

HYBRID KEY TELEPHONE SYSTEM INSTALLATION AND PROGRAMMING MANUAL

MODEL : GHX-308A



LG Electronics Inc.

<http://www.sutti.com.ar>

GHX-308A

HYBRID KEY TELEPHONE SYSTEM

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SECTION 1. INTRODUCTION

1.1 PURPOSE

This manual provides the information necessary to configure, install, operate and maintain the GHX-308A Hybrid Key Telephone System.

1.2 REGULATORY INFORMATION

A. TELCO NOTIFICATION

Before connecting the GHX-308A Hybrid 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 information of the telephone numbers to be connected to the system.

B. 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.

C. CHANGES IN SERVICE

The local serving telephone company may make change in communications facilities or procedures. If these changes should affect the use of GHX-308A or compatibility with the network, the serving telephone company must give written notice to the user to allow uninterrupted service.

D. MAINTENANCE LIMITATION

Maintenance on the GHX-308A Hybrid Key Telephone System is performed only by the manufacturer or its authorized agent. The user may not make any changes and/or repairs except as specifically noted in the manual. If unauthorized alterations or repairs are performed, any remaining warranty may be voided.

E. NOTICE OF COMPLIANCE

The GHX-308A Hybrid Key Telephone is designed to comply 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:

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“WARNING:

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 or 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 residential area could cause interference, in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference.”

F. HEARING AID COMPATIBILITY

The GHX-308A Hybrid Key Telephone is Hearing Aid Compatible, as defined in Section 68.316 of Part 68 FCC Rules. **SECTION 2. GENERAL DESCRIPTION.**

SECTION 2. GENERAL DESCRIPTION

2.1 INTRODUCTION

The GHX-308A Hybrid Key Telephone System is designed to meet the telecommunication needs of small size business using maximum 3 CO lines & 8 extensions.

The system is a flat pack system equipped with basic 3 CO lines and 8 extensions (KTU : 1, Hybrid : 3, SLT : 4).

2.2 SYSTEM DESCRIPTION

The GHX-308A Hybrid Key Telephone System is microprocessor controlled, solid state electronic switching system. All controls, switching and interface circuitry are condensed onto a single printed circuit board(PCB) located inside the key service unit(KSU). The system can support both key telephone and single line telephone of DTMF and dial pulse type.

Switching is accomplished through a solid state crosspoint matrix that provides voice path connections for 3 Central Office lines, 1 Key Telephone, 3 Hybrids (Key telephone or SLT), and 4 SLTs.

There are two(2) external control contact ports that can be flexibly assigned to use loud bell control, external paging control, door open control and music on hold control.

The system also provides a battery backup interface circuit and a connector that allows customer provided external battery to be connected with the system, with this facility the system can execute its normal operation during commercial power failure.

The GHX-308A contains all system memories, which composed of 128Kbyte of ROM and 32Kbyte of RAM. The RAM is subdivided so that part is used as CPU working area and part is used for customer database. The customer database memory is protected from loss by a long-life lithium battery. The system generic memory(ROM) is mounted in the IC socket on the MBU. This allows easy access for removal of system software when upgrading software feature package.

2.3 SYSTEM CAPACITY

A. CONFIGURATION FOR OUTSIDE AND INTERNAL LINES

Description	System Capacity				Max. Capacity
CO/PABX	3				3 Lines
Key Telephone	1	2	3	4	8 Lines
Single Line Telephone	7	6	5	4	

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B. OTHER SYSTEM SOURCES

- 4 Intercom channels
- 1 Music source input
- 2 Free relay contacts
- 2 Power failure transfer ports

2.4 SYSTEM SPECIFICATION

A. ELECTRICAL SPECIFICATIONS

AC Input	110 or 220 VAC \pm 10%, 50~60Hz
Power Consumption	60Watts
Output Voltage	28V DC \pm 10%, 1.6A
Station Cable Lengths (Maximum) (Twisted 2 pair)	150m. of 26AWG Cable 300m. of 24AWG Cable 450m. of 22AW
Fuse-AC Input	110V : T500mA/250V 220V : T315mA/250V
Music Source (Input)	600 Ohms at 0 dBm
Contact Rating	
External Page Control	1.0A, 24VDC
Loud Bell Control	1.0A, 24VDC
External Page Port	
Output Impedance	600 Ohms at 0dBm
Output Power	1mW maximum

B. ENVIRONMENTAL SPECIFICATIONS

Operation Temperature	0~50 °C
Recommended Temperature	20~26 °C
Humidity	5-85 % (non-condensing)

C. DIALING SPECIFICATIONS

DTMF DIALING	
Frequency Deviation	less than \pm 1%
Rise Time	3 msec.
Duration of DTMF Signal	100 msec. minimum
Interdigit Time	100 msec. minimum
DIALING MEMORY	
System Speed Dialing	80 numbers (24 digits)
Station Speed Dialing	20 numbers per station (24 digits)
OUTSIDE LINE TYPE	Loop start

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D. DIMENSIONS AND WEIGHTS

BASIC KEY SERVICE UNIT Height Width Depth Weight	37.5cm (14.7 inches) 27.2cm (10.8 inches) 6.7cm (2.6 inches)
KEY TELEPHONE (GSX-33 EXE) Height Width Depth Weight	22cm (8.75 inches) 22cm (8.85 inches) 7cm (2.75 inches) 1.6Kg (4.4 lbs)
PHONE BOX (GSX-PHONE BOX) Height Width Depth Weight	4.5cm (1.75 inches) 14cm (5.5 inches) 10cm (4 inches) 0.5Kg (1 lbs)

2.5 EQUIPMENT DESCRIPTION

A. KEY SERVICE UNIT (KSU)

The KSU is a self-contained unit that contains the power supply, processor, external connectors and circuits for 4 CO lines and 8 extension lines. External connections use screw terminal connections. The KSU, is a metal frame cabinet for wall mounting. The KSU contains Main Board Unit(MBU) and power transformer.

The MBU contains;

- Micro Processor & Control Circuitry
- 3 CO(outside) line
- 1 Analogue Keyset Interface
- 3 Hybrid (Keyset or SLT) Interface
- 4 Single Line Telephone(SLT) Interface
- 1 Real Time Clock
- 1 Internal Music Source
- 1 DTMF Generator
- 2 DTMF Receiver
- 2 Emergency Transfer Ports
- 1 Ring Generator
- 1 External Control Contact Relay

B. MULTI FUNCTION UNIT (MFU)

The MFU can be installed optionally on the MBU. The MFU contains :

- 1 Fax. Tone Detect Circuit
- 1 External Music Source
- 1 External Paging
- 1 External Control Contact Relay

2.6 KEY TELEPHONES & TERMINALS

There are 3 series of electronic terminal to be used with GHX-308A as follows;

A. GSX Series

- GSX 21EXE, GSX 33EXE : Display Type
- GSX 21ENH, GSX 33ENH : Non-Display Type
- GSX 8BTN (With SPU)

B. GSX/E Series

- GSX/E 21EXE, GSX/E 33EXE : Display Type
- GSX/E 21ENH, GSX/E 33ENH : Non-Display Type
- GSX/E 8BTN (With SPU)

C. GK Series

- GK-24E, GK-36E : Display Type
- GK-24S, GK-36S : Non-Display Type
- GK-8S (With SPU)

D. OTHERS

- KVM-100, KVM-200
- PHONE BOX

SECTION 3. INSTALLATION

3.1 SITE PLANNING

The first step is to locate an acceptable site for the common equipment (KSUs, boards, etc.). When locating a mounition site for the KSUs, the following points must be considered;

- a) The KSUs are designed for wall-mounting and should not be mounted directly to a masonry or plaster-board wall. It is recommended that 1/2 inch polywood back-board be firmly mounted to the wall.
- b) The location must have access to a dedicated 110 Volt AC or 220 Volt AC, 50-60Hz circuit with a circuit breaker or fuse rated at 2amps. A 3-wire parallel blade grounded outlet should be within approximately 2 meters(6 feet) of the lower left rear of the BKSU mounting.
- c) The location have access to a good earth ground, such as a metallic cold water pipe with non-metallic joints. The ground source should be located as close as possible to the system.
- d) The system should be located in an area which is well ventilated with a recommended temperature of 20-26 °C (68-78.8 °F) and a relative humidity of 5~85%(non-condensing).
- e) The system should be located within 8 meters(25 feet) of the telephone company's termination point. Also, the location should be within the prescribed station loop lengths for all keysets and terminals. If exiting cabling is to be employed, the location of existing cabling and conduits should be considered.
- f) The location should have adequate accessibility, space and lighting for future servicing and should consider the need for future expansion.
- g) The site should be away from radio transmitting equipment, arc-welding devices, copy machines, and other electrical equipment capable of generating electrical interference. The system should be protected from flooding and heavy machinery as well as excessive dust and vibration.

3.2 VERIFY ON-SITE EQUIPMENT

Once the equipment installation site has been identified and a dedicated AC outlet, earth-ground, and lighting and ventilation are available, verify that all equipments required are on-site and has not been damaged during shipment. Unpack the KSUs assure there is no shipping damage. Note that a mounting template is packed with KSU and this template will be required later in the installation.

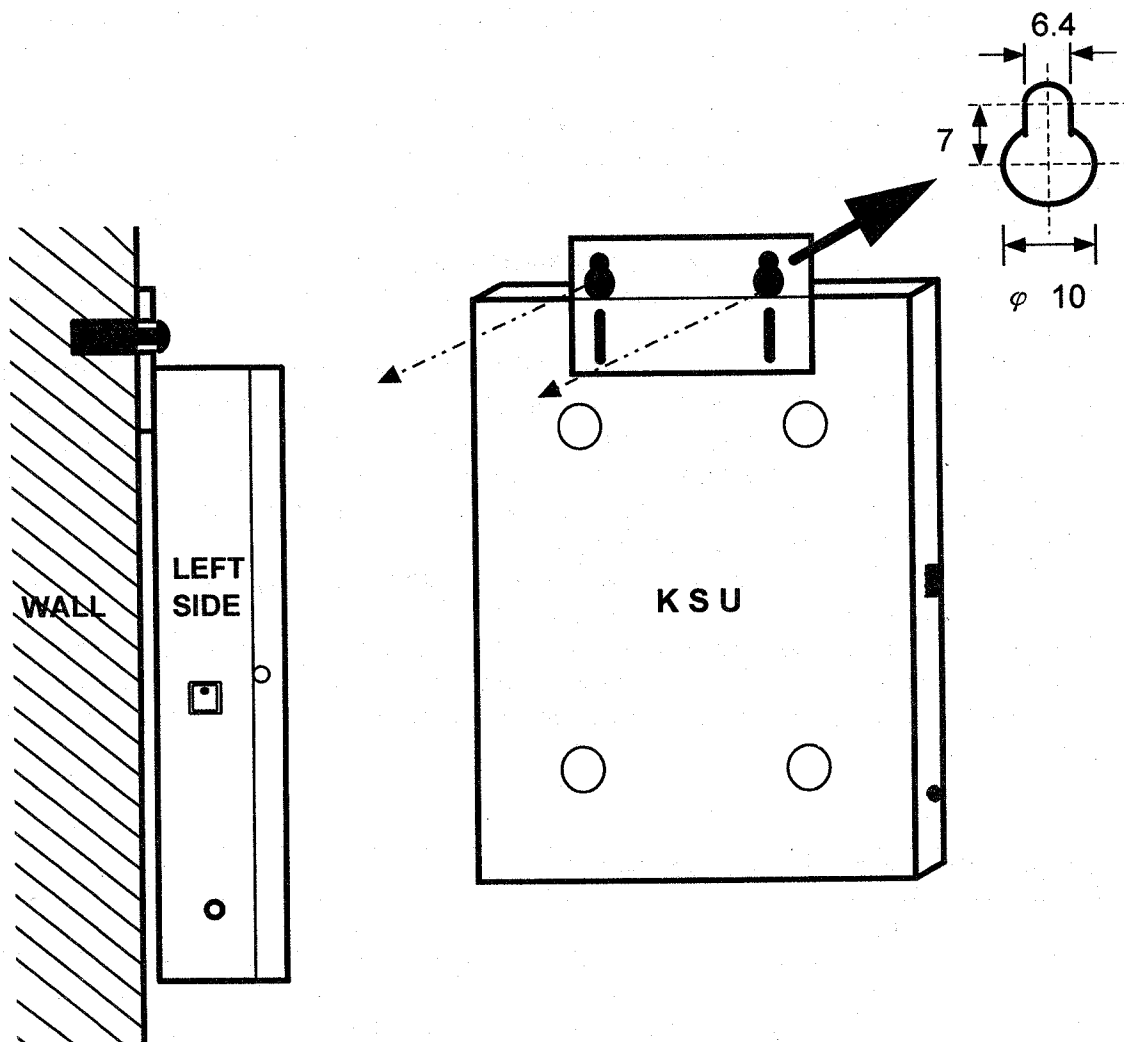
Check that type and quantity of boards received is correct and optional equipment and a Power Line Surge Protector are on-site. Note that the individual boards should not be unpacked at this time.

If any equipment is damaged or missing, notify appropriate personnel to correct the situation.

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3.3 KSU MOUNTING

Employing the KSU mounting template provided with the KSU, mark the location of the two screws to mount the KSU. Again, the KSU must not be mounted on a masonry or dry-wall surface. The KSU is mounted with four #10 or larger, 1 1/2 inch or long screws. Drill pilot holes in the two locations marked, insert the screws and tighten leaving about 1/2 inch exposed. Mount the KSU on the screws and tighten the screws securely.



[Figure 3-1] KSU MOUNTING

3.4 POWER VOLTAGE SELECTION

The power of system is used 110VAC or 220VAC, 50~60Hz. When the system is shipped, the power voltage selection in the inside of the KSU is set to 220 VAC at factory. If you use 110VAC, the primary connector of power transformer should be moved "CN220" to "CN110" position.

3.5 KSU GROUNDING

To ensure proper system operation and for safety purposes, a good ground is required. A metallic COLD water pipe usually provides a reliable ground. Carefully check that the pipe does not contain insulated joints that could isolate the ground path. If insulated joints exist, another earth ground source must be used or, if allowed, the joints may be bridged.

A #14 AWG or larger copper wire should be used between the ground source and the KSU. The wire should be kept as short as possible, it is recommended that the wire be no longer than 8 meters (about 25 feet).

3.6 POWER LINE SURGE PROTECTION

The GHX-308A Hybrid Key Telephone System should be equipped with a power-line transient surge protection device. System equipped with such devices are more resistant to damage from power line surge than unprotected systems. Power line surges often occur during switching operations and especially during violent thunderstorm activity.

Installation of a surge protector meeting the specifications described in the following paragraph will prevent or minimize the damage resulting from power-line surges.

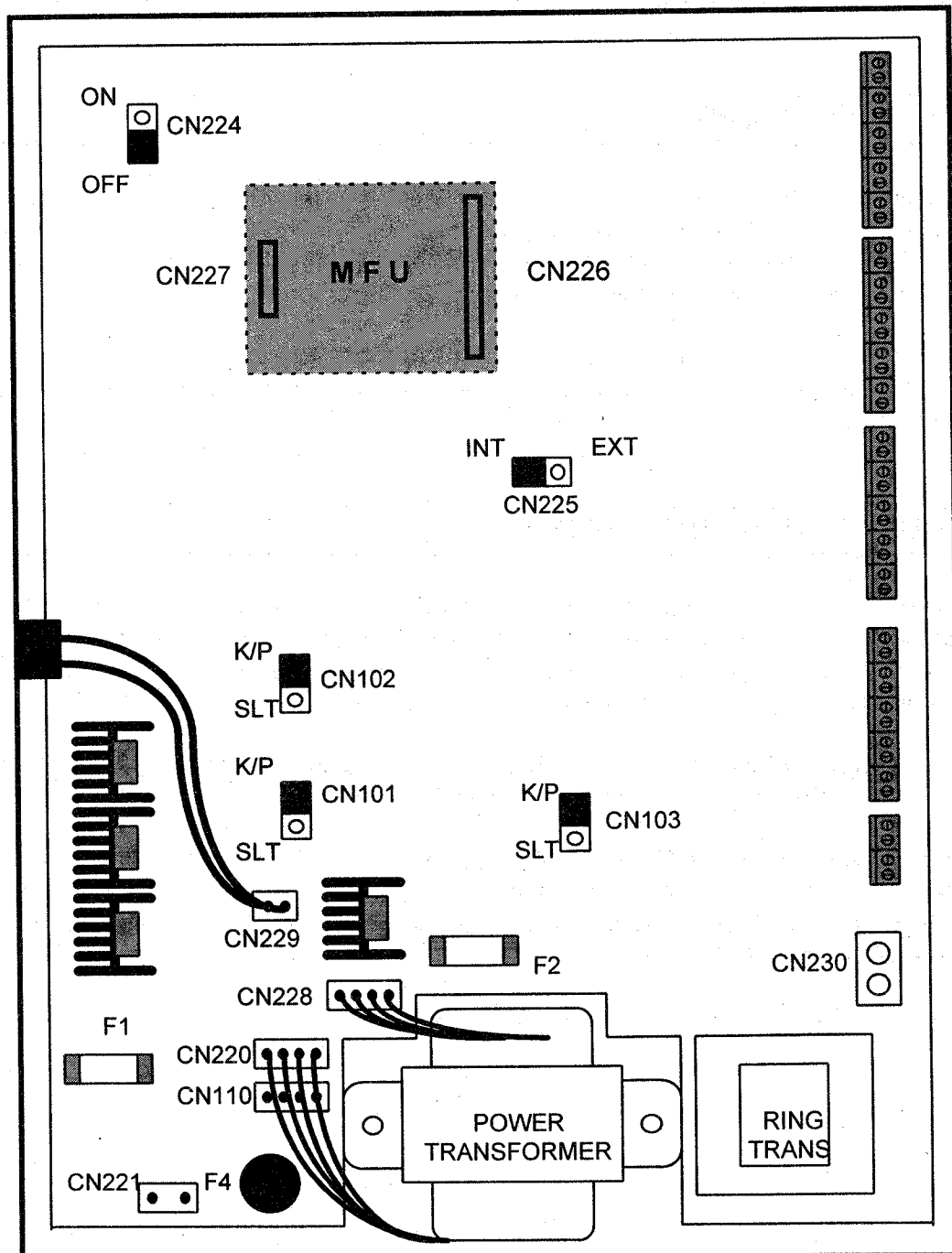
The surge protector shall be a 15 amp self-contained unit that plugs into a standard, grounded 110/220VAC wall outlet. The wall outlet must be designed to accept a 3-prong plug (2 parallel blades and ground pin). The protector should be fast operating and capable of protecting for transients greater than 220/400 volts.

The AC power cord should not be plugged in at this time.

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3.7 UNCOVERING THE KSU

The below figure is the inside of KSU, GHX-308A.

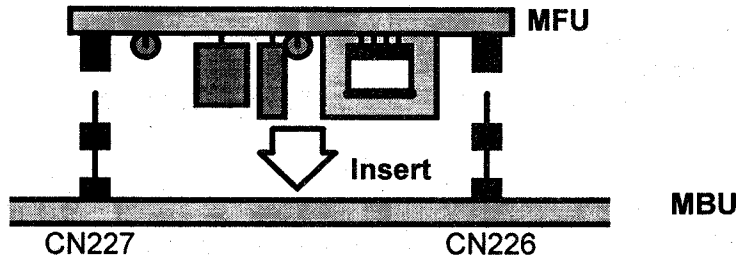


[Figure 3-2] Inside of KSU

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3.8 MULTI FUNCTION UNIT(MFU) INSTALLATION

- A. Before installing the MFU, turn off the power of system.
- B. Insert carefully the MFU to connector "CN226" and "CN227" on the MBU.

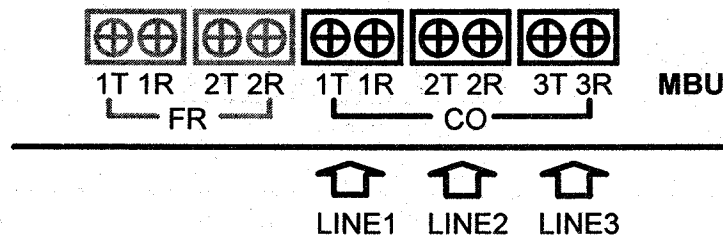


[Figure 3-3] MFU INSTALLATION

- C. After installing MFU, program the followings;
 - a) Assign the CO & the extension port for FAX.
 - b) Assign the detect timing of FAX tone

3.9 CO/PABX CONNECTIONS

All CO/PABX line connections are made on the connector CO 1T/1R ~ 3T/3R.
CO/PABX lines are connected to terminals CO #T and #R on the MDF.



[Figure 3-4] CO/PABX LINE CONNECTIONS

3.10 KEY TELEPHONE/SLT CONNECTIONS

A. KEY TELEPHONE UNIT

Maximum 4 Key Telephones can be installed with GHX-308A Hybrid Key Telephone System. Each Key Telephone requires 2-pair(4wires) twisted wiring cable be used to connect with MDF. The installer should exercise caution when connecting a key telephone while system power on. The second pair(DT,DR) or wires supplies the power (+24V) and the data. The first pair(VT,VR) supplies the power(GND) and the voice transmission. The power polarity of wired connections must be maintained for proper operation. Care should be taken to ensure the telephones are wired properly.

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Color of Wires	Contents	MDF Terminal
Yellow	Power (+) / Data Line	DT#
Black	Power (+) / Data Line	DR#
Green	Power (-) / Voice Line	VT#
Red	Power (-) / Voice Line	VR#

- a) Extension #100 is only the Key Telephone and connects to <DT,DR,VT,VR> terminals of connector "K100" on the MBU.
- b) Extension #101~103 are universal ports that SLT or Key Telephone can be connected by user's selection.

In case of Key Telephone connection, the short pins of connector "CN101~103" on the MBU should be moved "SLT" to "K/P" position and the Key Telephones connect to <DT,DR,VT,VR> terminals of connectors "K101~103" on the MBU.

CN101 : Extension #101

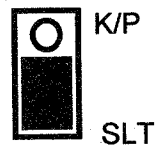
CN102 : Extension #102

CN103 : Extension #103

Universal port (KTU or SLT selection)

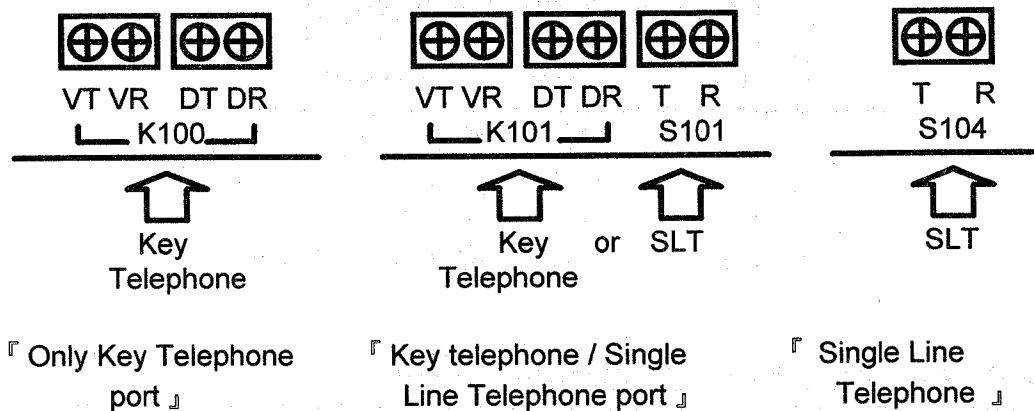


『 Key Telephone 』



『 Single Line Telephone 』

[Figure 3-5] KEY/SINGLE LINE TELEPHONE SELECTION



[Figure 3-6] KEY/SINGLE LINE TELEPHONE WIRING

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B. SINGLE LINE TELEPHONE

Maximum 7 Single Line Telephones(Extension #101~107) can be installed with GHX-308A Hybrid Key Telephone System.

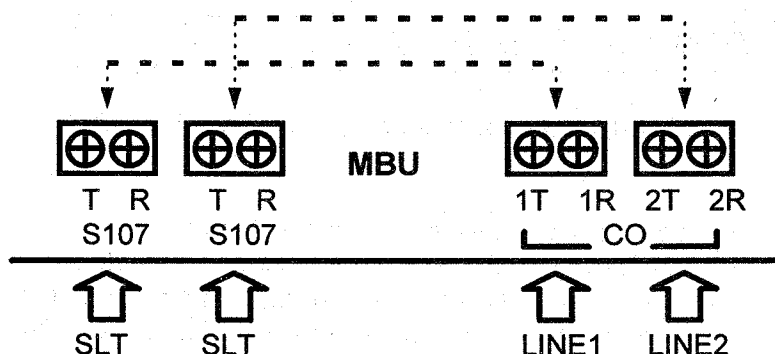
- a) Extension #101~103 are universal ports that SLT or Key Telephone can be connected by user's selection.
In case of Single Line Telephone connection, the short pins of connector "CN101~103" on the MBU should be moved "K/P" to "SLT" position and the Single Line Telephones connect to <T, R> terminals of connectors "S101~103" on the MBU.
- b) Extension #104~107 have only used the Single Line Telephones and connected to <T, R> terminals of connectors "S104~107" on the MBU.

3.11 POWER FAILURE TRANSFER CONNECTION

In the event of a commercial power failure without battery back-up, upto 2 CO/PABX lines can be automatically transferred to single line telephones for emergency communications. When power interrupted, CO 1T/R, 2T/R are automatically transferred to SLT #106, #107, the corresponding emergency telephone can be used as SLT extension under normal operation.

CO/PBX Line #1 → Transfer to SLT #106 (Connector "S106 T/R" on the MBU)

CO/PBX Line #2 → Transfer to SLT #107 (Connector "S107 T/R" on the MBU)



[Figure 3-7] POWER FAILURE TRANSFER CONNECTIONS

3.12 PHONE BOX CONNECTION

The GSX Phone Box is designed to initiate calls to preassigned stations as well as receive intercom calls with handsfree talkback operation.

The unit should be located in weather protected areas where paging or monitoring is required. Each phone box is connected to a dedicated key telephone station line cord position.

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The connection of Phone Box(es) to the KSU is identical to that of key telephone.

- a) The housings separated by inserting a thin, flat-edged tool at the bottom rim of the assembly. By pressing inward on the recessing tab, the assembly will open.
- b) 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 MDF.
- c) The slack wiring should be pulled back through the bottom mounting plate and the top housing snapped shut.
- d) The bottom plate of the Phone Box assembly is fastened to the wall by mounting with NO.8 or larger pan head screws.

3.13 LOUD BELL CONTROL CONNECTION

The GHX-308A system provides relay contact closure to activate optional signaling equipment during incoming CO/PABX line and intercom ringing.

The stations for Loud Bell Control are selected as part of system programming (Admin program, FLASH 23). Connect the Loud Bell to FR 1T/1R, 2T/2R terminal of free relay on the MBU. Regular electrical specification of the free relay is 120VAC, 500mA(24VDC 1A).

See **[Figure 3-8] Miscellaneous Wiring**.

3.14 EXTERNAL PAGING CONNECTION

External paging amplifier equipment can be connected to the GHX-308A system for external paging from any telephone.

The output impedance of the paging signal port is 600 ohm at 0 dBm.

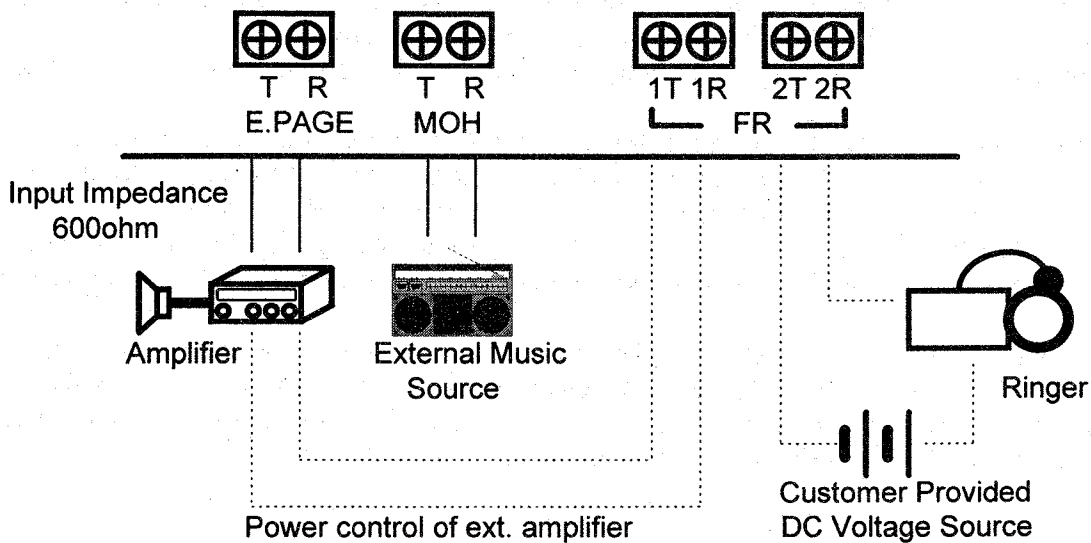
The voice signal output is specified at 5mW maximum. Regular electrical specification of the relay is 120VAC 500mA (24V DC 1A). For external paging contact control, the free relay (FR #T/#R) is provided to switch the external amplifier equipment. The voice output is provided the E.PAGE T/R pair on the MBU. See **[Figure 3-8] Miscellaneous Wiring**.

3.15 BACKGROUND MUSIC AND MUSIC ON HOLD

Music-On-Hold as well as background music through telephone speaker can be connected to either KSU contained music(Melody IC) or via a customer provided tuner, tape deck, etc., by setting music select pin of connector "CN225" on the MBU.

When the system is shipped, the music select pin is set to internal music(Melody IC) at the factory. If you want to connect external audio equipment, the music select pin of "CN225" should be moved "INT" to "EXT" - external music position. See **[Figure 3-8] Miscellaneous Wiring**.

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[Figure 3-8] MISCELLANEOUS WIRING

3.16 HEADSET INSTALLATION

The Key Telephone has been 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 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.

In the Admin program FLASH 40, speakerphone operation must be disabled to allow headset operation. When this is done, such features as On-Hook Dialing and Handsfree speakerphone operation are rendered inoperable. However, incoming page/voice announcements, tone ringing and background music will still be heard over the keyset speaker. The monitor key(MON) then controls the on-hook or off-hook status of the telephones.

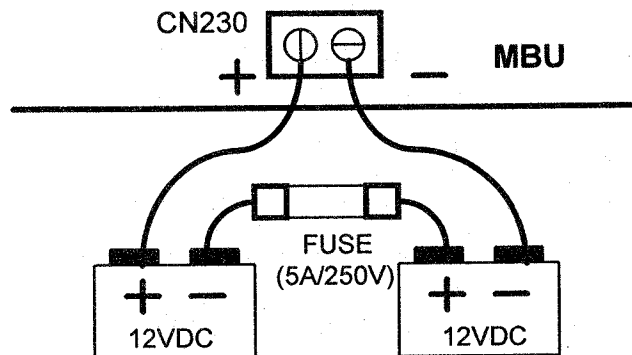
3.17 BATTERY INSTALLATION

A separate external 24 Volt DC battery package must be provided and selected to ensure the proper back-up time during power outage. 24 VDC (normally two 12 VDC batteries) package with a 20 Ampere hour rating is considered maximum.

It is recommended that maintenance-free gel-type batteries be used. The following must be considered when connecting batteries.

- A. Batteries are to be placed in a limited access room or cabinet with adequate ventilation to dissipate any battery gases that may be present.
- B. The batteries are to be installed in accordance with Article 480 of the National Electrical Code (NEC) in U.S.A. or any other applicable codes.

- C. A battery rack or case should be used to secure the batteries to prevent tipping or any movement that could cause spilling of battery acid or shorting of terminals.
The arrangement should protect against all hazards such as fire, spark, heat, gas fumes and accidents.
- D. Use the shortest length of flexible cord type that will comply with the National Electrical Code to connect batteries and the KSU. The cable should be located, routed and clamped (strain relief) in such a way as to prevent the batteries from moving should the cables be moved.
- E. A 12 Amp 32V minimum fuse or a 12 Amp DC instantaneous tripping circuit breaker should be installed. Locate it at batteries "in line" with the battery negative lead to protect the battery from damage.
- F. See **[Figure 3-9]** for wiring considerations. DC input wire size should be sufficient to restrict voltage drop to 0.5 volt or less at rated input current between the battery and the KSU. The loop length is the sum of the lengths of the negative and positive leads. Use wire sizes recommended by the National Electrical Code and/or local regulations.



[Figure 3-9] BATTERY CONNECTION

3.18 MEMORY BACK-UP SWITCH

To protect the user database from being lost during System power failure, the short pin of connector "CN224" on the MBU should be moved "OFF" to "ON" position after Admin programming. (refer to **Figure 3-2**)

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SECTION 4. FEATURE DESCRIPTION

4.1 NUMBERING PLAN

NUMBER	FLEX BUTTON			STATION					FEATURE
	K	8	B	A	K	S	8	4	
0	Y	Y	.	.	Y	Y	Y	Y	Call to Attendant
100-699	Y	Y	.	Y	Y	Y	Y	Y	Intercom Call
700-705	Y	Y	.	Y	Y	Y	Y	Y	Call Park
* 700-705	.	.	.	Y	Y	Y	Y	Y	Call Park Retrieve
700-705	.	.	.	.	.	Y	.	.	Call Park Retrieve
710-717	Y	Y	.	Y	Y	Y	Y	Y	Hunt Group
731	.	.	.	Y	.	.	.	.	Wake-up Registration - Effective until Cancel
732	.	.	.	Y	.	.	.	.	Wake-up Registration - One time Only
733	.	.	.	Y	.	.	.	.	Wake-up Cancel
734	.	.	.	Y	.	.	.	.	Erase Password
735	.	.	.	Y	.	.	.	.	Change System Date Format (MMDDYY or DDMMYY)
746	.	.	.	Y	.	.	.	.	Change System Time Format (am/pm or 24 hour)
785	.	.	.	Y	.	.	.	.	Station COS Change
736	.	.	.	Y	Y	.	.	.	Software Version Display
737	.	.	.	Y	.	.	.	.	Custom Message Registration
740	.	.	.	Y	.	.	.	.	Disable Outgoing CO Line Access
739	.	.	.	Y	.	.	.	.	Setting Time and Date
774	Y	Y	Y	Y	Y	.	Y	.	Dial Memo Button Assignment
3	Y	Y	.	Y	Y	Y	Y	Y	Camp-on
741	Y	Y	.	Y	.	Y	Y	Y	Wake-up Registration - Effective until Cancel
742	Y	Y	.	Y	Y	Y	Y	Y	Wake-up Registration - One time Only
743	Y	Y	.	Y	Y	Y	Y	Y	Wake-up Cancel
744	Y	Y	.	Y	Y	Y	Y	Y	Access Authorization Code Registration
745	Y	Y	.	Y	Y	Y	Y	Y	Access Authorization Code Change
747	Y	Y	.	Y	Y	Y	Y	Y	Station COS Change (to COS 5)
748	Y	Y	.	Y	Y	Y	Y	Y	Original COS Restoration
750	.	.	.	.	.	Y	Y	Y	Last Number Redial
753	.	.	.	Y	Y	Y	Y	Y	DND
754	.	.	.	Y	Y	Y	Y	Y	Station Call Forward
755	.	.	.	.	.	Y	.	.	Station Speed Dial Programming
756	.	.	.	.	.	Y	.	.	Message Wait/Call Back Enable, CO Queuing
757	.	.	.	.	.	.	Y	Y	Message Wait Return
758, 75*	.	.	.	.	.	Y	.	.	Speed Dial Access
760	.	Y	Y	.	.	.	Y	.	"SPEED" Button Assignment
761	.	Y	Y	.	.	.	Y	.	"DONF" Button Assignment
762	.	Y	Y	.	.	.	Y	.	"CALL BACK" Button Assignment
763	.	Y	Y	.	.	.	Y	.	"DND/FOR" Button Assignment
764	.	Y	Y	.	.	.	Y	.	"FLASH" Button Assignment
765	.	Y	Y	.	.	.	Y	.	"MUTE" Button Assignment

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NUMBER	FLEX BUTTON			STATION					FEATURE
	K	8	B	A	K	S	8	4	
766	.	Y	Y	.	.	.	Y	.	"MON" Button Assignment
769	.	Y	Y	.	.	.	Y	.	ICM Call Answer Mode (TN or PV, toggle)
76*	.	.	.	.	.	.	Y	.	Station Flexible Button Programming
7200-7220	Y	Y	.	Y	Y	Y	Y	Y	Pre-selected / Custom Message
*73	Y	Y	.	Y	Y	.	Y	Y	Background Music
776	Y	Y	Y	Y	Y	.	Y	.	ICM Key Assignment
777	Y	Y	.	Y	Y	Y	Y	Y	UNA Answer
79	Y	Y	Y	Y	Y	.	Y	.	Loop Button Assignment
89xx, 8#01-8#03	.	.	.	.	.	Y	Y	Y	Retrieve CO on Hold
8*	.	.	.	.	.	Y	Y	Y	Retrieve CO on Hold (Held by itself)
81-83	Y	Y	.	Y	Y	Y	Y	Y	CO Line Group
8801-8803	.	.	.	Y	Y	Y	Y	Y	Individual CO line Access
9	Y	Y	.	Y	Y	Y	Y	Y	Line Group Access
#6	Y	Y	.	Y	Y	Y	Y	Y	External Zone Page
##	Y	Y	.	Y	Y	Y	Y	Y	Meet-Me Page
#*0,2,5,8	Y	.	.	Y	Y	.	.	.	Ring Frequency 1,2,3,4, Selection (New Keypad Only)
**	Y	Y	.	Y	Y	Y	Y	Y	Group Call Pickup
*100-699	Y	Y	.	Y	Y	Y	Y	Y	Directed Call Pickup
*7764	.	.	.	.	Y	.	.	.	Customer Program Mode (Station Port #1)
HF8	.	.	.	.	.	Y	.	.	System Hold
HF751	.	.	.	.	.	Y	.	.	Flash to CO Line
HF752	.	.	.	.	.	Y	.	.	Conference
SPD#	Y	.	.	Y	Y	.	Y	Y	Save Number Redial
SPD*	Y	.	.	Y	Y	.	Y	Y	Last Number Redial
TRANS 752	.	.	.	.	.	.	.	Y	Conference
TRANS 756	.	.	.	.	.	.	.	Y	Message Wait/Call Back Enable, CO Queuing
*#1, *#2	Y	Y	.	Y	Y	Y	Y	Y	Door Open Command

Symbol	Description
A	Attendant
B	Button Assignment Only
K	Key Station
8	8 Button Station
4	4 Button Station
S	SLT

4.2 SYSTEM FEATURES

ACCESS AUTHORIZATION CODE (PASSWORD)

Description

Station users can change their class of service to lower class temporarily to prevent unauthorized use of toll dialing on their stations by others.

Operation

To register password;

1. Dial Authorization Code Registration code and 4 digit password.

To change the password;

1. Dial Authorization Code Change code and current password.
2. Enter the new password.

To erase password (Attendant);

1. On the attendant station, dial Erase Authorization Code.
2. Dial 6 digit station range whose passwords are to be erased.
3. Press HOLD button.

To degrade station to COS 5;

1. Dial COS Change code.
2. MUTE button will be flashing.

To restore the original COS;

1. Dial COS Restoration code and 4 digit station password.

Feature Code

1. 734 : (Attendant) Erase Authorization Code
2. 744 : Authorization Code Registration
3. 745 : Authorization Code Change
4. 747 : COS Change (to COS 5)
5. 748 : Original COS Restoration

Conditions

1. Stations on which the password has not been registered are not allowed to degrade their COS to change their password (Error tone will be returned).

ATTENDANT

Attendant Disable Outgoing CO Line Access

Description

This feature allows the attendant station to dial a code and disable CO lines from dialing to outside. This applies to all stations that have access to the lines. Incoming calls are not affected.

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Operation

1. At the attendant, dial Disable Outgoing CO Line Access code.
2. Press CO buttons to disable, then CO LEDs at attendant will flash.
3. Press flashing CO button (LED off) again to restore outgoing access.
4. Go on-hook.

Feature Code

1. 740 : (Attendant) Disable Outgoing CO Line Access

Conditions

1. Only CO lines for which the attendant has direct appearances can be disabled for outgoing access.

Attendant Override

Description

The attendant may interrupt stations in the DND mode by dialing the Call Wait code.

Operation

1. After receiving DND tone, dial Call Wait code "3".
2. Wait for station to answer.

Feature Code

1. 3 : Call Wait

Attendant Recall

Description

When a CO line has been left on hold for a programmable period of time, the station placing that line on hold will be recalled. If that station fails to answer the recall, the line will be recalled to the attendant for handling.

Programming

1. Flash 01 : System Hold Recall Timer
2. Flash 02 : Exclusive Hold Recall Timer
3. Flash 03 : Transfer Recall Timer
4. Flash 33 : Attendant Recall Timer
5. Flash 06 : Call Park Recall Timer

Attendant Station Assignment

Description

Any key station in the system may be assigned as the attendant station. This station will receive recalls and can place the system in Night Service and has access to various features.

Programming

1. Flash 15 : Attendant Station Assignment

Conditions

1. The attendant station is not necessarily the customer data programming station.

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AUTOMATIC PAUSE INSERTION WITH SPEED DIAL

Description

If a flash command or PBX access code is programmed into the system and station speed dial numbers, a pause will automatically be inserted after the flash or PBX access code.

Programming

1. Flash 05 : Pause Timer
2. Flash 17 : PBX Access Codes

AUTOMATIC PRIVACY

Description

Privacy is automatically provided on all calls.

Programming

1. Flash 12, Button 1: Automatic Privacy Enable/Disable
2. Flash 12, Button 2: Privacy Warning Tone Yes/No

Related Feature

1. Override

AUTOMATIC SELECTION

Description

The user can select a CO line, an intercom station, or speed dial bin and automatically place the telephone in the dialing mode without lifting the handset or pressing the MON button.

Operation

1. The user presses the DSS button and the station associated is signaled.
2. The user presses the CO button and start dialing.
3. The user presses a flexible button programmed as a feature and the action takes place.

AUTO FAX TRANSFER

Description

The system can classify incoming call thru preprogrammed CO line is from automatic FAX (facsimile) station or speech terminal by detecting tone. When the system detects a tone from incoming line within predetermined time, the system transfers this line to the station assigned for a Fax machine. If a tone calling FAX is not detected within predetermined time, this system gives ring to stations which are programmed to ring.

Programming

1. Flash 76 : FAX line / FAX station assignment
2. Flash 77 : FAX tone detect timer assignment
3. Flash 78 : FAX CO call timer assignment

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Condition

1. Only one CO line and station can be programmed as a FAX CO line and a FAX station. If both a FAX CO and a station are not programmed, AUTO FAX transfer is not activated.
2. If a FAX tone is not detected within the FAX tone detect timer, the system gives ring to the stations programmed by CO ring assignment.
3. If the FAX CO line is not answered within the FAX CO call timer, the line is released.
4. Outside caller connected to the FAX CO line can't hear any tone while system is detecting a FAX calling tone.
5. To transfer only a call from FAX to the FAX station, do not assign CO ring to the FAX station.

Hardware

To use FAX Transfer, MFU board is required.

BACKGROUND MUSIC

Description

Station users may receive music over their speakers provided by an internal music source, or an optional music source connected to the system externally.

Operation

1. Dial Background Music code "*73", or press the pre-programmed button (Keyset).
2. Dial Background code again to remove music.

Feature Code

1. *73 : Background Music (Toggle)

CALL BACK

Description

Stations that are busy can be left a CALL BACK request by other stations in the system. When the busy station goes on-hook, the CALL BACK initiating station will be signalled for automatic CALL BACK. When the station answers, the other station is signaled for an intercom call.

Operation

1. While receiving intercom busy tone, press CALLBACK button and hang up.
2. When busy station hangs up, you will be signaled and your CALLBACK button is twinkling.
3. Answer the signal by lifting handset or pressing MON button or flashing CALLBACK button. The station you called will then signaled.

Feature Code

1. TRANS 756 : (4 Button) Message Wait/Call Back Enable
2. 756 : (SLT) Call Back Enable

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CALL FORWARD

Description

Station Call Forward

Each key station user may direct intercom calls and incoming CO lines to be forwarded to another station in the system.

Preset Call Forward

The system may be programmed so that incoming CO lines, which are programmed to ring a particular station, can be forwarded to another station predetermined in programming if the original station does not answer. Each station in the system can have one preset forward station.

Operation

To active Station Call Forward;

1. Lift handset or press MON button.
2. Press DND/FWD button.
3. Dial the station number or press the DSS of the station where calls are to be forwarded. Then you will hear confirmation tone. The DND/FWD button will flash.

To cancel Station Call Forward;

1. Lift handset or press MON button.
2. (key station) Press DND/FWD button and go on-hook.
(4/8/SLT) Dial '754' and go on-hook.

To program Preset Forward Station;

- Refer to programming.

Feature Code

1. 754xxx: (4/8 Button, SLT)
(xxx= Destination Station Number)

Programming

1. Flash 04: Preset Forward Timer
2. Flash 40, Page B, Button 6: Preset Forward Station (Destination)
3. Flash 40, Page A, Button 7: Station Call Forward Access Yes/No

Conditions

1. The Station Call Forward takes precedence over the Preset Call Forward.
2. More than one station can be forwarded to the same destination.
3. In Preset Forward, when the ring is forwarded to the preset forward station, the ring stops on the initiating station.
4. Stations already in DND will be released from the DND status and enter into call forward status when call forward is activated.

CALL PARK

Description

A CO line can be placed into one of 6 parking locations and can be retrieved by any station with direct appearance or loop button(except station of COS 6) in the system. Parked calls have their own recall timer and will recall the originating station and, if unanswered, the attendant. If still not answered, all available stations will receive recall for the duration of system hold recall timer until answered or the line is dropped.

Operation

To park CO line;

1. While connected to an CO line, press TRANS button.
2. Dial 3 digit parking location.

To retrieve parked CO line;

- Keyset: Dial Retrieve code "*" and parking location.
- SLT: Dial the parking location.

Feature Code

	Park	Unpark
Keyset	TRANS 700-705	* 700-705
SLT	HOOK FLASH 700-705	(*) 700-705

Programming

1. Flash 06: Call Park Recall Timer
2. Flash 33: Attendant Recall Timer

Conditions

1. When dialing a parking location to park a CO line and the location is already occupied, the initiating party receives busy tone.

CALL TRANSFER

Description

A CO line can be transferred from one to another. Screened transfers (with announcement) or unscreened transfers (without announcement) can be made. Several attempts can be made to find someone at different keysets without losing the call. If a line is transferred to a busy station, that station will receive muted ringing.

Operation

While connected to a CO line,

1. Press TRANS button and dial 3 digits station number, or press appropriate DSS button. CO line is put on exclusive hold and music is provided to the held party.
2. At this point, you can make a screened or unscreened transfer.

Screened Transfer

- 1) When the called extension answers, announce transfer and hang up.
- 2) The transferred party will be automatically connected to outside party.

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Unscreened Transfer

- 1) Once the station you called begins to ring, hang up.

Programming

1. Flash 03 : Transfer Recall Timer
2. Flash 33 : Attendant Recall Timer

Conditions

1. Only the secretary assigned station can transfer a CO line to a busy executive.
2. If the transfer recall timer expires when station A transfers a call to station B, the recall will ring both station A and B. If not answered, then the recall will ring station A, B and the attendant.
3. If still not answered, all available stations will receive recall for the duration of system hold recall timer until answered or the line is dropped.

CALL WAIT

Description

A station user may alert a busy party that a CO lines on hold and waiting for them. The busy party will receive a muted ring and flashing HOLD button to notify them a call is waiting for them. On keyset, Call Wait can be answered by pressing the HOLD button. If the station was in CO conversation, the CO line is put on Exclusive Hold, if intercom, then the intercom is terminated. On SLT, Call Wait can be answered by answering the ringing signal after placing the CO line on hold or terminating the current call.

Operation

1. After receiving intercom busy tone, dial "3" or press pre-programmed CALL WAIT button.
2. Called station will receive one burst Call Wait tone.
3. When called station answers by pressing HOLD button, consult with them or hang up to transfer call.

Feature Code

1. 3: Call Wait

Conditions

1. Only the secretary assigned station can place a Call Wait to the busy executive.
2. CALL WAIT button can be programmed under one of the flexible buttons.

CO LINE ACCESS

Description

Through programming, stations are allowed or denied access to particular CO line groups. This access is programmable per station basis.

Operation

1. Press CO line button or pool button, or dial CO line access code.
2. Dial the phone number of the desired party.

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Feature Code

1. 9 : Line Group Access (the first access allowed group)
2. 81-83: Line Group Access
3. 88xx: (xx=Co line number, 01-03) Individual CO Line Access

Programming

1. Flash 30, Page B, Button 2: CO Line Group Assignment
2. Flash 40, Page B, Button 7: CO Group Access

CO RING ASSIGNMENT

Description

CO lines are assigned to ring at individual stations by programming. Any station may be programmed to ring for any CO lines during the Day and/or Night mode, both or neither.

Programming

1. Flash 40, Page B, Button 8: CO Button/Ring Assignment
2. Flash 40, Page B, Button 9: CO Button/Ring Assignment Display

CO RING DETECT

Description

The duration of the ringing signal from the CO or the PBX is matched with ringing detection circuitry in the KSU. The RING ON detect window can range from 200 to 900msec, programmed in 100msec increments.

Programming

1. Flash 10: CO Ring ON Detect Timer (2-9 100msec).

Conditions

1. The RING ON detect window is from 200msec to 900msec, divided into 100 msec increments.

CONFERENCE

Description

The system allows following conferences:

- 1) Internal Conference - three internals
- 2) Add On Conference - two internals and one external
- 3) Multi-Line Conference - one internal and two externals
- 4) Unsupervised Conference

The conference initiator can exit a multi-line conference and leave them in an unsupervised conference. The initiator can re-enter the conference at any time. A programmable conference timer will disconnect the unsupervised multi-line conference if the initiator does not re-enter.

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Operation

Establishing a conference;

1. Call desired party, outside or internal.
2. Press CONF button. Outside party is placed on exclusive hold and hear the music sound.
3. Call next party and press CONF button.
4. Conference is established.

Exiting a conference (Unsupervised Conference);

- During conference, press CONF button. Allowed only if you are the initiator of the conference.

Re-enter a conference;

- Press CONF button or go off-hook. When initiator reenter the conference, confirmation tone is heard to all station in conference.

Terminating conference;

- Hang up during conference.

Feature Code

1. TRANS 752 : (4 Button) Conference
2. HOOK FLASH 752 : (SLT) Conference

Programming

1. Flash 07 : Unsupervised Conference Timer
2. Flash 39 : Multi-line Conference Enable/Disable

Conditions

1. The conference sequence must be completed prior to the expiration of the recall timer.
2. If you want to make an Multi-Line Conference, multi-line conference should be enabled.
(Program Code: Flash 39)
3. When the conference initiator exits the multi-line conference, an unsupervised conference timer will be activated. (Program Code: Flash 07)
4. Unsupervised multi-line conference will be dropped if the initiator does not re-enter within unsupervised conference time.

DIAL SENDING

Description

DTMF/Pulse Sending

CO lines can be programmed to send dial pulse or DTMF(tone) signal. In case of Pulse CO line, Dialing Speed and Make/Break Ratio are programmable per each CO line.

Pulse-to-Tone Switch-over

When commanded, 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 when dialing, or can be stored within a speed dial number.

Operation

1. When using speed dial numbers, the TRANS button is used to store a switch-over command. When activated, it will automatically insert a pause and switch over to DTMF sending for a remaining digits.
2. The switch-over is activated manually by dialing the "*" (asterisk) when dialing.

Programming

1. Flash 05: Pause Timer
2. Flash 30, Page A, Button 1: Dial Signaling DTMF/PULSE
3. Flash 30, Page A, Button 5: Pulse Ratio 60-40/66-33
4. Flash 30, Page A, Button 6: Pulse Speed 10 PPS/20 PPS

Related Feature

1. Automatic Pause Insertion with Speed Dial
2. Station/System Speed Dial

Conditions

1. The pause length is determined by the System Pause Timer.

DIALING PRIVILEGES (Class of Service)

Description

The system provides a flexible means of providing toll or dialing restriction. Through the assignment of Class of Service(COS) many combinations of allow and deny numbers can be set. Each station is assigned one of the six(6) Classes of Service (Day and Night).

The 6 classes are,

COS	Description
1	Unrestricted.
2	Governed by Toll Allow/Deny Table A.
3	Governed by Toll Allow/Deny Table B.
4	No '0' or '1' as the first digit, maximum 7 digits.
5	Intercom calls and Paging only.
6	Receiving calls and Paging only.

Programming

1. Flash 40, Page B, Button 2: Station COS
Two digits are entered via dial keypad. The first digit is for day COS and the second for night COS. Default gives all stations COS 11.
2. Flash 50, Button 1: Allow Table A
3. Flash 50, Button 2: Deny Table A
4. Flash 50, Button 3: Allow Table B
5. Flash 50, Button 4: Deny Table B

Related Feature

1. Toll Override

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DIFFERENTIAL RING FREQUENCY SELECTION (Only NEW KEYSET)

Description

The user of keyset can program the frequency of the ringing signal sent to speaker of the keyset. For frequency settings are available to allow users to distinguish which telephone in a given area is ringing. The setting will only affect ringing signals (Intercom, Incoming CO) sent to the speaker of the keyset while idle.

Operation

1. Dial Frequency Selection Code and one data digit (2,5,8,0) to select frequency.

Feature Code

1. #*2, #*5, #*8, #*0 : Differential Ring Frequency Selection

Conditions

1. No LCD service for selection.
2. After dialing a code, user can continue to enter determine preferable ringing frequency.
3. Upon entering a digit system will present selected ringing to the user and data is automatically saved in battery-backed up memory.
4. For proper operation, firmware of existing keyset must be changed with new one which has been built-in menu.
5. The keyset which is unavailable for differential ringing may not receive any system response after entering data, 2/5/8. In this case, user must finish with entering 0 (ordinary ringing).
6. This feature is not applicable to SLT (error tone).
7. Built-in menu:

DATA	FREQUENCY	TIME BY TURNS
2	701/857 Hz	50 msec
5	771/701 Hz	100 msec
8	1471/1215/1336Hz	50 msec
0	1215/1471 Hz	50 msec

DO NOT DISTURB

Description

Placing a keyset in DND will eliminate incoming CO line ringing, intercom calls, transferred calls and paging announcements. The station in DND can use the telephone to make normal outgoing calls. A station can be denied this feature through programming.

Operation

To activate the DND;

1. Press DND/FWD button while on-hook.
2. DND/FWD button lights and your phone is in DND.

To deactivate the DND;

1. Press DND/FWD button while on-hook (toggle).
2. DND/FWD button extinguishes and DND in your phone is removed.

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Feature Code

1. 753: (4/8 Button, SLT) Do Not Disturb

Programming

1. Flash 40, Page A, Button 2: DND Access Yes/No

DOOR OPEN CONTROL

Description

This feature allows privileged stations to activate door open feature. The relay is assigned as DOOR OPEN RELAY by system programming. The relay will be activated for a predetermined period.

Operation

To activate the Door Open Relay, dial '*#1' (or *#2) for the first(second) door relay. The second door relay is available when MFU is installed.

Feature Code

1. *#1, *#2 : Door Open Control Code

Programming

1. Flash 54 : Door Open Timer (0.5 - 9.9 seconds)
2. Flash 52, Button 3 : Door Open Privilege
3. Flash 23, Button 1,2 : Program Control Relay

EMERGENCY TRANSFER

Description

In the event of commercial power failure or central processor failure, the system will automatically connect the first two(2) CO lines to the pre-selected two single line telephones. (106-107)

EXECUTIVE/SECRETARY TRANSFER

Description

There are 4 sets of Executive/Secretary pairings available. When the executive station is busy or in DND, the secretary station will receive intercom calls and transfers. The secretary station can signal the executive in DND by using the CALL WAIT feature.

Operation

1. If the executive station is busy or in DND, all calls to the executive will forward to the secretary station.
2. A secretary station can signal an executive busy or in DND via CALL WAIT.

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Feature Code

1. 3 : CALL WAIT

Programming

1. Flash 18 : Executive/Secretary Assignment

Related Feature

1. DND
2. Preset Call Forward
3. Station Call Forward

Conditions

1. Intercom calls routed to the secretary station will always signal tone ringing.
2. The secretary can signal the executive in DND via Call Wait.
3. Chaining of the transfer is possible. If the first secretary is busy, the call can be transferred to the next programmed secretary.
4. If the executive of an executive/secretary pair station forwards his phone, calls to the executive will follow his station forward.
5. If both the executive and the secretary are busy or in DND and the calling party leaves a message or call back, the message or call back will be left at the secretary station.

FLASH

Description

Flash provides users with the ability to terminate an outside call or transfer a call behind PBX and restore dial tone without hanging up the handset.

Operation

While connected to a CO line,

Key station : Press the FLASH button.

SLT : Dial Flash Code after Hook Flash.

Feature Code

1. HOOK FLASH 751: (SLT) Flash command to CO Line

Programming

1. Flash 30, Page B, Button 1: Flash Timer

Related Feature

1. Flash with Speed Dial

FLASH WITH SPEED DIAL

Description

A flash can be programmed within a speed dial number. When this is done, a pause will automatically be inserted before the remaining speed dial digits are sent.

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Operation

While storing speed numbers, press FLASH button as a digit.

Related Feature

1. Flash Key
2. Station/System Speed Dial

FLEXIBLE BUTTON ASSIGNMENT

Description

The buttons on each key station which are not assigned to CO line in system programming can be individually programmed. One of 5 operations can be selected for each button.

1. CO line group:
automatically access assigned CO line group.
2. Direct Station Select:
automatically signal assigned station provide BLF for off-hook and DND.
3. Speed dial:
automatically dial a speed number. (system or station)
4. Loop:
used to answer a transferred CO line or to retrieve a parked CO line for which a user does not have a direct button assignment.
5. Features:
Feature codes in the numbering plan can be programmed under the flexible buttons.

Operation

To program flexible buttons;

1. Press SPEED button twice and flexible button you wish to program.
2. Enter the code for the desired feature.
3. You will hear confirmation tone. By programming flexible button, the previously assigned code is substituted by new one.

To erase a flexible button;

1. Press SPEED button twice and flexible button to be erased.
2. Press FLASH button.

Feature Code

1. 76*: (8 Button) Station Flexible Button Programming

Conditions

1. Speed bin cannot be programmed under a flexible button on 8 button station.

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FLEXIBLE STATION NUMBER

Description

Station intercom numbers in the system can be newly allocated through programming into a range from 100 to 699. Flexible station numbers should be used for all call procedures and admin. programming.

Programming

Flash 36 Button 1-2 : Flexible Station Numbers.

Button 1 : 100-103

Button 2 : 104-107

Dial the 4 station numbers(each 3 digit) after press the button 1 or 2.

HOLD

Description

Hold Preference

The system allows either exclusive or system hold as the primary hold on the first depression of the HOLD button depending on programming.

System Hold

When a line is placed on system hold, any station in the system with access to that line can retrieve the call.

Exclusive Hold

When a line is placed on exclusive hold, no other station in the system can retrieve this call.

Hold Recall

If an held line is not re-seized within a programmable length of time (System /Exclusive /Transfer /Call Park Recall Timer), recall ring (for the duration of the associated Hold Recall Timer) is sent to the station placing the call on hold. If this recall is not answered, a recall ring is sent to the attendant (for the duration of the Attendant Recall Timer), and if the attendant doesn't answer, a recall is sent to all phones in the system.

Operation

To place a call on Hold:

- If the system is programmed to have system hold preferred (Program Code: Flash 10), press HOLD button once for System, twice for Exclusive Hold.

Hold Retrieve (To retrieve a call on Hold)

- Press flashing CO line button on Hold or dial Retrieve code.

Feature Code

1. HF 8: (SLT) System Hold Code
2. 89xx, 8#xx : (xx=CO line number, 4/8 Button, SLT) Retrieve CO on hold
3. 891, 8* : (4/8 Button, SLT) Retrieve CO on hold (Held by itself)

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Programming

1. Flash 01 : System Hold Recall Timer
2. Flash 02 : Exclusive Hold Recall Timer
3. Flash 03 : Transfer Recall Timer
4. Flash 33 : Attendant Recall Timer
5. Flash 06 : Call Park Recall Timer
6. Flash 11 : Hold Preference

Related Feature

1. Attendant Recall
2. Call Park
3. Call Transfer

Conditions

1. When an exclusive hold line recalls the attendant the status of the hold line changes from exclusive to system hold.
2. A line that recalls the attendant will ring until answered or disconnected, or the attendant recall timer expires. (Program Code: Flash 33)
3. If still not answered, all available stations will receive recall for the duration of system hold recall timer until answered or the line is dropped.
4. When connected to a CO line and pressing a DSS button in an attempt to transfer the CO line, the CO line is placed on exclusive hold regardless of Hold Preference.
5. A CO line put on hold cannot be retrieved with loop buttons.

HOT LINE

Description

This feature lets a station perform a pre-assigned feature when a station takes no action for Hot Line after going off-hook. Hot Line feature can be programmed as one of the followings; Activation time for Hot Line feature is determined by Hot Line Timer.

- 1) To activate a feature on flexible button as if pressed.
- 2) To seize a CO Line
- 3) To seize a CO Line Group
- 4) To call an another station
- 5) To dial a SPEED BIN number

Operation

Lift handset or press MON button, and wait for a predetermined period while hearing ICM dial tone. If the Hot Line Timer is set to zero, Hot Line feature is activated.

Conditions

1. Any flexible button may be assigned as Hot Line feature. When lifting handset or pressing MON button, system will act as if user presses the preselected button.
2. If the user selects an another feature prior to going off-hook, Hot Line feature is not activated.
3. SLT allows Hot Line feature except flexible button feature.
4. On going off-hook, both Dial Tone Timer and Hot Line Timer start. After the Hot Line Timer expires(no user action), the Dial Tone Timer is continuous.

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Programming

1. Hot Line Selection : Flash 53, Button 1-6.
 - a. Enter the station range
 - b. Select a button (one of button1-6 : hot line operation)
 - Button 1 : flexible button
 - Button 2 : CO line
 - Button 3 : CO group
 - Button 4 : sta. number
 - Button 5 : speed dial
 - Button 6 : delete hot line operation

2. Hot Line Timer : Flash 57

HUNT GROUPS

Description

The system can be arranged for up to eight hunt groups. Each hunt group can contain up to eight stations. When an intercom or transferred CO line is directed to a pilot hunt group, the system will search sequentially for an idle station. Upon finding an idle station within the group, it will ring at the idle station.

Feature Code

1. 710-717 : Hunt Group Number

Programming

1. Flash 19 : Hunt Group

Conditions

1. A station placed in DND will be considered busy for hunting purpose.
2. A station placed in Call Forward mode will be considered busy. A direct call to that station will be forwarded.
3. Hunt groups can be joined together.

INTERCOM SIGNALING SELECT

Description

Users can control the method by which they receive intercom calls and signals. A convenient slide switch is located on each key station for easy selection. The choices are;

1. Tone ringing (TN)

A standard tone ring notifies the party of an incoming intercom call. The called party answers by lifting the handset or sliding switch to HF or pressing MON button.
2. Privacy (PV)

The station user receives a burst of tone and a voice announcement over his/her speaker. The microphone is deactivated for privacy. The called party must lift the handset to answer the call. (Or switch the selector to hands-free(HF))

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3. Hands-free (HF)

The station user, upon hearing a tone burst and voice announcement over the speaker, can reply hands-free.

Feature code

1. 769 : (8 Button) ICM Call Answer Mode (TN or PV, Toggle)
2. # *0,2,5,8 : Ring Frequency 1,2,3,4 Selection

LOOP BUTTON

Description

The loop is used primarily to receive transferred CO lines that do not appear(no direct) on a station.

Feature Code

1. 79 : Loop Key Button Assignment (at the station)

Programming

1. Flash 40, Page B, Button 8 : CO Button/Ring Assignment

LOUD BELL CONTROL

Description

Relay-controlled contacts can be connected to a loud ringing device to provide ringing signal of specified station. (2 stations)

Programming

1. Flash 16: Loud Bell Station Assignment
2. Flash 23, Button1,2 : Program Control Relay

Conditions

1. Intercom calls in the PV and HF mode are not presented via LBC.
2. Two LBC contacts are available.

Hardware

1. External ringing device, using contact closure.
2. Second relay contact is available when MFU is installed.

MESSAGE DISPLAY

Description

Custom Messages

The system can be programmed with 10 custom messages so that the each station can select the message to be displayed on the LCD of the calling station.

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Pre-selected Messages

Each key station can select a pre-assigned message to be displayed on the LCD of the telephone calling that station.

Code	Message
00	cancel the message
01	OUT TO LUNCH
02	ON VACATION
03	OUT OF OFFICE-BACK AM
04	OUT OF OFFICE-BACK PM
05	OUT OF OFFICE-BACK TOM
06	OUT OF OFFICE-BACK UNKN
07	OUT OF TOWN
08	IN A MEETING
09	AT HOME
10	AT BRANCH OFFICE

Operation

To program the customized messages (Attendant):

1. At the attendant station, dial the Custom Message Registration code "737" and custom message bin number (11-20).
2. Enter messages using the dial pad in a same manner to that used to display names. The messages are limited to 24 characters including spaces.
3. Press HOLD button.

To activate pre-selected/customized messages:

1. Dial Pre-selected/Custom Message code "72" and message number (00-20).
2. Dial appropriate dial data if you select the new message.
3. Appropriate message will be displayed on the LCD of the station calling that station.

Feature Code

1. 72xx : (xx=00-20) Pre-selected/Custom Message Code
2. 737xx : (Attendant, xx=11-20) Custom Message Registration

Related Feature

1. DND (Do Not Disturb)
2. Pre-selected Messages
3. Station Call Forward

MESSAGE WAIT

Description

Stations that are unattended or in DND can be left a message indication by other stations in the system. Up to 5 messages can be left at a keyset. A station with a message waiting can be reminded at a timed interval with a tone.

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Operation

To leave Message Wait indication;

1. After receiving DND tone or no answer, press CALL BACK button. Confirmation tone will be heard.
2. At called party, the Message Wait indication will be displayed and CALL BACK button will be twinkling.

To answer the Message Wait indication;

- Press flashing CALL BACK button. Then station that left message will be signaled with tone ringing.

Programming

1. Flash 08 : Message Waiting Remind Tone Timer

Feature Code

1. TRANS 756 : (4 Button) Message Wait/Call Back Enable
2. 757 : (4/8 Button) Message Wait/Call Back Return

Conditions

1. Message Wait Reminder Tone is for key stations only.
2. The reminder tone will continue until all messages have been retrieved.
3. SLT cannot be left with a message wait.

MONITOR MODE (GROUP LISTENING)

Description

While you are talking on handset, by pressing the MON button, other persons around you may hear the conversation through the speaker of the keyset.

Programming

1. Flash 29 : Monitor Mode Enable/Disable

Conditions

1. While in monitor mode, microphone is muted.

MUSIC ON HOLD

Description

The system is equipped with an internal music source if connected to provide music to all lines on hold, or background music to key station users.

Operation

The system provides internal music source or external music source.

Related Feature

1. Exclusive/System Hold
2. Call Transfer

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Hardware

To use external music source, set jumper option for music source on MBU to EXT.

Programming

Program Control Relay : Flash 23, Button 1, 2

MUTE

Description

While on a conversation, the voice transmission can be blocked by pressing the MUTE button.
The transmission is enabled again by pressing the MUTE button again.

NAME DISPLAY

Description

You can program your phone so display phone user will see your name instead of your station number.

Operation

To program your name;

(Keyset)

1. Press SPEED button twice and dial "00".
2. Press SPEED button and enter your name (up to 7 character) using dial pad.
3. Press SPEED button.

(SLT)

1. Go off hook and dial "755*".
2. Enter the name as in keyset.
3. Perform Hook Flash to complete.

	1	2	3	4	5	6	7	8	9
1	.	A	D	G	J	M	P	T	W
*	Q	B	E	H	K	N	R	U	X
#	Z	C	F	I	L	O	S	V	Y

'##': Space

To erase your name;

(Keyset)

1. Press SPEED button twice and dial "00".
2. Press SPEED button twice.

(SLT)

1. Go off hook and dial "755*" and perform Hook Flash.

NIGHT TRANSFER

Description

The system can be placed into night service. This allows designated stations to ring at night that may or may not ring on those lines during the day.

Operation

1. Attendant presses DND button to activate or deactivate.
2. Any other station can place the system into or remove from night service by dialing "777".

Feature Code

1. 777 : Night Service

Programming

1. Flash 40, Page B, Button 8 : CO Button/Ring Assignment

Conditions

1. If attendant placed the system into night mode, other stations cannot change to day mode.

ON-HOOK DIALING

Description

The key station user can place calls without lifting the handset.

OVERRIDE

Description

This feature enables station to override CO line to gain access to the conversation.

Operation

If your system is privileged to override (Program code 12, Button 1), press the CO line button to be overridden. You will join the conversation immediately.

Programming

1. Flash 12, Button 1 : Automatic Privacy Enable/Disable
2. Flash 12, Button 2 : Privacy Warning Tone Yes/No

PAGE

Description

Paging

There is only external paging.

Page Access Restriction

A station can be individually allowed or denied the ability to make page.

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Meet Me Page

Users may answer a page call from any phone in the system by dialing a special code. The party who initiated the page must remain off-hook.

Operation

1. Dial Page code. Warning tone will be heard. When the tone ends speak in a normal tone of voice and ask for Meet Me Page.
2. After hearing the page announcement, go to the nearest telephone and dial Meet Me Page code "##", then you will be connected to paging party.

Feature Code

1. #6 : External Zone Page
2. ## : Meet Me

Programming

1. Flash 40, Page A, Button 1 : Page Access Yes/No
2. Flash 22, Button 1 : Page Warning Tone Yes/No

Conditions

1. Meet Me Page does not concern the Page Access Restriction.

PAUSE TIMER

Description

When dialing a speed number, a timed pause in digit sending can be placed in the number. The length of this pause can be programmed in the system database.

Programming

1. Flash 05 : Pause Timer

Related Feature

1. Station/System Speed Dial

Conditions

1. When the HOLD button is pressed as an entry into a speed dial bin, it serves as a command to the system to provide a timed pause before resuming digit sending.
2. Successive entries of the HOLD will provide successive timed pause.
3. Each programmed pause utilizes one of the spaces for speed dialing digit.

PBX DIAL CODES

Description

The system will allow 5 one- or two-digit access codes to be entered into memory. When one of these codes is dialed, the signals the KSU that toll restriction is to be applied at the next dialed digits after the code. If one of these codes is not dialed, toll restriction does not apply. This allows the dialing of PBX extensions 100, 101, 107, etc. The line must be marked as PBX type and toll restriction must be enabled.

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Programming

1. Flash 30, Page A, Button 7 : CO/PBX
2. Flash 17 : PBX Access Codes

Conditions

1. In CO line programming, the line must be marked as PBX type and toll restriction must be enabled.

PHONE BOX

Description

A convenient phone box for receiving announcements, intercom call and signaling can be connected the system. Stations programmed to receive alarm signal (Program Code: Flash 40) will receive a call from a phone box, and can answer the call by dialing phone box number.

Stations with a flexible button programmed as DSS of a phone box can answer a call from the phone box by pressing the flashing DSS button.

To call a phone box, stations can use either the dial pad or the DSS button.

Programming

1. Flash 25 : Phone box Call Timer
2. Flash 40, Page A, Button 8 : Phone box Call Signal Receive Yes/No
3. Flash 40, Page B, Button 1 : Station ID

Conditions

1. If a phone box originated call is not answered within programmed period, the associated DSS button at all key stations will extinguish and the LED of the call button will extinguish, too.
2. A phone box can be a part of a conference.
3. For proper operation, the station ID should be programmed as a phone box. (Flash 40, Button 1)

PICKUP

Description

Directed Call Pickup

A station can pick up an intercom or CO line call ringing on a specific unattended station. The call must be a tone ringing call.

Group Call Pickup

Stations can be placed in one or more of 8 pickup groups. Stations within the same group can pick up tone ringing intercom calls and recalling or CO line calls for another station.

Branch Group

Stations belonging to Pick-up group 7 or 8 can be used as Branch Group. By lifting handset (or pressing the MON button), you can answer the incoming call on another station in the same Branch Group.

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Operation

After hearing an unattended ringing (incoming, transferred, intercom, recall rings) at a particular station, dial Pickup code, then you will be connected to the calling party.

Feature Code

(Keyset)

'*' + station number : Direct Call Pickup

'**' : Group Call Pickup

(SLT)

'*' + station number : Direct Call Pickup

'**' : Group Call Pickup

Programming

1. Flash 40, Page B, Button 4 : Pickup Group

Conditions

1. Directed call pickup is allowed regardless of pickup group assignment.
2. Group call pickup is allowed to the two stations in the same pickup group.
3. Direct button appearance of the CO line is required for pickup.
4. If you are belongs to pickup group 7 or 8 (Intercom Branch Group), Group Pickup is available only by lifting handset without dialing "****".

POOL BUTTON (CO GROUP BUTTON)

Description

The pool key is used to access CO line that don't appear on a station so that outgoing call may be made. When dialing '9', an idle CO in the first access allowed line group will be seized.

Feature Code

1. 9 : Line Group Access (The first access allowed group)
2. 81-83 : Line Group Access

Programming

1. Flash 30, Page B, Button 2 : CO line group assignment
2. Flash 40, Page B, Button 7 : CO Group Access

QUEUING

Description

When all the CO lines allowed to access are busy, stations can be placed in queue awaiting a line to become available. Users are signaled when the line is available. If a station doesn't answer the queue signal within 15 seconds, that station is dropped from the queue.

Operation

Queue Request

- After receiving busy tone, press CALL BACK button. You will hear confirmation tone. Then you can see a special display in your LCD and your CALL BACK button will be lit steady.

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Queue Recall

When a CO line of the group that you queued is idle, you hear queue recall ring. The queue recall can be answered;

- by pressing the line button.
- by going off-hook with Ringing Line Preference answer.

Queue Cancel

1. Press MON button.
2. Press CALL BACK button and CALL BACK button is extinguished.

Feature Code

1. TRANS 756 : (4 Button) CO Line Queuing
2. 756 : (SLT) CO Line Queuing

REDIAL

Description

The system allows following 4 kinds of Redial. Up to 32 digits can be stored.

- 1) Dial Memo
- 2) Last Number Redial
- 3) Save Number Redial

Operation

To redial the number;

- To dial the last number dialed lately on a CO line, dial Last Number Redial code.
- To dial the save number on a CO line, dial Save(Memo) Number Redial code.

Last Number Redial

Redial the last telephone number dialed on a CO line. Up to 32 digits can be stored. CO line selection is automatic.

Save Number Redial

Any number dialed on a CO line can be saved permanently to be used at any time by pressing the SPEED button twice before terminating the call. To dial the saved number, press "SPEED#".

To save the number;

If you wish to save a number you dialed:

- Before terminating the call, press SPEED button twice.

If you wish to save a number during CO conversation:

1. During CO conversation, press pre-programmed Dial Memo button.
2. Dial the number you wish to save with dial pad.
3. Press pre-programmed Dial Memo button again.
4. This feature does not have any influence on CO conversation.

To display a saved number;

- Press pre-programmed Dial Memo button while on-hook.

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Feature Code

- | | |
|---------------------|------------------------------------|
| 1. SPD* : | Last Number Redial |
| 2. 750, 75# (SLT) : | Last Number Redial |
| 3. SPD # : | Save Number (Memo) Redial |
| 4. 774 : | Dial Memo (Button assignment only) |

RINGING LINE PREFERENCE

Description

A station with ringing line preference can answer any assigned ringing CO line by simply lifting the handset or pressing the MON button.

Programming

1. Flash 40, Page A, Button 5 : Preferred Line Answer Enable/Disable

SPEED DIAL

Description

The system allows following two kinds of Speed Dial;

1) *Station Speed Dial*

Up to 20 station speed numbers are programmed by individual station.

2) *System Speed Dial*

Up to 80 commonly dialed system speed numbers are programmed by system attendant for use by stations allowed this feature. The last 40 numbers(bin 60-99) will not be monitored by toll restriction.

Numbers are dialed by use of the Speed Dial code.

Speed bin 00 can be used to program user's name so that it appears on calling/called display phones instead of station number.

Operation

(Keyset)

To program special commands;

- for Pause, press the HOLD button.
- for Flash, press the FLASH button.
- for Pulse-to-Tone switch-over, press the TRANS button.

To store station speed numbers (at Station) or

To store system speed numbers (at Attendant);

1. Press SPEED button once.
2. Press SPEED button or, a CO line button or CO group button.
3. Dial Speed bin number. (00-19 for station speed or 20-99 for system speed numbers)
4. Dial telephone number to be stored.
5. Press SPEED button.

To use Speed Numbers;

- Press SPEED button and dial speed bin number (00-99).

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To erase Speed Number (at Station or Attendant);

1. Press SPEED button twice.
2. Dial Speed bin number (00-19 or 20-99).
3. Press SPEED button twice.

(SLT)

To store station speed numbers;

- Lift the handset and dial "755".
- Dial the speed bin number (00-19).
- Enter the telephone number and perform the Hook Flash.

To use Speed Numbers;

- Lift the handset and dial "758" or "75*".
- Dial the speed bin number.

To erase Speed Number (at Station or Attendant);

- Lift the handset and dial "755".
- Dial the speed bin number (00-19) and perform the Hook Flash.

Feature Code

1. SPD xx : (xx= 00-99, Keyset) Speed Dial
2. 75*xx, 758 xx : (SLT) Speed Dial

Programming

1. Flash 40, Page A, Button 3 : System Speed Dial Access Yes/No

Related Feature

1. Name Display

TIME DISPLAY

Description

The system provides time and date for display key telephone. The time and date can't be kept during commercial power failure because it is provided by software. Attendant or the programming station can enter the system date and time.

Operation

1. Dial Setting Time and Date code "739".
 2. Dial 10 digits data for YYMMDDHHmm. (YY-Year, MM-Month, DD-Day, HH-Hour, mm-minute)
 3. You will hear confirmation tone and see updated time and date.
- or,
1. Enter Admin. Program mode Flash 28.
 2. Dial 10 digits data for YYMMDDHHmm. (YY-Year, MM-Month, DD-Day, HH-Hour, mm-minute)
 3. Press HOLD button.

Feature Code

1. 735 (Attendant) : Change System Date Format
 2. 736 (Attendant) : Change System Time Format
-

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3. 739 (Attendant) : Setting Time and Date

Condition

The system time and date can't be kept during commercial power failure.

Programming

1. Flash 28 : Setting Time and Date

UNIVERSAL NIGHT ANSWER (UNA)

Description

When CO lines are marked UNA and the system is placed into night service, a SLT or Keyset (with a direct or loop button) can answer incoming calls on lines, it does not normally have access to by dialing "777".

Operation

To answer incoming calls, lift handset and dial UNA code "777".

Feature Code

1. 777 : UNA code

Programming

1. Flash 30, Page A, Button 2 : UNA Line Yes/No

Related Feature

1. Night Transfer

VERSION DISPLAY

Description

Software version can be displayed by dialing "736" at the station with LCD.

Operation

Dial S/W Version Display code "736".

Feature Code

1. 736 : S/W Version Display

3 MINUTE WARNING

Description

A station user on a CO line conversation can be given a periodic warning signal every 3 minute.

Programming

1. Flash 40, Page A, Button 6 : 3 minute warning Enable/Disable

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http://www.sutti.com.ar

SECTION 5. SYSTEM PROGRAMMING

5.1 PROGRAM CODES LIST

http://www.sutti.com.ar

PROGRAM CODE	BUTTON ENTRY	FUNCTION	RANGE OF PARAMETER	DEFAULT VALUE
FLASH 01		SYSTEM HOLD RECALL TIMER	000-255 sec	060 sec
FLASH 02		EXCLUSIVE HOLD RECALL TIMER	000-255 sec	180 sec
FLASH 03		TRANSFER RECALL TIMER	000-255 sec	045 sec
FLASH 04		PRESET FORWARD TIMER	00-99 sec	10 sec
FLASH 05		PAUSE TIMER	1-9 sec	2 sec
FLASH 06		CALL PARK RECALL TIMER	000-255 sec	180 sec
FLASH 07		CONFERENCE TIMER	00-99 min	10 min
FLASH 08		MESSAGE WAIT REMINDER TONE TIMER	000-104 min	000 min
FLASH 09		NOT USED		
FLASH 10		CO RING DETECT TIMER	2-9 (x100) msec	3(x100)msec
FLASH 11	1	HOLD PREFERENCE	System/Exclusive	System
FLASH 12	1	AUTOMATIC PRIVACY	Yes /No	Yes
	2	PRIVACY WARNING TONE	Yes/No	No
FLASH 13	1	ATTENDANT CALL CODE (0)	Yes/No	Yes
FLASH 14	1	INCOMING CO TOLL	Yes/No	No
FLASH 15		ATTENDANT STATION ASSIGN	Sta No.	100
FLASH 16		LOUD BELL CONTROL	Sta No.	None
FLASH 17		PBX DIALING CODES	5 codes up to 2 digits	None
FLASH 18	1 - 4	EXECUTIVE/SECRETARY TRANSFER	4 pairs	None
FLASH 19	1 - 8	HUNT GROUP	upto 8 stations/group	
FLASH 20		NOT USED		
FLASH 21		PHONE BOX SIGNAL	Once/Repeat	Once
FLASH 22		PAGE WARNING TONE	Yes/No	Yes
FLASH 23	1,2	PROGRAM CONTROL RELAY	Loud Bell/Door Open	Loud Bell
FLASH 24		NOT USED		
FLASH 25		PHONE BOX CALL TIMER	00-60 sec	20 sec
FLASH26-27		NOT USED		
FLASH 28		SETTING TIME AND DATE		
FLASH 29	1	GROUP LISTENING	Yes/No	No
FLASH 30		CO LINE ATTRIBUTES		
	1A	DIAL SIGNALING	DTMF/PULSE	DTMF
	2A	UNA	Yes/No	Yes
	3A	TOLL OVERRIDE	Yes/No	No
	4A	GROUND FLASH	Yes/No	No
	5A	PULSE RATIO	60/40 or 66/33	66/33
	6A	PULSE SPEED	10 pps or 20 pps	10 pps
	7A	CO/PBX	0(CO) / 1(PBX)	0(CO)
	8A	LOOP SUPERVISION	0-9 min	0

	9	SELECT PAGE A		
	1B	FLASH TIME	01-20 (x 100ms)	10x100ms
	2B	CO LINE GROUP	0 - 4 (7)	1
	3B	NOT USED		
	10	SELECT PAGE B		
	11	NEXT CO NO.		
	12	PREVIOUS CO NO.		
FLASH 31		HOOK FLASH TIME	01-20(x100)msec	05(x100)ms
FLASH 32		NOT USED		
FLASH 33		ATTENDANT RECALL TIMER	000-255 sec	030sec
FLASH 34		NOT USED		
FLASH 35	1	RING TYPE SELECT	LED ON /OFF KST: 0.4/0.4/0.4/2 SLT: 0.4/0.2/0.4/4 OR KST: 0.8/2.4 SLT: 1/4	LED ON INTERCOM RING KST: 0.4/0.4/0.4/2 SLT: 0.4/0.2/0.4/4 CO RING: KST: 0.8/2.4 SLT: 1/4
FLASH 36	1-2	STA NUMBER CHANGE	100 - 699	100 - 107
FLASH 37	1	METHOD OF SELECTING CO LINE	CIRCULE (Yes/No)	Yes
FLASH 38		NOT USED		
FLASH 39		MULTI LINE CONFERENCE	Yes/No	No
FLASH 40		STATION ATTRIBUTES		
	1A	PAGE	Yes/No	No
	2A	DND	Yes/No	No
	3A	SYSTEM SPEED DIAL	Yes/No	Yes
	4A	HEADSET	Yes/No	No
	5A	PREFERRED LINE ANSWER	Yes/No	Yes
	6A	3 MINUTE WARNING	Yes/No	No
	7A	CALL FORWARD	Yes/No	No
	8A	PHONE-BOX CALL	Yes/No	No
	1B	STATION ID	1 - 6	
	2B	CLASS OF SERVICE	11 - 66	11
	3B	NOT USED		
	4B	PICK-UP GROUP	0 - 8	1
	5B	NOT USED		
	6B	PRESET FORWARD STATION	Sta. No.	None
	7B	CO GROUP ACCESS	dial 1 - 5	All (123)
	8B	CO BUTTON ASSIGNMENT	BLLR	Square
	9B	CO BUTTON DISPLAY	BLLR	Square
	10	SELECT PAGE A		
	11	SELECT PAGE B		
	12	SELECT STATION RANGE		
FLASH 41-44		NOT USED		
FLASH 45	1	PREVENT ILLEGAL DIAL	Yes/No	No
FLASH 46-49		NOT USED		

FLASH 50		EXCEPTION TABLES		
	1	ALLOW TABLE A	8 digits (16 bins)	None
	2	DENY TABLE A	8 digits (16 bins)	None
	3	ALLOW TABLE B	8 digits (16 bins)	None
	4	DENY TABLE B	8 digits (16 bins)	None
FLASH 52		STATION ATTRIBUTE-2		
	1	LCD DISPLAY	KOR/ENG	ENG
	2	ICM TRANSFER	Yes/No	No
	4	DOOR OPEN	Yes/No	No
FLASH 53	1-6	HOT LINE SELECT		None
FLASH 54		DOOR OPEN TIMER	05-99 (100msec)	20 (x100msec)
FLASH 55		NOT USED		
FLASH 56		CO DIAL DELAY TIME	00-99 (x100msec)	05 (x100msec)
FLASH 57		HOT LINE TIMER	0-9 sec	0 sec
FLASH 58-59		NOT USED		
FLASH 60		INITIALIZE SYSTEM PARAMETERS		
FLASH 61		INITIALIZE CO LINE ATTRIBUTES		
FLASH 62		INITIALIZE STATION ATTRIBUTES		
FLASH 63		INITIALIZE EXCEPTION TABLES		
FLASH 64		INITIALIZE SYSTEM SPEED NUMBERS		
FLASH 65		INITIALIZE ALL DATABASE		
FLASH 66-75		NOT USED		
FLASH 76		FAX CO, STA ASSIGNMENT	CO:01-03, STA:100-699	None
FLASH 77		FAX TONE DETECT TIMER	05-30 sec	05sec
FLASH 78		FAX CO CALL TIMER	1-3 min	1 min

5.2 INTRODUCTION

<http://www.sutti.com.ar>

The GHX-308A Key Telephone System can be programmed to meet each customer's individual needs. All programmings are done at station 100(Extension #1) using a key telephone. It can be done with either a 21-button or 33-button in display telephone. However, using a display phone will make programming easier. This display will indicate what features are being programmed and the current programming of these features. When data is changed, it will be displayed so you can see what has been entered.

Upon entering the program mode, the key telephone at station 100 no longer operates as a telephone but as a programming instrument with all of the buttons redefined. These keys of the dial pad are used to enter the various data fields and to enter numerical information such as timers. The 12 buttons are located at the top of program features such as class of service, line groups, station features, toll restriction table, etc.

At the time system is installed, upon entering the program mode, the system **MUST** be initialized to load default data into memory. If this pre-programming suits the customer, initialization is all that is needed.

Anytime data is to be changed, the program mode must be entered and then the individual program code. Use program codes to determine current programming or to change a specific feature.

During programming, other keysets operate normally. If a program code is used to determine programming but nothing is changed (or changed but not entered into memory by pressing HOLD), the previous data will remain intact upon leaving the field. Program codes do not have to be used in any particular order.

When programming, tones are provided to help the programmer determines correct or incorrect entry of data. A solid tone indicates that the data was accepted. An interrupted tone means an error was made. When this occurs, re-enter the data. Until new data is entered and accepted, the system will continue to operate under default or previously programmed values.

Data is entered permanently into the database when the HOLD button is pressed.

5.3 PROGRAM MODE ENTRY

<http://www.sutti.com.ar>

Programming is done at station 100 using preferably a 21-or 33-button display telephone. Programming is always done at this station regardless of attendant assignment or class of service.

To enter the program mode, the programmer must verify that the keyset is properly connected to station 100 (Extension #1) at first.

- 1) Go off-hook or press MON button to ON.
- 2) Dial an asterisk(*).
- 3) Dial 7-7-6-4 (PROG) and confirmation tone is heard. (System database is initialized at this point.)
- 4) Press FLASH button.
- 5) Dial 2-digit program code.
- 6) Enter the data to be programmed or press program buttons to be changed.
- 7) Press HOLD button. (Confirmation tone is heard.)
- 8) Go On-Hook or press MON button to exit.

All data are now stored in permanent memory and will affect system operation.

5.4 INITIALIZATION

<http://www.sutti.com.ar>

The system has been pre-programmed with certain features which are called default data, these features are loaded into memory when the system is initialized. The system should ALWAYS be initialized when installed or at any time the database has been corrupted.

To initialize the system to default values, repeat the procedures explained below for each of the database area.

- 1) Enter the programming mode.
- 2) Press FLASH button.
- 3) Dial 60 to initialize system parameters.

INITIALIZE SYS PARAM
PRESS HOLD

- 4) Press HOLD button.
- 5) Repeat from step 2 for the other areas. In step 3, use to following program codes.
 - 60 for system parameters
 - 61 for CO lines
 - 62 for station parameters
 - 63 for exception tables
 - 64 for system speed numbers
 - 65 for all system data

5.5 SYSTEM PARAMETER PROGRAMMING

http://www.sutti.com.ar

SYSTEM HOLD RECALL TIMER (FLASH 01)

A CO line placed on system hold and left unattended will remain in a hold condition until the expiration of the timer. Once the timer expires, the line will recall the originator of the hold for the duration of the recall timer. (If not answered within the recall time, the recall will go to the attendant for the duration of Attendant Recall Timer.)

Parameters:

Determines the amount of time before a call placed on system hold will recall the station placing the hold.

Range: 000-255 seconds (000: No recall)

Default: 060 seconds

Procedure:

1. Press FLASH button and dial 01.
2. Dial field # 01.
3. If you have a display phone, you will see this display:

SYS HOLD RECALL 000-255 060

4. Enter 3 digits on the numeric keypad.
5. Press HOLD button.

EXCLUSIVE HOLD RECALL TIMER (FLASH 02)

A CO line placed on exclusive hold and left unattended will remain in an exclusive hold condition until the timer expires. Once the timer expires, the line will recall the originator of the hold for the duration of the recall timer. (If not answered within the recall time, the recall will go to the attendant for the duration of Attendant Recall Timer.)

Parameters:

Determines amount of time before a call placed on exclusive hold will recall the station placing the hold.

Range: 000-255 seconds (000: No recall)

Default: 180 seconds

Procedure:

1. Press FLASH button and dial 01.
2. Dial field # 02.
3. On a display phone, you will see this display:

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EXC HOLD RECALL 000-255
180

4. Enter 3 digits on the numeric keypad.
5. Press HOLD button.

TRANSFER RECALL TIMER (FLASH 03)

A CO line transferred to unattended or unanswered station will recall the station transferring the call upon the expiration of the timer.

Parameters:

Determines the amount of time and a transferred call will ring at the station receiving the transfer before it will recall the station which made the transfer.

Range: 000-255 seconds

Default: 045 seconds

Procedure:

1. Press FLASH button and dial 01.
2. dial field # 03.
3. On a display phone, you will see this display:

TRANSFER RECALL 000-255
045

4. Press HOLD button.

PRESET FORWARD TIMER (FLASH 04)

Incoming CO lines will ring at the station until the expiration of the timer before being forwarded to a predetermined station.

Parameters:

Determines the amount of time a CO line will ring before being forwarded to a predetermined station.

Range: 00-99 seconds (00:No forward)

Default: 10 seconds

Procedure:

1. Press FLASH button and dial 01.
2. Dial field # 05.
3. On a display phone, you will see this display:

PRESET FWD TIMER 00-99
10

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4. Enter 2 digits on the numeric keypad.
5. Press HOLD button.

PAUSE TIMER (FLASH 05)

When dialing a speed number, a timed pause in digit sending can be directed into the number during entry. The length of the pause is controlled by the pause timer.

Parameters:

Determines the length of the pause for use with automatically sent digits or other speed dialing.

Range: 1-9 seconds

Default: 2 seconds

Procedure:

1. Press FLASH button and dial 01.
2. Dial field # 06.
3. On a display phone, you will see this display:

PAUSE TIMER	1 - 9
2	

4. Enter 1 digit on the numeric keypad
5. Press HOLD button.

CALL PARK RECALL TIMER (FLASH 06)

A CO line connected to a station can be placed into one of six parking locations and can be retrieved from the originating or any other station by dialing the Unpark code. A parked call will recall to the station that parked the call when call park timer expires.

Parameters:

Determines the amount of time before a call placed in a call park location will recall the station placing the park.

Range: 000-255 seconds (000:No Recall)

Default: 180 seconds

Procedure:

1. Press FLASH button and dial 06.
2. On a display phone, you will see this display:

CALL PARK TIMER 000-255
180

4. Enter 3 digits on the numeric keypad.
5. Press HOLD button.

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CONFERENCE TIMER (FLASH 07)

An unsupervised multi-line conference can continue until the expiration of the timer after the initiator of the conference has exited the conference.

The outside caller can use the CO line he/she has accessed for outgoing call until the expiration of the timer.

Parameters:

Determines the amount of time an unsupervised mode(unsupervised multi-line conference) can be continued.

Range: 00-99 minutes

Default: 10 minutes

Procedure:

1. Press FLASH button and dial 07.
2. On a display phone, you will see this display:

CONFERENCE TIMER 00-99
10

3. Enter 2 digits on the numeric keypad.
4. Press HOLD button.

MESSAGE WAIT REMINDER TONE TIMER (FLASH 08)

A station can receive up to five independent messages. A station with a message waiting can be reminded at a timed interval with a tone.

Parameters:

Determines the amount of time between repeated reminder tones to a telephone in a message waiting condition.

Range: 000-104 minutes (000: No reminder tone)

Default: 000 minutes

Procedure:

1. Press FLASH button and dial 08.
2. On a display phone, you will see this display:

M/W TONE TIMER 000-104
000

3. Enter 3 digits on the numeric keypad.
4. Press HOLD button.

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CO RING DETECT TIMER (FLASH 10)

This parameter can be adjusted to all CO line ringing detections from all types of central offices and PBX's. When the duration of the ringing signal from CO lines is matched with the ringing detection circuitry, the CO lines begin to ring at assigned telephones.

Parameters:

This timer controls the time necessary to detect a CO line as ringing into the system.

Range: 2-9(x 100) msec

Default: 3 (x100) msec

Procedure:

1. Press FLASH and dial 10.
2. On a display phone, you will see this display:

CO RING DETECT 2 - 9 3

3. Enter 1 digit on the number keypad.
4. Press HOLD button.

HOLD PREFERENCE (FLASH 11)

Hold preference allows either exclusive hold or system hold as the primary hold on the first depression of the HOLD button.

Parameters:

The system may be programmed to have either exclusive or system hold preferred. If exclusive hold is preferred, depress HOLD button once for exclusive hold and twice for system hold when using a key telephone. If system hold is preferred, depress HOLD button once for system hold and twice for exclusive hold.

Default: System Hold

Procedure:

1. Press FLASH button and dial 11.
2. On a display phone, you will see this display:

HOLD PREFERENCE SYS-EXC SYSTEM

3. To make a change, press the top left program button.
 LED off: Exclusive hold
 LED on: System hold
4. Press HOLD button.

AUTOMATIC PRIVACY (FLASH 12)

Through the programming, privacy is automatically provided on all calls. If one station is using a CO line or intercom, another station cannot intrude on that call. No one can interrupt or overhear your calls.

Parameters:

If desired, the system can be programmed to eliminate CO line privacy, allowing a maximum of one other station to join in on existing CO line conversations. If privacy is disabled and a station will hear an alert tone.

Default: Automatic privacy

Procedure:

1. Press FLASH button and dial 12.
2. On a display phone, you will see this display:

PRIVACY WARNING	
YES	NO

3. To make a change, press the first two program buttons.
LED off: Automatic privacy disabled, privacy warning tone disabled.
LED on: Automatic privacy enabled, privacy warning tone enabled.
4. Press HOLD button.

ATTENDANT CALL CODE (0) (FLASH 13)

This field allows to call Attendant by dialing "0".

Parameters:

Determines whether Attendant Call code is "0" or not.

Range: Yes/No

Default: Yes

Procedure:

1. Press FLASH button and dial 13.
2. On a display phone, you will see this display:

ATTD CALL ENABLE
YES

3. To make change, press the top left program button.
LED off: No
LED on: Yes
4. Press HOLD button.

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INCOMING CO TOLL RESTRICTION (FLASH 14)

This field allows to govern station's toll restriction for incoming CO line. Station's dialing privilege depends on it's COS.

Parameters:

Determines whether the system restrict station's toll thru incoming CO line or not.

Range : Yes/No

Default : No

Procedure :

1. Press FLASH button.
2. On a display phone, you will see this display;

INCOMING CO TOLL YES/NO
NO

3. To make change, press the top left program button.

LED Off : No

LED On : Yes

4. Press HOLD button.

ATTENDANT STATION ASSIGNMENT (FLASH 15)

The attendant will receive unattended recalls, i.e., transfers and holds after the initial recall attempt has been made. The attendant places the system into the night service by pressing the DND button.

Parameters:

The system identifies a station as the attendant for line recall and attendant features. There can be a maximum of one(1) attendant station.

Default: Station 100

Procedure:

1. Press FLASH button and dial 15.
2. On a display phone, you will see this display:

ATTN STA ASSIGNMENT
100

3. Enter the 3-digit station number on the numeric keypad.
4. Press HOLD button.

Conditions:

1. The attendant is by default assigned to station 100. When assigned to any other station, the attendant cannot be the programming entry station.

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2. Recalls to the attendant will continue to ring until answered or disconnected, or the attendant recall timer expires.

LOUD BELL CONTROL (FLASH 16)

Intercom calls, CO line transfers and CO ringing will be presented to an externally connected loud ringing device via contact closure.

Two sets of control are provided to allow external ringing. Both contacts may be assigned to stations and the contacts will operate when station is ringing.

Parameters:

Two stations can be assigned to Loud Bell Control. The LBC contacts on MDF inside the KSU will allow the ringing assignments of those stations.

Default: None

Procedure:

1. Press FLASH and dial 16.
2. On a display phone, you will see this display:

LOUD BELL CONTROL ASSGN ###, ###

3. Enter the 6-digit station number.
4. Press HOLD button.

Condition

The second relay is available when MFU is installed.

PBX ACCESS CODES (FLASH 17)

The system will allow five 1-or 2- digit PBX access codes to be entered into memory. When one of these codes is dialed, this signals the KSU that toll restriction is to be applied at the next dialed digits after the code. If one of these codes is not dialed, toll restriction does not apply.

Parameters:

Five 1-or 2-digit PBX access codes can be programmed into memory. When a single-digit access code(9) is required, the pound(#) must be entered as the second digit (9#).

Default: None

Procedure:

1. Press FLASH button and dial 17.
2. On a display phone, you will see this display:

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PBX DIAL CODES

##, ##, ##, ##, ##

3. Enter 2-digit code number one right after the other up to maximum of 10 digits on the numeric keypad. (To delete an entry, enter two pound(##) signs.)
4. Press HOLD button.

EXECUTIVE/SECRETARY TRANSFER (FLASH 18)

There are four sets of Executive/Secretary pairs available for assignment so that when the executive designated telephone is busy or in DND, intercom calls and transfers will be automatically routed to the designated secretary station.

Parameters:

There are four pairs available with numerous combinations, i.e., 1 executive and 4 secretaries or 4 executives and 1 secretary. You cannot pair EXECUTIVE to SECRETARY(100-101) and then pair SECRETARY to EXECUTIVE(100-101). You can have the same secretary station for more than one executive station(101-100, 102-100).

Range: Program button 1-4 (pair 1-4)

Default: None

Procedure:

1. Press FLASH button and dial 18.
2. On a display phone, you will see this display:

EXEC SECY PAIRING

/ ### PAIR 1

3. The top left program button will be lit indicating the first pair may be entered.
Enter 3-digit executive station number.
Enter 3-digit secretary station number.
4. Press HOLD button.
5. To enter a second/third/fourth pair, press corresponding program button (Program button 2-4). Repeat procedure 3 and 4. (An entry of pounds (#) will remove the assignments)

HUNT GROUP (FLASH 19)

The system can be arranged for up to eight(8) hunt groups. Each hunt group can contain up to eight stations each. The hunt group uses a pilot hunting technique. When an intercom or transferred CO line is directed to a pilot hunt group, the system will search sequentially for an idle station. Upon finding an idle station within the group, it will ring at the idle station.

Parameters:

Can arrange up to eight(8) hunt groups of no more than eight(8) stations each.

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Button No.	Group No.	Pilot Number	Default stations
1	1	710	Station 100-103
2	2	711	Station 104-107
3	3	712	...
4	4	713	...
5	5	714	...
6	6	715	...
7	7	716	...
8	8	717	...

Procedure:

1. Press FLASH button and dial 19.
2. On a display phone you will see this display:

HUNT GROUP 710 100,101
 102,103,____,____,____,____

The top left program button will be lit for programming the first hunt group.

3. Enter the 3-digit station number up to a maximum of 24 digits (8 stations). The station numbers are entered in order of the hunting desires.
4. Press HOLD button.
5. To enter further hunt group, press program buttons as follows;

710	711	712	713
714	715	716	717

6. Enter station numbers.
7. Press HOLD button.

PBX CALLING SIGNAL (FLASH 21)

This field allows to select the ring type of extensions called by PBX extension.

Parameters:

Determines whether the system provides single or continuous ring to the called extensions.

Range: Once/Repeat

Default: Once

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Procedure:

1. Press FLASH button and dial 21.
2. On a display phone, you will see this display:

SIGNAL ONCE

3. To make change, press the top left program button.
LED off: Once
LED on: Repeat
4. Press HOLD button.

PAGE WARNING TONE (FLASH 22)

This field allows to select page warning tone.

Parameters:

Determines whether the system provides page warning tone after user dials page code or not.

Range: Yes/No

Default: Yes

Procedure:

1. Press FLASH button and dial 22.
2. On a display phone, you will see this display:

PAGE WARNING TONE YES/NO YES

3. To make change, press the top left program button.
LED off: No
LED on: Yes
4. Press HOLD button.

PROGRAM CONTROL RELAY (FLASH 23)

This field allows to select the usage of control relays. The relays can be used Loud Bell, Door Open, External Page or External MOH.

Parameters:

Determines the control relays is for Loud Bell, Door Open, External Page or External MOH.

Range: Loud Bell / Door Open /External Page /External MOH

Default: Loud Bell

Procedure:

1. Press FLASH button and dial 23.

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2. On a display phone, you will see this display:

PROGRAM CONTROL RELAY

3. To make change, press the button 1 (for relay 1) or button 2 (for relay 2).

01 RELAY: LOUD BELL
1LBC 2DOOR 3EPAGE 4EMOH

Dial 1 digit (1-4) for your desired control.

4. Press HOLD button.

PHONE BOX CALL TIMER (FLASH 25)

A convenient phone box for receiving announcements, intercom calls, and signaling can be connected to the system. Any condition of key telephones or phone boxes can be arranged in the system. The positions for key stations are completely interchangeable with phone boxes. (Station ID programming as phone box is required.)

Parameters:

Determines the amount of the ringing. The assigned stations (Program Code: Flash 40) will receive ringing when a phone box user presses the CALL button.

Range: 00-60 seconds

Default: 20 seconds

Procedure:

1. Press FLASH button and dial 25.
2. On a display phone, you will see this display:

ICM BOX TIMER 00-60
20

3. Enter 2 digits on the numeric keypad.
4. Press HOLD button.

SETTING TIME AND DATE (FLASH 28)

This allows the user to program the system date and time.

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Parameters:

Range & Default:

Field	Range	Default
Year (YY)	00-99	99
Month (MM)	01-12	01
Day (DD)	01-31	01
Hour (HH)	00-23	12
Minute (mm)	00-59	01
Second (SS)	00-59	00

Procedure:

1. Press FLASH and dial 28.
2. On a display phone, you will see this display:

DATE & TIME
MM DD YY HH:mm:am

3. Enter time and date in form of YYMMDDHHmmSS on the numeric keypad.
4. Press HOLD button.

GROUP LISTENING (FLASH 29)

A station user engaged in a conversation with the handset can allow people around to listen to the conversation by pressing the MON button.

Parameters:

Determine if this feature be used.

Range: Yes/No

Default: No

Procedure:

1. Press FLASH button and dial 29.
2. On a display phone, you will see this display:

MONITOR MODE YES/NO
NO

3. To make a change, press the top left program button.
LED off: Disables monitor mode
LED on: Enables monitor mode
4. Press HOLD button

CO LINE PROGRAMMING (FLASH 30)

If you are in the program mode, continue using the program codes. If you are starting to program at this point, enter the program mode at first.

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This allows the features and services of the CO lines to be entered on each CO line in the system individually.

Parameters:

The data fields are assigned to 8 program buttons as follows;

PAGE A

DTMF/PULSE

Each individual CO line can be programmed to be either DTMF(tone) or dial pulse. By default all lines are set for DTMF.

UNA

Incoming CO/PBX lines marked as UNA can be answered by dialing the UNA access code by stations not normally assigned access to the line(s). The stations must have a direct line button or loop key assigned to answer.

Default is Yes(UNA).

TOLL OVR

A CO line may be marked for Toll Override which allows to dial long distance call on this line for toll restricted stations.

Default is No.

GROUND/LOOP

The flash type of each CO line can be programmed to be either Loop flash or Ground flash.

Default is Loop flash.

PULSE RATIO

If out-pulsing is required, the individual CO line must be programmed for dial pulse in program button 1. The Make/Break ratio and the dial speed can be programmed for either 66/33 or 60/40.

Default is set to 66/33.

PULSE SPEED

Dialing speed is set to 10 pps (Pulses per second) and is able to change to 20 pps.

CO/PBX

CO line can be marked either CO or behind PBX. When marked PBX, toll restriction applies after the PBX dial codes.

0=CO line, 1=PBX line.

By default, all lines are CO.

LOOP SUPERV

If marked Loop Supervision, CO line sets to monitor the CO line(s) for loop disconnect.

1-9=Timer(x100 msec). Default is 0(No Supervision) and this feature is not serviced in GHX-308A.

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HYBRID KEY TELEPHONE SYSTEM**PAGE B****FLASH TIMER**

When using an outside, flash allows a user

- 1) to obtain new dial tone without losing the line if the line is CO or
- 2) to transfer the line to another extension if the line is behind PBX.

Default is set to 1 second and is variable from 01-20 (x100 msec).

CO LINE GRP

Three(3) CO line groups are available for CO assignment. Groups should be assigned according to Trunk Type. All lines are assigned to line group "1" by default.

Range & Default

Field	Range	Default
DTMF/PULSE	DTMF/PULSE (On/Off)	DTMF
UNA	Yes/No (On/Off)	Yes
TOLL OVERRIDE	Yes/No (On/Off)	No
GROUND / LOOP	Ground/Loop (On/Off)	Loop
PULSE RATIO	60:40 / 66:33 (On/Off)	66:33
PULSE SPEED	10 pps / 20 pps (On/Off)	10 pps
CO/PBX	0(CO) /1(PBX)	CO
LOOP SUPERVISION	0-9	0 (No Loop Supervision)
FLASH TIMER	01-20 (x100) msec	10 (x100) msec
CO CROUP	0-7	1

Procedure:

1. Press FLASH button and dial 30.
2. On a display phone, You'll see this display:

CO LINE ATTRIBUTE
 SELECT A CO LINE RANGE

The program button 12 will be lit steady so that you can input the range of CO line to be programmed.

3. From the dial pad, enter 4 digits for the CO line range to be programmed. (For an example, if you want to program CO 1 to CO 3 enter 0103. If you want to program CO 3, only enter 0303.)
4. When the CO line(s) is accessed the display will appear as:
The alternatives for the display PAGE A are:

CO x-y DTMF UNA OVN GN
 R66 SP1 CO SU0

CO XX-YY (X, Y=01-03),
 DTMF(DP),
 UNA,
 OV# (#: Y=Yes, N=No),

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G# (#: Y=Ground, N=Loop),
 RXX (XX: 66=66/33, 60=60/40),
 SPX (X: 1=10pps, 2=20pps),
 CO(PBX),
 SU# (#=0-9),

The alternatives for the display PAGE B are:

CO xx-yy F10 GRP1

CO xx-yy (xx, y=01-03),
 Fxx (xx=01-20),
 GRPx (x=0-3),

5. To program **PAGE A** features, use the button as follows:

DTMF PULSE	UNA	TOLL PVERRIDE	GROUND LOOP
PULSE RATIO	PULSE SPEED	CO PBX	LOOP SUPERV
PAGE A	PAGE B	NEXT FORWARD	NEXT BACKWARD

LED off : Dial pulse, Disable UNA, Disable Toll Override, Loop Flash, Pulse Ratio (66/33),
 Pulse speed (20 pps).

LED on : DTMF, UNA, Toll override, Ground Flash, Pulse Ratio (60/40), Pulse Speed (10 pps)

6. When the attributes are being programmed, button 1 through 6 can be toggled On or Off. Buttons 7 through 8 require numeric entries form the dial pad. The toggled buttons can all be set and then entered as a block with the HOLD button. Each button with a numeric entry requires a pressing of the HOLD button to store the data. Each time the HOLD button is pressed, the display will refresh with the new data.

7. To program **PAGE B** features, use the button as follows:

FLASH TIME	LINE GROUP		
PAGE A	PAGE B	NEXT FORWARD	NEXT BACKWARD

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8. Buttons 1 and 2 require numeric entries from the dial pad. The toggled buttons can all be set and then entered as a block with the HOLD button. Each button with a numeric entry requires a pressing of the HOLD button to store the data. Each time the HOLD button is pressed, the display will refresh with the new data.
9. Pressing button 11 (Next Forward) steps to the next CO line higher than the upper limit of the present CO range. Pressing button 12 (Next Backward) steps to the lower CO range than the present range. Subsequent presses of button 11 and 12 will continue to step to the next CO range.

HOOK FLASH TIMER (FLASH 31)

When single line telephones are connected to the system, this time determines how long the user should depress the hook switch in order for it to be considered a Flash.

Parameters:

Determines the time range to be considered as hook flash signal. The time variable from 100 msec to 2 seconds.

Range: 01-20 (x100 msec)

Default: 05 (x100 msec)

Procedure:

1. Press FLASH button dial 31.
2. On a display phone, you will see this display:

HOOK FLASH TIME 01-20 05

3. Enter 2 digits on the numeric keypad.
4. Press HOLD button.

ATTENDANT RECALL TIMER (FLASH 33)

A CO line placed on hold or transferred or parked 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, the associated timer continues and upon expiration again the attendant station will ring.

Parameters:

Determines the amount of time the attendant will receive the recall.

Range: 000-255 seconds

Default: 30 seconds

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Procedure:

1. Press FLASH button and dial 33.
2. On a display phone, you will see this display:

ATTENDANT RECALL 000-255 030

3. Enter 3 digits on the numeric keypad.
4. Press HOLD button.

RING TYPE SELECTION (FLASH 35)

This field allows to select the type of rings (intercom and CO rings) for stations.

Parameters:

Determines the ring types.

	LED OFF (DEFAULT)		LED ON	
	CO RING	INTERCOM RING	CO RING	INTERCOM RING
KEY STATION	0.4/0.4/0.4/2	0.8/2.4	0.8/2.4	0.4/0.4/0.4/2
SLT	0.4/0.2/0.4/4	1/4	1/4	0.4/0.2/0.4/4

Default: LED OFF

Procedure:

1. Press FLASH button and dial 35.
2. On a display phone, you will see this display:

SELECT RING TYPE CO .4/.2/.4/4 INT 1/4
--

3. To make change, press button 1.
4. Press HOLD button.

FLEXIBLE STATION NUMBERING (FLASH 36)

This field allows to change intercom number in the range from 100 to 699.

Parameters:

Determines intercom number.

Range: 100-699

Default: 100-107

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Procedure:

1. Press FLASH button and dial 36.
2. Press button 1-2.
3. Dial 12 digits station numbers.
4. Press HOLD button.

METHOD OF SEIZING CO LINE (FLASH 37)

When you dial CO line access code, there are two ways of selecting CO line.

Last CO choice

You can select last CO line available in that CO group.

Circle CO choice

You can select sequentially CO line in that CO group whenever you access CO group.

Parameters:

Determines intercom number.

Range: Last/Circle

Default: Circle

Procedure:

1. Press FLASH button and dial 37.
2. Press button 1.
LED ON : Circle Choice
LED OFF : Last Choice
3. Press HOLD button.

MULTI-LINE CONFERENCE (FLASH 39)

The system will allow conference with two(2) CO lines and one(1) internal party. The internal party can exit the conference and leave the conference unsupervised.

Parameters:

Determines to set the system parameter to allow multi-line conference.

Range: Yes/No

Default: No

Procedure:

1. Press FLASH button and dial 39.
2. On a display phone, you will see this display:

MULTI LINE CONF YES/NO NO

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3. To make a change, press the top left program button.
LED off: No
LED on: Yes
4. Press HOLD button.

STATION PROGRAMMING - (I) (FLASH 40)

If you are in the program mode, use the program code continuously. If you are starting to program at this point, enter the program mode at first.

It allows the features and services of the station to be entered on each station in the system individually.

Parameters:

PAGE A

PAGE

Station can individually be allowed or denied the ability to make pages. It disallows paging access by default.

DND

Stations can be individually allowed or denied the ability to place their telephone in DO NOT DISTURB. It disallows DND by default.

SYS SP DIAL

Stations can be individually allowed or denied the ability to use system speed dial numbers. It allows system speed by default.

HEADSET

Stations can be allowed or denied to use industrial standard headset for convenient operation. It is not allowed headset operation by default.

PLA

Stations can be given the ability to answer incoming CO line calls by simply going off-hook (ringing line preference). Allowed by default.

3 MIN WARN

Stations can be allowed or denied to receive alert tone when a CO line is occupied for 3 minutes. The alert tone is heard every 3 minute. Disallowed by default.

CALL FWD

Stations can be disallowed or denied the ability to have intercom and CO lines forwarded to another station. It allows Call Forward by default.

ALARM SIGNAL

Stations can be designated to receive phone box call through the telephone speaker. It gives no stations the feature by default.

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PAGE B

STA ID

Each station must be identified as one of the followings;

ID	Description
1	21, 33 Button key station (default)
2	Phone Box
3	Not used
4	Dial Pulse SLT
5	DTMF SLT
6	8 Button station

COS

Each station must be assigned a class of service which governs that station's toll restriction. The 6 classes are;

Two digits are entered via dial keypad. The first digit is for day COS and the second for night COS. Default gives all stations COS 11.

COS	Description
1	No restriction
2	Governed by Allow/Deny Table A
3	Governed by Allow/Deny Table B
4	no '0', '1' as the first digit, 7 digits maximum
5	intercom calls and paging only
6	receive calls and paging only

GRP PICK-UP

Each station is assigned into pickup groups. Stations can be in any combination of the 8 groups or in no group at all.

Group No.	Access allowed to Group
0	No group
1	Group 1 (Default)
2	Group 2
3	Group 3
4	Group 4
5	Group 5
6	Group 6
7	Group 7 (Branch Group)
8	Group 8 (Branch Group)

Note: The group 7 and 8 are used for automatic group pick-up feature, i.e. by simply going off-hook, he can pick the call in the group.

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PRESET FWD

A station can be programmed so that incoming ringing CO lines can be forwarded to a preset station if the station does not answer after a programmable period of time (Program Code: Flash 04). It assigns no stations by default.

CO GRP ACCESS

A station is allowed to access to any combination of CO line groups. Or a station may not be allowed any access to CO line groups. The followings are the group numbers and their access buttons:

Button	Access allowed CO line groups
1	GROUP 1
2	GROUP 2
3	GROUP 3
4	TO ALL GROUPS
5	NONE

CO lines are accessed by the station user dialing the appropriate access code number. Dial tone will be received and they can dial the desired telephone number. A station user can also program one of the flexible buttons as CO Group Access Code and then can access that CO line by simply pressing the button.

When using a code "9" to access a CO line, an idle CO line in the first access allowed CO line group is seized. By default, all stations will be allowed access to all CO line groups.

To assign the CO line access map, press program button 7 on PAGE B. If you have a display phone, you will see this display:

**CO GRP ACCESS MAP
ENTER CO LINE DATA**

Then the user presses the program button 1 to 4 to assign the CO line group 1 to 3 that can be accessed by this station. An entry of program button 4 will make the station to be able to access all CO line groups and an entry of program button 5 will make the station not to be allowed to access any CO line groups in system. Press HOLD button to enter the data.

CO BTN ASGN

To assign which buttons are to be CO lines, press CO Line button on page B (Button 8). If you have a display telephone, you will see this display:

**CO LINE TO BUTTON PROG
ENTER BUTTON DATA**

Each entry is 5 digits in length and is entered on the dial pad. Press HOLD after each 5 digit entry. Button assignments are made in the following format:

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BLLR

- BB = flexible button number (01-24).
 LL = line assigned to that button (01-03), 00 for Loop Button.
 R = ringing status
 0 = no ring (display shows '0')
 1 = day ring ('1')
 2 = night ring ('2')
 3 = day and night ring ('3')

By default, the button assignment is square, which means that each button is assigned the corresponding line number(button 1 is line 1, button 2 is line 2, etc.). The remaining buttons on the 33-button are initialized by default. To see what assignments were made previously, press "DSP" button on PAGE B. Each depression of this button will display 4 button assignments(up to a maximum of 24 buttons)

BUTTONS XXX-XXX	BLLR
BLLR	BLLR

If a button is not to be assigned as a CO line, the entry should be BB.(BB=button number) Any button not assigned as a CO line or as a loop button can be programmed by each station user for one of several functions. Instructions for this programming are in the station user's guide.

Range & Default

Page	Field	Range	Default
A	PAGE	Yes/No (On/Off)	No (Off)
	DND	Yes/No (On/Off)	No (Off)
	SYSTEM SPEED DIAL	Yes/No (On/Off)	Yes (On)
	HEADSET	Yes/No (On/Off)	No (Off)
	PREFERRED LINE ANSWER	Yes/No (On/Off)	Yes (On)
	3 MINUTE WARNING	Yes/No (On/Off)	No (Off)
	CALL FORWARD	Yes/No (On/Off)	No (Off)
	ALARM SIGNAL	Yes/No (On/Off)	No (Off)
B	STATION ID	1-7	11
	COS	XY (X=1-6, Day. Y=1-6, Night)	
	Not Used		
	GROUP PICK-UP	0-8	1
	Not Used		
	PRESET FORWARD	Station Number	None
	CO GROUP ACCESS	1-3	All
	CO LINE BUTTON	BLLR	Square

Procedure:

1. Press FLASH button and dial 40.
2. On a display phone, you'll see this display:

STATION ATTRIBUTES SELECT A STA RANGE
--

The program button 12 will be lit steady so that you can input the range of station to be programmed.

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3. Enter a 6-digit number for station range being programmed. (For an example, if you want to program station 100 to 105 with same attributes, enter 100105. If you want to program only one(1) station, enter that number twice (i.e.101101).
4. The display will appear like this while programming Page A for that station or for group of station.

XXX-XXX A	DND SPD
HEAD PLA	WARN FWD ALM

5. To program PAGE A features, use the button as follows:

PAGE	DND	SYS SPD	HEADSET
PREF LINE	3 MIN WARNING	CALL FWD	ALARM
PAGE A	PAGE B	SELECT STA #	

These buttons toggle on and off.

LED off: Paging restricted, no DND, no system speed dial, no headset, no preferred line answer, no 3 min. warning tone, no call forward, no alarm.

LED on: Paging access, DND, system speed dial, headset, preferred line answer, 3 min warning tone, call forward, alarm receive.

When the features of Page A have been selected, press HOLD. The display will be updated to the new data.

6. The remaining features of the station are located and programmed on Page B. Press PAGE B SELECT button. This will bring up additional station features to be programmed. The display of current programming for those features will appear as follows:

XXX-XXX	B ID1 COS11
AAAAAAA	DDD EEE

XXX = station range

B = page B

ID = station ID

COS = class of service

A = pickup group

D = preset forward station

E = CO line group access

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7. To program Page B features, use the program buttons as follows:

STA ID	COS	Not used	PICKUP
Not used	PRESET FWD	CO ACCESS	CO LINE
DSP	PAGE A	PAGE B	SELECT STA

These features except CO LINE ACCESS button (Button 7) require a numeric entry. Press the program button and then enter the number via the dialpad. Press HOLD after each numeric entry. (Display will be now updated.)

PREVENT ILLEGAL DIAL (FLASH 45)

This field allows to prevent illegal dial. When this field is set to "YES", dial thru CO is stored and forwarded.

Parameters:

Determines whether illegal dial is to be prevented or not.

Range: Yes/No

Default: No

Procedure:

1. Press FLASH button and dial 45.
2. On a display phone, you will see this display:

PREVENT ILLEGAL DIAL Y/N NO

3. To make a change, press the top left program button.
 LED off: No
 LED on: Yes
4. Press HOLD button.

EXCEPTION TABLES PROGRAMMING (FLASH 50)

If you are in the programming mode, use the program codes continuously. If you are starting programming here, enter the programming mode at first. Press FLASH button and dial 50. If you have a display telephone, you will see this display:

EXCEPTION TABLES SELECT A TABLE

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To program exception tables, use the program button as follows;

ALLOW A	DENY A	ALLOW B	DENY B
DSP			

Press a button to program a table. You will see a display such as this.

ALLOW TABLE A	
01	02

The first 2 bin locations are displayed. Refer to work sheet and enter data via the dial pad.

Digits 0-9 = numbers
DND/FOR button = don't care (D)
HOLD button = End/Enter Data (E)

Each entry can be up to 10 digits. The entry format is : BBXXXXXXXXXX

BB = bin number

XX = exception number

Press HOLD after each entry. (Display will be now updated.) When all entries for one table are complete, press the program button for the next table to be programmed and follow the same procedure.

To erase an entry, enter that bin number followed by pressing HOLD button. (Display will be updated with that number removed.) To see what has been programmed into a particular table, press the "DSP" button. The display will scroll through the bins which have been programmed. The following characters can be displayed with a code.

D = don't care
E = end/enter

The Allow/Deny Tables are organized into 2 sets of tables to support 2 different toll plans at one installed site. Each allow table may contain up to 16 number strings and each deny table 16 number strings.

Each number string can contain up to 10 digits including any number 0-9, "Don't care". The following rules should be remembered when setting up the Allow/Deny Tables:

1. If the tables have no entries, no restriction is applied.
2. If entries are made in the allow table and only there, then only those numbers are allowed.
3. If entries are made in the deny table and only there, then only those numbers are denied.
4. If there are entries in both tables, the allow table is searched first and if number is found, it is allowed. If not found, the deny table is searched and if number is found, it is denied. If it is not found in either table, it is allowed.

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[ALLOW/DENY RULES]

	Entries		Condition & Result	
	Allow Tables	Deny Tables	Allow	Deny
Rule 1	No	No	Allowed	Allowed
Rule 2	Yes	No	Found - Allowed Not Found - Denied	
Rule 3	No	Yes		Found - Denied Not Found - Allowed
Rule 4	Yes	Yes	Found - Allowed Not Found	Found - Denied Not Found - Allowed

STATION PROGRAMMING - (II) (FLASH 52)

If you are in the programming mode, use the program codes continuously. If you are starting programming here, enter the program mode at first. If station features are to be changed, press FLASH and dial 52. If you have a display telephone, you will see this display:

STATION ATTRIBUTES SELECT A STA RANGE
--

Program button #12(SELECT STA #) will be lit. Enter a 6-digit number for station range being programmed. If only 1 station, enter that number twice(i.e. 101101).
The display will appear as follows:

XXX-XXX ENG ICM_TRF DOOR

To program features, use the buttons as follows;

DISPLAY	ICM TRANSFER	DOOR OPEN	
			SELECT STA #

Buttons 1-3 toggle on and off.

LED off: Korean display, No ICM Transfer privileged, No Door Open privileged.

LED on: English display, ICM Transfer privileged, Door Open privileged.

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The features are described as follows:

DISPLAY

This features selects language on LCD display. (English or Korean)
By default, English.

ICM TRANSFER

If ICM Transfer Privilege is allowed, you can transfer Intercom call to internal party.
By default, no privileged.

DOOR OPEN

If Door Open Privilege is allowed, stations can open the door(relay is controlled ON) for the Door Open timer period by dialing '*#1'(1st door) and '*#2' (2nd door).
By default, no privileged.

HOT LINE (FLASH 53)

This feature lets a station perform a pre-assigned feature when a station takes no action for Hot Line after going off-hook. Hot Line feature can be programmed as one of the followings:
Activation time for Hot Line feature is determined by Hot Line Timer.

- 1) To activate a feature on flexible button as if pressed.
- 2) To seize a CO Line.
- 3) To seize a CO Line Group.
- 4) To call an another station.
- 5) To dial a SPEED BIN number.

Procedure:

1. Press FLASH button and dial 53.
2. On a display phone, you will see this display:

HOT LINE
SELECT A STA RANGE

3. Dial 6 digits to specify your desired stations. To program Hot Line Feature for station 105, dial 105105.

After dialing station range, you will see this display:

105-105 SELECT FEATURE
FLX COL GRP STA SPD NONE

4. To program feature, use the button as follows:

FLEXIBLE
BTN

CO LINE

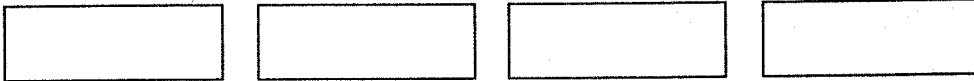
CO GROUP

STATION

SPD DIAL
BIN

CANCEL

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- 1) To program a feature on flexible as Hot Line feature, press button 1.
You will see following this display:

105-105 SELECT FEATURE
FLEX BTN:

Dial flexible button number as 2 digits(01-24) and press HOLD button to save it.
Flexible feature can't be assigned as Hot Line feature on SLT.

- 2) To program a CO line as Hot Line feature, press button 2.
You will see the following display;

105-105 SELECT FEATURE
CO LINE:

Dial CO line number as 2 digits(01-03) and press HOLD button to save it.

- 3) To program a CO line group as Hot Line feature, press button 3.
You will see following display;

105-105 SELECT FEATURE
CO GROUP:

Dial CO line GROUP as 1 digit(1-3) and press HOLD button to save it.

- 4) To program a station number as Hot Line feature, press button 4.
You will see following display;

105-105 SELECT FEATURE
STA NO:

Dial a station number as 3 digits(100-699) and press HOLD button to save it.

- 5) To program a speed bin bumber as Hot Line feature, press button 5.
You will see the following display:

105-105 SELECT FEATURE
SPD NO:

Dial a speed bin number as 2 digits(00-99) and press HOLD button to save it.

- 6) To erase your programmed Hot Line feature, press button 6 and HOLD button.

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CO DIAL DELAY TIMER (FLASH 56)

The system will give a user CO dial tone after the pre-determined time in this field to prevent a user from dialing a restricted number.

Parameters:

Determines the amount of time before giving a CO dial tone.

Range: 00-99 (x100) msec

Default: 05

Procedure:

1. Press FLASH button and dial 56.
2. On a display phone, you will see this display:

CO DIAL DELAY TMR 00-99
00

4. Enter 2 digits on the numeric keypad.
5. Press HOLD button.

HOT LINE TIMER (FLASH 57)

Activation time of Hot Line feature can be programmed. On going off-hook, Hot Line timer starts. When Hot Line timer expires, Hot Line feature is preformed.

Range: 0-9 sec

Default: 0

1. Press FLASH button and dial 57.
2. On a display phone, you will see this display:

HOT LINE TIMER 0-9
0

4. Enter 1 digit on the numeric keypad.
5. Press HOLD button.

INITIALIZATION (FLASH 60-65)

The system has been pre-programmed with certain features which are called default data, these features are loaded into memory when the system is initialized. The system should ALWAYS be initialized when installed or at any time the database has been corrupted.

To initialize the system to default values, repeat the procedures explained below for each of the database area.

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1. Enter the programming mode.
2. Press FLASH button.
3. Dial the 2 digits initialization code.

INITIALIZE SYS PARAM
PRESS HOLD

4. Press HOLD button.

Initialization Code

- 60: System parameters
- 61: CO lines
- 62: Station parameters
- 63: Exception tables
- 64: System speed numbers
- 65: All data

FAX CO, STATION ASSIGNMENT (FLASH 76)

This field allows to assign CO line and station for FAX transfer feature. When both a CO line and a station are assigned for FAX transfer, incoming thru CO line is answered by system and the call is checked from FAX machine or not by detecting FAX calling tone. If the incoming CO line is from FAX machine, this call is transferred to the FAX machine connected to SLT port.

Parameters:

Determines the CO line for receiving FAX signal and the station for FAX machine.

Range: CO range : 01-03, Station range : 101-107

Default: None

Procedure:

1. Press FLASH button and dial 76.
2. On a display phone, you will see this display:

FAX CO, STA ASSGN
CO:## STA:###

3. To program FAX CO line, press Button 1.
Enter CO line number(01-03) as 2 digits and press HOLD button.
To delete an entry, enter pound(# #) signs twice.
4. To program station number, press Button 2.
Enter station number(101-107) as 3 digits and press HOLD button.
To delete an entry, enter pound(# # #) signs three times.

FAX TONE DETECT TIMER (FLASH 77)

The system answers the incoming CO line assigned to FAX transfer and checks the call comes from FAX by detecting FAX calling tone. This field determines the duration to detect FAX calling tone. If FAX calling tone is not detected during this time, the CO line calls stations assigned to ring. When FAX calling tone is detected, the system gives ring to the station assigned for FAX.

Range: 05-30 sec

Default: 05 sec

Procedure:

1. Press FLASH button and dial 77.
2. On a display phone, you will see this display:

FAX TONE DTCT TMR 05-30 05

3. Enter the time as 2 digits and press HOLD button.

FAX CO CALL TIMER (FLASH 78)

The incoming line thru FAX CO gives ring to the FAX station or all the station assigned to ring on this line according to FAX calling tone detection. If this call is not answered till this timer expires, the system drops this CO line.

Range: 1-3 min.

Default: 1 min.

Procedure:

1. Press FLASH button and dial 78.
2. On a display phone, you will see this display:

FAX CO CALL TMR 1-3 1

3. Enter the time as 1 digit and press HOLD button.