be programmed as COS 6. It is also required that stations be programmed to receive phone box/alarm signaling. Refer to Section 710.2.

Station Attributes Programming (Cont'd)

710.2 STATION CONFIGURATION

Programming Steps

If the system is in the Programming mode, continue using program codes. If starting to program here, enter the Programming mode first (See Paragraph 700.4).

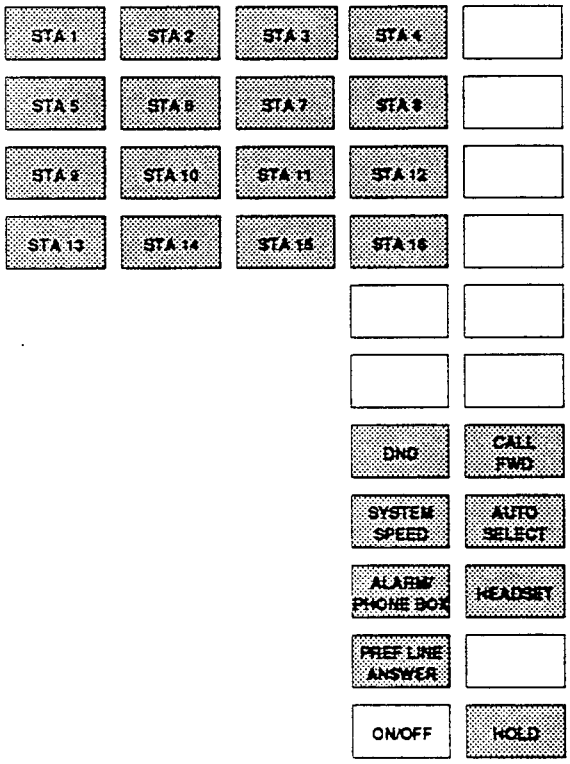
To change station features:

a. Dial an asterisk [*] and [02] on the dial pad.

b. Press the button of the station to be programmed.

c. Then toggle on or off the following program button depending on what features that station is to be given:

NOTE: If the LED is lit, that feature is enabled; if not lit, that feature is denied to that station.



d. Press HOLD to enter.

Description

Do Not Disturb - A yes entry (LED on) indicates this station is allowed the Do Not Disturb (DND) feature.

Default: By default, DND is enabled (allowed) at all stations.

System Speed Dial - A yes entry (LED on) indicates this station is allowed access to system speed dial numbers. The last 20 numbers are not monitored by toll restriction.

Default: By default, system speed is allowed.

Alarm/Phone Box - Stations can be designated to receive alarm signals through the telephone speaker. These stations will also receive an alert tone from a Phone Box. Phones which are programmed to receive Phone Box ringing should be assigned that DSS button.

Default: By default, no stations are given this feature (LED off).

Preferred Line Answer - Stations can be given the ability to answer incoming outside line calls, transferred and recalling lines, and line queues by going off-hook.

Default: By default, this feature is disabled (LED off).

Call Forward - Stations can be allowed or denied the ability to have incoming, intercom, and transferred outside lines forwarded to another station.

Default: By default, this feature is allowed (LED on).

Automatic Selection - This feature allows a user to press an idle CO line button and have that line automatically seized and dial tone received through the speaker. The user can then dial manually or select a DSS or Speed Number.

Default: By default, this feature is allowed (LED on).

Headset - This feature disables the speakerphone and must be enabled if a telephone is to be equipped with a headset.

Default: By default, this feature is disabled (LED off).

Station Attributes Programming (Cont'd)

710.3 FLEXIBLE STATION NUMBERS

Programming Steps

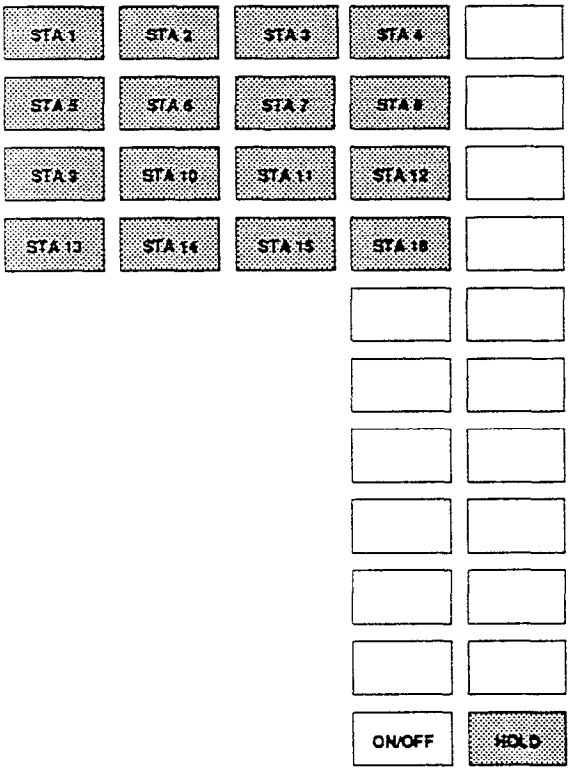
If the system is in the Programming mode, continue using program codes. If starting to program here, enter the Programming mode first (See Paragraph 700.4).

If station intercom numbers are to be changed:

a. Dial an asterisk [*] and [03] on the dial pad.

b. Press the button of the station whose intercom number is to be changed (LED will flash).

c. Press the button of the station number to be changed to. Confirmation tone will be heard and the LED will be lit solid.



d. When all changes have been made, press HOLD button.

Description

This feature allows one person to move from one station to another without changing phones and yet take all individual station data including intercom number.

Station port 01 always remains the programming port regardless of the intercom number assigned to it.

The system does not allow duplicate or unassigned numbers. If this happens, error tone will be heard when entering the data.

For example, if a station with an intercom number of 16 is moved to where station intercom number 10 was; then station intercom number 10 must be moved somewhere. Station 10 could be moved to where 12 was and 12 moved to where 16 was. This way all circuits have a unique intercom number.

Default: By default, station port 01 is assigned intercom number 1, port 02 is assigned intercom number 2, etc.

Station Attributes Programming (Cont'd)

710.4 CO LINE ACCESS

Programming Steps

If the system is in the Programming mode, continue using program codes. If starting to program here, enter the Programming mode first (See Paragraph 700.4).

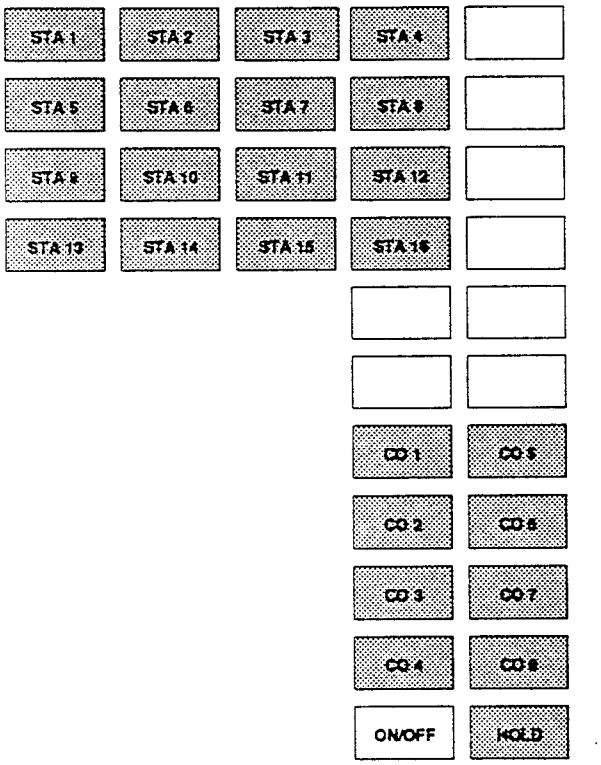
If CO Line access is to be changed:

a. Dial an asterisk [*] and [04] on the dial pad.

b. Press the station button of the station to be programmed.

c. Toggle on or off the program button for the desired CO line.

- LED lit = access
- LED unlit = no access



d. Press HOLD to enter.

Description

Telephones are allowed or denied access to CO (outside) lines. This is programmable on a per telephone per CO line basis.

Default: By default, all stations are allowed access to all CO lines.

Station Attributes Programming (Cont'd)

710.5 PAGE/PICKUP GROUPS

Programming Steps

If the system is in the Programming mode, continue using program codes. If starting to program here, enter the Programming mode first (See Paragraph 700.4).

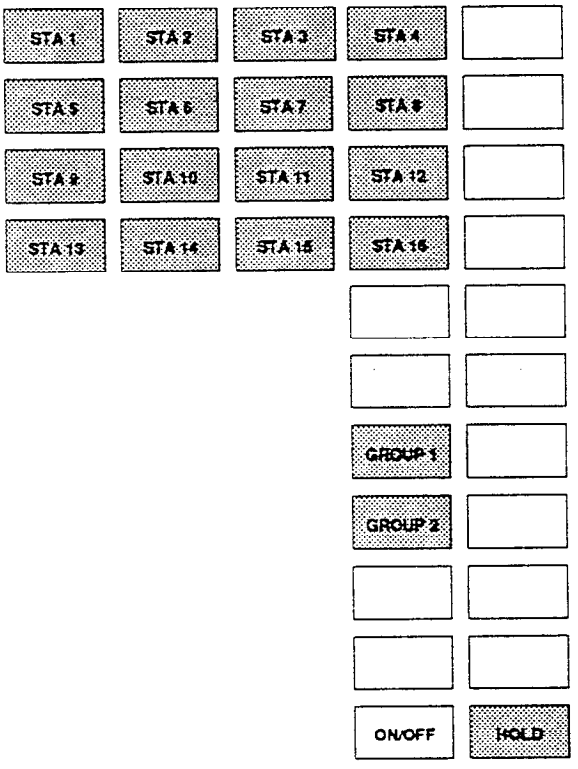
If page/pickup groups are to be changed:

a. Dial an asterisk [*] and [05] on the dial pad.

b. Press the station button of the station to be programmed.

c. Toggle on or off the program button for the desired page/pickup group.

- LED lit = enabled
- LED unlit = disabled



d. Press HOLD to enter.

Description

Each station can be assigned to one, both, or none of the two paging zones and pickup groups. Stations not assigned to a page group can still make page announcements if allowed in station programming. Stations not assigned to a pickup group will be unable to pickup calls ringing at other stations or to have calls picked up from their station.

Default: By default, all stations are assigned to Paging Zone 1 and Pickup Group 1.

If a station is assigned to a group, the corresponding CO line LED will be lit.

SECTION 720
CO LINE ATTRIBUTES PROGRAMMING

720.1 CO LINE GROUPS

Programming Steps

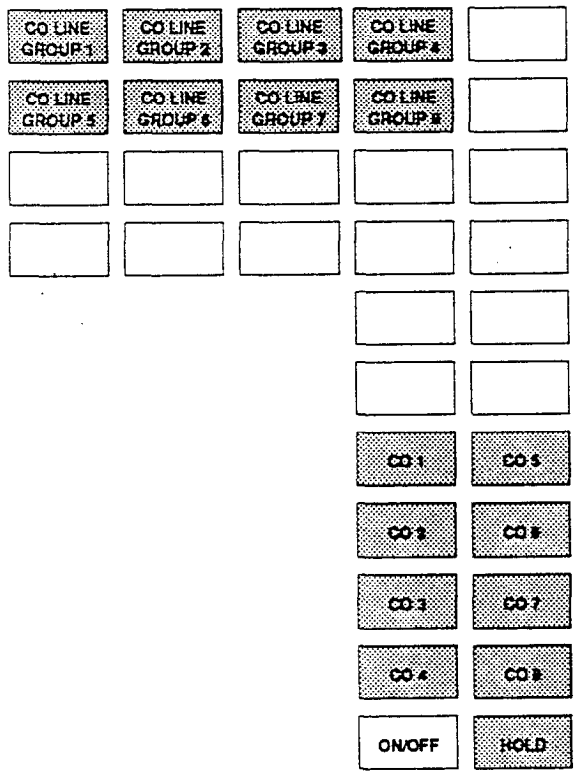
If the system is in the Programming mode, continue using program codes. If starting to program here, enter the Programming mode first (See Paragraph 700.4).

To assign CO line groups:

a. Dial an asterisk [*] and [11] on the dial pad.

b. Press the CO line as indicated on the program buttons.

c. Then press the button for the CO line group that CO line is to be placed in.



d. Press HOLD to enter. Continue programming CO lines until they have all been programmed.

Description

Eight line groups are available for CO line assignment. Groups should be assigned according to trunk type (local, FX, WATS, etc.).

Default: By default, all lines are placed in line group 1.

NOTE: It is important to assign unused CO lines to a separate Line Group. When the system selects a line for dialing a speed bin by default the system will select the last available line in Line Group 1 (Line 8 with default data.)

CO Line Attributes Programming (Cont'd)

720.2 CO LINE CONFIGURATION

Programming Steps

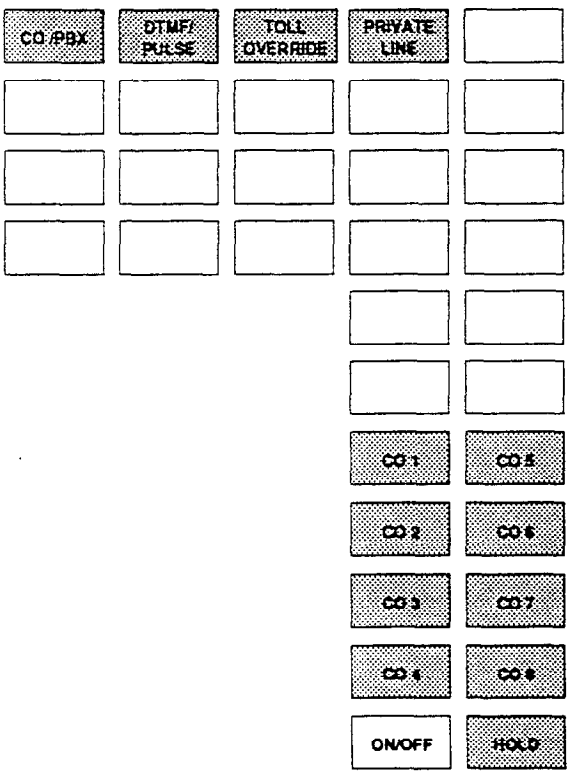
If the system is in the Programming mode, continue using program codes. If starting to program here, enter the Programming mode first (See Paragraph 700.4).

If any CO line features are to be changed:

a. Dial an asterisk [*] and [12] on the dial pad.

b. Press the CO line button of the line to be programmed.

c. Toggle the program buttons on or off so the LEDs light up or extinguish.



d. Press HOLD to enter data. The next CO line will light for programming.

Description

Line Type (CO/PBX) - Each outside line can be programmed to be either a CO line (LED on) or a PBX line. When marked PBX, a one- or two-digit dial code may be entered, after which toll restriction is applied. (Data Field 30).

Default: By default, all are lines are CO lines.

Signaling (DTMF/Pulse) - Each line can also be programmed as either DTMF (tone) or dial pulse. When a line is assigned as dial pulse, the break/make ratio and dial speed can be programmed.

Default: By default, all are set for DTMF (LED on).

Toll Override - A line may be marked for Toll Override which allows toll restricted stations to dial on this line.

Default: By default, no lines are marked for Toll Override (LED off).

Private Line - This feature allows a CO line to be marked private and to flash and ring at the specified station only. This line cannot be retrieved from System Hold by other stations and does not have Night Service. This line can be programmed to Preset Call Forward. **If the LED is unlit, the line is NOT a private line.** If a line is programmed as private, go to Data Field 04 and remove access to that line from all other stations. Also go to Data Field 13 and remove ringing of that line from any other station.

CO Line Attributes Programming (Cont'd)

720.3 CO LINE RINGING - DAY

Programming Steps

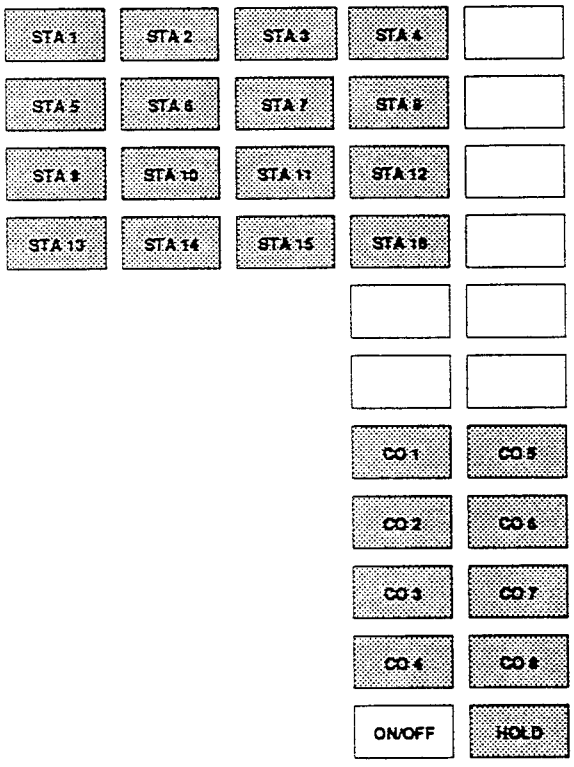
If the system is in the Programming mode, continue using program codes. If starting to program here, enter the Programming mode first (See Paragraph 700.4).

To change which stations ring:

a. Dial an asterisk [*] and [13] on the dial pad for day ringing stations.

b. Press the outside line that is to be programmed.

c. Then press station buttons for stations that are to ring on that line (each button will light).



d. When all stations have been entered, press HOLD to enter data.

Description

Telephones can be assigned to receive incoming outside line ringing during the day Telephones that ring during the day do not automatically ring at night. They require night ringing programming.

A CO line can be assigned to ring at a station where access is denied. That station can transfer the call but cannot flash and regain dial tone.

All lines can be assigned to ring at all stations or no phones can be assigned to ring on a line.

Default: By default, all lines ring at the Attendant station (1).

CO Line Attributes Programming (Cont'd)

720.4 CO LINE RINGING - NIGHT

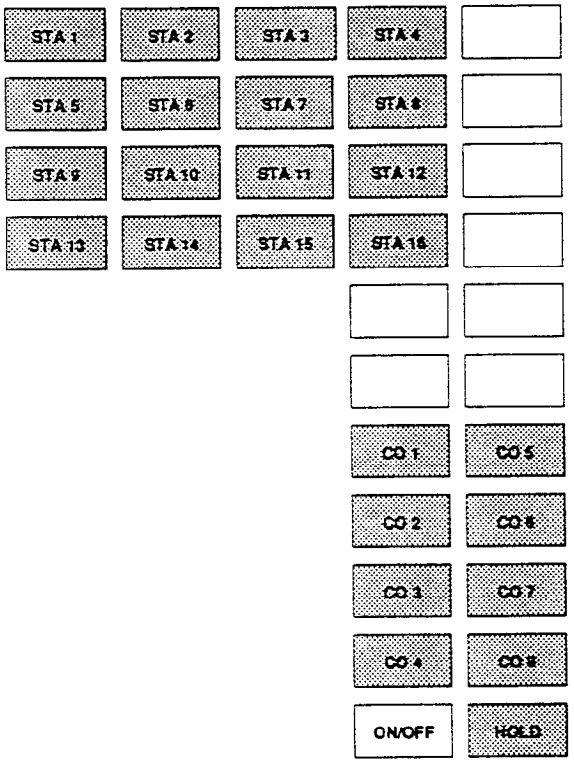
Programming Steps

If the system is in the Programming mode, continue using program codes. If starting to program here, enter the Programming mode first (See Paragraph 700.4).

a. Dial an asterisk [*] and [14] on the dial pad for night ringing stations.

b. Press the outside line that is to be programmed.

c. Then press station buttons for stations that are to ring on that line (each button will light).



d. When all stations have been entered, press HOLD to enter data.

Description

Telephones can be assigned to receive incoming outside line ringing during the night. The attendant places the system in night service by pressing the DND button.

A CO line can be assigned to ring at a station where access is denied. That station can transfer the call but cannot flash and regain dial tone.

All lines can be assigned to ring at all stations or no phones can be assigned to ring on a line.

Default: By default, all lines ring at the Attendant station (1).

CO Line Attributes Programming (Cont'd)

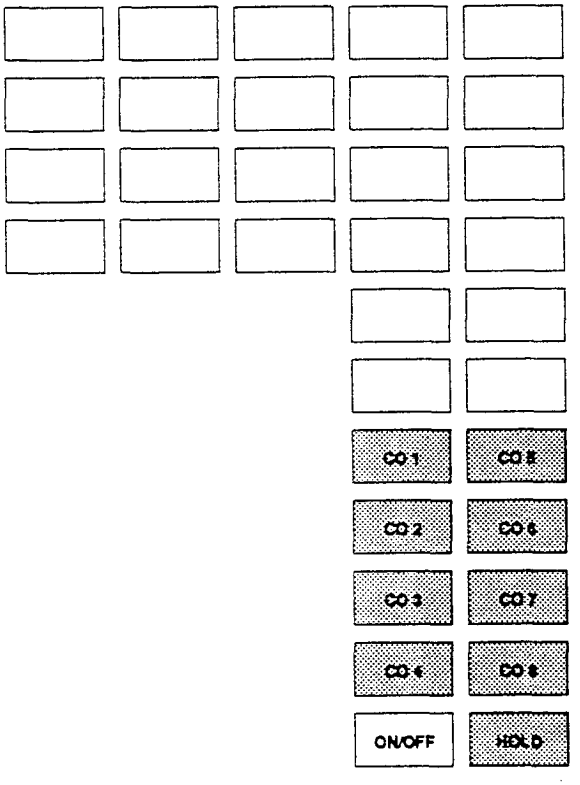
720.5 FLASH TIMER

Programming Steps

If the system is in the Programming mode, continue using program codes. If starting to program here, enter the Programming mode first (See Paragraph 700.4).

If the Flash timer is to be changed:

a. Dial an asterisk [*] and [15] on the dial pad.
   The first CO line button will light for programming.
b. Press CO line to be programmed.
c. Enter the two-digit timer value on the dial pad (01 to 99), which corresponds to 0.1 to 9.9 seconds.



d. Press HOLD to enter the data.

Description

Flash is a programmable opening on a CO/PBX line for signaling. When using an outside line, Flash allows a user to obtain a new dial tone without losing the line. This is particularly useful on a PBX system.

Each CO line is individually programmed for a Flash time. The Flash timer is programmed on a per-line basis.

Default: By default, the value for each line is 20 (2 seconds) and is variable from 0.1 to 99 (1 msec. to 9.9 seconds).

CO Line Attributes Programming (Cont'd)

720.6 CO RING DETECT

Programming Steps

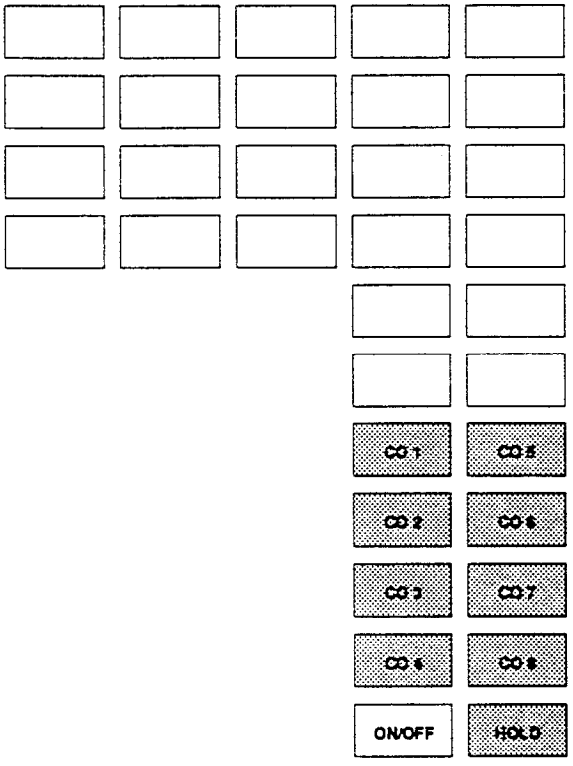
If the system is in the Programming mode, continue using program codes. If starting to program here, enter the Programming mode first (See Paragraph 700.4).

If CO Ring Detect timing is to be changed:

a. Dial an asterisk [*] and [16] on the dial pad.

b. Press CO line button for the line the timer will affect.

c. Enter one-digit timer value (2 to 9).
2 = 200 msec., etc.



d. Press HOLD to enter data. Continue entering timer values for CO lines which require them.

Description

The duration of the ringing signal from the CO or PBX is matched with ringing detection circuitry in the KSU. The ring detect timer can range from 200 to 900 milliseconds divided into 100 millisecond increments.

Default: By default, the value for each line is 300 milliseconds. Ring detect time is programmed on a per-CO line basis.

CO Line Attributes Programming (Cont'd)

720.7 DIAL PULSE

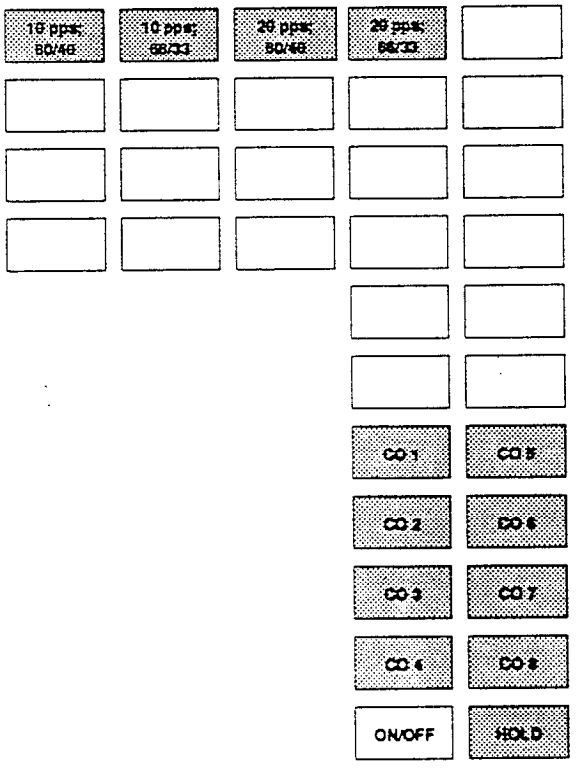
Programming Steps

If the system is in the Programming mode, continue using program codes. If starting to program here, enter the Programming mode first (See Paragraph 700.4).

If pulses per second (pps) and break/make ratios are to be changed:

a. Dial an asterisk [*] and [17] on the dial pad.

b. Press CO line button for the line to be assigned dial pulse. Then press the appropriate program button.



c. Press HOLD to enter data.

Description

This data field is only required when dial pulse signaling lines are connected and programmed.

Each CO (outside) line can send dial pulse signals to the receiving central office. The break/make ratio and pulses per second are programmed on a per-CO line basis.

Default: By default, the break/make ratio is 60/40 and 10 pps.

SECTION 730
SYSTEM PARAMETERS PROGRAMMING

730.1 SYSTEM CONFIGURATION

Programming Steps

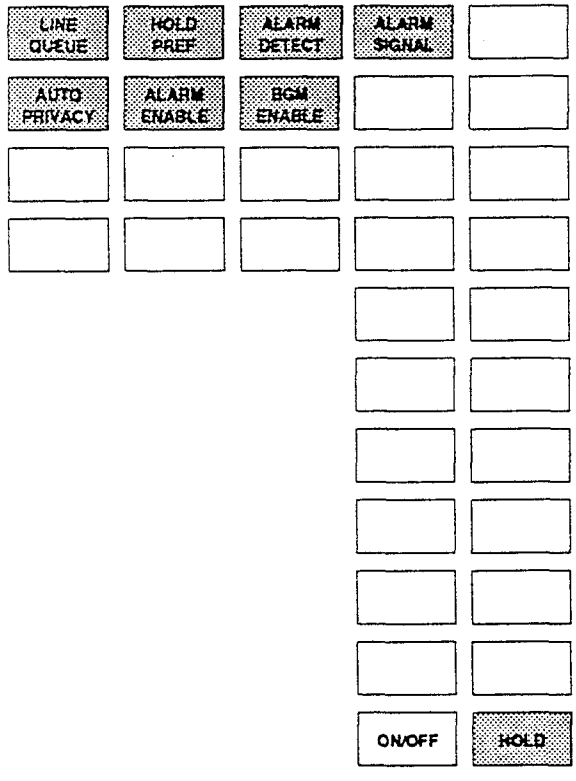
If the system is in the Programming mode, continue using program codes. If starting to program here, enter the Programming mode first (See Paragraph 700.4).

To change system data features:

a. Dial an asterisk [*] and [21] on the dial pad.

b. Toggle them on or off so the LEDs light or extinguish for desired features.

- LED on = enabled
- LED off = disabled



c. Press HOLD to enter data.

Description

Line Queuing - If this button is lit, CO line queuing is allowed on a system basis. Stations queuing a line are recalled according to the line group requested.

Default: By default, queuing is allowed (LED on).

Hold Preference - The system can be programmed to have either Exclusive Hold or System Hold preferred. If Exclusive Hold is preferred, the HOLD button is pressed once for Exclusive Hold and twice for System Hold when placing a call on hold.

If System Hold is preferred, the HOLD button is pressed once for System Hold and twice for Exclusive Hold. Transfer and conference calls are always placed on Exclusive Hold.

Default: By default, System Hold (LED on).

Alarm Detection - This feature determines the type of alarm signal received from an external source. If the LED is lit, it means closed loop detection; unlit means the system will detect an open loop.

Default: By default, the loop is closed (LED on).

Alarm Signaling - This feature determines the type of signaling received by the stations. If the LED is lit, it means a continuous tone will be given; if the LED is unlit it means a single tone will be given.

Default: By default, the tone is a continuous (LED on).

Automatic Privacy - A yes entry (LED lit) means that privacy is automatically provided on all communications in the system. To eliminate privacy, toggle the button so the LED extinguishes.

Default: By default, privacy is enabled (LED on).

System Configuration (Cont'd)

Programming Steps	Description
	Alarm Enable - A yes entry (LED lit) means the system is programmed for alarm. Stations must then be programmed to receive the alarm signal. Alarm signaling and alarm detection must also be chosen. **Default:** By default, this feature is disabled (LED off).
	Background Music This feature must be enabled if Background Music is supplied to the system. **Default:** By default, Background Music is disabled (LED off).

System Parameters Programming (Cont'd)

730.2 SYSTEM TIMERS

A. Exclusive Hold Recall

Programming Steps

If the system is in the Programming mode, continue using program codes. If starting to program here, enter the Programming mode first (See Paragraph 700.4).

To change this timer:

1. Dial an asterisk [*] and dial [22] on the dial pad.
2. Dial three-digit number between 000 and 255 (seconds). An entry of 000 disables the timer.
3. Press HOLD to enter data.

Description

The Exclusive Hold Recall Timer reflects the time before an outside line placed on Exclusive Hold will recall the initiating station. If the call is unanswered for the same amount of time, it will recall the attendant; and if unanswered by the attendant, it will recall all phones in the system.

Default: By default this timer is set for 060 seconds.

B. System Hold Recall

Programming Steps

To change this timer:

1. Dial an asterisk [*] and [23] on the dial pad.
2. Dial three-digit number between 000 and 255 (seconds). An entry of 000 disables the timer.
3. Press HOLD to enter data.

Description

The System Hold Recall Timer reflects the amount of time before an outside line placed on System Hold will recall the initiating station. If the call is unanswered for the same amount of time, it will recall the attendant; and if unanswered by the attendant, it will recall all phones in the system.

Default: By default, this timer is set for 060 seconds.

C. Transfer Recall

Programming Steps

To change this timer:

1. Dial an asterisk [*] and [24] on the dial pad.
2. Dial three-digit number between 000 and 255 (seconds). An entry of 000 disables the timer.
3. Press HOLD to enter data.

Description

The Transfer Recall Timer reflects the amount of time before an unanswered transfer is recalled to the station that initiated it. If the call is still unanswered for the same amount of time, it will recall the attendant; and if unanswered by the attendant, it will recall all phones in the system.

Default: By default, this timer is set for 030 seconds.

System Parameters Programming (Cont'd)

System Timers (Cont'd)

D. Message Wait Reminder Tone

Programming Steps

To change this timer:

1. Dial an asterisk [*] and [25] on the dial pad.
2. Dial two-digit entry between 00 and 99 (minutes). An entry of 00 disables the timer.
3. Press HOLD to enter data.

Description

A station with a message waiting can be reminded at a timed interval with a tone. The tone will continue at the programmed intervals until all messages have been answered. The interval can be programmed between 00 and 99 minutes.

Default: By default, this timer is disabled (00).

E. Pause Timer

Programming Steps

To change this timer:

1. Dial an asterisk [*] are [26] on the dial pad.
2. Dial one-digit entry between 1 and 9 (seconds).
3. Press HOLD to enter data.

Description

When dialing a speed number, a timed pause in digit sending can be inserted into the number. The length of the pause is controlled by the pause timer and can be programmed from 1 to 9 seconds.

Default: By default, this timer is set for 2 seconds.

System Parameters Programming (Cont'd)

730.3 EXECUTIVE/SECRETARY ASSIGNMENTS

Programming Steps

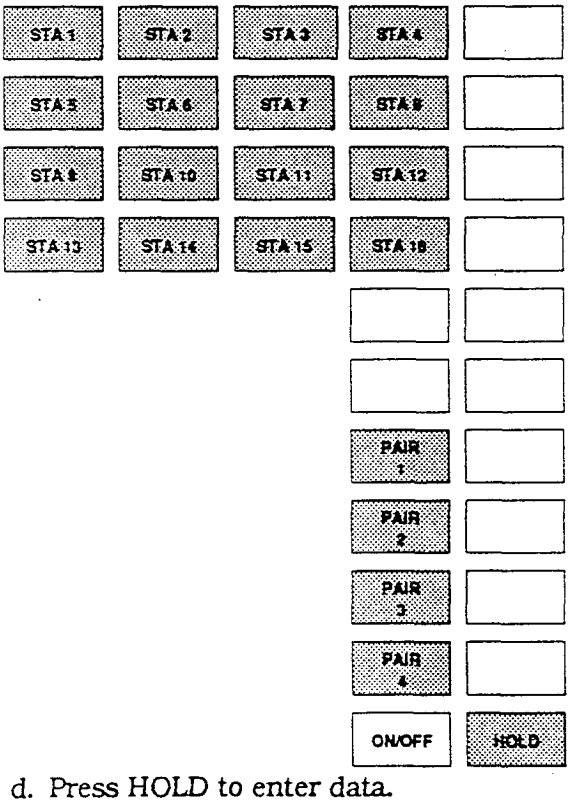
If the system is in the Programming mode, continue using program codes. If starting to program here, enter the Programming mode first (See Paragraph 700.4).

To program Executive/Secretary assignments:

a. Dial an asterisk [*] and [27] on the dial pad.

b. Press button for desired executive/ secretary pair assignment. Press the station button to select the desired executive station (LED lights steady).

c. Press the station button to select the desired secretary station (LED flashes).



d. Press HOLD to enter data.

Description

There are four sets of Executive/ Secretary pairs available for assignment. When the Executive is busy or in DND, intercom calls and transferred calls are automatically routed to the Secretary.

One Executive can have calls routed to four Secretaries, one Secretary can answer for four Executives or one Executive can be assigned one Secretary.

Default: By default, there are no pairs assigned.

System Parameters Programming (Cont'd)

730.4 LOUD BELL CONTROL

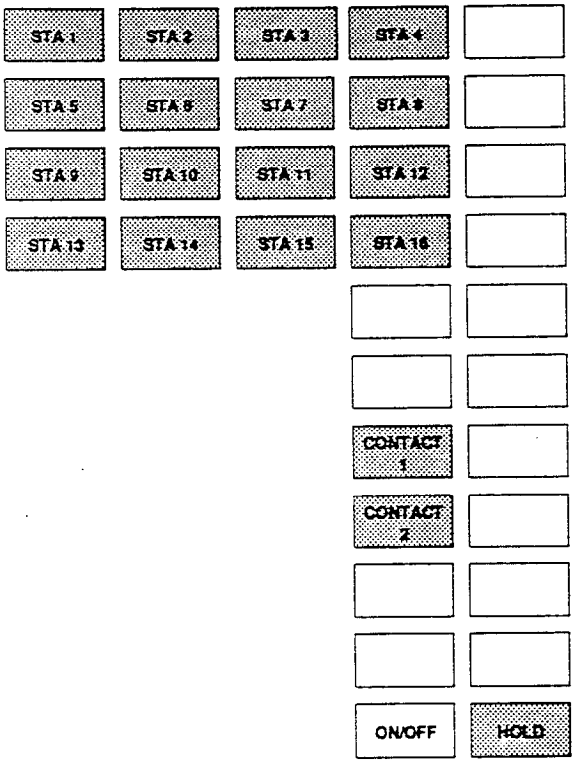
Programming Steps

If the system is in the Programming mode, continue using program codes. If starting to program here, enter the Programming mode first (See Paragraph 700.4).

To program these assignments:

a. Dial an asterisk [*] and [28] on the dial pad.

b. First, press the station button of the station to be assigned ringing (LED will light).



c. Press HOLD to enter data.

Description

The *Infinite 816* System provides relay contact closure for activation of external signaling equipment during incoming CO line ringing. The Loud Bell Control is selected by programming in the customer database.

Either or both of the Loud Bell Control circuits may be assigned to a station. The Loud Bell Control dry contacts will follow the ringing condition of that station. Locate the LBC1T and LBC1R terminals on the connecting block. Two wires are connected to these terminals and routed to customer provided signaling equipment.

All incoming CO lines assigned to ring for the programmed Loud Bell Control station will activate the Loud Bell Control station will activate the Loud Bell Control, causing the LBC contacts to sequence in a 1 second ON/3 seconds OFF rate until all lines have been answered by Key Telephone users. The LBC contacts are current-rated at 1 ampere/24Vdc.

Default: By default, none are assigned.

System Parameters Programming (Cont'd)

730.5 PBX DIALING CODES

Programming Steps

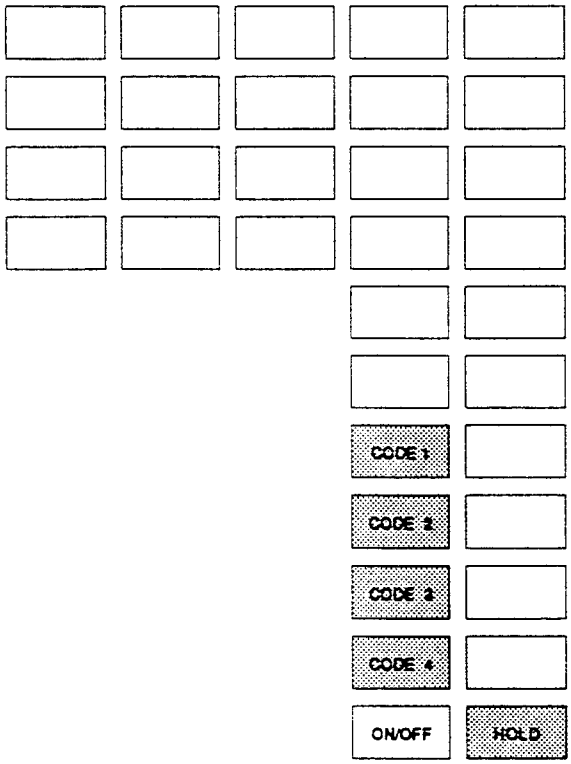
If the system is in the Programming mode, continue using program codes. If starting to program here, enter the Programming mode first (See Paragraph 700.4).

To enter PBX Dialing codes:

a. Dial an asterisk [*] and [30] on the dial pad.

b. Press the program button to assign the first code. CO line 1 button is automatically lit for programming the first code number.

c. Enter the one- or two-digit number on the dial pad.



d. Press HOLD to enter data. The next program button will light for entering further PBX codes.

Description

Four one- or two-digit PBX access codes can be entered into system memory. When dialed, they signal the system that an access code is being dialed and that toll restriction is to be applied at the next dialed digit. Otherwise, toll restriction does not apply. This allows dialing of PBX extensions 100, 110, 111, etc.

A one-digit code may be used.

Default: By default, no codes are assigned.

System Parameters Programming (Cont'd)

730.6 ATTENDANT POSITION

Programming Steps

If the system is in the Programming mode, continue using program codes. If starting to program here, enter the Programming mode first (See Paragraph 700.4).

To change the attendant position:

a. Dial an asterisk [*] and [31] on the dial pad.
b. Press the station button of the station to be assigned as the system attendant.
c. Press HOLD to enter data.

Description

One station must be assigned as the attendant for CO line recalls and placing the system into Night Service by pressing the DND button. Therefore, the attendant position does not have the Do Not Disturb feature.

System speed numbers as well as date and time are entered at the attendant station. The attendant can override stations in DND with the Camp-On feature.

Default: By default, station port 01 is assigned as the attendant position.

730.7 PRESET FORWARD RING TIMER

Programming Steps

If the system is in the Programming mode, continue using program codes. If starting to program here, enter the Programming mode first (See Paragraph 700.4).

To set the Preset Forward Ring Timer:

a. Dial an asterisk [*] and [32] on the dial pad.
b. Dial a two-digit number between 00 and 99. An entry of 00 disables the timer.
c. Press HOLD to enter data.

Description

The Preset Forward Ring Timer determines the amount of time a call will ring into a station before automatically forwarding to the predetermined station.

Default: By default, the timer is set for 30 seconds.

System Parameters Programming (Cont'd)

730.8 PRESET CALL FORWARD

Programming Steps

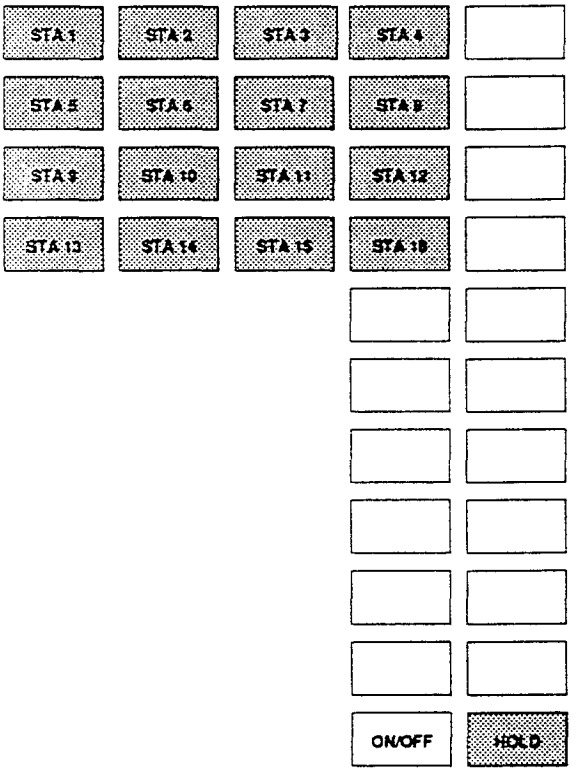
If the system is in the Programming mode, continue using program codes. If starting to program here, enter the Programming mode first (See Paragraph 700.4).

To assign a Preset Call Forward position to a station:

a. Dial an asterisk [*] and [33] on the dial pad.

b. Press the station button for the station being given a Preset Call Forward position. LED will light steady.

c. Then press the station button of the station which is to receive the forwarded ringing. LED will flash.



d. Press HOLD to enter.

Description

Ringing CO lines can be forwarded to another predetermined station if the original station is busy or does not answer. These lines will ring for a programmed period of time before forwarding. During this time, the busy station will hear muted ringing.

Default: By default, no stations are assigned a Preset Call Forward station.

An unlimited number of assignments can be made, but an individual station can have only one Preset Call Forward assignment. A station may receive an unlimited number of forwards.

To remove an assignment, first press the station with the preset forward assignment, then press that station a second time and press HOLD.

System Parameters Programming (Cont'd)

730.9 CONFERENCE TIMER

Programming Steps

If the system is in the Programming mode, continue using program codes. If starting to program here, enter the Programming mode first (See Paragraph 700.4).

To change the conference timer:

a. Dial an asterisk [*] and [34] on the dial pad.

b. Dial a two-digit number between 00 and 99. An entry of 00 disables the timer.

c. Press HOLD to enter data.

Description

The Conference Timer determines the amount of time a conference circuit will remain active if the initiator of the conference is no longer in a multi-line conference. A warning tone will be sounded to the remaining users 15 seconds prior to shutdown.

Default: By default, the conference timer is set at 15 minutes.

System Parameters Programming (Cont'd)

730.10 SMDR ENABLE

Programming Steps

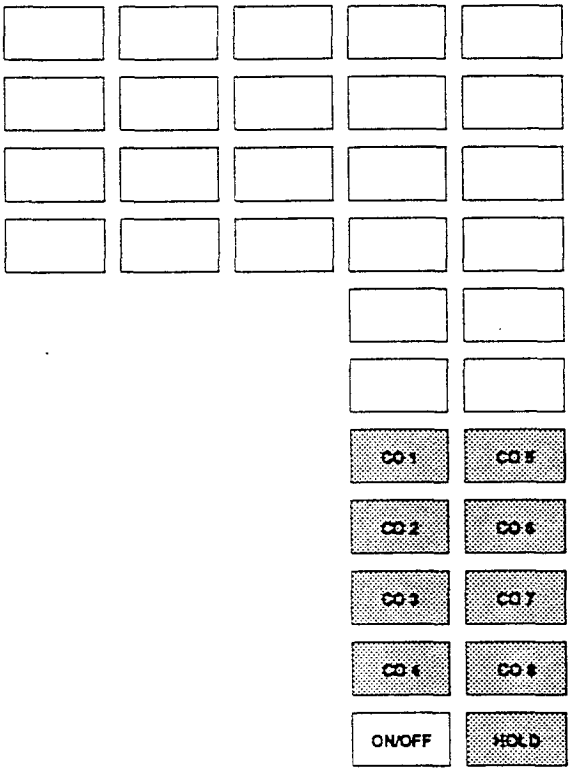
If the system is in the Programming mode, continue using program codes. If starting to program here, enter the Programming mode first (See Paragraph 700.4).

To program SMDR:

a. Dial an asterisk [*] and [35] on the dial pad.

b. Press CO line(s) for which SMDR is to be disabled or enabled.

- LED on = enabled
- LED off = disabled



c. Press HOLD to enter data.

Description

Station Message Detail Recording (SMDR) is a feature that allows customers to keep track of either all calls or only long distance calls, both incoming and outgoing, by CO line, number dialed, time of day, date, station that placed the call, duration of call, and account code, if used.

Default: By default, SMDR is enabled for all CO lines (LED On).

System Parameters Programming (Cont'd)

730.11 STATION MESSAGE DETAIL RECORDING (SMDR)

Programming Steps

To determine what calls are to be recorded, baud rate, and print format:

a. Press the asterisk [*] and dial [36] on the dial pad.

b. Press desired program button to determine if all calls are to be recorded or just long distance calls.

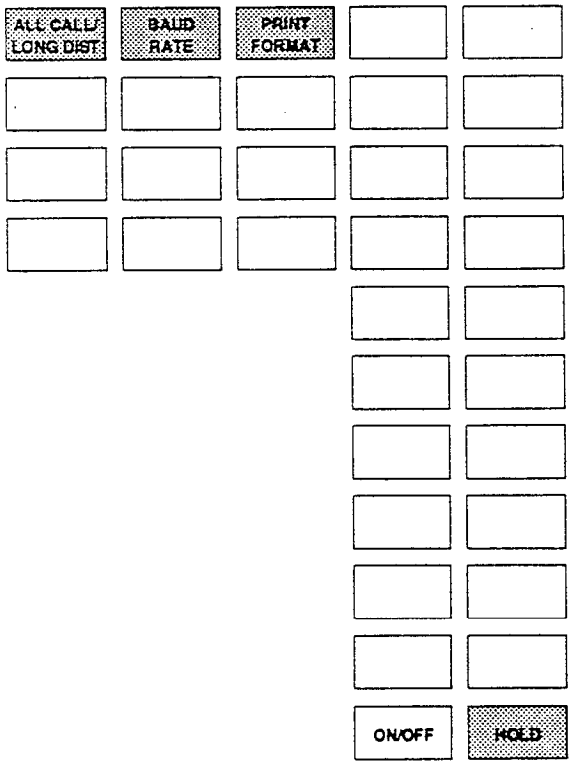
- LED off = long distance
- LED on = all calls

c. Press desired program button to determine baud rate.

- LED off = 1200 baud
- LED on = 300 baud

d. Press desired program button to determine print format.

- LED off = 29 character
- LED on = 80 character



e. Press HOLD to enter data.

Description

All Call Long Distance - SMDR can be programmed to record all calls, both incoming and outgoing or it can be programmed to record only outgoing long distance. Long Distance calls are calls of over seven digits or calls that begin with a "0" or a "1".

Default: By default all calls are recorded (LED on).

Baud Rate - The baud rate can be set at 300 or 1200 baud.

Default: By default, the baud rate is set at 300 (LED on).

Print Format - Print format can be set at either 29 characters (LED lit formats 3 line call records) or 80 characters (LED unlit formats 1 line call record).

Default: By default, format is 29 characters (LED off).

System Parameters Programming (Cont'd)

730.12 DATE/TIME FORMAT

Programming Steps

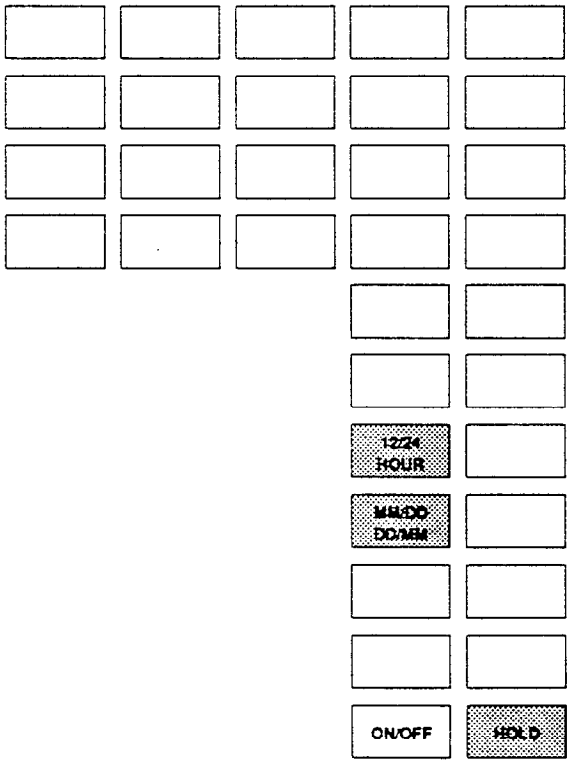
If the system is in the Programming mode, continue using program codes. If starting to program here, enter the Programming mode first (See Paragraph 700.4).

To change the format of the LCD display:

a. Dial an asterisk [*] and [38] on the dial pad.

b. Press the desired program button to determine the date and time display format.

- LED on = 12 hr, MM/DD/YY
- LED off = 24 hr, DD/MM/YY



c. Press HOLD to enter data.

Description

The LCD Display program controls the display format of the time and date on

the LCD. By default, the time is set at the 12 hour clock with a range of 1 through 12. This feature can be changed so the range is 00 through 24 (military time).

Default: By default, the date reads month/day/ year. The display can be changed to read day/month/year.

The actual time and date is programmed at the attendant station.

System Parameters Programming (Cont'd)

730.13 STATION SPEED DIAL

Each telephone has 20 unique speed dial numbers. These numbers are entered and stored by the user and can be recalled by the user at any time.

To program a station speed number:

a. Lift handset or press on/off button.
b. Press AUTO/SAVE button twice.
c. Press STA/SPD button where number is to be stored.
d. Press outside line button if desired.
e. Enter telephone number.
   - The asterisk [*] is used to program Pulse-To-Tone switchover.
   - The Pound [#] button is used to program a pause.
   - The FLASH button is used to program a Flash command.
   - The CONF button is used to program a "No Display".

The [*] can be programmed as a digit.

f. Press HOLD button.

To program additional numbers, repeat programming from Step a.

730.14 PULSE-TO-TONE SWITCHOVER

The user can command the system to change the signaling on a CO line from dial pulse to DTMF tone, allowing the use of common carriers behind a dial pulse line. This can be done either manually or programmed into a speed dial number.

To manually command a switchover, the user, while connected to an outside line, dials an asterisk [*]. The switchover occurs and the succeeding digits are sent DTMF.

When using speed dial numbers, the asterisk [*] is stored and sent with the number. The system automatically inserts a pause and then switches to DTMF sending for the remaining digits.

730.15 FLASH WITH SPEED DIAL

During the dialing of a station or system speed number, a Flash can be programmed into the number. A pause is automatically inserted after the Flash before the remaining digits are sent.

When programming a speed number, pressing the FLASH button programs a Flash command. This is counted as a digit. The Flash length and the pause that follows it are determined by programming.

730.16 NUMBERING PLAN

10 to 49	System Speed Dial (preceded by
1	AUTO/SAVE button)
2	Alarm Reset
3	External Page
4	Meet Me Page Answer
6	Call Pickup
70	Internal All Call Page
71	Internal Zone 1 Page
72	Internal Zone 2 Page
73	External Zone Page (or 3)
74	All Call Page
9	Music
0	Attendant
*	Save Number Redial (preceded by
#	AUTO/SAVE button)
	All Call

730.17 NIGHT SERVICE

The 816 System is placed into Night Service by pressing the DND button at the attendant's Key Telephone. To remove Night Service, the attendant reverses the procedure. When the system is in Night Service, stations marked to ring at night will function according to programmed ring assignments. CO lines not programmed as Private Lines will have Universal Night Answer (UNA) status allowing stations to answer incoming calls on their phone.

730.18 SYSTEM SPEED DIAL

System speed dial numbers are entered into the data base at the designated attendant station. A CO line can be programmed into a speed number. There can be 16 digits in the number including Pause, Pulse-To-Tone switchover, and Flash commands.

Speed bins 10 to 29 are subject to the class of service and line access restrictions assigned to the station that uses the number. Speed bins 30 to 49 are not monitored by toll restriction.

To program system speed numbers at attendant station:

a. Press AUTO/SAVE button twice.
b. Dial speed bin location (10 to 49).
c. Press specific CO line (optional).
d. Dial telephone number including Pauses, Flash commands and Pulse-To-Tone switchover.

- The asterisk [*] is used to indicate a Pulse-To-Tone switchover.
- The Pound [#] button to insert a Pause command.
- The FLASH button to program a Flash command.
- The CONF button is used to program a "No Display".

The [*] can be programmed as a digit.

e. Press HOLD button.

To continue programming additional numbers, repeat from step a.

730.19 SETTING SYSTEM DATE AND TIME

System date and time can be set only from the attendant station and must be done in the following manner:

a. Press AUTO/SAVE button twice.

b. Dial [50] on the dial pad.

c. Enter date and time as follows: YYMMDDHHMM
   - YY = year 80 to 99
   - MM = month 01 to 12
   - DD = day 01 to 31
   - HH = hour 00 to 23
   - MM = minute 00 to 59

d. Press HOLD to enter.

730.20 PHONE BOX PROGRAMMING

The following program parameters should be considered where Phone Box operation is desired.

1. Program Station Class of Service to COS 6 for the desired phone box station. Refer to Section 710.1, Station Class of Service.
2. Assign Alarm/Phone Box signaling to stations to receive phone box signaling. Refer to Section 710.2, Station Configuration.
3. Program the type of Alarm/Phone Box signaling is desired:

   The options are:

   — A continuously repeated warble tone of .25s on/.25s off.

   — A Single burst of tone ring (once)

Refer to Section 730.1, System Configuration

730.21 SINGLE LINE STATION ADAPTER (SLA) PROGRAMMING

The SLA stations are programmed in the same manner a key telephone is programmed in the system data base admin. Attributes such as Station COS, feature access, CO Line Ringing, Pick Up group, etc... can be assigned to a single line station connected to the SLA adapter. Refer to Table 730.1 for a complete list of Program Codes that can affect SLA operation. Refer to the systems manual for complete programming procedures and station attributes that can apply to SLA station ports.

Table 730-1 Applicable SLA Program Codes

PROGRAM CODES 816	
Class of Service	DF 01
Do Not Disturb	DF 02, SF 1
System Speed Dial	DF 02, SF 2
Alarm/Door Signal	DF 02, SF 3
Preferred Line Answer (must be enabled)	DF 02, SF 4
Call Forwarding	DF 02, SF 5
Pick Up Group	DF 05
CO Line Ringing, Day	DF 13
CO Line Ringing, Night	DF 14
Message Reminder Tone	DF 25
Preset Forward Sta Assign	DF 33
DF=Data Field SF=Sub-Field	

The following are some of the parameters that require special attention for stations connected to a SLA.

A. Preferred Line Answer (PLA)

For proper operation of a single line telephone or device connected to a SLA, Preferred Line Answer (PLA) **must** be enabled in Data base admin for each SLA port that is connected. This is performed in program code 02, Sub-Field 4. Refer to Station Configuration, Section 710.2 for the complete programming procedures to enable Preferred Line Answer (PLA) for the SLA station ports.

B. CO Ringing

Direct CO ringing is allowed to a SLA device. Ringing assignments may be for day ringing and/or night ringing. Ringing assignments are programmed in the Station Configuration, CO Ringing, program code 13 and 14. Refer to Section 720.3 and 720.4 for complete programming procedures for entering CO ringing assignments. If the SLA is programmed to receive incoming ringing for more than one line and the SLA is busy when a CO line rings in, no signal will be presented to the SLT.

C. Receiving an Audible Message Waiting Signal

An SLA may receive an audible message waiting signal in the form of the "system wide" Message Wait Reminder Tone. This tone must be enabled in the system data base program code 25. When message wait reminder tone is enabled ALL stations in the system will receive this alert tone at the programmed interval including SLT's connected to the SLA. Refer to System Timers, Section 730.2 for complete programming procedures to enable the Message Wait Reminder Tone.

NOTE: The SLA adapter does not support standard Message Waiting telephones with message waiting lamps.

SECTION 740
EXCEPTION TABLES PROGRAMMING

740.1 TOLL RESTRICTION TABLES

Programming Steps

If the system is in the Programming mode, continue using program codes. If starting to program here, enter the Programming mode first (See Paragraph 700.4).

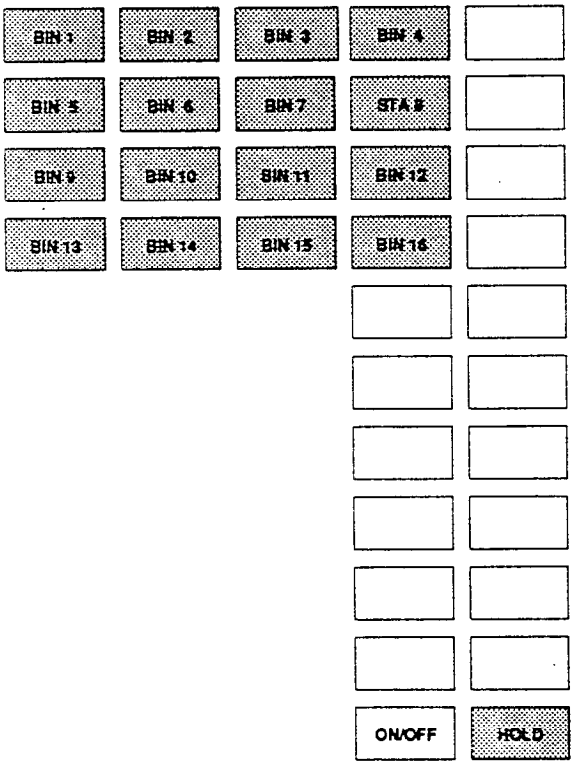
To enter numbers into the toll tables:

a. Dial an asterisk [*] and use one of the following:

b. Allow Table A = [41], Deny Table A = [42]
Allow Table B = [43], Deny Table B= [44]

c. Press desired bin number location.

d. Dial the Allow/Deny number including don't cares (8 digits maximum).



e. Press HOLD to enter the data. Continue programming the various bins.

Description

The Allow/Deny tables are organized into two sets of tables to allow the 816 System to support two different toll plans at one installed site. Allow/Deny Table A is referenced when a station is assigned Class of Service 2. Allow/Deny Table B is referenced when a station is assigned Class of Service 3.

Each table may contain up to 16 numbers of up to 8 digits each. Any number of digits up to 8 maximum may be entered. Less than 8 digits may be entered. For example, the programmer needs only to dial "0" and press HOLD to program operator restriction.

The following rules should be remembered when setting up the Allow/Deny tables:

- If nothing is assigned in either the Allow or Deny table, no restriction is applied.
- If entries are made only in the Allow table, then only the numbers in that table are allowed (Allow Only Restriction).
- If entries are made only in the Deny table, then only the numbers in that table are denied (Deny Only).
- If there are entries in both tables, the Allow table is searched first; and if the dialed number is found, it is allowed. If it is not found in the Allow table, the Deny table is searched. If the number is found there, it is denied; if it is not found there, it is allowed.
- Exchange Codes can be blocked by specific entries in the Deny lists or allowed by specific entries in the Allow lists.

Exception Tables Programming (Cont'd)

Toll Restriction Tables (Cont'd)

Programming Steps	Description
	When the Do Not Disturb (DND) button is used, it enters a **don't care** character. This will allow or deny any digit 0 to 9 in that location.
	When a CO line is marked PBX, Class of Service (COS) restrictions apply to the station only if one of four PBX codes are dialed first.
	The Allow/Deny tables are reserved for COS 2 and 3, respectively. A CO line marked Toll Restriction Override is not subject to restriction of COS 2, 3, or 4. The last 20 system speed bins are not subject to toll restriction also.
	The pound [#] and asterisk [*] are used as Allow/Deny digits.
	Press HOLD twice to erase a bin.
	When viewing a bin but not entering or changing anything in that bin, the HOLD button must be pressed to exit the bin. No confirmation tone will be heard.

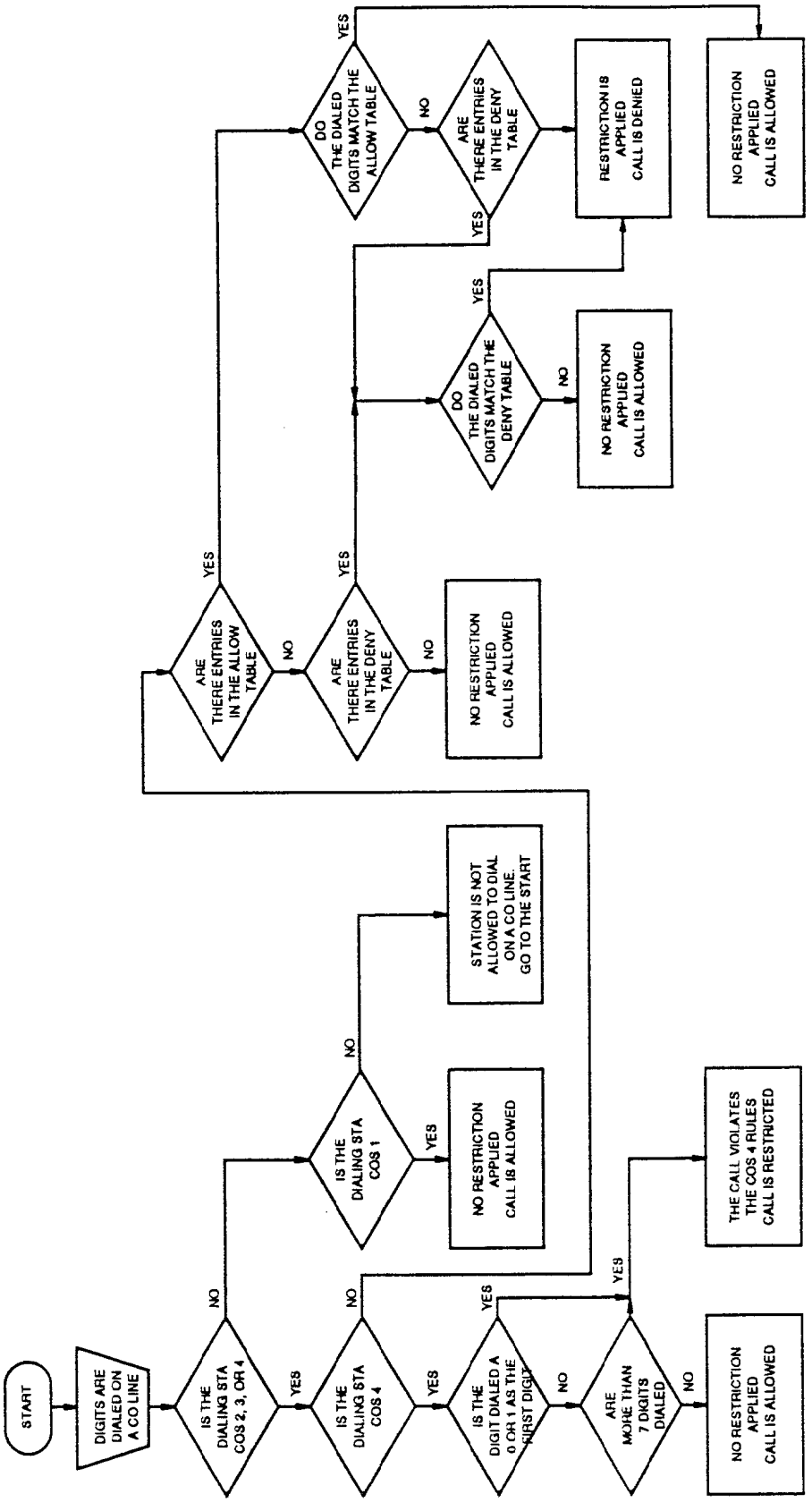


Figure 740-1 Toll Restriction Flowchart

SECTION 750
INITIALIZE DATA BASE PARAMETERS

750.1 DEFAULT DATA BASE CODES

Programming Steps	Description
If you are in the program mode, continue using the program codes. If you are starting to program here, enter the program mode first.	

A. Default Station Data

Programming Steps	Description
To initialize the Station Data: 1. Dial an (*) asterisk and [00] on the dial pad. 2. Press the HOLD button to initialize the Station Data. Confirmation tone will be heard.	This data field is used to initialize all Station Data. (Program Codes 01-04). **Default:** All applicable program codes returned to default (Program codes: 01, 02, 03, and 04)

B. Default CO Line Data

Programming Steps	Description
To initialize the CO Line Data: 1. Dial an (*) asterisk and [10] on the dial pad. 2. Press the HOLD button to initialize the CO Line Data. Confirmation tone will be heard.	This data field is used to initialize all CO Line Data. (Program codes 11-17) **Default:** All applicable program codes returned to default (Program codes: 11, 12, 13, 14, 15, 16, and 17)

Initialize Data Base Parameters (Cont'd)

DEFAULT DATA BASE CODES (Cont'd)

C. Default System Data

Programming Steps

To initialize the System Data:

1. Dial an (*) asterisk and [20] on the dial pad.
2. Press the HOLD button to initialize the System Data. Confirmation tone will be heard.

Description

This data field is used to initialize all System Data. (Program Codes 21-36).

Default: All applicable program codes returned to default (Program codes: 21, 22, 23, 24, 26, 27, 28, 29, 31, 32, 33, 34, 35, and 36)

D. Default Toll Table Data

Programming Steps

To initialize the Toll Table Data:

1. Dial and (*) asterisk and [40] on the dial pad.
2. Press the HOLD button initialize the Toll Table Data. Confirmation tone will be heard.

Description

This data field is used to initialize all Toll Table Data. (Program Codes 41-44).

Default: All applicable program codes returned to default (Program codes: 41, 42, 43, and 44)

SECTION 755
PRINTING DATA BASE PARAMETERS

755.1 DATA BASE PRINTOUT

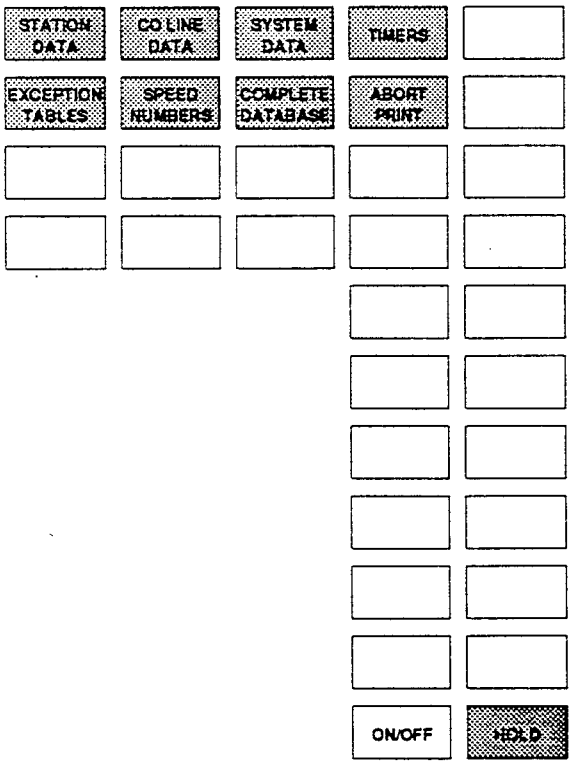
Programming Steps

If the system is in the Programming mode, continue using program codes. If starting to program here, enter the Programming mode first (See Paragraph 700.4).

To print out a copy of the data base, or any part of the data base:

a. Dial an asterisk [*] and [37] on the dial pad.

b. Press one of the program buttons, depending on what information is needed in the printout.



c. Press HOLD to begin printing.

Description

Requires the installation of the SIU module, the RCU module, and Program Module IV.

A printer must be connected to the RS-232C port of the KSU for a Data Base Printout.

Station Configuration

The Station Configuration printout will provide station related information in a 54-character field in the following format:

```
STA CONFIG
CKT NUM  COS DND SPD ALM PFL
01   1    1   Y   Y   N   N
CF DSLT CO ACCESS ZNE B/NA
Y   Y   1247.  ..  1.  12
CKT NUM  COS DND SPD ALM PFL
02   2    1   Y   Y   N   N
CF DSLT CO ACCESS ZNE BNA
Y   Y   1          12  ..
```

and so on through the rest of the stations

CKT= The two-digit circuit number (KSU physical port)

NUM= The two-digit intercom number assigned to this KSU port

COS= The one-digit class of service assignment

DND= "Y" enabled DND;
"N" disabled DND at that station

SPD= "Y" allows system speed dial;
"N" disables system speed dial

ALM= "Y" allows alarm/Door Box ringing;
"N" disables it

PFL= "Y" enables Preferred Line operation;
"N" disallows it

CF= "Y" allows Station Call Forwarding;
"N" disallows it

DSLT= "Y" enables Direct Select operation;
"N" disables it

CO ACCESS=Lines that station can access

ZNE= Page/Pickup Zone(s)

BNA= Valid date is "01" through "15" indicating the Busy/No Answer preset forward station assigned

CO Line Configuration

The CO Line Configuration will provide CO line related information in the following format:

```
CO CONFIG
CO GRP TYPE SIGL TRO PVL FLSH
01  1   CO  DTMF  N   N   20
RDT DIAL-PLS SMDR
 3  60/40;10   Y
DAY RING:
01 .. .. .. .. .. .. ..
.. .. .. .. .. .. .. ..
NIGHT RING:
01 .. .. .. .. .. .. ..
.. .. .. .. .. .. .. ..
```

and so on through the rest of the CO lines

CO= The CO line number as it is terminated on the system

GRP= The CO line group this CO line is assigned to

TYPE= Valid data is "CO" or "PBX"

SIGL= Valid data is "DTMF" or "Dial Pulse"

TRO= "Y" enables Toll Restrict Override;
"N" disables it

PVL= "Y" enables a Private Line;
"N" disables it

FLSH= Valid entries for Flash Timer are "01" through "99"

RDT= Valid entries for Ring Detect Timer are "2" through "9"

DIAL-PLS= Valid entries are:
1) 60/40; 10
2) 66/33; 10
3) 60/40; 20
4) 66/33; 20

SMDR="Y" enables SMDR; "N" disables SMDR

DAY RING=Stations assigned to ring in the day mode for this CO Line. Unassigned numbers are shown as two dots ".."

NIGHT RING=Stations assigned to ring in the night mode for this CO Line. Unassigned numbers are shown as two dots ".."

System Configuration

The System Configuration related database information is provided in the following format:

```
SYS CONFIG
QUE HOLD  ALM :DT :SIGL :ENBL
 Y   SY        CL  REPT    N
PRV ATTD LBC1 LBC2
 Y   01   ..   ..
SMDR BAUD PRNT
ALL   300  29
EX/SC1 EX/SC2 EX/SC3 EX/SC4
.. ..  .. ..  .. ..  .. ..
```

QUE= Enabled = "Y",
Disabled = "N"

HOLD=Valid data is "EX" or "SY"

ALM= Alarm parameters where:

DT= Closed "CL" or Open "OP" detection

SIGL= Repeated "RPT" or
one-time "ONCE" signaling

ENBL= Enable the alarm, "Y"=yes, "N"=no

PRV= = Privacy enabled, "Y"=yes, "N"=no

ATTD= = Assigned Attendant station.
Valid data=Stations 01-15

LBC= Loud Bell/CO Line Control station/CO assignment. Valid data for LBC Station assignments is "B01 through B15" or if programmed for CO Line Control, CO Lines "C01 through C06"

SMDR=Type of SMDR: "ALL" prints local and long distance; "LD" prints long distance only

BAUD=Baud Rate: "300" or "1200"

PRNT= 29 or 80 character option

EX/SC=The four (4) programmable Executive/Secretary pairs. Valid data is stations "01" through "15"

System Timers

The Timers printout will provide programmed information on all programmable timers in the system in the following format:

```
TIMERS
ERCL SRCL TRCL MSG-TNE PAUSE
 060  060  030   00     2
RING-FWD CNFTO
   30      15
```

Where:

ERCL=Exclusive Recall Timer

SRCL=System Recall Timer

TRCL=Transfer Recall Timer

MSG-TNE=Message Wait Reminder Tone

PAUSE=Programmed length for a pause stored in a speed dial number

RING-FWD=Busy/No Answer Ring Forward Timer

CNFTO=Conference Time-out for unsupervised conference

Exception Tables

The Exception Tables printout will provide information on data programmed into the Allow and Deny Tables "A" and the Allow and Deny Tables "B". Up to eight (8) digit entries will be displayed. A double period indicates that no data has been programmed for the particular bin. Exception Table information is displayed in the following format:

```
EXCEPT TABLE
ALLOW TABLE A
01 ..          09 ..
02 ..          10 ..
03 ..          11 ..
04 ..          12 ..
05 ..          13 ..
06 ..          14 ..
07 ..          15 ..
08 ..          16 ..

DENY TABLE A
01 ..          09 ..
02 ..          10 ..
03 ..          11 ..
04 ..          12 ..
05 ..          13 ..
06 ..          14 ..
07 ..          15 ..
08 ..          16 ..
```

Where:

Valid data will be digits [0] through [9], [*], and [#], and don't care character "D". Valid data, if programmed will printout in the eight spaces to the right of each bin number with the first digit occupying the position of the first period shown.

System Speed Dial Printout

System Speed Dial numbers programmed into the system can be displayed in this printout. Up to sixteen (16) digits can be displayed for each of the forty (40) bins. System Speed Dial numbers can be displayed sequentially from bin 10 through 49, one bin and it's data per line.

```
SYSTEM SPEED
10 ..30 ..
11 ..31 ..
12 ..32 ..
13 ..33 ..
14 ..34 ..
15 ..35 ..
16 ..36 ..
17 ..37 ..
18 ..38 ..
19 ..39 ..
20 ..40 ..
21 ..41 ..
22 ..42 ..
23 ..43 ..
24 ..44 ..
25 ..45 ..
26 ..46 ..
27 ..47 ..
28 ..48 ..
29 ..49 ..
```

Where:

Valid data will be any digit [0] through [9], [*] and [#] plus the rotary to DTMF switch-over command "T", the pause symbol "P", the no display character "N", and the FLASH command "F".

SECTION 800
MAINTENANCE AND TROUBLESHOOTING

800.1 GENERAL INFORMATION

This section provides common maintenance, troubleshooting and repair instructions for the *Infinite 816* Key Telephone System. It is advisable to use the latest issue manual and supporting documentation whenever possible.

The 816 System architecture is designed such that all solid state circuitry is enclosed in the Key Service Unit (KSU). The Serial Interface Unit (SIU) and Real Time Clock Unit (RCU) are already installed inside the KSU to provide Station Message Detail Recording (SMDR) and the time and date. Therefore, the KSU cover should not be removed.

Isolating problems in the replaceable units such as the Key Telephones or any external devices requires no special know-ledge of solid state electronics or micro-processor programming techniques. The 816 System requires no involved or complicated mechanical procedures for installation or removal of peripherals.

Before starting troubleshooting procedures, be sure to turn the power to the system OFF.

800.2 PREVENTIVE MAINTENANCE

A regular preventive maintenance program is essential to reduce the possibility of system failures. General servicing such as cleaning and inspecting should be performed yearly. If the KSU is located in an area of extremely high temperatures, humidity, dust, etc., servicing should be performed more frequently. General servicing should include:

- Hardware and cabling. Check for general mechanical integrity, loose or broker wires, plugs, or connectors. Tighten or repair as necessary.
- KSU. Inspect air vents located in front and on top of the KSU cabinet for unrestricted air passage.
- MDF/cabling. Inspect the Main Distribution Frame for loose wires, obstructions, dust, and dirt.

800.3 TEST EQUIPMENT AND TOOLS

The following test equipment and tools are necessary in performing maintenance and repair on the 816 System.

- Voltmeter
- DTMF/dial pulse hand-held test telephone
- Standard telephone repairman's hand tools

800.4 SPARE PARTS

The troubleshooting and repair instructions are based on the assumption that spare Key Telephones and KSU are available to the repairman, either on- site or at a central warehouse/storeroom location. In addition, spare fuses, jacks, wire, and terminal blocks should be available.

800.5 FIELD SERVICE ENGINEERING

Installation, troubleshooting, and repair are described in detail in this manual. However, field service type questions such as application requirements and troubleshooting assistance arise which require support. Such services are available through *Infinite* Field Service.

800.6 FAULT CLASSIFICATION

Reported problems come from a variety of sources under differing conditions. Therefore, all trouble reports should be thoroughly examined so the exact problem is understood. Do not always suspect the 816 System equipment. Be sure to check external interface equipment such as the MDF, interconnection points, cabling, central office, or programming. To help isolate a fault from the reported description, the following information should be investigated to further define the fault source.

- Were any changes made recently to the customer data base assignments that could cause the problem?
- Were any changes made recently to cabling that could cause the problem?
- Is the trouble condition associated with one circuit, a particular section or sections of circuits (i.e., CO lines, stations), or common to all circuits?

- Is the trouble intermittent or continuous?
- Could the trouble be caused by "cross symptoms" such that two failures mask the symptoms associated with a particular fault?

800.7 SYSTEM FAILURES

Some problems can affect the entire system. These are normally related to power failures, central processor failures, or memory failures. Where central processor or memory failures occur, the KSU must be replaced. When loss of power occurs, steps can be taken to localize the problem.

800.8 POWER FAILURES

The loss of commercial power will shut the system down unless external battery backup is provided. This loss of power could come from tripped circuit breakers, AC cords unplugged, or a fuse blown. When a power failure occurs, test for voltage, working toward the source. The power monitor LED remains lit when power is present. Since the processor or power failure causes switchover to the power failure telephone, the LED should be used to determine whether it is a power failure or processor failure. The LED can be seen through the bottom air vents located on the front cover of the KSU. Perform power test in Table 800-1 if power failure is indicated.

800.9 KEY TELEPHONE FAILURES

The following statements should be considered when isolating and categorizing Key Telephone failures:

Is the reported fault:

- Present on one telephone only? Check wiring, programming, telephone, and KSU. (Move telephone to a known good working position to eliminate possible telephone failure.)
- Common to station numbers in pairs (1-2, 3-4, 5-6, etc.)? Check wiring polarity and KSU.
- Common to all station numbers? Check programming and KSU.
- Associated with a Key Telephone that was recently moved? Check wiring, programming, telephone, and KSU.
- Associated with programming changes made recently? (Ringing, CO line access, etc.) Check for proper and accurate programming.
- Occurring intermittently? Set up a test to duplicate the problem.
- Accompanying a software feature? Test the feature operation, programming, and KSU.

Table 800-1 Power Test

PROCEDURE		RESULT	
1.	Inspect Installation	1.	CO line connected to proper RJ-21X connector
		2.	MDF cabling punched down correctly on 66M-50 block.
		3.	External connection properly connected.
		4.	Music source wiring securely connected.
2.	Plug in AC cord	1.	Power LED on.
		2.	AC power input voltage 106 to 128V ac.
		3.	MDF voltage for station VT (-) to DT (+) = 28V dc± 15% VR (-) to DR (+) = 28V dc ± 15%
3.	Feature Verification	1.	System programming according to desired feature operation (Section 700).
		2.	Features function as described (Section 300).

800.10 CO/PBX LINE FAILURES

Problems with CO/PBX lines can be isolated and categorized by the following statements:

Is the reported fault:

- Present on one CO line only? Check the affected line, wiring, plug connections, and KSU.
- Common to two or more CO lines? Check the lines, wiring, and KSU.
- Associated with a Key Telephone? Check programming, telephone, and KSU.
- Associated with signaling (DTMF, dial pulse)? Check programming, CO line, and KSU.
- Associated with CO incoming ringing? Check programming and KSU.
- Occurring intermittently? Set up test to duplicate the problem. If the problem can be duplicated, check programming, telephone, CO line, or KSU.

800.11 FEATURE OPERATION FAILURES

All operational features are controlled by software and specific data base assignments. Most features are provided exclusively by software. However, some require supporting equipment. For this reason, data base assignments should be checked before corrective maintenance is performed. If the data base has been corrupted, re-initializing the system may clear the problem. Also check for proper usage by the customer, as feature failures are often user-related. Feature supporting equipment could be faulty. This should be checked.

The following is a list of features that use additional equipment:

Table 800-2 Features w/additional Equipment

FEATURE	EQUIPMENT USED
Alarm	Alarm system
Background music and Music-On-Hold	Music source, connections
Battery backup	Battery package and charger
Loud Bell Control	External power source and ringing device
Power Failure Transfer	Telephones, wiring
External Paging	Amplifier, speaker, and connections

Table 800-3 Key Station Testing

OPERATIONAL TEST		RESULT		PROCEDURE	
1.	Connect the modular cord to the instrument.	1.1	Tone is heard for a short time from the speaker of the instrument. All LED's are momentarily illuminated.	1.1	Normal
		1.2	No tone, no reaction	1.2	Check station wiring.
2.	Depress the ON/OFF button on the instrument.	2.1	ON/OFF lamp lights	2.1	Normal
		2.2	Associated station DSS key lights	2.2	Normal
		2.3	No reaction.	2.3	Check the connections of keyboard connector "K" in the instrument.
3.	Background music.				
3.1	With the instrument in an idle state, depress 9 on the dial pad.	3.1.1	Background music is heard.	3.1.1	Normal
		3.1.2	No reaction.	3.1.2	Check that instrument is on in on-hook state. Check the Music Source connection at the KSU.
3.2	Adjust the voice volume knob (closest to the user) of the instrument.	3.2.1	Volume is increased or decreased, as desired.	3.2.1	Normal
		3.2.2	No reaction	3.2.2	Check the volume connector (VL2)(closest to line keys) in the instrument.
3.3	Press 9 again.	3.3	MUSIC is turned off.	3.3	Normal
4	Do Not Disturb				
4.1	Depress the DND button. NOTE: Telephone must be on-hook.	4.1.1	DNDlamp is lit steadily.	4.1.1	Normal
		4.1.2	No reaction.	4.1.2	Check the connections of key board connector"K" in the instrument.
				4.1.3	Verify station is allowed DND in data base.
4.2	Press the DND button again.	4.2.1	DND lamp goes out.	4.2.1	Normal

Table 800-3 Key Station Testing (Cont'd)

OPERATIONAL TEST		RESULT		PROCEDURE	
5.	Tone Volume NOTE: Instrument must be in tone signaling mode.				
5.1	From another instrument place an intercom call to set under test.	5.1.1	Muted tone is heard Adjust volume	5.1.1	Normal
		5.1.2	Muted tone is not heard	5.1.2	Check the connections of speaker connector "SP" in the instrument.
5.2	Depress the ON/OFF again.	5.2.1	The muted ringing tone is louder.	5.2.1	Normal
5.3	Adjust the tone volume	5.3.1	Increase or decrease volume as desired	5.3.1	Normal
		5.3.2	No reaction.	5.3.2	Change the instrument.
6.	Transmitting of Data Signals.				
6.1	When incorrect or no data signals are transmitted between KSU and instrument.	6.1.1	Only ON/OFF LED willlight when pressed. The remaining LEDs will not light.	6.1.1	Check cabling.
7.	Where there is difficulty in the operation of speakerphone.	7.1.1	Calls are not received through the built-in speaker.	7.1.1	Check the connections of speaker connector "SP" in the instrument.
		7.2.1	Speech through microphone of the instrument is not transmitted.	7.2.1	Check that the instrument is in the on-hook mode.
				7.2.2	Check the microphone connections in the instrument.
				7.2.3	Check the ribboncable of the speakerphoneconnector in the instrument.
				7.2.4	Replace keyset

Table 800-4 Intercom Functions Test

OPERATIONAL TEST		RESULT		PROCEDURE	
1.	Intercom Call				
1.1	Depress the DSS button for the desired instrument.	1.1.1	ON/OFF lamp lights.	1.1.1	Normal
a.	If the called instrument is a speakerphone and is placed in the handsfree talk back (voice) mode.	1.1.2	DSS lamp of called party islit.	1.1.2	Normal
		1.1.3	Intercom lamp (HOLD button) of called party is flashing 30 IPM.	1.1.3	Normal
		1.1.4	Busy tone is heard.	1.1.4	If called party is off-hook, in DND mode or not installed; normal.
		1.1.5	3 tones are heard	1.1.5	Normal
		1.1.6	Handsfree communications is possible at the called instrument, if it is a speakerphone.	1.1.6	Normal
		1.1.7	HOLD buttons flashes at called party.	1.1.7	Normal
		1.1.8	Intercom call is not connected.	1.1.8	Consult trouble shooting guide, section7.
		1.1.9	Intercom ringing is heard instead of 3 tones.	1.1.9	Confirm whether called station is in P orH mode.
		1.1.10	Handsfree conversation at the called instrument is not possible.	1.1.10	Check connections of microphone and speakerphone ribbon connector in the call instrument.
				1.1.11	Check that called instrument has speakerphone unit (SPU) installed.
1.2	If the called station answers by lifting the handset.	1.2.1	The flashing HOLD lamp of the called instrument lights steadily.	1.2.1	Normal
		1.2.2	Ring back tone is stopped.	1.2.2	Normal
1.3	Call Pick-Up				
a.	Lift Handset and depress DSS button for called station.	1.3a	Ringing or 3 bursts of tone are heard at the called station.	1.3a	Normal
b.	To answer at the remote station, lift the handset or depress the ON/OFF button.	1.3b	Intercom dial tone isheard.	1.3b	Normal
c.	Depress 6 on the dial pad.	1.3.c	Called station returns to idle state. HOLD lamp is extinguished. Intercom conversation between calling instrument and remote answering station is possible.If remote answering is not possible.	1.3.c	Normal Normal Change the remote answer instrument.

Table 800-4 Intercom Functions Test (Cont'd)

OPERATIONAL TEST		RESULT		PROCEDURE	
1.4	Intercom-Conference				
a.	During an intercom conversation depress the CONF button.	1.4.a	Party goes on HOLD.	1.4.a	Normal
b.	Depress the DSS button for another party. (3rd instrument)	1.4b	No change. Busy tone is heard	1.4.b	Normal The 3rd instrument is busy or not installed; Normal.
c.	When the third party answers, depress CONF button.	1.4.c	Ringing tone is heard	1.4.c	Normal
1.5	Call Waiting (Camp-On)				
a.	Lift the handset and depress the DSS button for the desired instrument that is busy on the CO line or intercom.	1.5.a	Busy tone is heard.	1.5.a	The called instrument is busy; Normal.
b.	Depress the CAMP-ON button.	1.5.b	Ring back tone is heard at the calling instrument and muted warble tone is heard over the speaker at the called instrument. Busy tone is heard continuously.	1.5.b	Normal
1.6	Transferring intercom calls to Exec-Sec instrument. The incoming intercom call is routed to the executive station which is busy.	1.6.1	The incoming intercom call is automatically transferred to the secretary station.	1.6.1	Normal
1.7	Paging				
a.	Lift handset. Dial 74 on the dial pad. Make paging announcement.	1.7.a	ALL CALL warning tone is heard. HOLD lamp lights steady. All idle instruments not in DND are paged. Paging does not occur	1.7.a	Normal Normal Normal Change the instrument.
b.	Hang up.	1.7.b	Paging is terminated and all stations not off-hook return to idle status.	1.7.b	Normal

Table 800-5 CO Line Functions Test

OPERATIONAL TEST		RESULT		PROCEDURE	
1.	Outgoing Calls				
1.1	Lift the handset or depress the ON/OFF button and depress a CO line button.	1.1.1	The CO line lamp is lit steady.	1.1.1	Normal
		1.1.2	Dial tone is heard.	1.1.2	Normal
		1.1.3	CO lamp is not lit.	1.1.3	Check line access.
		1.1.4	Dial tone is not heard.	1.1.4	Check line connections of CO line.
2.	Incoming Calls				
2.1	Incoming CO ringing.	2.1.1	CO ringing is heard.	2.1.1	Normal
		2.1.2	CO ringing is not heard but CO line is flashing.	2.1.2	Check programming for ring assignment.
		2.1.3	The CO line lamp is flashing at 30 IPM.	2.1.3	Normal
2.2	Depress the flashing CO line button.	2.2	CO line lamp is lit steady.	2.2	Normal
3.	Transferring a CO line call.				
3.1	During a CO line conversation, depress the DSS button for station to which CO line is to be transferred.	3.1.1	The CO line is placed on HOLD automatically.	3.1.1	Normal
		3.1.2	The CO line lamp is flashing I-HOLD at transferring station.	3.1.2	Normal
		3.1.3	At the 2nd instrument, the CO line lamp is flashing at 240 IPM (indicating the transferred CO line is on exclusive HOLD.)	3.1.3	Normal
		3.1.4	MUSIC-ON-HOLD is transmitted to the external CO line subscriber.	3.1.4	Normal
		3.1.5	No MUSIC-ON-HOLD is transmitted to the external CO lines.	3.1.5	Check connections of music source.
3.2	At the 2nd instrument, depress the flashing CO line button after answering intercom call from 1st instrument.	3.2.1	The CO line lamp is steady at all stations in the system.	3.2.1	Normal
		3.2.2	The CO line call is not transferred to the desired station.	3.2.2	Check that called station is not in DND. Consult trouble shooting guide (Section 800).

Table 800-5 CO Lines Functions Test (Cont'd)

OPERATIONAL TEST		RESULT		PROCEDURE	
4.	Add-On Conference				
4.1	During a CO line conversation, depress the CONF button then depress the DSS button for desired 2nd instrument.	4.1.1	The CO line is placed on HOLD.	4.1.1	Normal
		4.1.2	The three parties are connected for conferencing.	4.1.2	Normal
		4.1.3	At the 1st station: The CO line lamp is lit steady.	4.1.3	Normal
		4.1.4	2nd station: The CO line lamp is lit steady.	4.1.4	Normal
4.2	Hang up the handset at the 1st station to terminate conference call.				
5.	Multi-line Conference				
5.1.a	Make an outgoing CO line call to subscriber (B).				
b.	Press CONF button (CO line party (B) will automatically be put on I-HOLD at your station, exclusive busy at other station.)				
c.	Press another CO line button to make another outgoing CO line call to party (C).	5.1.c	All three parties are connected. The two CO line lamps are lit steady.	5.1.c	Normal
d.	Press CONF button again.				
6.	Flash				
6.1	During the CO line conversation, depress the FLASH button.	6.1.1	CO dial tone is heard again.	6.1.1	Normal

APPENDIX A
INFINITE 816 PROGRAMMING FORMS

Appendix A-1 Station Programming

	Program Code	CO Line Buttons	Sta	Sta	Sta	Sta	Sta	Sta	Sta	Sta	Default
Class of Service	01										COS 1
Do Not Disturb	02	Button 1									Yes (LED On)
Speed Dial	02	Button 2									Yes (LED On)
Alarm/ Phone Bx Signaling	02	Button 3									No (LED Off)
Pref Line Answer	02	Button 4									No (LED Off)
Call Forward	02	Button 5									Yes (LED On)
Auto Select	02	Button 6									Yes (LED On)
Headset Option	02	Button 7									No (LED Off)
CO Line Access	04										All Sta's All Lines
Page/ Pickup Group	05										Group 1

Appendix A-2 DSS Assignments (Program Code 04)

FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO
FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO

Appendix A-3 CO Line Programming

	Program Code	Sub-Fld Button	Line 1	Line 2	Line 3	Line 4	Line 5	Line 6	Line 7	Line 8	Default
Line Group	11										Group 1
Line Type	12	DSS 1 CO/PBX									CO
Signal	12	DSS 2 DTMF/ Pluse									DTMF
Toll Override	12	DSS 3									No
Private Line	12	DSS 4									None
Day Ring	13										All Ring Attendant
Night Ring	14										All Ring Attendant
Flash Timer	15										2 sec.
Ring Detect	16										300 msec.
Dial Pulse	17	DSS 1									60/40 10pps

Appendix A-4 System Programming

PROG CODE	DSS	FEATURE	FORMAT	DEFAULT	CUSTOMER DATA
21	DSS 1	CO Line Queuing	Yes/No	Yes	
	DSS 2	Hold Preference	System/Excl.	System	
	DSS 3	Alarm Detection	Open/Closed	Closed	
	DSS 4	Alarm Signaling	Continuous	Continuous	
	DSS 5	Automatic Privacy	Yes/No	Yes	
	DSS 6	Alarm Enable	Yes/No	No	
	DSS 7	Background Music Enable	Yes/No	No	
22		Exclusive Hold Recall	000-255 sec.	060 sec.	
23		System Hold Recall	000-255 sec.	060 sec.	
24		Transfer Recall	000-255 sec.	030 sec.	
25		MSG Reminder Tone	000-255 sec.	000 min.	
26		Pause Timer	1-9 sec.	2 sec.	
27		Executive/Secretary	4 pairs sta #, sta #	None	
28		Loud Bell Control	sta #	None	
30		PBX Codes	4 numbers 1 or digit	None	
31		Attendant Position	1-16	Sta. 1	
32		Ring Timer - Preset Forward	10-99 sec.	15 sec.	
33		Station - Preset Forward	unlimited sta #, sta #	None	
34		Conference Timer	00-99 min.	15 min.	
35		SMDR Enable for CO Lines 1-8	Yes/No	Yes	
36		Baud Rate; all calls or long distance; printer charac.	300/1200; all/ LD; 29/80	300; all; 29	
38		Time/Date Format	12/24; MD/DM	12; DN	

Appendix A-5 System Speed Dial Numbers

Programmed from the first Attendant station.

Monitored by Toll Restriction (COS)	
BIN #	Telephone Number
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	

Not Monitored by Toll Restriction	
BIN #	Telephone Number
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	

Appendix A-6 Exception Tables

Allow Table A (Program Code 41)	
BIN 1	
BIN 2	
BIN 3	
BIN 4	
BIN 5	
BIN 6	
BIN 7	
BIN 8	
BIN 9	
BIN 10	
BIN 11	
BIN 12	
BIN 13	
BIN 14	
BIN 15	
BIN 16	

Deny Table A (Program Code 42)	
BIN 1	
BIN 2	
BIN 3	
BIN 4	
BIN 5	
BIN 6	
BIN 7	
BIN 8	
BIN 9	
BIN 10	
BIN 11	
BIN 12	
BIN 13	
BIN 14	
BIN 15	
BIN 16	

Allow Table B (Program Code 43)	
BIN 1	
BIN 2	
BIN 3	
BIN 4	
BIN 5	
BIN 6	
BIN 7	
BIN 8	
BIN 9	
BIN 10	
BIN 11	
BIN 12	
BIN 13	
BIN 14	
BIN 15	

Deny Table B (Program Code 44)	
BIN 1	
BIN 2	
BIN 3	
BIN 4	
BIN 5	
BIN 6	
BIN 7	
BIN 8	
BIN 9	
BIN 10	
BIN 12	
BIN 13	
BIN 14	
BIN 15	
BIN 16	

APPENDIX B
INFINITE 816 COMPONENT LIST

Appendix B-1 *Infinite 816* System Component List

Description	
816 Enhanced Basic System	20VCS005
816 Program Module	22VCS007
816 SMDR Module (Replacement)	22VCS006
816 Station User Guide	00VCS210
816 Installation Manual	00VCS203
Real Time Clock Unit (RCU)(Replacement)	22VCS005
34 Button Enhanced Key Telephone (White)	10VCS201
34 Button Enhanced Key Telephone (Black)	10VCS204
34 Button Executive Key Telephone (White)	10VCS203
34 Button Executive Key Telephone (Black)	10VCS205
Wall Mount Kit (White)	16VCS001
Wall Mount Kit (Black)	16VCS002
34 Button KTU Replacement Handset (White)	18VCS001
34 Button KTU Replacement Handset (Black)	18VCS002
34 Button KTU Blank Designation Tabs	00VCS205
816 KTU Numbered Designation Tabs	00VCS212
816 Phone Box	26VCS002
34 Button KTU Directory Tray with Designation Sheet	00VCS207
Battery Back Up Unit (BBU)	VC61101
Single Line Telephone Adapter (SLA)	99VCS500