

SMG-400

User Guide

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Chapter 1

Overview

Chapter 1 Overview

This chapter describes the various functions of the SMG-400 system, its component parts, and system specifications to provide you with a good understanding of the system.

Introduction to SMG-400

SMG-400 VoIP (Voice over Internet Protocol) gateway system is a high performance H.323 compliant gateway optimized for voice communication over the Internet.

SMG-400 enables transmission of both voice and FAX data from a PSTN (Public Switched Telephone Network) through real-time data compression and protocol conversion. Therefore, it enables seamless integration of voice and data networks, simple network architecture design and considerable cost reduction in network infrastructure construction. Also, it can provide long-distance and international telephone services at local telephone rates for users in an Internet or Intranet environment.

Since SMG-400 is designed based on hardware and software modules, it is easy to install. Installation of trunk, subscriber line or new software for additional features is possible even during operation if necessary.

SMG-400 provides local/remote CLI (Command Line Interface). To use SMG-400 after hardware installing, only a basic information configuration for system operation using CLI commands is needed, while the remaining operation environment configuration is automatically configured using default values. Providing conversational type CLI, SMG-400 enables easier system configuration even if a user is not accustomed to the Gateway system.

SMG-400 Features

The SMG-400 system has the following major features.

PSTN Interfaces

The SMG-400 system provides the following PSTN interfaces for interoperability with PBX (Private Branch eXchange) or KTS (Key Telephone System).

- LOOP Analog Trunk Interface
- SLC Analog Interface

VoIP Interfaces

VoIP is a technology that enables simultaneous transmission of both voice and data over the Internet, and enables Internet telephony service. The SMG-400 system offers the following VoIP interfaces.

- H.323-V4 VoIP Interface
- Gatekeeper Interface (RAS)
- Real Time Internet Fax Support (FoIP)

Trunk Routing Functions

The SMG-400 system offers the following trunk functions including trunk routing, trunk tandem, and access code control.

- Trunk Routing
 - LCR (Lease Cost Routing) code and route control
 - Dynamic rerouting depending on the traffic load of PSTN and Internet Protocol state
 - Routing Table
- Trunk Tandem
 - Various PSTN and VoIP trunks connection
 - Interoperability among analog trunk, digital station, and VoIP network
- Access Code Control
 - IP address translation based on access code and prefix number

Call Processing Functions

The SMG-400 system provides the following call processing functions.

- DTMF Signaling
- DTMF Relay between PSTN and VoIP
- CDR (Call Detail Record) Generation
- RTP Traffic Channel Status Monitoring Functions (Delay, Loss, and Link Down)

System Management Functions

The SMG-400 system provides GUI interface, and a Standard Network Management Protocol (SNMP) for easier management. The SMG-400 also provides the following system management functions.

- Web-based Management
- Program change by TFTP Loading
- DHCP Client (IP address allocation by DHCP server)
- FTP, Telnet Interface
- CLI (Command Line Interface)

PSTN Routing

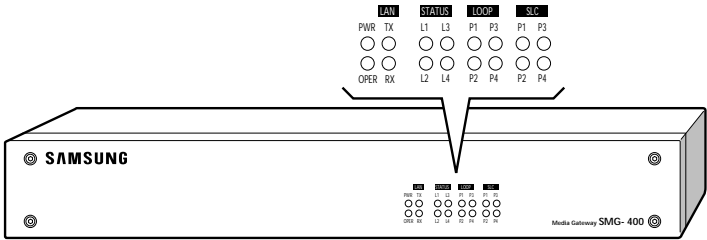
The SMG-400 system provides a function called PSTN rerouting (or PSTN Detour). PSTN rerouting is used to reroute a call set by a VOIP to PSTN network bypassing an IP network in the case of having poor QoS (Quality Of Service), or detecting IP network being busy or disconnected or in error.

Components of SMG-400

This section explains each component and function of the SMG-400 system.

Front View of SMG-400

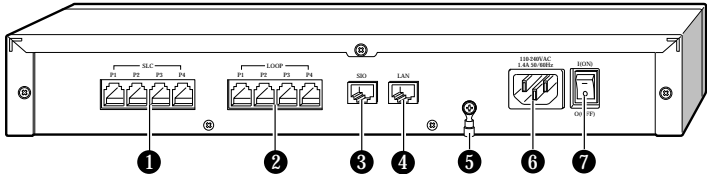
There are LED indicators to display the activity status of the system on the front of the SMG-400.



LED		Color	Description
LAN	PWR	Green	LED is on when power is normally supplied to system.
	OPER		LED blinks during system software operation.
	Tx		LED is on while sending data through LAN port.
	Rx		LED is on while receiving data through LAN port.
STATUS	L1		LED is on while initializing the system.
	L2		LED blinks when VoIP software operates normally.
	L3		LED is on when the system is normally operated.
	L4		LED blinks during the VoIP channel in use.
LOOP	P1		LED is on during each LOOP port in use.
	P2		
	P3		
	P4		
SLC	P1		LED is on during each SLC port in use.
	P2		
	P3		
	P4		

Rear View of SMG-400

There are LOOP ports, SLC ports, SIO port, LAN port, power-in terminal, and power switch on the rear of the SMG-400.



No	Port	Description
❶	SLC	This is connected to a Private Branch Exchange (PBX), the loop start trunk port of a Key Telephone System (KTS) or to a general analog telephone through each port.
❷	LOOP	This is connected to SLC port of a PBX or a KTS.
❸	SIO	This is for system setup and testing using CLI (Command Line Interface). This is usually connected to the serial port of a PC.
❹	LAN	This is for 10/100Mbps Ethernet LAN connection. This is connected to network equipment such as a hub or switch.
❺	Ground Connector	Provides an external ground connection to protect user and system against lightning, static electric charges, spikes, sags, and surges.
❻	Power Connector	Provides power supply cable connection. It requires AC 110-240V main power.
❼	Power Switch	A switch to turn the system power on/off.

SMG-400 System Specifications

This section describes hardware and software specifications of the SMG-400 system.

Hardware Specifications

Feature		Description
System	Processor	MPC860 50Mhz
	Memory	<ul style="list-style-type: none">• Boot Flash ROM : 512KB• Flash Memory : 8MB• SDRAM : 16MB
	VoIP DSP	Audio Codes AC4804
	Network	10Base-T/100 Base-TX
	Test Port	RJ-45 (SIO port)
	Power	<ul style="list-style-type: none">• Input : AC 110-240V• Output : -48V(25W), +5V(10W), +3.3V(15W)
Line Capacity	Trunk	<ul style="list-style-type: none">• Loop : 4 Channels
	Station	<ul style="list-style-type: none">• SLC : 4 Channels
	VoIP	<ul style="list-style-type: none">• 4 Channels (The maximum fax channel is 1.)

Software Specifications

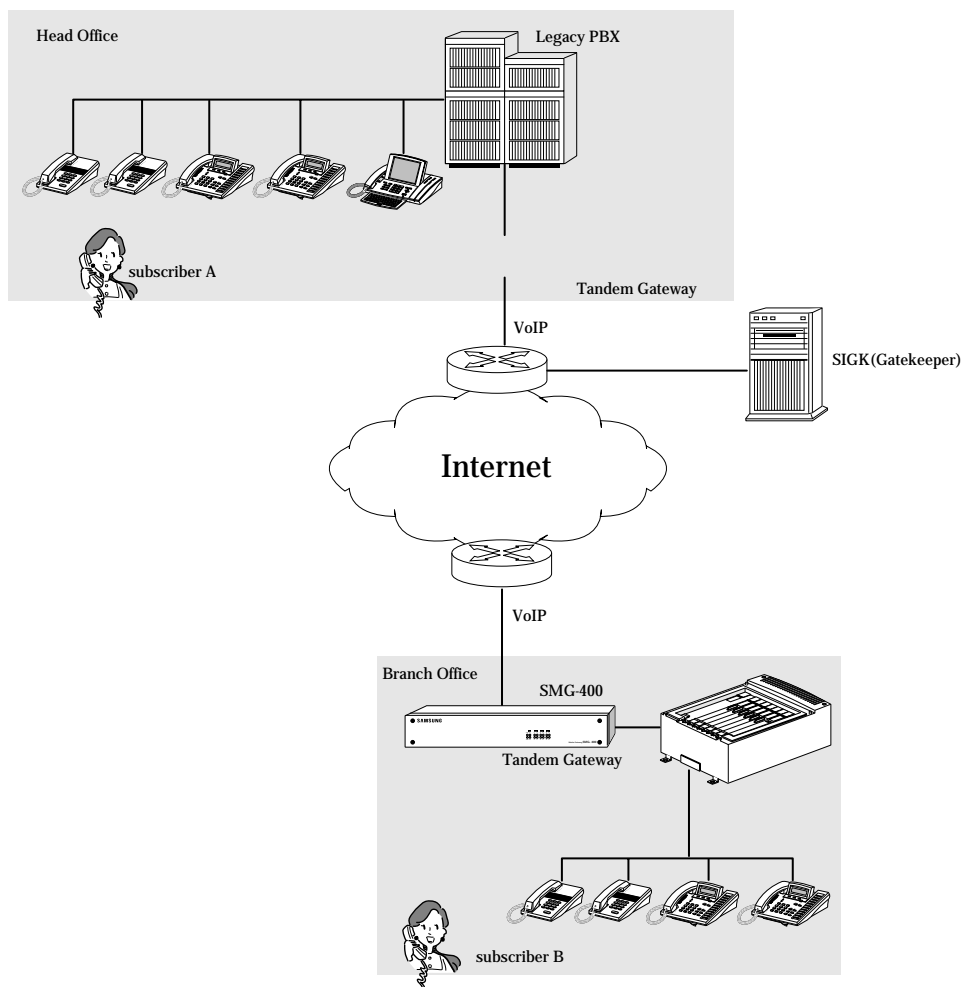
Feature	Description
OS	VxWorks
VoIP Protocol	ITU-T H.323-V4
VoIP Codec	G.723.1(5.3k/6.3k), G.729, G.729A, G.711
Audio Function	<ul style="list-style-type: none"> • Echo Cancellation (G.165) • Silence Suppression (VAD, CNG) • DTMF Detection/Generation (In/Outband) • Selectable A/ μ law • Gain/Volume Control • Dynamic Jitter Control
VoIP Function	<ul style="list-style-type: none"> • H.323-V4 Interoperability (RADVision) • G3 Internet FAX Relay (FRF.11, T.38) • External Gatekeeper RAS Interface • Internal Gatekeeper Functions (Control Code Translate/Add/Delete) • Flexible Numbering Plan • Caller ID (G/W ID, IP, ANI, Assigned Caller ID) • QoS Functions (Delay/Loss/Link Down Check, RTP Multiframe, IP TOS)
System Management	<ul style="list-style-type: none"> • DHCP Client Functions to Enable Automatic IP Address Allocation • Remote Program Upgrade • FTP, TFTP, Telnet Network Interface • Easy Install (Default Configuration) • Diagnostic and Alarm Report • Local/Network CLI Interface • System Maintenance Through EMS Manager <ul style="list-style-type: none"> - GUI, SNMP, Web Management - DB List and Change

VoIP Network Configuration Using SMG-400

A VoIP network can be constructed using SMG-400, PBX, and KTS as the following figure shows.

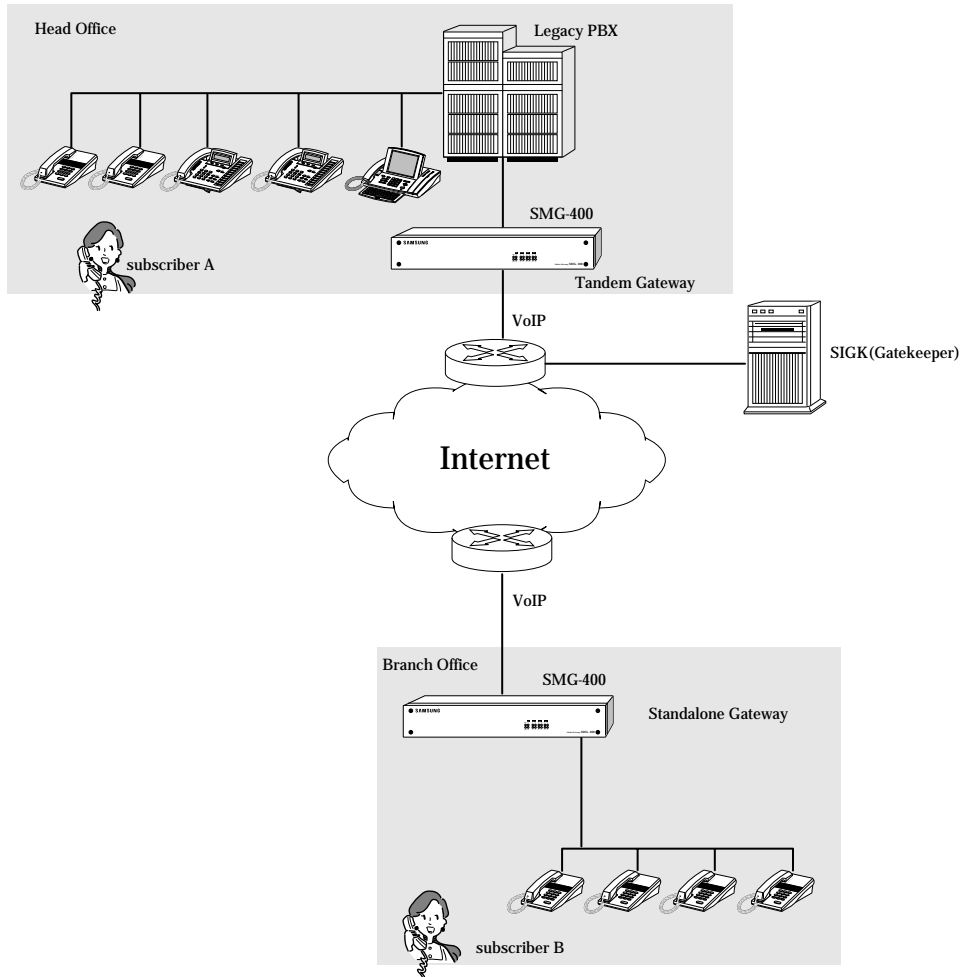
Tandem Gateway Mode

The SMG-400 can be run in the tandem gateway mode. It connects the SMG-400 to PBX or KTS, and uses the SMG-400 as a gateway without internal subscribers.



Standalone Gateway Mode

The SMG-400 can be run in the standalone gateway mode. It connects a telephone to a SLC port on the SMG-400 and uses the system as a VoIP Gateway with internal subscribers.



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Chapter 2

System Boards

Chapter 2 System Boards

This Chapter describes the types of boards available for the SMG-400, and the functions and features of each board.

Types of Boards

There are two types of board available for the SMG-400: the MCU board and LOOP board

① MCU Board

MCU (Main Control Unit) boards must be installed in the SMG-400. MCU board controls the entire operation of the system and VoIP Gateway function and provides SLC subscriber ports. MCU boards include the following three parts.

- MGC (Media Gateway Control) Part
- VOIP (Voice over Internet Protocol) Part
- SLC (Subscriber Line Circuit) Part

② LOOP Board

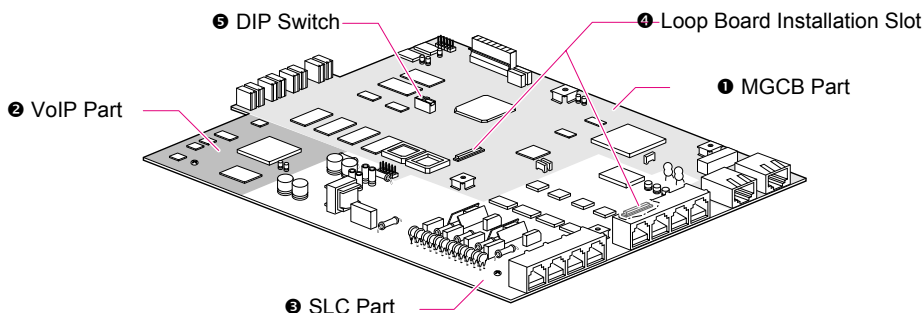
LOOP (Loop Start Trunk) board may be installed depending on the user's need. LOOP board provides 4 loop start ports.

MCU Board

This section describes the structure of MCU board and features of each part.

Structure of Board

The MCU board is composed of MGCB part, VoIP part, and SLC part. The board has LOOP board installation slot and one DIP switch.



① MGCB Part

This part controls the operation of the entire SMG-400 system. Refer to the description of the **MGCP Part** for more detailed information.

② VoIP Part

This part converts voice data used in a PSTN into data used in an IP network. Refer to the description of the **VoIP Part** for more detailed information.

③ SLC Part

This part provides four analog telephone ports. Refer to the description of the **SLC Part** for more detailed information.

④ LOOP Board Installation Slot

An optional board, a LOOP board can be installed in this slot.

⑥ DIP Switch

Switch	Default	Description
S1	OFF	Set to ON state during an offline test.

MGCB Part

MGCB (Media Gateway Control Board) part controls the entire operation of the SMG-400 system.

Three memories are installed in the MGCB part.

- 512KB Flash Memory : Booting program is stored.
- 8MB Flash Memory : Database used by the SMG-400 system is saved in.
- 16MB SDRAM : The place where the system software is run.

The features and functions of the MGCB part are as follows.

- Operational control of installed boards in the system
- Detection and generation of 16 DTMF
- Generation of 7 dial tones
- Offering 256x256 channel time slot
- Offering a 10/100Mbps LAN port, and RS-232C SIO port

VoIP Part

The VoIP part performs conversion of the voice data of PSTN into packet data that can be transmitted over IP networks. In other words, it provides H.323 V4-compliant VoIP Gateway functions to enable voice communication over the Internet. The VoIP part provides 4 Internet telephone channels.

The features and functions of the VOIP part are as follows.

- G.729A, G.729, G.723.1(5.3k/6.3k), G.711 audio codec support
- Internet FAX support
- FAX/data auto-detection
- G.165 compliance, 16ms echo canceler
- DTMF detection and generation function
- U-Law/A-Law support
- Input/Output Gain Control
- VAD/CNG support

SLC Part

The SLC (Subscriber Line Circuit) part provides four analog telephone ports and allows connection to a Private Branch Exchange (PBX), the loop start trunk port of a Key Telephone System (KTS) or a connection to a general analog telephone through each port.

The features and functions of the SLC part are as follows.

- It provides a current of -48VDC for the connected subscriber telephone.
- It provides the Ring signal that indicates the subscriber telephone is ringing.
- It reads the hook ON/OFF status, dial pulse, Ring trip, call answer status of the subscriber telephone.
- It protects the subscriber circuit and system from lightening or high voltages, AC voltage crossing etc. that are generated from the subscriber line.
- It converts the analog signal into a digital signal with the PCM method to send them to the control module. It also converts the digital signal with the PCM method into an analog signal.
- It provides hybrid function to separate the sending path and receiving path from the analog voice signal.

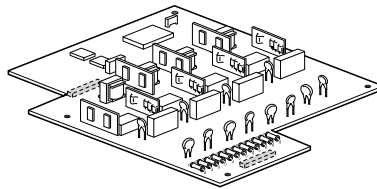
LOOP Board

The LOOP (Loop Start Trunk) board is an option board providing the local extension trunk interface. It provides 4 trunk ports and each port is connected to SLC port of a Private Branch eXchange (PBX), or the Key Telephone System (KTS).

The features and functions of the LOOP board are as follows.

- It provides the signal detection function.
- Impedance matching circuits are built in.
- It reads the status such as the HOS and Ring Detection, Tone Detection, and Polarity Reverse Signal etc.
- It converts the analog signal into a digital signal with the PCM method to send them to the control module. It also converts the digital signal with the PCM method into an analog signal.
- It protects the system from lightening or high voltages, AC voltage crossing etc.

Structure of Board



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Chapter 3

Installing the System

Chapter 3 Installing the System

This chapter provides SMG-400 system installation procedures. First, step by step SMG-400 system installation procedures are presented, and then environment configuration, board installation, and power cable connecting procedures are explained.

Procedures on Installing the System

Following steps must be taken to install the SMG-400 system.

1. Prepare the place to set up the system.
2. Move the packed system product to the installation place and unpack.
3. Connect the grounding line.
4. Install the LOOP board on the MCU board. (Option)
5. Connect cables.
6. Turn on the system after running a prior checkup.

Here are the detailed explanations of steps one to six.

Condition of the Installation Location

SMG-400 system can be installed in a rack or on a table. To operate the SMG-400 system securely, you have to find the location that satisfies the conditions described in this chapter before setting up the system.



..... Please do not place the unit on a table with a table cloth, and do not cover the ventilation slots.
.....

Space Condition

You have to select the location that satisfies the following conditions such as safety condition and temperature/humidity condition.



..... Installation is to be performed by qualified service personnel only.

To be installed in Restricted Access Areas.
.....

Safety Condition

- Remove the objects that are sensitive to fires such as explosive gas and flammable objects in the exchange room.
- Before setting up the system, check that every condition is satisfied such as the power wiring, grounding, voltage, frequency, and etc.
- If the power switch or circuit breaker is open, be sure to remove the power supply line's blocking route.
- Place a booklet that provides emergency measures, grate, artificial respiration and heart resuscitation information in the exchange room to prepare for emergency cases such as electric shock.

Temperature/Humidity Condition

- Maintain the consistent temperature and humidity.
 - Temperature : 0°C ~ 45°C
 - Humidity : 10% – 90%
- Should be in a cool place not exposed to direct sunlight.
- During or after setting up the system, equip a fan in the room in order to maintain the system by preventing dust from going into.

Grounding Condition

You have to consider the followings when performing grounding operation.

- The connection hole, connected with the SMG-400 grounding conductor, should be connected to the earth grounding through a fine earth-grounding medium.
- Overall, the power circulation status of the SMG-400 system exposed electric conduction with the metal face and the rectifier power plug's grounding conductor should be exceedingly fine.
- A single contact point must be made to connect if the grounding of all of the exterior supplementary equipment are connected to the system's grounding.
- The SMG-400 grounding conductor should never be connected with the pipe for the interior power wire.
- Power and ground standard must follow the national standard, and the installation office should check whether the standard is kept.
- Power and grounding standards should suit the national standard where this are certified by an installation organization.

Input Power Condition

The input power of the SMG-400 system needs to be supplied with the AC power.

You should use the consent that supplies normal AC only for the SMG-400 system. This consent should not be used parallel with other devices. This consent should be located at a safe place to prevent cutting off the power by mistake.

You should choose the power outlet suitable for the SMG-400 capacity.

The standard of the SMG-400 system is

- Input : AC 110-240V
- Output : -48V(25W), +5V(10W), +3.3V(15W)

Line Condition

You need to be careful about the following points when you install the line.

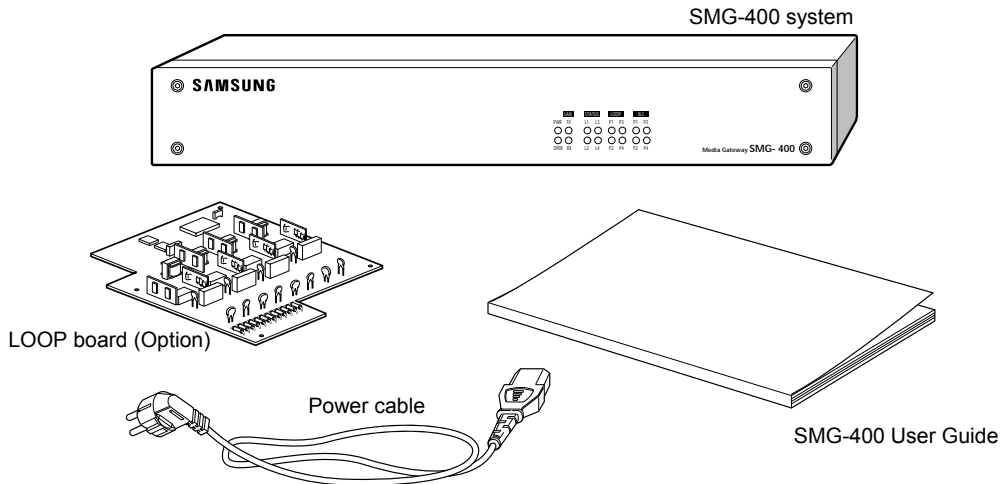
- When wiring at the place where there is a high humidity, make sure to remove all the humid before proceeding on the work.
- Take care of the cable to prevent it from being deform or damage.
- Make the line's curvature radius to be 6 times larger than the cable's circumference where there have no repeating curved points.
- You must take extreme precaution in the cable's insulation overlap cases where the copper wire are exposed and get entangled.
- The maximum allowable line's loop resister is not more than 1.8KOhm. The line's leak resistor must be over 20KOhm, the earth's leak resistor must be over 20KOhm. (This is excluded in special cases)
- Do not place the line near a high voltage power line.

Unpacking the System

After preparing the place to install the SMG-400 system and finishing all the preparation work by meeting all the conditions, move the packed SMG-400 system to the installation location.

Unpack the system and check if all the items are in the shipping carton. Basically, there should be the following items in the package.

- SMG-400 system that are separately packed
- LOOP board that are separately packed (Option)
- Power cable
- SMG-400 User Guide



And, the remaining items can be different according to the orders. Compare closely the order form and the items that you have. Please contact the distributor where you had bought the SMG-400 system if there is any missing item or different item from the order form.



When you use a sharp tool to open the package, the item may be damaged.

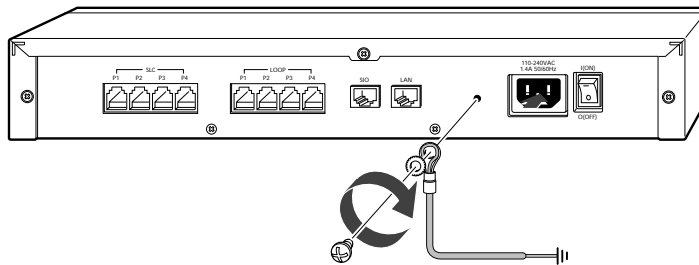


Before open the top-cover, please make sure that the power cable is detached from power line.

Connecting Ground Cable

The protective earth connection to the SMG-400 is provided via three core mains lead. The earth wire in the mains cord (Green/Yellow) is connected in the factory to the earth terminal within the system. The Earth wire is connected directly to the ground connection on the rear panel of the system.

The protective earth (PE) is used for surge protection and for the electrical safety of the system. The system must be plugged into a GPO socket that is correctly earthed. The PE provided all system earthing requirements, a TRC is not required and should not be connected.



Before connecting ground cable, ensure that AC power supply cable is disconnected. With power cable connected, connecting ground cable may cause damage or possibly death.

Installing LOOP Board

This section describes a method of installing a LOOP board in the MCU board of the SMG-400. The LOOP board is necessary when the SMG-400 is used for Tandem Gateway operation. The LOOP board is connected to a PBX or KTS in the form of FXO/FXS.



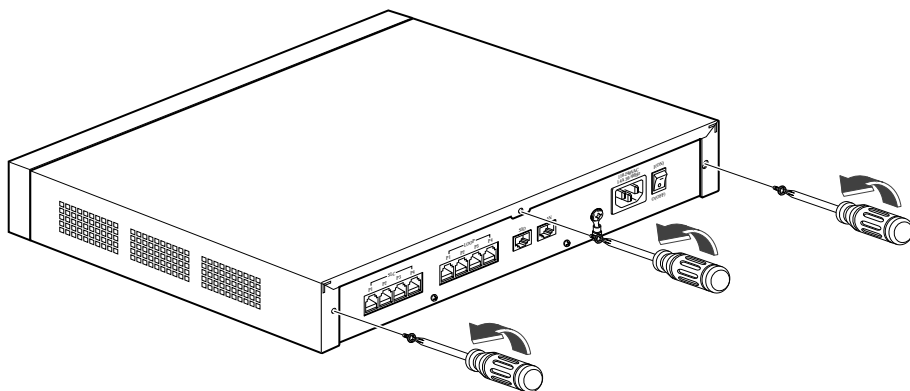
Before installing the LOOP board, please make sure that the main cable is detached from power line and that all at telecommuni-cation cables are deltached form telecommunication ports.

When installing the LOOP board on the MCU board, keep the followings in mind.

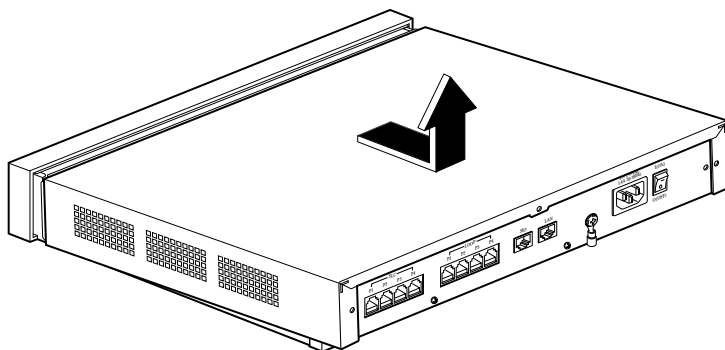
- The high voltage static-electric charge is easily accumulated in a human body. Deal with the board after removing all the accumulated electric charge by touching any equipment's device or the grounded part.
- Don't touch the Edge connector of the board and the jumper pin, if possible.
- You have to ground the surface of a workstation, on which the board is place, after wrapping it with conductor. And you also can put the Ground clip connected to the anti-static carrying bag to use the station.
- When you have to touch the board, it is recommended to put an anti-static strap on the wrist, if possible.

After understanding all these cautions, install the LOOP board on the MCU board in the following way.

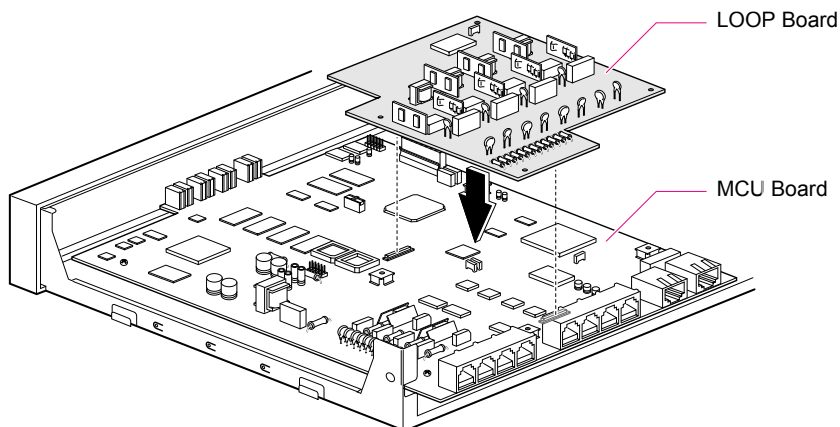
1. Loosen the three screws at both ends and the center of the back panel of the SMG-400.



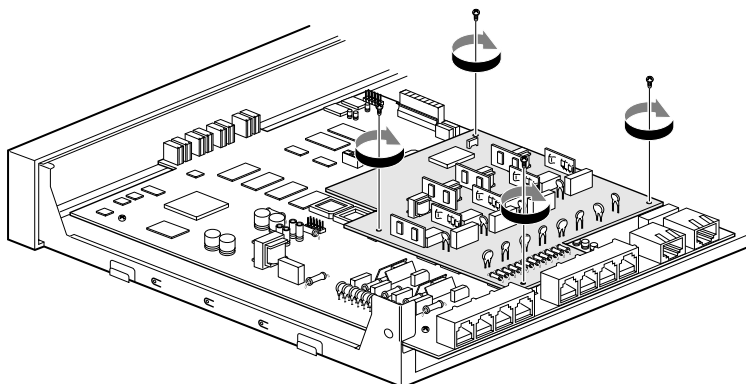
2. Pull the cover of the SMG-400 backward a little and lift it up to remove it.



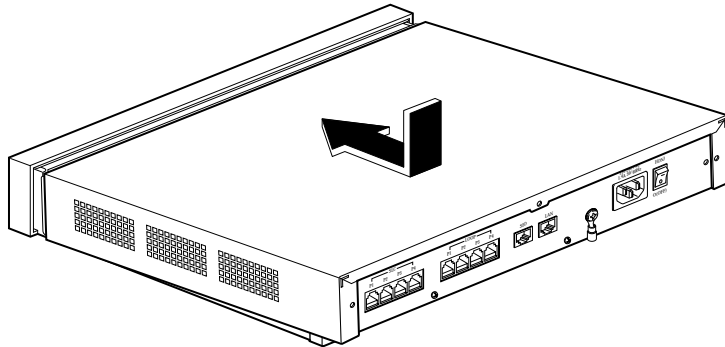
3. Match the slots of the LOOP board with the slots of the MCU board and press down on the loop board with your hands.



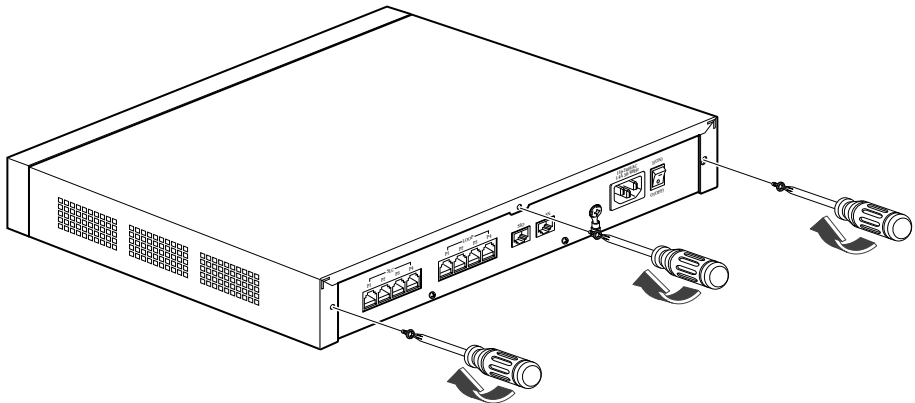
4. Tighten screws into the four holes at the edge of the LOOP board.



5. Fit the grooves inside the cover of the SMG-400 to the body of the SMG-400 and push the cover towards the front side of the system.



6. Tighten the three screws that were loosened in step 1 to re-seal the cover.



Installing on the Wall

The SMG-400 system can be put on a table or hung on a concrete or wooden wall. This section describes a method for installing the SMG-400 system on a concrete or wooden wall. When installing the SMG-400 system on a table, skip this section and go to the next step entitled “**Connecting Cables**”.

Installing on a Concrete Wall

Required Tools

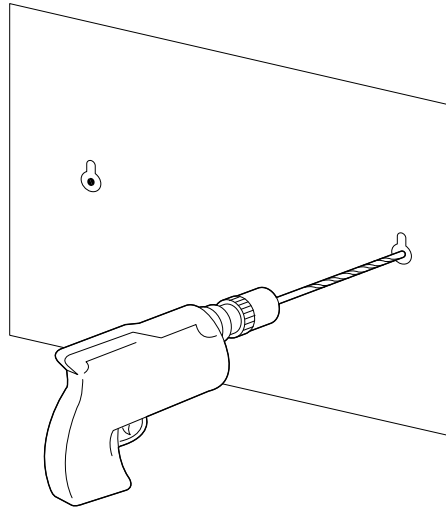
The following tools are necessary to install the SMG-400 system on a concrete wall. Prepare these tools in advance.

- Electric drill, Hammer
- Cross-shaped driver (6.5mm)
- Two plastic anchors, Two screws with cross-recessed heads

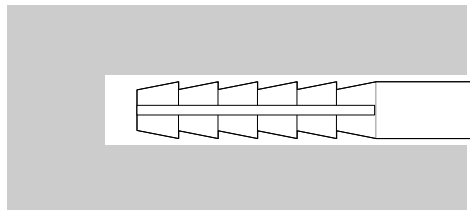
Installing

1. Tear out the <Screw Position Indicating Diagram> attached to this guidebook.
2. Attach the <Screw Position Indicating Diagram> to the wall on which the SMG-400 system will be installed.

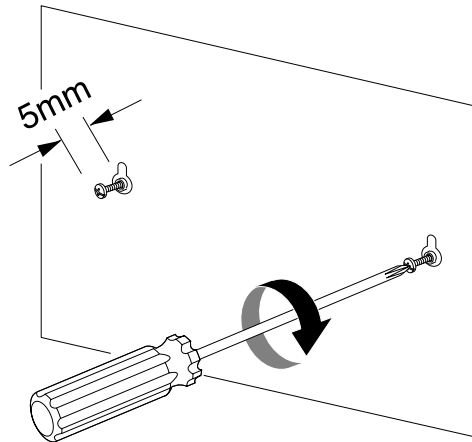
3. Bore holes in the wall at the screw positions indicated on the <Screw Position Indicating Diagram> using an electric drill. The depth of each hole should be at least 35mm, and the diameter of each hole should be about 5.5mm, so that the plastic anchors can be easily inserted into the holes.



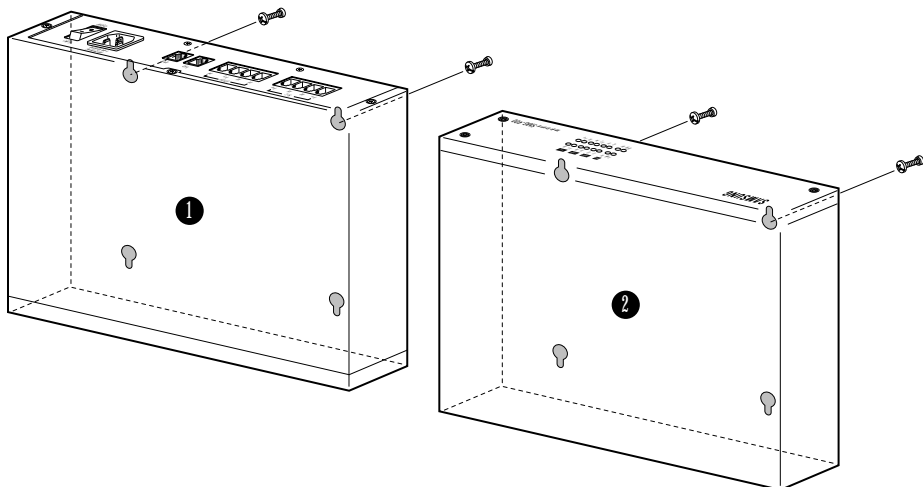
4. After boring the holes, detach the <Screw Position Indicating Diagram>.
5. Drive the plastic anchors into the bored holes using a hammer.



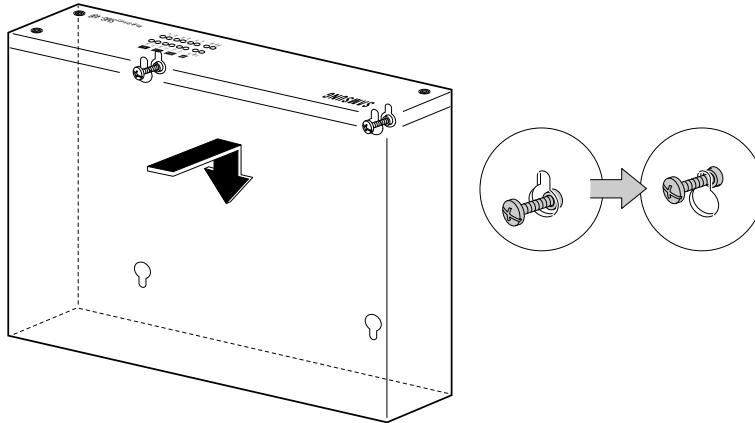
6. Insert a screw into each of the plastic anchors and tighten the screws using a cross-shaped driver. Do not tighten the screw until its head contacts the wall. Let the head of the screw be separated from the wall by 5 mm.



7. You can see 4 holes for screws in the bottom of the SMG-400 system. Among these 4 holes, select two holes into which the screws on the wall are inserted according to a direction in which the SMG-400 system is installed.
- When installing the system such that ports on the back of the system face upward, hang the system on the wall such that the two screws on the wall are inserted into the two holes in the back part of the bottom of the system.
 - When installing the system such that LEDs on the front of the system face upward, hang the system on the wall such that the two screws on the wall are inserted into two holes in the front part of the bottom of the system.



8. Hold the SMG-400 system with both hands, match the two holes with the two screws on the concrete wall, and lower the system.



Installing on a Wooden Wall

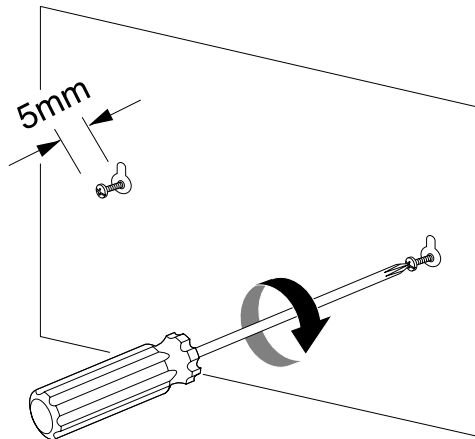
Required Tools

The following tools are necessary to install the SMG-400 system on a wooden wall. Prepare these tools in advance.

- Cross-shaped driver (6.5mm)
- Two screws with cross-recessed heads

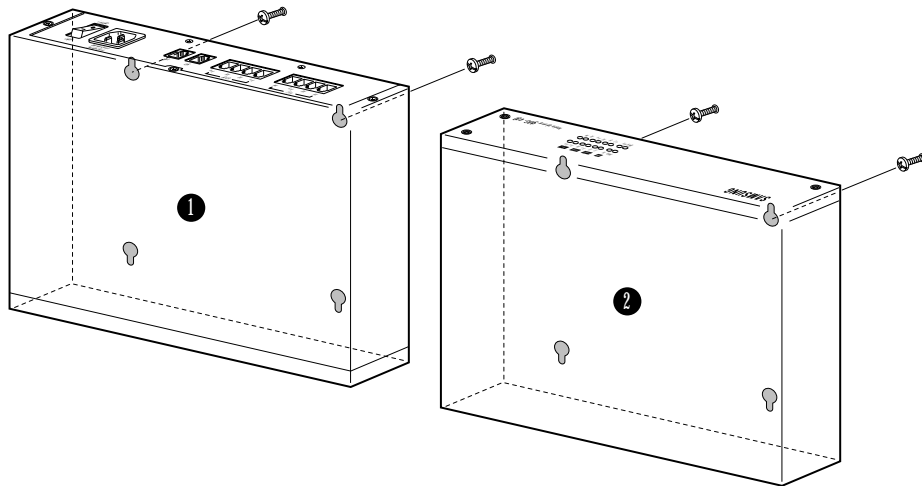
Installing

1. Tear out the <Screw Position Indicating Diagram> attached to this guidebook.
2. Attach the <Screw Position Indicating Diagram> to the wall on which the SMG-400 system will be installed.
3. Drive the screws into the wall at the screw positions indicated on the <Screw Position Indicating Diagram> using the cross-shaped driver. Here, do not tighten the screw until its head contacts the wall. Let the head of the screw be separated from the wall by 5 mm.



4. After driving the two screws into the wooden wall, detach the <Screw Position Indicating Diagram>.

5. You can see 4 holes for screws in the bottom of the SMG-400 system. Among these 4 holes, select two holes into which the screws on the wall are inserted according to a direction in which the SMG-400 system is installed.
- When installing the system such that ports on the back of the system face upward, hang the system on the wall such that the two screws on the wall are inserted into the two holes in the back part of the bottom of the system.
 - When installing the system such that LEDs on the front of the system face upward, hang the system on the wall such that the two screws on the wall are inserted into two holes in the front part of the bottom of the system.



6. Hold the SMG-400 system with both hands, match the two holes with the two screws on the wooden wall, and lower the system.

Connecting Cables

Connect cables to the ports on the rear side of the system to construct the VoIP network.



In this section, the Pin Numbers of the PBX or KTS port are displayed according to the Samsung PABX INFOREX. For the case of connecting to other PBX or KTS, connect cables referring to the Pin Name.

1. To connect the SMG-400 and PBX or KTS with general trunk, connect one end of a RJ-11 cable to the SLC port of the SMG-400, and the other end to the LOOP port of the PBX or KTS.

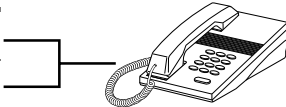
SLC port of SMG-400		LOOP port of PBX or KTS	
Pin	Name	Name	Pin
3	Tip	Tip 0	1
4	Ring	Ring 0	26

2. To connect the SMG-400 and PBX or KTS with SLC line, connect one end of a RJ-11 cable to the LOOP port of the SMG-400, and the other end to the SLC port of the PBX or KTS.

LOOP port of SMG-400		SLC port of PBX or KTS	
Pin	Name	Name	Pin
3	Tip	Tip 0	1
4	Ring	Ring 0	26

3. To connect the SMG-400 and analog terminal such as analog telephone or FAX machine, connect one end of RJ-11 cable to SLC port of the SMG-400, and the other end to the port of analog terminal.

SLC port of SMG-400	
Pin	Name
3	Tip
4	Ring



4. Connect the SMG-400 to the network of the site. Connect one end of a RJ-45 cable (Twisted pair category-5 straight-through) to the LAN port of the SMG-400, and the other end of the cable to the Ethernet port of the hub or switch.

LAN port of SMG-400		Ethernet port of switch	
Pin	Name	Name	Pin
1	Tx+	Rx+	1
2	Tx-	Rx-	2
3	Rx+	Tx+	3
6	Rx-	Tx-	6

5. Connect console terminal. Connect one end of a serial cable to the SIO port of the SMG-400, and the other end of the cable to the serial port of a PC.

SIO port of SMG-400		9 Pin Serial port of PC	
Pin	Name	Name	Pin
3	Tx	Rx	2
6	Rx	Tx	3
4, 5	GND	GND	5

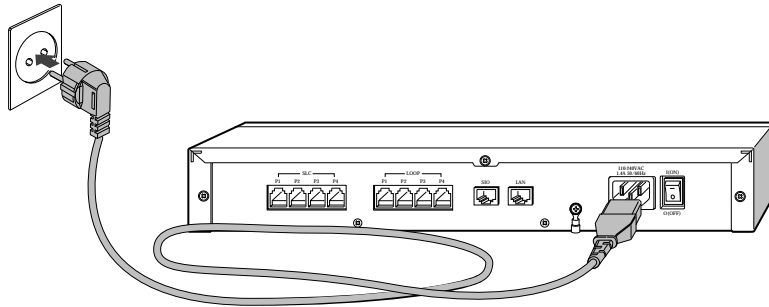
Connecting Power Cable

Before connecting the power cable to the SMG-400, you have to be aware of the following guidelines.

- Do not connect other equipment to the AC outlet connected to the system to avoid malfunction or fire of the system due to electrical noise and low voltage.
- The AC power source to supply power must be stable and uninterruptible, since power outages during the night can cause malfunctioning of the system.

After checking the above guidelines, connect the power cable to the system as follows.

1. There is a power connector on the rear side of the SMG-400.
2. Connect grounded outlet and the power connector on the rear side of the system with the power cable.



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Chapter 4

Configuring the System

Chapter 4 Configuring the System

This chapter describes procedures for the configuration of the SMG-400 operating environment with console terminal as well as the login procedure in console terminal.

Setting up the Terminal

Terminal setup methods differ according to terminal types and operating system. In this manual, we will use an example of how to use the hyper terminal on a PC running with a Windows 98 operation system.

Terminal Features

The user can connect an ASCII terminal such as a VT100 or VT220 or a PC installed with a terminal emulation program.

- Emulation → VT100/ANSI Compatible
- Bits per second → 38400
- Data bit → 8
- Parity → None
- Stop bit → 1
- Flow control → Xon/Xoff

Setting up the Terminal

To set up a terminal, follow these steps.

1. Turn on the PC and boot with Windows98.
2. Click [Start] at the bottom and select Programs and select **Program → Accessories → Communication → HyperTerminal**.
3. When the <HyperTerminal> window appears, double-click the **Hyperterm** icon.
4. When the <Connection Description> window appears, type the name of a hyper terminal in the **Name** box and select an icon displayed in the Icon box. Then, click [OK].

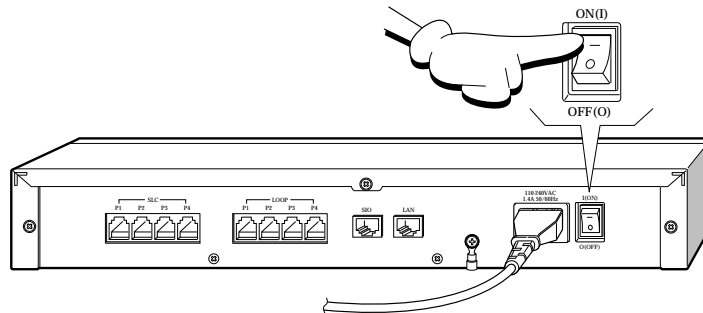
5. Then, the user will have the following <Phone Number> window appears, where the user can define a location to connect the hyper terminal. Since the terminal is directly connected to the SMG-400 through a COM port, click the **Connect using** box and select a corresponding COM port.
6. Next, the <COMx Properties> window appears, where the user can configure various options for the selected COM port. Configure each item as shown in the following and click [OK].
7. Next, a new hyper terminal where the user can set up the SMG-400 by using console commands will pop up.

Starting SMG-400

This section describes the login procedure using CLI, after turning on SMG-400.

Turning on

While the hyper terminal window is on the screen, turn on the SMG-400 with the power button in the rear of the system.



After the system turn on, system initialization proceeds approximately 60 seconds. The system POST (Power On Self Test) will be executed and the factory-preset configuration data will be loaded and shown on the terminal.

If booting of the SMG-400 is successfully completed, then

- L3 LED and PWR LED are on in green.
- L2 LED and OPER LED blink in green.

-
5. Press [Enter] to display the SMG-400 login prompt.

```
SMG400: 165.213.81.230>
```

Configuring the Operating Environment

To operate the SMG-400, only the fundamental information configuration is required, and the detailed operation environment configuration is configured automatically by using default values.

The following 3 configurations are necessary for the operation of the SMG-400. Other than these configurations, additional operation environment configurations are not normally used.

- TCP/IP Configuration : IP address, subnet mask, default gateway
- System Operation Mode : Gateway operation mode, PCM type
- VoIP Configuration : VoIP table/gatekeeper configuration

This section describes how to configure the operating environment after turning on and logging in the SMG-400.



- Messages displayed in the console terminal emulator in this section may differ according to the version of system software, and might be different from the actual messages you can see on the console terminal.
 - During operation environment configuration, pressing [Enter] without input value in conversational mode is the same as configuration with the default value at the current step.
-

Configuring the TCP/IP

To use the TCP/IP protocol for Internet connection, you must configure network information such as IP address, subnet mask, and default gateway.

SMG-400 provides the following two methods for TCP/IP configuration.

→ Automatic Configuration

Configures TCP/IP information automatically using a DHCP (Dynamic Host Configuration Protocol) server.

→ Manual Configuration

Specify the static IP address, subnet mask and default gateway of the SMG-400.

Before configuring TCP/IP, determine whether automatically configure TCP/IP information or not.

- Automatic configuration requires DHCP service provided by a DHCP server.
- In case automatic configuration is not available, you have to know the following information for manual configuration of TCP/IP settings.
 - IP address and subnet mask for the SMG-400
 - IP address of default gateway

Option → Automatic Configuration

To set up TCP/IP information automatically using a DHCP server, configure the SMG-400 as a DHCP client using the following directions.

1. At the SMG400 prompt, type 'sysmenu' and press [Enter].

```
SMG400:165.213.81.230> sysmenu
```

2. <System Configuration Menu> screen is displayed. Type '0' and press [Enter].

```

<<<< System Configuration Menu >>>>

      [0] DHCP Client Setting
      [1] Network Configuration
      [2] Login ID Configuration
      [3] System Upgrade
      [4] Display Package Information
      [5] Default DB Setting
      [6] Restart System
      [7] Exit

Select ? 0

```

3. <DHCP Client Setting> screen is displayed. Enter the values as following indications.

```

<<<< DHCP Client Setting >>>>

+-----+-----+-----+
| No |           I tems           |           Value           |
+-----+-----+-----+
|  0  |      DHCP Client Set      |           OFF             |
|  1  |           Class ID        |                           |
+-----+-----+-----+
                                           [ - :Null, . :Exit ]

Configuration Item Number:0
*Input '0'.

Set DHCP Client? (y: ON, n: OFF): ON -> y
*Input 'y' to set the status of the DHCP Client On.

Good

Configuration Item Number: .
*Input '.' to exit the configuration.

#System Configuration has changed. Restart? (y: Now, n: Later) -> y
*Input 'y' to reboot the system.

```

4. Log in again on CLI after the system is restarted.

Option → Manual Configuration

Referring to the following directions, specify static IP address, subnet mask, and IP address of default gateway for the SMG-400.

1. At the SMG400 prompt, type 'sysmenu' and press [Enter].

```
SMG400:165.213.81.230> sysmenu
```

2. <System Configuration Menu> screen is displayed. Type '1' and press [Enter].

```
<<<< System Configuration Menu >>>>
```

```
[0] DHCP Client Setting
[1] Network Configuration
[2] Login ID Configuration
[3] System Upgrade
[4] Display Package Information
[5] Default DB Setting
[6] Restart System
[7] Exit
```

```
Select ? 1
```

3. <Network Configuration> screen is displayed. Type 'y' and press [Enter].

```

<<<< Network Configuration >>>>

+---+-----+-----+-----+
| No | Items           | Value           |
+---+-----+-----+-----+
| 0  | IP Address       | 165.213.81.230  |
| 1  | Gateway Address  | 165.213.81.1    |
| 2  | Netmask          | 255.255.255.0   |
| 3  | TOS (Type Of Service) | 0x0             |
| 4  | MAC Address (Read Only) | SAMSUNG (00-00-F0) -AB-CD-0D |
+---+-----+-----+-----+
[ . :Exit ]

Change Network Configuration? (y: Yes, n: No) -> y

```

4. The following message is displayed. Input the IP address of the SMG-400 and press [Enter].

```

IP Address (dot form): 165.213.81.230 -> 165.213.81.230

```

5. Input the IP address of default gateway and press [Enter].

```

Gateway Address (dot form): 165.213.81.1 -> 165.213.81.1

```

6. Input the subnet mask for the IP address of the SMG-400 and press [Enter].

```

Netmask (dot form): 255.255.255.0 -> 255.255.255.0

```


7. TOS (Type Of Service) value is used to determine the priority of voice packets transmitted from the SMG-400 on the network, which enables the network to provide better QOS (Quality Of Service). Input appropriate TOS value and press [Enter].

```

+-----+
| TOS(Type Of Service) Field |
+-----+
| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
+-----+
| Priority | D | T | R | 0 | 0 |
+-----+
D: if 0x10, Minimum Delay
T: if 0x08, Maximum Throughput
R: if 0x04, Maximum Reliability
Range:0x00 ~ 0xFF, Default:0x00

TOS Value(Default: 0x00): 0x00 -> 0

```



Consult with your network administrator about TOS configuration. To make TOS configuration effective, network routing equipment connected to the SMG-400 have to be configured to support TOS in advance. You can configure TOS values, if necessary, regardless of DHCP server.

8. Configured network parameters and message asking you whether to restart system is displayed as follows. After confirming the parameters type 'y' and press [Enter].

```

Good
>>> IP Address      = 165.213.81.230
>>> Gateway         = 165.213.81.1
>>> Subnet Mask      = 255.255.255.0
>>> TOS              = 0

# System Configuration has changed. Restart? (y: Now, n: Later) -> y

```

9. Log in again on CLI after the system is restarted.

Configuring the System Operation Mode

You have to configure gateway operation mode and PCM type, after TCP/IP configuration. This section describes procedures for system operation configuration.

Setting up Gateway Operation Mode

SMG-400 gateway operates in either of the following 2 operation modes.

- Tandem Gateway : SMG-400 communicates with PBX or KTS over PSTN trunk without subscriber phone connection.
- Standalone Gateway : SMG-400 communicates with analog telephone with PSTN trunk with subscriber phone connection through SLC port.

Configure gateway operation mode of SMG-400 referring to the following directions.

1. At the SMG400 prompt, type 'pstnmenu' and press [Enter].

```
SMG400:165.213.81.230> pstnmenu
```

2. <PSTN Configuration Menu> screen is displayed. Type '0' and press [Enter].

```
<<<< PSTN Configuration Menu >>>>

[0] Gateway Operation Mode
[1] PSTN Rerouting Insert Digit
[2] PCM Method
[3] Dial Method
[4] SLI Signal
[5] Trunk Signal
[6] Call Control Method
[7] Ring Cadence
[8] System Tone Cadence
[9] CO Tone Cadence
[10] Gain Control
[11] Diagnosis
[12] MMC Port Block/UnBlock
[13] Display Card Configuration
[14] Display Port Status
[15] Save & Exit
[16] Exit

Select ? 0
```

3. To configure the gateway operation mode of the SMG-400, type '0' and press [Enter].

<<<<< Gateway Operation Mode >>>>>						
No	Items			Value		Default
0	Gateway Operation Mode			Tandem Gateway		Tandem Gateway
1	PSTN Inbound LCR Option			Disable		Disable
<<<<< PSTN Inbound LCR Table >>>>>						
No	Inbound Prefix	Max Digit Count	No	Inbound Prefix	Max Digit Count	
2		0	18		0	
3		0	19		0	
4		0	20		0	
5		0	21		0	
6		0	22		0	
7		0	23		0	
8		0	24		0	
9		0	25		0	
10		0	26		0	
11		0	27		0	
12		0	28		0	
13		0	29		0	
14		0	30		0	
15		0	31		0	
16		0	32		0	
17		0	33		0	
[. :Exit, - :Null, Enter :Skip]						
Configuration Item Number: 0						

4. Type the number of desired gateway operation mode and press [Enter].

```
Gateway Operation Mode (0:Tandem Gateway, 1:Standalone): Standalone -> 0
```

5. To close current screen, type '.' and press [Enter].

```
Configuration Item Number: .
```

Return to the <PSTN Configuration Menu> screen.

Setting up PCM Type

PCM (Pulse Code Modulation) is the most frequently used analog-to-digital encoding (A/D conversion technique to convert analog voice into digital signal). SMG-400 provides 2 PCM types, which are A-law and U-law.

- A-law : A-law is an ITU-T (International Telecommunication Union) standard for analog-to-digital conversion in PCM. A-law is used in most of the telephone networks in Europe, and similar to U-law used in North America.
- μ -law : μ -law is an ITU-T (International Telecommunications Union) standard for analog-to-digital conversion in PCM. μ -law is used in most of the telephone networks in North America.

Setting up the PCM type of the SMG-400 using the following directions.

1. In the <PSTN Configuration Menu> screen, type '2' and press [Enter].

```
<<<< PSTN Configuration Menu >>>>

[0] Gateway Operation Mode
[1] PSTN Rerouting Insert Digit
[2] PCM Method
[3] Dial Method
[4] SLI Signal
[5] Trunk Signal
[6] Call Control Method
[7] Ring Cadence
[8] System Tone Cadence
[9] CO Tone Cadence
[10] Gain Control
[11] Diagnosis
[12] MMC Port Block/UnBlock
[13] Display Card Configuration
[14] Display Port Status
[15] Save & Exit
[16] Exit

Select ? 2
```

2. <PCM Method> screen is displayed. Type '0' and press [Enter].

```

<<<<< PCM Method >>>>>

+-----+-----+-----+-----+
| No | Items | Value | Default |
+-----+-----+-----+-----+
| 0 | PCM Type | A_LAW | A_LAW |
+-----+-----+-----+-----+

[ . :Exit ]

Configuration Item Number: 0

```

3. Input the number of desired PCM type and press [Enter].

```

Configuration Item Number: 0
PCM Type (0:U_LAW, 1:A_LAW): A_LAW -> 1

```

4. To close current screen, type '.' and press [Enter].

```

Configuration Item Number: .

```

5. After returning to the <PSTN Configuration Menu> screen, type '16' and press [Enter].

```

<<<<< PSTN Configuration Menu >>>>>

[0] Gateway Operation Mode
[1] PSTN Rerouting Insert Digit
[2] PCM Method
[3] Dial Method
[4] SLI Signal
[5] Trunk Signal
[6] Call Control Method
[7] Ring Cadence
[8] System Tone Cadence
[9] CO Tone Cadence
[10] Gain Control

```

(Continued)

```
[11] Diagnosis
[12] MMC Port Block/UnBlock
[13] Display Card Configuration
[14] Display Port Status
[15] Save & Exit
[16] Exit

Select ? 16
```

6. Message asking if you want to save the changed configuration in flash memory is displayed. Type 'y' and press [Enter].

```
# PSTN Configuration has changed. Save? (y: Yes, n: No) -> y
```

7. Changed data is saved in flash memory, and you are returned to the initial screen of the SMG-400 CLI interface.

Configuring the VoIP

This section describes the procedures for the SMG-400 VoIP configuration. The SMG-400 VoIP configuration procedure is determined by the Gatekeeper service that translates terminal aliases such as telephone number in E.164 format, e-mail address, and H.323 ID into an IP address.

→ When not using Gatekeeper

You have to create the VoIP table. To create the VoIP table, consult with the network administrator for required information.

→ When using Gatekeeper

Register the information of Gatekeeper. The following information is required for registration.

- IP address and Alias (host name) of Gatekeeper
- H.323 ID and E.164 ID of the SMG-400 to be registered in Gatekeeper

Option → When not using Gatekeeper

Create the VoIP table according to the following directions.

1. At the SMG400 prompt, type 'voipmenu' and press [Enter].

```
help          Print This List
sysmenu       System Configuration
pstnmenu      PSTN Configuration
voipmenu      VoIP Configuration
quit          Logout
```

```
Please Press Enter Key!!!
```

```
SMG400:165.213.81.230> voipmenu
```


2. <VoIP Configuration Menu> screen is displayed. Type '5' and press [Enter].

```
<<<< VoIP Configuration Menu >>>>
```

```

[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit
Select ? 5

```

3. Message as follows is displayed. Type '0' and press [Enter].

```
IP Table Index Number(Range: 0 ~ 31): 0
```

4. <VoIP Remote IP Table> screen is displayed. Type the number of the VoIP table to configure and press [Enter].

```
<<<< VoIP Remote IP Table >>>>
```

No	IP Address	No	IP Address
0	165.213.81.230	8	0. 0. 0. 0
1	0. 0. 0. 0	9	0. 0. 0. 0
2	0. 0. 0. 0	10	0. 0. 0. 0
3	0. 0. 0. 0	11	0. 0. 0. 0
4	0. 0. 0. 0	12	0. 0. 0. 0
5	0. 0. 0. 0	13	0. 0. 0. 0
6	0. 0. 0. 0	14	0. 0. 0. 0
7	0. 0. 0. 0	15	0. 0. 0. 0

```
[ . :Exit ]
```

```
Configuration Item Number: 0
```

5. Input IP address of opposite VoIP equipment to be connected to the SMG-400 and press [Enter].

```
IP Address (dot form): 165.213.81.230 ->
```

6. To register the IP address of other VoIP equipment, repeat steps 4 ~ 5.
7. After VoIP table creation is completed, type '.' and press [Enter].

```
Configuration Item Number: .
```

8. To close current screen, type '.' and press [Enter].

```
IP Table Index Number (Range: 0 ~ 31): .
```

9. After returning to the <VoIP Configuration Menu> screen. Type '8' and press [Enter].

```
<<<< VoIP Configuration Menu >>>>
      [0] VoIP General Option
      [1] VoIP DSP Option
      [2] VoIP Gatekeeper Option
      [3] VoIP Routing Table
      [4] VoIP Caller ID Table
      [5] VoIP Remote IP Table
      [6] VoIP Remote IP Status
      [7] Save & Exit
      [8] Exit
      Select ? 8
```

10. Message asking if you want to save the changed configuration in flash memory is displayed. Type 'y' and press [Enter].

```
# VoIP Configuration has changed. Save? (y: Yes, n: No) -> y
```

11. Changed data is saved in flash memory.

Option → When using Gatekeeper

Configure Gatekeeper information according to the following directions.

1. At the SMG400 prompt, type 'voipmenu' and press [Enter].

```
SMG400:165.213.81.230> voipmenu
```

2. <VoIP Configuration Menu> screen is displayed. Type '2' and press [Enter].

```
<<<< VoIP Configuration Menu >>>>
[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit
Select ? 2
```

3. <VoIP Gatekeeper Option> screen is displayed. Type '0' and press [Enter].

```
<<<< VoIP Gatekeeper Option >>>>
```

No	Items	Value	Default
0	Gatekeeper Connection	Disable	Disable
	Gatekeeper Status	Unregistration	..
1	RAS Method	Auto	Auto
2	Registration Type	E.164 in GW Name	GW Name
3	Gatekeeper Type	Other GK	Other GK
4	GW Routing In GK mode	Disable	Disable
5	Gatekeeper IP	0.0.0.0	..
6	Gatekeeper Alias	Gatekeeper	..
7	Alternative Gatekeeper IP	0.0.0.0	..
8	Gatekeeper Down Option	Alternative GK	Alternative
9	Gateway Name H.323 ID	SMG400	..
10	E.164	400	..

[. : Exit, - :Null]

Configuration Item Number: 0

4. Message is displayed as follows. Type '1' and press [Enter].

```
Gatekeeper Connection (0:Disable, 1:Enable): Disable -> 1
```

5. To set a routing table, input '4' and press the [Enter] key.

```
Configuration Item Number: 4
```

6. In the case of routing under the connection of a Gatekeeper, input "1" to use the routing table of the Gatekeeper after a number conversion using the routing table set in the SMG-400, or input "0" not to use the routing table set in the SMG-400. Then press the [Enter] key.

```
GW Routing In GK Mode (0:Disable, 1:Enable): Disable -> 0
```

7. To specify IP address of Gatekeeper, type '5' and press [Enter].

```
Configuration Item Number: 5
```

8. Input IP address of Gatekeeper and press [Enter].

```
Gatekeeper IP Address (dot form): 165.213.81.230 -> 165.213.81.58
```

9. To specify alias name (host name) of Gatekeeper, type '6' and press [Enter].

```
Configuration Item Number: 6
```

10. Input alias name (host name) of gatekeeper and press [Enter].

```
Gatekeeper Alias Name : Gatekeeper -> Gatekeeper1
```

11. To specify H.323 ID of the SMG-400, type '9' and press [Enter].

```
Configuration Item Number: 9
```

12. Input H.323 ID of the SMG-400 for login and press [Enter].

```
Gateway Name H.323 ID : SMG-400 -> pa-27
```

13. To close the current screen, type '.' and press [Enter].

```
Configuration Item Number: .
```

14. After returning to the <VoIP Configuration Menu> screen, type '8', and press [Enter].

```
<<<< VoIP Configuration Menu >>>>
[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit

Select ? 8
```

15. Message asking if you want to save the changed configuration in flash memory is displayed. Type 'y' and press [Enter] to save.

```
# VoIP Configuration has changed. Save? (y: Yes, n: No) -> y
```

Chapter 5

CLI (Command Line Interface)

Chapter 5 CLI (Command Line Interface)

This chapter presents the CLI that allows operational configuration of the SMG-400. An overview of menus followed by a description of functions for each menu and settings for submenus is given.

Menu Configuration

The CLI menu of the SMG-400 consists of 6 main menus. Each menu has a number of submenus, except for ‘help’ and ‘quit’ menus.

Main Menu	Sub Menu
help	No
sysmenu	[0] DHCP Client Setting [1]Network Configuration [2]Login ID Configuration [3] System Upgrade [4] Display Package Information [5] Default DB Setting [6] Restart System [7] Exit
pstnmenu	[0] Gateway Operation Mode [1] PSTN Rerouting Insert Digit [2] PCM Method [3] Dial Method [4] SLC Signal [5] Trunk Signal [6] Call Control Method [7] Ring Cadence [8] System Tone Cadence [9] CO Tone Cadence [10] Gain Control [11] Diagnosis [12] MMC Port Block/UnBlock [13] Display Slot Configuration [14] Display Port Status [15] Save & Exit [16] Exit

Main Menu	Sub Menu
VoIPmenu	[0]VoIP General Option [1]VoIP DSP Option [2]VoIP Gatekeeper Option [3]VoIP Routing Table [4]VoIP Caller ID Table [5]VoIP Remote IP Table [6]VoIP Remote IP Status [7] Save & Exit [8] Exit
clicmd	clicmd cdrhelp date dbfilehelp optionhelp snmphelp ntp help loopincall ivrhelp callblock settime
quit	No

Using Menus

Make sure that you familiarize yourself with the following instructions on the CLI Menus of the SMG-400.

- **Selecting the Main Menu**
To select the Main Menu from prompt on the SMG-400 main screen, type in the name of the desired menu. For example, type '**sysmenu**' and press [Enter] to select **sysmenu**.
- **Selecting a Submenu**
To select a submenu, type the number of the desired submenu. For example, type '**0**' and press [Enter] to select **0) DHCP Client Setting** on the **System Configuration Menu**.
When you using the 'clcmd' menu, just input the string of submenu name at the SMG400:165.213.81.230> prompt in the main screen. Each submenu itself can be CLI command, or has another submenu.
- **Back to the Previous Screen**
To close the current menu screen and return to the previous screen, type in the number corresponding to **Exit** in the menu.

In addition to the above, you can follow the guide that appears on the bottom of the screen every time you select a menu.

Each menu item will be explained in detail in the following sections.

System Configuration Menu

You can set overall system functions, such as IP address and login password, of the SMG-400 from the **System Configuration Menu**. You can also view values of parameters such as system version information.

The following <System Configuration Menu> screen will appear when you type '**sysmenu**' and press [Enter] from the prompt on the main screen.

```
<<<< System Configuration Menu >>>>

      [0] DHCP Client Setting
      [1] Network Configuration
      [2] Login ID Configuration
      [3] System Upgrade
      [4] Display Package Information
      [5] Default DB Setting
      [6] Restart System
      [7] Exit

      Select ?
```

The following table shows an overview of the 8 submenus found in the **System Configuration Menu**.

No	Menu	Functions
0	DHCP Client Setting	Sets the SMG-400 as a DHCP client.
1	Network Configuration	Configures static IP address, subnet mask and gateway.
2	Login ID Configuration	Configures login name and password.
3	System Upgrade	Upgrades the system software.
4	Display Package Information	Displays the version of system program.
5	Default DB Setting	Resets item values by type of database with default values.
6	Restart System	Restarts the system.
7	Exit	Closes the System Configuration Menu screen.

[0] DHCP Client Setting

Function You can set the SMG-400 as a DHCP client. By doing so, the DHCP server automatically allocates an IP address for the SMG-400. After the setup, you must restart the system to implement the change.

Default DHCP Client Set OFF
Value Class ID (none)

Procedure 1. In the <System Configuration Menu> screen, type '0', and press [Enter].

<<<<< DHCP Client Setting >>>>>			
+-----+-----+-----+-----+			
No	Items	Value	
+-----+-----+-----+-----+			
0	DHCP Client Set	OFF	
1	Class ID		
+-----+-----+-----+-----+			
[- :Null, . :Exit]			

2. To set the SMG-400 as a DHCP client, select 0 in Configuration Item Number, press [Enter], and type 'y'.

```
Set DHCP Client? (y: ON, n: OFF): ON ->
```

3. When Class ID is needed, select 1 in Configuration Item Number, press [Enter], and type 'y'. Enter Class ID if it is necessary in DHCP server.

4. A message asking whether to restart the system will be displayed. To restart immediately, type 'y' or type 'n' otherwise and press [Enter].

```
# System Configuration has changed. Restart? (y: Now, n: Later) ->
```

[1] Network Configuration

Function Users can set the network configuration such as IP address for the SMG-400, default gateway address and subnet mask. After setup, you must restart the system to implement the change.

Procedure 1. In the <System Configuration Menu> screen, type '1', and press [Enter].

```
<<<<< Network Configuration >>>>
```

No	Items	Value
0	IP Address	165.213.81.230
1	Gateway Address	165.213.81.1
2	Netmask	255.255.255.0
3	TOS(Type Of Service)	0x0
4	MAC Address(Read Only)	SAMSUNG(00-00-F0)-AB-CD-0D

[. :Exit]

2. To change the network information, type 'y', and press [Enter].

```
Change Network Configuration? (y: Yes, n: No) ->
```

3. Input a new IP address for the SMG-400 and press [Enter].

```
IP Address (dot form): 165.213.81.230 ->
```

4. Input an IP address for the default gateway and press [Enter].

```
Gateway Address (dot form): 165.213.81.1 ->
```

5. Input a subnet mask and press [Enter].

```
Netmask(dot form): 255.255.255.0 ->
```

6. Set a TOS value in consultation with your network administrator at the site. TOS (Type Of Service) requests a router for a specific service to effectively process voice packets (that are transmitted from the SMG-400) on the network. Refer to the definition of terms listed in the **Appendix D** for a full description of TOS.

```

+-----+
|  TOS(Type Of Service) Field  |
+-----+
| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
+-----+
| Priority | D | T | R | 0 | 0 |
+-----+

D: if 0x10, Minimum Delay
T: if 0x08, Maximum Throughput
R: if 0x04, Maximum Reliability
Range:0x00 ~ 0xFF, Default:0x00

TOS Value(Default: 0x00): 0x00 ->

```



When you set TOS for the SMG-400, you must set router to support the TOS. You can configure TOS values, if necessary, to process QoS (Quality of Service) regardless of whether using a DHCP server or not.

7. A message asking whether to restart the system will be displayed as follows. To restart immediately, type 'y' or type 'n' otherwise and press [Enter].

```
# System Configuration has changed. Restart? (y: Now, n: Later) ->
```



MAC Address

MAC Address is a fixed address that is allocated to a network controller of the SMG-400. It cannot be modified by users.

[2] Login ID Configuration

Function You can change the login name and password of CLI.

- Super User : User who has permission for all the functions of the system

Default Login Name smg400
Value Login Passwd smg400v1

- Normal User : User who can connect to the system only through Telnet and has a read only permission for the CLI DB of the system

Procedure 1. In the <System Configuration Menu> screen, type '2', and press [Enter].

```
<<<<< Login ID Configuration >>>>>
```

No	Items	Value
0	Super User ID(Console, Telnet, Web)	smg400
1	Super User Password	smg400v1
2	Normal User ID(Telnet, Read Only)	None
3	Normal User Password	None

[. :Exit]

2. To change the login name and password of CLI, type 'y', and press [Enter].

```
Change Login Name and Passwd? (y: Yes, n: No) ->
```

3. Select the type of user (Super User or Normal User) whose login name and password will change. To change the login name and password of Super User, type 's' and press [Enter].

```
Change Super User or Normal User? (s: Super User, n: Normal User) ->
```


4. Input a new login name and press [Enter]. The new login name must be different from the default or previous login names.

```
Enter New Super User Login Name: smg400 ->
```

5. Input a new password.

```
Enter Super User New Passwd: smg400v1 ->
```

6. A message asking whether to restart the system will be displayed as follows. To restart immediately, type 'y' or type 'n' otherwise and press [Enter].

```
# System Configuration has changed. Restart? (y: Now, n: Later) ->
```

[3] System Upgrade

Function You can view the system upgrade information, or change the using TFTP or FTP. Changes are stored in the system's flash memory and will be implemented when the system is rebooted.

There are two ways to upgrade the system of the SMG-400:

→ TFTP : It receives the system program stored on a TFTP server at a remote location through TFTP protocol and changes the program. The system program to be changed must be stored under the “/tftpboot” directory in the TFTP server.

→ FTP : When there is no TFTP server, it first receives the program to be changed through FTP protocol. By selecting the FTP method and typing in the number of files in the system program, the system program will be changed.

Procedure 1. In the <System Configuration Menu> screen, type '3', and press [Enter].

```

<<<< System Upgrade >>>>

[TFTP Method]
+-----+-----+
| No | Items | Value |
+-----+-----+
| 0 | TFTP Server Address | 165.213.81.10 |
| 1 | Upgrade Status | SUCCESS |
| 2 | Working Program Version | 400V3.0:021015 |
| 3 | Saved Program Version | 400V3.0:021015 |
| 4 | Total Program File Count | 28 |
| 5 | Saved Program File Count | 28 |
| 6 | DSP Package File Count | 2 |
| 7 | Main Package File Count | 28 |
+-----+-----+

[FTP Method]
+-----+-----+
| No | Items | Value |
+-----+-----+
| 0 | DSP Package File Count | 2 |
| 1 | Main Package File Count | 28 |
+-----+-----+

[ . :Exit ]

```

2. To upgrade the system software, type 'y', and press [Enter].

```
Upgrade This System? (y: Yes, n: No) -> y
```

3. Select an upgrade method and press [Enter].

```
Upgrade Method (1: TFTP, 2: FTP) ->
```

4. When TFTP is selected, input the IP address of the TFTP server.
When FTP is selected.

```
TFTP Server Address (dot form): 165.213.81.10->
```

5. Input the number of files in the DSP Chip program for VoIP. When none of the DSP Chip programs for VoIP are to be upgraded, type '0' and press [Enter].

```
DSP Package File Count: 2 ->
```

6. Input the number of system operation program files. When none of the system operation programs are to be upgraded, type '0' and press [Enter].

```
Main Package File Count: 25 ->
```

7. A message asking you whether to restart the system will be displayed as follows. To restart immediately, type 'y' or type 'n' otherwise and press [Enter].

```
# System Configuration has changed. Restart? (y: Now, n: Later) ->
```



The number of DSP files or system operation files can be changed according to the version of system program.

[4] Display Package Information

Function You can view the version information of the program that is installed in the system.

Procedure 1. In the <System Configuration Menu> screen, type '4', and press [Enter].

```

<<<<< Display Package Information >>>>

```

No	Items	Value
0	Boot ROM Version	BootROM ver 1.1
1	Working Program Version	400V3.0:021015
2	Saved Program Version	400V3.0:021015
3	Total Program File Count	28
4	Saved Program File Count	28
5	Upgrade Status	SUCCESS
6	EMS	Disabled

```

[ . :Exit ], [ 1 : Re-play ]:

```

2. The following information will appear.

- Boot ROM Version : Version of the Boot ROM.
- Working Program Version : Version of the program currently in operation.
- Saved Program Version : Version of the program stored in flash memory.
- Total Program File Count : Number of program files.
- Saved Program File Count : Number of program files stored in flash memory.
- Upgrade Status : Status of the latest upgraded system program.
- EMS : Indicates whether EMS (Element Management System), the GUI maintenance tool for the SMG-400, is enabled.

[5] Default DB Setting

Function You can set all values of each variable in the SMG-400 to default values, by database type.

- Procedure**
1. In the <System Configuration Menu> screen, type '5', and press [Enter].
 2. When the following message appears, select which database variables are to be changed to default values and press [Enter]. To change all database variable values with default values, select '0'.

```
Set Default DB (0: All, 1: System, 2: PSTN, 3: VoIP )
```

3. It will automatically find and set the old values to the default values. The screen below the case you selected ALL.

```
>>> Set Default System DB(Default Login ID):  
Good  
>>> Set Default System DB(Default Password):  
Good  
>>> Set Default System DB(DHCP Client Off ):  
Good  
>>> Set Default PSTN DB(PSTN Configuration):  
Good  
>>> Set Default VoIP DB(VoIP Configuration):  
Good
```

4. Upon completion, a message asking whether to restart the system will be displayed as follows. To restart immediately, type 'y' or type 'n' otherwise and press [Enter].

```
# System Configuration has changed. Restart? (y: Now, n: Later) ->
```

[6] Restart System

Function When you execute the system restart command the system will restart provided that the value of **Upgrade Status** on the **4) Display Package Information** menu is 'SUCCESS'. If the value is 'Fail' or 'Loading', the system will not restart and a warning message will appear. This is because the system will not operate properly when the restart command is given when the system update has not been properly completed.

Procedure 1. In the <System Configuration Menu> screen, type '6', and press [Enter].

```
Restart System? (y: Yes, n: No)
```

2. To restart the system, type 'y', and press [Enter].

[7] Exit

Function This closes the <System Configuration Menu> screen and returns to the main menu screen.

Procedure In the <System Configuration Menu> screen, type '7' and press [Enter].

PSTN Configuration Menu

In the **PSTN Configuration Menu**, you can set the PSTN interface that is required to connect to the PSTN trunk line. You can also view the values of parameters.

At the SMG400 prompt of the main screen, type '**pstnmenu**' and press [Enter]. The following PSTN Configuration Menu screen will be displayed.

```
<<<< PSTN Configuration Menu >>>>
```

- [0] Gateway Operation Mode
- [1] PSTN Rerouting Insert Digit
- [2] PCM Method
- [3] Dial Method
- [4] SLI Signal
- [5] Trunk Signal
- [6] Call Control Method
- [7] Ring Cadence
- [8] System Tone Cadence
- [9] CO Tone Cadence
- [10] Gain Control
- [11] Diagnosis
- [12] MMC Port Block/UnBlock
- [13] Display Card Configuration
- [14] Display Port Status
- [15] Save & Exit
- [16] Exit

Select ?

The following is an overview of the 17 submenus found in the **PSTN Configuration Menu**.

No	Menu	Functions
0	Gateway Operation Mode	Sets the system operation mode.
1	PSTN Rerouting Insert Digit	When PSTN routing, it configures a trunk line access code used in either PBX or KTS.
2	PCM Method	Sets PCM mode.
3	Dial Method	Sets the trunk line digit transmission method.
4	SLI Signal	Sets the signal type of analog interface.
5	Trunk Signal	Sets the signal type of digital interface.
6	Call Control Method	Sets the signal type for call control.
7	Ring Cadence	Sets the system ring cadence.
8	System Tone Cadence	Sets the system tone cadence.
9	CO Tone Cadence	Sets the CO tone cadence.
10	Gain Control	Adjusts call quality depending on the connection type.
11	Diagnosis	Sets the diagnosis interval for PSTN interface.
12	MMC Port Block/UnBlock	Specifies use of a specific port.
13	Display Card Configuration	Views information of cards installed in system.
14	Display Port Status	Views operation status of card and ports installed in system.
15	Save & Exit	Closes the PSTN Configuration Menu screen with saving changes.
16	Exit	Closes the PSTN Configuration Menu screen without saving changes.

[0] Gateway Operation Mode

Function (1) Gateway Operation Mode

The SMG-400 operates in either of the following modes. In this menu you can configure the operation mode of the SMG-400.

- Tandem Gateway : You can connect the SMG-400 to PBX or KTS, and use the system as a gateway without internal subscribers.
- Standalone Gateway : You can connect a telephone to a SLC port on the SMG-400, and use the system as a gateway with internal subscribers.

(2) PSTN Inbound LCR Option

SMG-400 analyzes the dialing digits coming from PABX, KTS, and telephones and decides whether or not the dialing is terminated.

Procedure 1. In the <PSTN Configuration Menu> screen, type '0', and press [Enter].

<<<< Gateway Operation Mode >>>>						
No	Items	Value	Default			
0	Gateway Operation Mode	Tandem Gateway	Tandem Gateway			
1	PSTN Inbound LCR Option	Disable	Disable			
<<<< PSTN Inbound LCR Table >>>>						
No	Inbound Prefix	Max Digit	No	Inbound Prefix	Max Digit	
		Count			Count	
2		0	18		0	
3		0	19		0	
4		0	20		0	
5		0	21		0	
6		0	22		0	

(Continued)

7	0	23	0
8	0	24	0
9	0	25	0
10	0	26	0
11	0	27	0
12	0	28	0
13	0	29	0
14	0	30	0
15	0	31	0
16	0	32	0
17	0	33	0
+-----+-----+-----+-----+			
[. :Exit, - :Null, Enter :Skip]			
Configuration Item Number:0			

2. To change the operation mode of the SMG-400, type '0', and press [Enter].

Configuration Item Number: 0

3. To change the operation mode to Tandem Gateway or Standalone, press '0' or '1' respectively, and press [Enter].

Gateway Operation Mode (0:Tandem Gateway, 1:Standalone):
Tandem Gateway ->

4. To set the PSTN Inbound LCR Option, type '1' in the above <<<<< Gateway Operation Mode >>>>> screen and press [Enter]. It enables PSTN Inbound LCR Option.

Configuration Item Number: 1

5. Then, select 2 to 33 as a Configuration Item Number and enter Inbound Prefix and Maxdigit count. This value analyzes dialing digits to decide the termination of dialing.

- Inbound Prefix : the prefix pattern of dialing digits coming into SMG-400
- Max Digit Count : The maximum number of dialing digits coming into SMG-400 with the designated prefix.

Configuration Item Number: 2

Inbound Prefix: ->

Max Digit Count : 0 ->



Inbound LCR PSTN Option decides whether or not the dialing is terminated coming into SMG-400. Generally dialing is considered to be terminated when '#' came in or dialing timeout occurred. Without '#' or dialing timeout, however, when the designated number of dialing digits for the assigned prefix are incoming, it is considered the dialing termination.

This feature shortens the call connection time for SMG-400 because SMG-400 decides the dialing termination without any other termination separators.

[1] PSTN Rerouting Insert Digit

Function The SMG-400 system provides a function called PSTN rerouting (or PSTN Detour). PSTN rerouting is used to reroute a call set by a VOIP to PSTN network bypassing an IP network in the case of having poor QoS (Quality Of Service), or detecting IP network being busy or disconnected or in error.

At the time of PSTN rerouting, an access code is required for PABX or KTS connected to SMG-400 to access the PSTN trunk line depending on the environment of the operating site. This access code can be specified.

Procedure 1. In the <PSTN Configuration Menu> screen, type '1', and press [Enter].

<<<< PSTN Rerouting Insert Digit >>>>				
+-----+	+-----+	+-----+	+-----+	
No	Items	Value	Default	
+-----+		+-----+	+-----+	
0	Rerouting Insert Digit	None	None	
+-----+		+-----+	+-----+	
				[. :Exit]

2. To set an access code for PSTN routing, input '0' and press the [Enter] key.

Configuration Item Number: 0

3. Input an external trunk access code used in the extension of the PBX or KTS connected to the SMG-400 and press the [Enter] key.

PSTN Rerouting Insert Digit: (N: None) None ->

[2] PCM Method

Function PCM (Pulse Code Modulation) is the most frequently used analog-to-digital encoding (A/D conversion technique to convert analog voice into digital signal). SMG-400 provides 2 PCM types, which are A-law and μ -law. In this menu, PCM type can be changed.



The PCM coding method of the PBX or KTS connected to the SMG-400 system must be set the same.

Procedure 1. In the <PSTN Configuration Menu> screen, type '2', and press [Enter].

<<<< PCM Method >>>>				
No	Items	Value	Default	
0	PCM Type	A_LAW	A_LAW	
				[. :Exit]

2. To change the PCM coding method, type '0', and press [Enter].

Configuration Item Number:

3. To change the PCM coding method to U_LAW or A_LAW, type '0' or '1' respectively, and press [Enter].

PCM Type (0:U_LAW, 1:A_LAW): A_LAW ->

[3] Dial Method

Function You can set the digit transmission method and its options on the trunk connected to a PSTN interface.

→ MFC (DTMF) : The digit transmission method that is used to send pressed numbers on a tone telephone. When MFC is used, the holding time for MFC digits must be specified on **1. DTMF Holding Time** item.

→ Dial Pulse : The digit transmission method that is used to send dialed numbers on a pulse telephone.

Procedure 1. In the <PSTN Configuration Menu> screen, type '3', and press [Enter].

```
<<<< Dial Method >>>>
```

No	Items	Value	Default
		[Unit: 100msec]	
0	Dial Type Selection	MFC	MFC
1	DTMF Holding Time	1	1

[. :Exit]

2. Input the number of the dial method to be changed, and press [Enter].

```
Configuration Item Number:
```

3. Specify a value referring to the following table, and press [Enter].

No	Item	Description
0	Dial Type Selection	Selects a trunk digit transmission type. 0. MFC : Multi-Frequency (DTMF) type 1. PULSE : Pulse type
1	DTMF Holding Time (1 ~ 99)	Specifies MFC digit holding time. Typed number x 100msec is the holding time.

[4] SLI Signal

Function You can set the signal type of the SLC interface.

Procedure 1. In the <PSTN Configuration Menu> screen, type '4', and press [Enter].

```
<<<< SLI Signal >>>>
```

No	SLI Signal Timer	Value	Unit	Default
0	Hook Off Time	1	100 msec	1
1	Hook On Time	50	10 msec	50
2	Hook Flash MIN. Time	10	10 msec	10
3	Hook Flash MAX. Time	30	10 msec	30

[. :Exit]

2. Input the number of the SLC signal to be changed, and press [Enter].

Configuration Item Number:

3.Specify a value referring to the following table, and press [Enter].

No	Item	Description
0	Hook Off Time	The minimum time elapsed to recognize hook off of an analog telephone. Typed number x 100msec is the actual hook off time.
1	Hook On Time	The minimum time elapsed to recognize hook on of an analog telephone. Typed number x 10msec is the actual hook on time.
2	Hook Flash MIN. Time	The minimum time elapsed to recognize hook flash of an analog telephone. Typed number x 10msec is the actual hook flash time.
3	Hook Flash MAX. Time	The maximum time elapsed to recognize hook flash of an analog telephone. Typed number x 10msec is the actual hook flash time.

[5] Trunk Signal

Function You can set the signal type for analog and digital trunk.

Procedure 1. In the <PSTN Configuration Menu> screen, type '5', and press [Enter].

```
<<<< Trunk Signal >>>>
```

No	Trunk Signal Type	Value	Default
0	Insert End Of Digit	Off	Off

No	Trunk Signal Timer	Value	Unit	Default
1	Seize Time	30	10 msec	30
2	Release Time	10	100 msec	10
3	Noring Time	4	1 sec	4
4	Answer Holding Time	6	100 msec	6
5	CO HookOn Time	50	10 msec	50

[. :Exit]

2. Input the number of the trunk signal type to be changed, and press [Enter].

Configuration Item Number:

3. Specify a value referring to the following table, and press [Enter].

No	Item	Description
0	Insert End Of Digit	This sets whether to insert '#' at the end of a trunk digit.
1	Seize Time	The time elapsed for a seizure signal being maintained until hook off is detected. Typed number x 10msec is the actual seize time.
2	Release Time	The time elapsed for a release signal being maintained until trunk connection is off. Typed number x 100msec is the actual release time.
3	Noring Time	The time elapsed for the process of transmission being abandoned when a hook off signal is not maintained from the moment a hook off is detected and responded. Typed number x 1sec is the actual time.
4	Answer Holding Time	The time elapsed to keep the response signal to a hook off. Typed number x 100msec is the actual time.
5	CO HookOn Time	The time elapsed to evaluate a hook on signal when connected to a trunk. Typed number x 10msec is the actual time.

[6] Call Control Method

Function You can set the signal type required to process a call.



The items in this menu have different default values for Tandem Gateway and Standalone modes.

Procedure 1. In the <PSTN Configuration Menu> screen, type '6', and press [Enter].

<<<< Call Control Method >>>>					
+-----+-----+-----+-----+-----+					
No	Digit Timer	Value	Unit	Default	
				TNDM (STND)	
+-----+-----+-----+-----+-----+					
0	First Digit Time	5	1 sec	5(10)	
1	Inter Digit Time	2	1 sec	2(10)	
+-----+-----+-----+-----+-----+					
+-----+-----+-----+-----+-----+					
No	Trunk LOOP Timer	Value	Unit	Default	
+-----+-----+-----+-----+-----+					
2	Loop OK Time	60	100 msec	60(60)	
3	OK Release Time	80	100 msec	80(80)	
+-----+-----+-----+-----+-----+					
					[. :Exit]

2. Input the number of the call control method to be changed,, and press [Enter].

Configuration Item Number:

3. Specify a value referring to the following table, and press [Enter].

No	Item	Description
0	First Digit Time	The time elapsed to receive the first digit after hook off. Typed number x 1sec is the actual time.
1	Inter Digit Time	The maximum time between the received digits after hook off. Typed number x 1sec is the actual time.
2	Loop OK Time	The time elapsed to receive a response after an attempt to seize a trunk is made. Typed number x 100msec is the actual time.
3	OK Release Time	The time elapsed until a response is received after a release to a trunk seize is attempted. Typed number x 100msec is the actual time.

[7] Ring Cadence

Function You can distinguish the ring type by setting the ring cadence (interval between rings). Sets the cadence in units of 100msec.

Procedure 1. In the <PSTN Configuration Menu> screen, type '7', and press [Enter].

```

<<<<< Ring Cadence >>>>>
+---+-----+-----+-----+-----+-----+-----+
|    | Ring Cadence (Default Value)    Unit: 100msec    |
| No | Ring Type | 1st On | 1st Off | 2nd On | 2nd Off |
+---+-----+-----+-----+-----+-----+-----+
| 0  | SLI       | 4 ( 4 ) | 2 ( 2 ) | 4 ( 4 ) | 20 (20) |
| 1  | TRUNK     | 4 ( 4 ) | 2 ( 2 ) | 4 ( 4 ) | 20 (20) |
+---+-----+-----+-----+-----+-----+-----+
                                     [ . :Exit ]

```

2. Input the number of the ring cadence to be changed, and press [Enter].

Configuration Item Number:

3. Set the cadence for the selected ring type, and press [Enter]. Typed number x 100msec is the actual time.

No	Item	Item in Detail	Description
0	SLI	SLI Ring 1st on Time	The time elapsed for the first SLI ring to be ON.
		SLI Ring 1st off Time	The time elapsed for the first SLI ring to be OFF.
		SLI Ring 2nd on Time	The time elapsed for the second SLI ring to be ON.
		SLI Ring 2nd off Time	The time elapsed for the second SLI ring to be OFF.
1	TRUNK	TRUNK Ring 1st on Time	The time elapsed for the first trunk ring to be ON.
		TRUNK Ring 1st off Time	The time elapsed for the first trunk ring to be OFF.
		TRUNK Ring 2nd on Time	The time elapsed for the second trunk ring to be ON.
		TRUNK Ring 2nd off Time	The time elapsed for the second trunk ring to be OFF.



In the standalone mode, SLI ring is used for the call between the telephone connected to SLC, and TRUNK ring is used for the rest of the case.

[8] System Tone Cadence

Function You can set the tone cadence that is sent by the SMG-400. Sets the tone cadence by tone type in units of 50msec.

Procedure 1. In the <PSTN Configuration Menu> screen, type '8', and press [Enter].

```

<<<<< System Tone Cadence >>>>>

+-----+-----+-----+-----+-----+-----+
|      | Tone Cadence (Default Value)      | Unit: 50msec |
| No  | Tone Type | 1st On  | 1st Off | 2nd On  | 2nd Off |
+-----+-----+-----+-----+-----+-----+
| 0   | Dial      | 1 ( 1)  | 1 ( 1)  | 20 (20) | 5 ( 5)  |
| 1   | Busy      | 10 (10) | 10 (10) | 10 (10) | 10 (10) |
| 2   | Transfer  | 2 ( 2)  | 2 ( 2)  | 2 ( 2)  | 2 ( 2)  |
| 3   | Ring Back | 20 (20) | 40 (40) | 20 (20) | 40 (40) |
| 4   | Error     | 5 ( 5)  | 5 ( 5)  | 5 ( 5)  | 5 ( 5)  |
+-----+-----+-----+-----+-----+-----+
[ . :Exit ]

```

2. Input the number of the system tone cadence to be changed, and press [Enter].

Configuration Item Number:

3. Set the cadence for the selected ring type, and press [Enter]. Typed number x 50msec is the actual time.

No	Item	Item in Detail	Description
0	Dial Tone	DIAL 1st on Time	The time elapsed for the first dial tone to be On.
		DIAL 1st off Time	The time elapsed for the first dial tone to be Off.
		DIAL 2nd on Time	The time elapsed for the second dial tone to be On.
		DIAL 2nd off Time	The time elapsed for the second dial tone to be Off.

(Continued)

No	Item	Item in Detail	Description
1	Busy Tone	BUSY 1st on Time	The time elapsed for the first busy tone to be On.
		BUSY 1st off Time	The time elapsed for the first busy tone to be Off.
		BUSY 2nd on Time	The time elapsed for the second busy tone to be On.
		BUSY 2nd off Time	The time elapsed for the second busy tone to be Off.
2	Transfer Tone	TRANSFER 1st on Time	The time elapsed for the first transfer tone to be On.
		TRANSFER 1st off Time	The time elapsed for the first transfer tone to be Off.
		TRANSFER 2nd off Time	The time elapsed for the second transfer tone to be On.
		TRANSFER 2nd off Time	The time elapsed for the second transfer tone to be Off.
3	Ring Back Tone	RING BACK 1st on Time	The time elapsed for the first Ring Back tone to be On.
		RING BACK 1st off Time	The time elapsed for the first Ring Back tone to be Off.
		RING BACK 2nd on Time	The time elapsed for the second Ring Back tone to be On.
		RING BACK 2nd off Time	The time elapsed for the second Ring Back tone to be Off.
4	Error Tone	ERROR 1st on Time	The time elapsed for the first Error tone to be On.
		ERROR 1st off Time	The time elapsed for the first Error tone to be Off.
		ERROR 2nd on Time	The time elapsed for the second Error tone to be On.
		ERROR 2nd off Time	The time elapsed for the second Error tone to be Off.



When the time of 1st On and 1st Off is 1, it means continuous tone without cadence control.

[9] CO Tone Cadence

Function You can set CO tone cadence to identify tones coming from a CO when the SMG-400 is connected to a CO line. The tone cadence can be set to units of 50msec by tone type.

Procedure 1. In the <PSTN Configuration Menu> screen, type '9', and press [Enter].

<<<<< CO Tone Cadence >>>>>						
+---+-----+-----+-----+-----+-----+-----+						
		CO Tone Cadence (Default Value) Unit: 50msec				
	No	Tone Type	1st On	1st Off	2nd On	2nd Off
+---+-----+-----+-----+-----+-----+-----+						
	0	Busy	10(10)	10(10)	10(10)	10(10)
	1	Ring Back	20(20)	40(40)	20(20)	0(40)
	2	Dial	20(20)	5(5)	20(20)	5(5)
+---+-----+-----+-----+-----+-----+-----+						
						[. :Exit]

2. Input the number of the CO tone cadence to be changed, and press [Enter].

Configuration Item Number:

3. Set the CO tone cadence referring to the following table, and press [Enter]. Typed number x 50msec is the actual time.

No	Item	Item in Detail	Description
0	Busy (Trunk Busy Tone)	BUSY CO TONE 1st on Time	The time elapsed for the first busy tone to be On.
		BUSY CO TONE 1st off Time	The time elapsed for the first busy tone to be Off.
		BUSY CO TONE 2nd on Time	The time elapsed for the second busy tone to be On.
		BUSY CO TONE 2nd off Time	The time elapsed for the second busy tone to be Off.
1	Ring Back (Trunk Ring Back Tone)	RING BACK CO TONE 1st on Time	The time elapsed for the first ring back tone to be On.
		RING BACK CO TONE 1st off Time	The time elapsed for the first ring back tone to be Off
		RING BACK CO TONE 2nd on Time	The time elapsed for the second ring back tone to be On
		RING BACK CO TONE 2nd off Time	The time elapsed for the second ring back tone to be Off.
2	Dial (Trunk Dial Tone)	DIAL CO TONE 1st on Time	The time elapsed for the first dial tone to be On.
		DIAL CO TONE 1st off Time	The time elapsed for the first dial tone to be Off.
		DIAL CO TONE 2nd on Time	The time elapsed for the second dial tone to be On.
		DIAL CO TONE 2nd off Time	The time elapsed for the second dial tone to be Off.

[10] Gain Control

Function You can adjust call quality (gain control) depending on the connection type, i.e. analog telephone, analog trunk or digital trunk line. Each gain is set in units of dB.

Procedure 1. In the <PSTN Configuration Menu> screen, type '10', and press [Enter].

<<<< Gain Control >>>>				
No	Connection Type	Gain	Default	
	(0:0dB 1:1.9dB 2:-6dB 3:-2.5dB)			
0	SLI -> SLI	0	0	
1	SLI -> ATRK	0	0	
2	SLI -> DTRK	0	0	
3	ATRK -> SLI	0	0	
4	ATRK -> ATRK	0	0	
5	ATRK -> DTRK	0	0	
6	DTRK -> SLI	1	1	
7	DTRK -> ATRK	0	0	
8	DTRK -> DTRK	0	0	
				[. :Exit]

2. Input the number of the gain control to be changed, and press [Enter].

Configuration Item Number:

3. Set value of gain referring to the following table, and press [Enter].

No	Item	Description
0	SLI SLI	Specifies the call quality that transmits from TX to RX of analog telephone.
1	SLI ATRK	Specifies the call quality that transmits from TX of analog telephone to RX of analog trunk.
2	SLI DTRK	Specifies the call quality that transmits from TX of analog telephone to RX of digital trunk.
3	ATRK SLI	Specifies the call quality that transmits from TX of analog trunk to RX of analog telephone.
4	ATRK ATRK	Specifies the call quality that transmits from TX of analog trunk to RX of analog trunk.
5	ATRK DTRK	Specifies the call quality that transmits from TX of analog trunk to RX of digital trunk.
6	DTRK SLI	Specifies the call quality that transmits from TX of digital trunk to RX of analog telephone.
7	DTRK ATRK	Specifies the call quality that transmits from TX of digital trunk to RX of analog trunk
8	DTRK DTRK	Specifies the call quality that transmits from TX of digital trunk to RX of digital trunk.



ATRK refers to LOOP, DTRK refers to VoIP, and SLI refers to SLC.

[11] Diagnosis

Function You can set a regular interval to diagnose the PSTN interface of the SMG-400. Setting it to '0' it bypasses the diagnosis. You can set the interval at units of 1sec by the test type.

Procedure 1. In the <PSTN Configuration Menu> screen, type '11', and press [Enter].

```

<<<<< Diagnosis >>>>>

+---+-----+-----+-----+-----+
| No | Diagnosis Items | Period | Unit | Default |
+---+-----+-----+-----+-----+
| 0 | SLI Port Test | 0 | 1 sec | 0 |
| 1 | Trunk Seizure Test | 0 | 1 sec | 0 |
| 2 | Trunk CODEC Test | 0 | 1 sec | 0 |
+---+-----+-----+-----+-----+
[ . :Exit ]

```

2. Input the number of the diagnosis interval to be changed, and press [Enter].

```

Configuration Item Number:

```

3. Set the diagnosis interval referring to the following table, and press [Enter]. Typed number x 1sec is the actual time.

No	Item	Description
0	SLI Port Test	Sets the diagnosis interval for SLI port test.
1	Trunk Seizure Test	It sets the diagnosis interval for trunk seizure test.
2	Trunk CODEC Test	It sets the diagnosis interval for trunk CODEC test.



SLI refers to SLC, Trunk refers to LOOP and E&M.

[12] MMC Port Block/UnBlock

Function You can set Block/UnBlock on each port of the system. 'Block' indicates 'disabled to use' and 'UnBlock' indicates 'enabled to use'.

Procedure 1. In the <PSTN Configuration Menu> screen, type '12', and press [Enter].

```
<<<<< MMC Port Block/UnBlock >>>>>
```

Port No.	Card Type(0:UnBlock, 1:Block, -:Unused)		
	VoIP	SLI	LOOP
0	0	0	0
1	0	0	0
2	0	0	0
3	0	0	0

[. :Exit]

2. Type '1' to block or '2' to unblock, and press [Enter].

```
Select Block or Unblock (1: Block, 2: Unblock) ->
```

3. Input the slot number for the port specified to be unblocked, and press [Enter].

```
Blocking Slot Number: (0: VoIP, 1: SLI, 2: LOOP)
```

4. Input the port number, and press [Enter].

```
Blocking Port No. of VoIP Slot (Range: 0 ~ 0x1F) [ . :Exit ] ->
```

5. You can continue with other ports by typing in the corresponding port number and pressing [Enter].

```
Blocking Port No. of VoIP Slot (Range: 0 ~ 0x1F) [ . :Exit ] ->
```

6. To exit, type '.', and press [Enter]. You will return to the <PSTN Configuration Menu> screen.

[13] Display Card Configuration

Function Displays type of cards that are installed on the system.

Procedure 1. In the <PSTN Configuration Menu> screen, type '13', and press [Enter].

```

<<<< Display Card Configuration >>>>

+-----+ +-----+ +-----+ +
| Card Name | Card Type | Port Count |
+-----+ +-----+ +-----+ +
| VoIP      | VoIP_04   | 4          |
| SLI       | SLI       | 4          |
| LOOP      | LOOP      | 4          |
+-----+ +-----+ +-----+ +
                                     [ . :Exit ]

[ . : Exit ], [ 1 : Re-play ]:

```

2. The following information will be displayed.

No	Item	Description
0	VoIP	You can identify the type of VoIP card and number of ports installed on the system. There are two types of VOIP cards, VoIP_04 and VoIP_304 depending on the type of DSP chip.
1	SLI	You can identify the type of SLI card and number of ports installed on the system.
3	LOOP	You can identify the type of LOOP card and number of ports installed on the system.

[14] Display Port Status

Function You can view the status of each port installed in the system.

Procedure 1. In the <PSTN Configuration Menu> screen, type '14', and press [Enter].

2. When the following message appears, input the card type number to display, and press [Enter].

```
Card Type [0: VoIP, 1: SLI, 2: LOOP] :
```

3. Port status of the selected card will appear as follows:

```
<<<< Display Port Status >>>>

[VoIP]
+-----+-----+-----+-----+-----+-----+
| Port No | Card Type | Fault Block | MMC Block | Call State | Opp. Port |
+-----+-----+-----+-----+-----+-----+
|    0    | VoIP_04  | Normal      | Unblock   | C0         | FF        |
|    1    | VoIP_04  | Normal      | Unblock   | C0         | FF        |
|    2    | VoIP_04  | Normal      | Unblock   | C0         | FF        |
|    3    | VoIP_04  | Normal      | Unblock   | C0         | FF        |
+-----+-----+-----+-----+-----+-----+
[ . :Exit ]

Card Type [0: VoIP, 1: SLI, 2: LOOP] :
```

- Port No : The port number on the card.
- Card Type : The card type installed in the system.
- Fault Block : Indicates an error on the selected port. When the port is operated normal, it shows 'Normal'.
- MMC Block : Indicates the operational status of the related port. 'UnBlock' indicates 'enabled to use', 'Block' indicates 'disabled to use'.
- Call State : Indicates the internal process status of a call. This value is used to trace the call processing status.
- Opp. Port : Indicates the relative port number of the selected port. It can also be used to test trace call status.

4. To continue to check the status of other cards, input the card type number to check.

Card Type [0: VoIP, 1: SLI, 2: LOOP] :

[15] Save & Exit

Function After saving changes, it closes the <PSTN Configuration Menu> screen, and returns to the main menu screen.

Procedure In the <PSTN Configuration Menu> screen, type '15', and press [Enter].

[16] Exit

Function Without saving changes, it closes the <PSTN Configuration Menu> screen, and returns to the main menu screen.

Procedure In the <PSTN Configuration Menu> screen, type '16', and press [Enter].

VoIP Configuration Menu

In the **VoIP Configuration Menu**, you can control the IP interface that connects to the SMG-400. You can also set IP routing information together with VoIP features.

At the prompt on the startup screen, type **'voipmenu'** and press [Enter]. The following screen will be displayed.

```
<<<<< VoIP Configuration Menu >>>>>

      [0] VoIP General Option
      [1] VoIP DSP Option
      [2] VoIP Gatekeeper Option
      [3] VoIP Routing Table
      [4] VoIP Caller ID Table
      [5] VoIP Remote IP Table
      [6] VoIP Remote IP Status
      [7] Save & Exit
      [8] Exit

      Select ?
```

The following is an overview of the 8 submenus found in the **VoIP Configuration Menu**.

No	Menu	Functions
0	VoIP General Option	Sets general options for VoIP services.
1	VoIP DSP Option	Sets DSP (Digital Signal Processing) options for VoIP services.
2	VoIP Gatekeeper Option	Sets connection options for Gatekeeper.
3	VoIP Routing Table	Sets types of connection for VoIP sending and incoming call services.
4	VoIP Caller IP Table	Sets the Caller ID for external calling through IP Network
5	VoIP Remote IP Table	Sets IP address of VoIP IP Table.
6	VoIP Remote IP Status	Checks each IP status in VoIP IP Table.
7	Save & Exit	Closes the VoIP Configuration Menu screen with saving changes.
8	Exit	Closes the VoIP Configuration Menu screen without saving changes.

[0] VoIP General Option

Function You can set general options for VoIP services.

Procedure 1. In the <VoIP Configuration Menu> screen, type '0', and press [Enter].

```
<<<< VoIP General Option >>>>
```

No	Items	Value	Default
0	Signal Type	FastStart	FastStart
1	Gateway ID	400	..
2	Caller ID Type	ANI	ANI
3	Virtual Ring Back Tone	Disable	Disable
4	DTMF Signal Type	H.245	H.245
5	FAX Signal Type	T.38	T.38
6	H.245 Open in FastStart	Yes	Yes
7	H.245 Tunneling	No	No
8	DIL Number	201	..
9	SNMP Server IP	0.0.0.0	..
10	Signaling Port	10000	10000
11	Status Monitoring Port	20000	20000
12	WCS Port	20010	20010
13	SIGK Access Port	20020	20020
14	Status Monitoring Period(sec)	0	30
15	Max. Fax Service Count	4	4
16	No Answer Waiting Time(sec)	90	90

[. :Exit]

2. Input the item number to be changed, and press [Enter].

Configuration Item Number:

3. Set values for the selected item referring to the following table, and press [Enter].

No	Item	Description
0	Signal Type	Selects H.323 signal type. 0. SlowStart : Q.931 H.245 Connection to Media 1. FastStart : Q.931 Connection to Media
1	Gateway ID	Sets the SMG-400's Gateway ID. If Caller ID Type is GWID, it is the ID information that is sent to the other party.
2	Caller ID Type	When sending a VoIP call via IP network, it selects the Caller ID type that is sent from the SMG-400 to recipients. 0. GWID : Uses Gateway ID number. ANI : Uses Calling Numbers that are sent by PBX at sender's end. 2. IP : Uses IP address. 3. GWD+ANI : Uses Gateway ID number and Calling Numbers that are sent by PBX at sender's end. 4. Caller ID Table : Uses Caller ID in the Caller ID Table
3	Virtual Ring Back Tone	Sets whether to use virtual Ring Back Tone. 0. Disable : Do not use virtual Ring Back Tone. 1. Enable (Setup) : uses virtual Ring Back Tone when sending setup. 2. Enable (Alert) : uses virtual Ring Back Tone when receiving Alert.
4	DTMF Signal Type	Sets DTMP process method via IP network. 0. Inband : The DTMF signaling process through voice channels. 1. H.245 : The DTMF signaling process through H.245 signal method.
5	FAX Signal Type	Internet fax is processed in the real-time event relay method. It sets a protocol for it. 0. T.38 : Uses standard T.38 fax protocol. 1. Samsung : Uses Samsung own protocol.
6	H.245 Open in FastStart	At the time of Fast Start, specifies (in terms of Yes/No) if H.245 channel is to be opened using H.245 channel information in setup information.

(Continued)

No	Item	Description
7	H.245 Tunneling	H.245 signalling does not need any additional channel. It is possible to use the Q.931 signalling channel together.
8	DIL Number	When a dial digit is not included in incoming calls on IP network, specifies a number to determine a call.
9	SNMP Server IP	When the SMG-400 is connected with network management equipment with SNMP protocol, it inputs IP address of the network management equipment.
10	Signaling Port	Indicates the port number in IP for H.323 signaling. It also sets the range of port numbers allowed by firewall equipment. When a specific port is specified, up to the number of VoIP channels x 4 from the specific port, can be used. This function will be available soon.
11	Status Monitoring Port	Sets the range of port numbers for exchange of system status information between the SMG-400. The specified port plus (specified port +1) can be used.
12	WCS Port	Specifies the communication port connecting Samsung's Web Call Service terminal.
13	SIGK Access Port	Specifies the communication port connecting Samsung's Internet Gatekeeper. The specified port plus (specified port +1) can be used.
14	Status Monitoring Period	Sets the status monitoring period between Samsung's VoIP Gateways. It is only to be used when the SMG-400 is connected to Samsung's VoIP Gateway.
15	Max. Fax Service Count	Sets the max allowable number of Internet fax channels with the SMG-400. (Max. no 4)
16	No Answer Waiting Time (sec)	Sets the max waiting time to wait when the party does not answer after call connection.

[1] VoIP DSP Option

Function You can set DSP (Digital Signal Processing) options for VoIP services.

Procedure 1. In the <VoIP Configuration Menu> screen, type '1', and press [Enter].

<<<< VoIP DSP Option >>>>				
No	Items	Value	Default	
0	Audio Codec	G.729a(8K)	G.729a(8K)	
1	Echo Cancellation	Enable	Enable	
2	Silence Suppression	Enable	Enable	
3	High Pass Filter	Enable	Enable	
4	Post Filter	Enable	Enable	
5	Input Gain(dB)	0	0 dB	
6	Voice Volume(dB)	0	0 dB	
7	Multi-Frame Counter	2	2	
8	Jitter Optimizing Factor	4	4	
9	RTP Delay Limit(msec)	500	500 msec	
10	RTP Loss Limit(%)	10	10 %	
11	RTP Loss Check Period(sec)	30	30 sec	
12	RTP Over Limit Count	1	1	
13	FAX Error Correction Mode	Enable	Enable	
				[. :Exit]

2. Input the item number to be changed, and press [Enter].

Configuration Item Number:

3. Set the values for the selected item referring to the following table, and press [Enter].

No	Item	Description
0	Audio Codec	Selects VoIP Codec. 1. G.711(64K) 2. G.723.1(6.3K) 3. G.729a(8K) 4. G.729 (8K) 5. G.723.1(5.3K)
1	Echo Cancellation	Echo Cancellation is the function to remove echo that is generated by voice reflection on Packet Delay and PSTN. It enables/disables this function.
2	Silence Suppression	Silence Suppression is the function to prevent transmission of voice packet by detecting 'mute' during a call. It enables/disables this function.
3	High Pass Filter	Voice filter, which must always be set as 'Enable'.
4	Post Filter	Voice filter, which must always be set as 'Enable'.
5	Input Gain	Quality of PCM voice that is input via VoIP DSP. It sets it to the site environment.
6	Voice Volume	Volume of voice packet when it is PCM processed. It sets it to the site environment.
7	Multi-Frame Counter	Sets the buffering number when voice packets are transmitted to network. The voice packets are buffered to the set number and set as a single RTP packet.
8	Jitter Optimizing Factor	Sets the control standard for Jitter Buffering that is required in the PCM process of received voice packets from network. When it is set below 4, it focuses on process of Packet Loss. When it is set above 4, it focuses on Packet Delay.
9	RTP Delay Limit	Sets the delay limit on voice packets received through RTP. When the limit is exceeded during communication, it is used as a basic index for network error.

(Continued)

No	Item	Description
10	RTP Loss Limit	Sets the loss limit on voice packets received through RTP. When the limit is exceeded during communication, it is used as a basic index for network error.
11	RTP Loss Check Period	Sets the RTP Loss check period.
12	RTP OverLimit Count	When the RTP Delay Limit or RTP Loss Limit is exceeded, it sets the standard accumulated frequency to be used as a basic index for network error.
13	FAX Error Connection Mode	Sets the additional recovery feature for T.38 FAX error.

[2] VoIP Gatekeeper Option

Function You can set information required for Gatekeeper connection when the SMG-400 is to be connected to Gatekeeper.

Procedure 1. In the <VoIP Configuration Menu> screen, type '2', and press [Enter].

```
<<<<< VoIP Gatekeeper Option >>>>>
```

No	Items	Value	Default
0	Gatekeeper Connection	Disable	Disable
	Gatekeeper Status	Unregistration	..
1	RAS Method	Auto	Auto
2	Registration Type	E.164 in GW Name	GW Name
3	Gatekeeper Type	Other GK	Other GK
4	GW Routing In GK mode	Disable	Disable
5	Gatekeeper IP	0.0.0.0	..
6	Gatekeeper Alias	Gatekeeper	..
7	Alternative Gatekeeper IP	0.0.0.0	..
8	Gatekeeper Down Option	Alternative GK	Alternative
9	Gateway Name H.323 ID	SMG400	..
10	E.164	400	..

[. :Exit, - :Null]

2. Input the item number to be changed, and press [Enter].

Configuration Item Number:

3. Set values for the selected item referring to the following table, and press [Enter]. The settings of No.6,9,10 can be 'Null', when if necessary. In that case, it sends the 'Null' to the connected Gatekeeper.

No	Item	Description
0	Gatekeeper Connection	Sets whether Gatekeeper is to be connected.

(Continued)

No	Item	Description
	Gatekeeper Status	Displays the current status of connection to Gatekeeper. - Unregistration : Indicates 'no-connection'. - Registration : Indicates 'connection'.
1	RAS Method	Manual : Select Manual to establish a selective connection to Gatekeeper depending on prefix. Auto with GRQ : Select Auto with GRQ to recover Gatekeeper using GRQ. Auto : Select Auto in cases other than those described above.
2	Registration Type	Sets the registration type for Gateway when it registered to Gatekeeper. The types include E.164 ID of Gateway mode and Caller ID in the Caller ID Table.
3	Gatekeeper Type	Specifies the manufacturer of Gatekeeper. 0. SIGK : Select if Samsung Internet Gatekeeper is to be connected. 1. Other GK : Select if other company's Gatekeeper is to be connected.
4	GW Routing In GK mode	This sets which routing table will be used. 0. Disable : To use only the routing table set in the Gatekeeper select this. 1. Enable : To use both a routing table set in the Gatekeeper and a routing table set in the SMG-400 select this.
5	Gatekeeper IP	Sets IP address of the Gatekeeper to be connected.
6	Gatekeeper Alias	Sets H.323 Alias Name of the Gatekeeper to be connected.
7	Alternative Gatekeeper IP	When Gatekeeper is to be duplicated, and the connection to the primary Gatekeeper is disconnected, it sets the other Gatekeeper's IP address.
8	Gatekeeper Down Option	Sets the type of routing that may be used in case the connection to the Gatekeeper in use becomes disconnected. 0. Alternative GK :Connects to the alternative Gatekeeper set in the above item 4. 1. PSTN : Uses PSTN routing.

(Continued)

No	Item	Description
7	Gateway Name H.323 ID	Sets H.323 ID to be registered as ID of SMG-400 with Gatekeeper.
8	Gateway Name E.164	Sets E.164 to be registered as ID of SMG- 400 with Gatekeeper.

[3] VoIP Routing Table

Function You can set the type of connection to another party's VoIP equipment depending on the prefix of sent VoIP calls to IP network.

Procedure 1. In the <VoIP Configuration Menu> screen, type '3', and press [Enter].

```
VoIP Routing Table (0:Outbound Routing Table, 1: Inbound
Routing Table) -> 0
```

2. In the above screen, type '0' to view Routing table.

<<<< VoIP Outbound Routing Table >>>>									
No	Access Code	Acc Code Length	Acc Code Del-Len	Insert Digit	IPTable index	Call Block	IP Table StartPoint	GK Use	
0	0	1	0		0	No	0	Yes	
1	1	1	0		0	No	0	Yes	
2	2		0		0	No	0	Yes	
3	3	1	0		0	No	0	Yes	
4	4	1	0		0	No	0	Yes	
5	5	1	0		0	No	0	Yes	
6	6	1	0		0	No	0	Yes	
7	7	1	0		0	No	0	Yes	
8	8	1	0		0	No	0	Yes	
9	9	1	0		0	No	0	Yes	
10		0	0		0	No	0	Yes	
11		0	0		255	No	0	Yes	
~		~	~		~	~	~	~	
~		~	~		~	~	~	~	
~		~	~		~	~	~	~	
63		0	0		255	No	0	Yes	

[. :Exit, - :Null, Enter :Skip]

3. Input the routing table number to be changed, and press [Enter].
It sets the way of handling dialing digits sent to IP Network though SMG-400.

Configuration Item Number:

4. Set the values for the selected item referring to the following table, and press [Enter].

Item	Description
Access Code	Inputs the Prefix Digit that can identify the other party to be connected. The maximum length of Prefix Digit is 8 .
Acc Code Length	Sets the length of access code. (0~8)
Acc Code Del-Len	Inputs the number of digit to be deleted from the access code. It analyzes the access code and deletes to the set length before it sends the remainder digits to the other party.
Insert Digit	After it analyzes and deletes digits from access codes, it sets prefix to be added to the access codes. It normally uses the other party's Trunk access code. The maximum length of Insert Digit is 8.
IP Table Index	Sets IP table numbers that store the IP address data of the other party's VoIP device. Each IP table has up to 16 IP addresses. An IP table can be allocated to an access code.
Call Block	Sets whether to limit the transmission of VoIP specific Access codes or not. This is a global VoIP Call Block. Refer to a Clicmd call block for a Call Block for each PSTN Port.
IP Table Start Point	When multiple IP addresses exist in the specified IP table, it sets which IP address is to be connected first. It is used to diversify routing when one access code is used for connecting multiple VoIP Gateways.
GK Use	Determine whether to use Gatekeeper for the access.

5. Now type ‘1’ in VoIP Routing Table to set the Prefix.

VoIP Routing Table (0: Outbound Routing Table, 1:Inbound Routing Table)->1

<<<< VoIP Inbound Routing Table >>>>

No	Access Code	Length	Del-Len	Digit	Slot	Port
0	0	1	0			
1	1	1	0			
2	2	1	0			
3	3	1	0			
4	4	1	0			
5	5	1	0			
6	6	1	0			
7	7	1	0			
8	8	1	0			
9	9	1	0			
10		0	0			
~		~	~			
~		~	~			
~		~	~			
31		0	0			

[. :Exit, - :Null, Enter :Skip]

6. Input the routing table number to be changed, and press [Enter].

Configuration Item Number:

7. Set the values for the selected item referring to the following table, and press [Enter].

Item	Description
Access Code	The Prefix pattern of the incoming dialing digits. The maximum length of Access Code digit is 16.
Acc Code Length	The number of Access Code digits. (0~16)
Acc Code Del-Len	The number of digits to be deleted from the access code.(0~16)
Insert Digit	The prefix to be added to the access codes after it is analyzed and deleted. The maximum length of Insert Digit is 8.
PSTN Route Slot Port	Port is inserted to route a VoIP inbound call to a specific PSTN port.

[4] VoIP Caller ID Table

Function You can set the Caller ID when sending a call through IP Network. Caller ID can be set separately according to the PSTN ports of SMG-400. To use this feature, the second item of [0] VoIP General Option, Caller ID Type, must be set to Caller ID Table.

Description 1. In the <VoIP Configuration Menu> screen, type '4', and press [Enter].

```
<<<< VoIP Caller ID Table >>>>
```

PSTN Port Index	Caller ID
0	
1	
2	
3	
4	
5	
6	
7	

[. :Exit, - :Null, Enter :Skip]

2. When the following message appears, input the index number of the PSTN Port, and press [Enter].

```
Configuration Port Index:
```

3. Select PSTN Port Index and enter Caller ID.

```
Caller ID for PSTN Port : -> 12345
```


[5] VoIP Remote IP Table

Function More than one IP address must be specified in the VoIP IP Table that is set by the VoIP Routing Table for VoIP outgoing call services. The VoIP IP Table is the table containing the IP address information of another party's VoIP device, which will be connected with access codes. Each IP table can have up to 16 IP addresses.

- Procedure**
1. In the <VoIP Configuration Menu> screen, type '5', and press [Enter].
 2. When the following message appears, input the index number of the table for setting IP addresses, and press [Enter].

```
IP Table Index Number (Range: 0 ~ 63):
```

3. The IP table of the selected index will appear below.

```
<<<<< VoIP Remote IP Table >>>>>
```

No	IP Address	No	IP Address
0	165.213.81.230	8	0. 0. 0. 0
1	0. 0. 0. 0	9	0. 0. 0. 0
2	0. 0. 0. 0	10	0. 0. 0. 0
3	0. 0. 0. 0	11	0. 0. 0. 0
4	0. 0. 0. 0	12	0. 0. 0. 0
5	0. 0. 0. 0	13	0. 0. 0. 0
6	0. 0. 0. 0	14	0. 0. 0. 0
7	0. 0. 0. 0	15	0. 0. 0. 0

```
[ . :Exit]
```

4. Input the table number to set IP addresses, and press [Enter].

```
Configuration Item Number:
```

5. When the following message appears, type in an IP address and press [Enter].

```
IP Address (dot form): 0.0.0.0 ->
```

[6] VoIP Remote IP Status

Function You can display the status of each IP address in the VoIP IP Table. With the SMG-400 Gateway function of monitoring status, this menu provides accurate status information.

- Procedure**
1. In the <VoIP Configuration Menu> screen, type '6', and press [Enter].
 2. When the following message appears, type in the index number of the table to display status of IP addresses, and press [Enter].

```
IP Table Index Number (Range: 0 ~ 63) :
```

3. The selected IP Table will appear below.

```
<<<<< VoIP Remote IP Status >>>>>
```

```
Table Index[0]
```

No	IP Address	Status	No	IP Address	Status
0	165.213.81.230	Idle	8	0. 0. 0. 0	Idle
1	0. 0. 0. 0	Idle	9	0. 0. 0. 0	Idle
2	0. 0. 0. 0	Idle	10	0. 0. 0. 0	Idle
3	0. 0. 0. 0	Idle	11	0. 0. 0. 0	Idle
4	0. 0. 0. 0	Idle	12	0. 0. 0. 0	Idle
5	0. 0. 0. 0	Idle	13	0. 0. 0. 0	Idle
6	0. 0. 0. 0	Idle	14	0. 0. 0. 0	Idle
7	0. 0. 0. 0	Idle	15	0. 0. 0. 0	Idle

[:Exit]

Unless the value of 14th item of [0] VoIP General Option, Status Monitoring Period, is '0', you get the exact information. This feature can be used only when SMG-400 is connected to Samsung Gateway.

4. The following status information may be displayed.

- Idle : Indicates 'normal status' to access VoIP outgoing call services.
- Busy : Indicates 'all ports are busy' to process new VoIP outgoing calls.
- Block : Indicates that the local Gatekeeper or the Gateway connected to the SMG-400 is down, or the link is in error.

5. To continue to check the status of the IP address table, type in the index number of the table.

```
IP Table Index Number(Range: 0 ~ 63):
```

[7] Save & Exit

Function After saving changes, it closes the <VoIP Configuration Menu> screen, and returns to the main menu screen.

Procedure In the <VoIP Configuration Menu> screen, type ‘7’, and press [Enter].

[8] Exit

Function Without saving changes, it closes the <VoIP Configuration Menu> screen, and returns to the main menu screen.

Procedure In the <VoIP Configuration Menu> screen, type ‘8’, and press [Enter].

CLI Command Menu

The **CLI Command Menu** displays the list of CLI commands, which SMG-400 system administrators can use, and provides simple directions.

At the SMG400 prompt, type 'clcmd,' and press [Enter]. Then, the screen displays a list of simple descriptions of available CLI commands as follows:

clcmd	Print This List
cdrhelp	Help CDR Command
date	Display the Current Time
dbfilehelp	Help DB Backup & Restore Command
optionhelp	Help Option Command
snmphelp	Help SNMP Manager
ntphelp	Help NTP Command
loopincall	Help loop Incoming Direct Call by Preset Number
ivrhelp	Help IVR Command
callblock	Help Call Block Command
settime y,M,d,h,m,s	Set Time yyyy,M(1~12),d(1~31),h(0~23),m(0~59),s(0~5)

The commands displayed in the CLI Command Menu can be summarized as follows:

No	Menu	Functions
0	clcmd	Display CLI commands.
1	cdrhelp	Display commands related to the use of CDR information.
2	date	Display the current time.
3	dbfilehelp	Display commands related to the backup and saving of DB.
4	optionhelp	Display commands for System Option setting.
5	snmphelp	Display commands for using Snmp function.
6	ntphelp	Display commands related to inter-working with NTP Server.
7	loophelp	Display commands for using Loop in call.
8	ivrhelp	Display commands for using ivr function.
9	callblock	Display commands for using call block functions.
10	settime y,M,d,h,m,s	Manually set the system time.

Detailed directions for use of the CLI commands are provided below.

clicmd

Function It displays the list of CLI commands that the user can use to operate the system.

Procedure Type 'clicmd' at the SMG400 prompt, and press [Enter]. Then, the following CLI command list is displayed on the screen.

```
SMG400:23.30.152.227> clicmd

clicmd      Print This List
cdrhelp     Help CDR Command
date        Display the Current Time
dbfilehelp  Help DB Backup & Restore Command
optionhelp  Help Option Command
snmphelp    Help SNMP Manager
ntphelp     Help NTP Command
loopincall  Help loop Incoming Direct Call by Preset Number
ivrhelp     Help IVR Command
callblock   Help Call Block Command
settime y,M,d,h,m,s  Set yyyy,M(1~12),d(1~31),h(0~23),m(0~59),s(0~59)

value = 1 = 0x1
SMG400:23.30.152.227>
```

cdrhelp

Function This command prints the list of short descriptions of the CLI commands that the user uses to operate the system to display the CDR information. For detailed description of the CDR format, please see "Chapter 7 Using the CDR (Call Detail Record)."

Procedure This command prints the list of short descriptions of the CLI commands that the user uses to operate the system to display the CDR information. For detailed description of the CDR format, please see "Chapter 7 Using the CDR (Call Detail Record)."

```
SMG400:165.213.81.230> cdrhelp
cdrhelp                Print This List
cdrlist                Print CDR for the Current Call
CDRclear               Set Default CDR Port, Clear CDR Buffer
CDRsetlist             Print CDR Setting Information
CDRtcpport port        Set CDR Output on TCP Port(Default
                        Port:8200)
CDRtcpserver ip1,ip2,ip3,ip4,port Set CDR Output on TCP
Server IP & Port
CDRudpport ip1,ip2,ip3,ip4,port Set CDR Output on UDP IP &
Port
Offcdrtcp              Turn Off CDR Output on TCP
                        Link(default)
Offcdrudp              Turn Off CDR Output on UDP
                        Link(default)
Oncdrtcp               Turn On CDR Output on TCP Link
Oncdrudp               Turn On CDR Output on UDP Link
Setcdrtcpmode mode     Set CDR TCP Mode(0:Server(Default),
                        1:Client)
value = 1 = 0x1
SMG400:165.213.81.230>
```

cdrlist

Function It displays the CDR information regarding the currently connected call.

Procedure If you want to see the CDR information regarding the currently connected call, type 'cdrlist' at the SMG400 prompt, and press [Enter].

```
SMG400:165.213.81.230> cdrlist

<<<<< Current CDR >>>>>

13. DVI: 1/1/2002 14:23:23 14:23:32 201 201 165.213.81.230
      40 ffff 32

value = 2 = 0x2
SMG400:165.213.81.230>
```


CDRclear

Function Close all TCP and UDP Links, and delete all CDR information saved in the buffer and the flash memory, and then set the CDR port as the default port. It will revert the system back to the initial setting.

Procedure If you want to delete all CDR information, type 'CDRclear' at the SMG400 prompt, and press [Enter].

```
SMG400:165.213.81.230> CDRclear

>>>[CDR] Turn Off CDR Output on TCP Link
Good
>>>[CDR] Turn Off CDR Output on UDP Link
Good
>>>[CDR] Set Default CDR TCP Port, UDP Port
Good
>>>[CDR] Clear CDR TCP Buffer
Good
>>>[CDR] Clear CDR UDP Buffer
Good
>>>[CDR] Set CDR TCP Server Mode(CDR Can be Sent TCP Client)
Goodvalue = 16 = 0x10
SMG400:165.213.81.230>
```

CDRsetlist

Function It displays the current setting of the options related to the CDR of the system. You can use other CDR CLI commands to change the setting.

Default:

TCP Link	Off
TCP Port	8200
TCP mode	Server
UDP Link	Off
UDP Port	Unknown
UDP IP Address	Unknown

Procedure If you want to see the setting of the CDR-related options, type 'CDRsetlist' at the SMG400 prompt, and press [Enter].

```
SMG400:165.213.81.230> CDRsetlist

>>>[CDR] Turn On CDR Output on TCP Link
                                     <- tcp link is turned On.
>>>[CDR] TCP Port: 8200              <- tcp port is set as 8200.

>>>[CDR] Turn Off CDR Output on UDP Link
                                     <- udp link is turned Off.
>>>[CDR] UDP Port: Unknown
>>>[CDR] UDP IP Address = Unknown

value = 37 = 0x25 = '%'
SMG400:165.213.81.230>
```

CDRtcpport port

Function Set the TCP port for the TCP Link that will display the CDR output information. It is already set as the Default(Default: 8200 port) value, and the user can use the CLI command to change the setting.

Default:

[CDR] TCP Port 8200

Procedure At the SMG400 prompt, type 'CDRtcpport' and a space, and type the TCP port for displaying the CDR information, and then press [Enter]. For example, if you want to set the TCP port for displaying the CDR information as 8500, type 'CDRtcpport 8500' on the screen, and press [Enter], and then the port will be set as follows:

```
SMG400:165.213.81.230> CDRtcpport 8500

>>>[CDR] Set CDR Output on TCP Port(8500)

Goodvalue = 0 = 0x0
SMG400:165.213.81.230>
```

CDRtcpserver ip1,ip2,ip3.ip4,port

Function Sets the IP address and port number of TCP server that is supposed to display CDR information.

Procedure At the SMG400 prompt, type 'CDRtcpserver' and a space. Enter the IP address and port number of TCP server and press [Enter]. Separate the parameters from each other using comma (.). For example, if the IP address and port number of TCP server are 165.213.87.95 and 1213 respectively, type "CDRtcpserver 165,213,87,85,1213" on the screen and press [Enter].

```
SMG400:165.213.81.230> CDRtcpserver 165,213,87,85,1213

>>>[CDR] Set CDR Output on TCP Server IP : 165.213.87.85
>>>[CDR] Set CDR Output on TCP Server Port : 1213

Goodvalue = 0 = 0x0
SMG400:165.213.81.230>
```

CDRudpport ip1,ip2,ip3,ip4,port

Function Set the UDP IP address and UDP port for the UDP Link that will display the CDR output information.

Procedure In the SMG400 prompt, type 'CDRudpport' and a space, and type the UDP IP address and port for displaying the CDR information, and then press [Enter]. Separate the parameters from one another by means of a comma (,).

For example, if you want to set the IP address as 165.213.87.85, and the port as 8800 for the UDP Link for displaying the CDR information, type 'CDRudpport 165,213,87,85,8800' on the screen, and press [Enter].

```
SMG400:165.213.81.230> CDRudpport 165,213,87,85,8800

>>>[CDR] Set CDR Output on UDP IP = 165.213.87.85
               <- udp ip address is set as 165.213.87.85.
>>>[CDR] Set CDR Output on UDP Port(8800)
               <- udp port is set as 8800.

Goodvalue = 0 = 0x0
SMG400:165.213.81.230>
```

Offcdrtcp

Function It is used to inactivate the CDR TCP Link. That is, the CDR to be output to the TCP Link is not generated. Basically, the CDR TCP Link is turned Off.

Procedure If you want to inactivate the current TCP CDR output Link, type 'Offcdrtcp' at the SMG400 prompt, and press [Enter].

```
SMG400:165.213.81.230> Offcdrtcp

>>>[CDR] Turn Off CDR Output on TCP Link

Goodvalue = 0 = 0x0
SMG400:165.213.81.230>
```

Offcdrudp

Function It is used to inactivate the current CDR UDP Link. That is, the CDR to be output to the UDP Link is not generated. Basically, the CDR UDP Link is turned Off.

Procedure If you want to inactivate the current UDP CDR output Link, type 'Offcdrudp' at the SMG400 prompt, and press [Enter].

```
SMG400:165.213.81.230> Offcdrudp

>>>[CDR] Turn Off CDR Output on UDP Link

Goodvalue = 0 = 0x0
SMG400:165.213.81.230>
```

Oncdrtcp

Function Before using this command, the port for displaying the CDR information must be set, and the Default value is 8200. Activate the CDR to be output to the TCP Link. Basically, the CDR TCP link output is turned Off.

Procedure 1. If you want to display the CDR information on the TCP Link, type 'Oncdrtcp' at the SMG400 prompt, and press [Enter].

```
SMG400:165.213.81.230> Oncdrtcp

>>>[CDR] Turn On CDR Output on TCP Link
>>>[CDR] TCP Port(8500)

Goodvalue = 0 = 0x0
SMG400:165.213.81.230>
```

2. If you use the Telnet program to connect to the CDR TCP port specified for the system, the CDR information is displayed. For more details on the format of the CDR information, please see "Chapter7 Using the CDR (Call Detail Record)."

```
GVO: 1/2/2002 18:39:07 --:--:-- 201 2111 165.213.87.74 20 0026 24
DVR: 1/2/2002 18:39:08 --:--:-- - 9 - 43 0202 0
DVR: 1/2/2002 18:39:11 --:--:-- - 9 - 42 0202 0
DVR: 1/2/2002 18:39:14 --:--:-- - 9 - 41 0202 0
DVI: 1/7/2002 14:59:13 --:--:-- 201 4111 - ffff 001c 0
DVO: 1/7/2002 14:59:12 --:--:-- 201 4111 165.213.81.230 20 001c 0
DVI: 1/7/2002 15:00:25 15:00:25 4112 201 165.213.87.83 20 0010 64
DVI: 1/7/2002 11:27:32 --:--:-- 4111 201 - 20 0010 0
DVI: 1/7/2002 11:27:34 --:--:-- 4111 201 - 20 0010 0
```


Oncdrudp

Function It activates the CDR to be output to the UDP Link. Basically, the CDR UDP Link output is turned Off. Before using this command, the UDP IP address and port for displaying the CDR information on the UDP Link must be set. These values do not have Defaults, and users must set them.

Procedure 1. If you want to display the CDR information on the UDP Link, type 'Oncdrudp' at the SMG400 prompt, and press [Enter].

```
SMG400:165.213.81.230> Oncdrudp

>>>[CDR] Turn On CDR Output on UDP Link
>>>[CDR] UDP IP Address = 165.213.87.85
>>>[CDR] UDP Port: 8800

Goodvalue = 0 = 0x0
SMG400:165.213.81.230>
```

2. If you make the UDP Link to the UDP Server program using the port of the CDR UDP IP address specified for the system, the CDR information is displayed. For more details on the CDR information, please see "Chapter7 Using the CDR (Call Detail Record)."

```
opened UDP socket with port no. 8800 ...
-----
GVO: 1/2/2002 18:39:07 --:--:-- 201 2111 165.213.87.74 20 0026 24
DVR: 1/2/2002 18:39:08 --:--:-- - 9 - 43 0202 0
DVR: 1/2/2002 18:39:11 --:--:-- - 9 - 42 0202 0
DVR: 1/2/2002 18:39:14 --:--:-- - 9 - 41 0202 0
DVI: 1/7/2002 14:59:13 --:--:-- 201 4111 - ffff 001c 0
DVO: 1/7/2002 14:59:12 --:--:-- 201 4111 165.213.81.230 20 001c 0
DVI: 1/7/2002 15:00:25 15:00:25 4112 201 165.213.87.83 20 0010 64
DVI: 1/7/2002 11:27:32 --:--:-- 4111 201 - 20 0010 0
DVI: 1/7/2002 11:27:34 --:--:-- 4111 201 - 20 0010 0
```

* Setcdrtcpmode mode

Function SMG-400 is a TCP link for the display of CDR information and can be used in either a TCP Server mode or a TCP Client mode. The TCP Server Mode is the default. Type 'Setcdrtcpmode 1 ' on the screen and press [Enter] to change TCP Server mode to TCP Client mode.
(TCP Mode 0:Server(default), 1 :Client)

Default: CDR TCP Server Mode

Procedure 1. At the SMG400 prompt, type 'Setcdrtcpmode 1 ' and press [Enter] to change TCP Server mode to TCP Client mode.

```
SMG400:165.213.81.230> Setcdrtcpmode 1

>>>[CDR] Set CDR TCP Client(CDR Can be Sent TCP Server)

Goodvalue = 0 = 0x0
SMG400:165.213.81.230>
```

2. At the SGM-400 prompt, type 'Setcdrtcpmode 0' and press [Enter] to change TCP Server mode to TCP Client mode.

```
SMG400:165.213.81.230> Setcdrtcpmode 0

>>>[CDR] Set CDR TCP Server Mode(CDR Can be Sent TCP
Client)

Goodvalue = 0 = 0x0
SMG400:165.213.81.230>
```

date

Function It displays the current system time in the 'day of the week month day hour:minute:second year' format.

Procedure Type 'date' at the SMG400 prompt, and press [Enter].

```
SMG400:165.213.81.230> date

>>> Date: Thu Feb 21 10:32:12 2002

value = 1 = 0x1
SMG400:165.213.81.230>
```

dbfilehelp

Function This command displays the CLI commands related to system information Backup and save.

The DB Down/Upload function is used to save system information in a file, or transfer the information saved in a file to the system. It is used to apply information on one system to several other systems, or to back up system information and recover the system from system failures. The system information file is an ASCII file.

Procedure At the SMG400 prompt, type 'dbfilehelp,' and press [Enter]. Then, the following DB-related CLI command list is displayed on the screen.

```
SMG400:165.213.81.230> dbfilehelp

dbfilehelp          Print This List
getdefdb "filename" Generate File with Default DB Value
getdb "filename"     Generate File from Current DB Value
putdb "filename"     Update System DB from File
dump "filename"      Print DB File to Console
load "filename"      Write DB File from Console

value = 2 = 0x2
SMG400:165.213.81.230>
```

getdefdb "filename"

Function It saves the default DB value of the current system in a file.

Procedure At the SMG400 prompt, type 'getdefdb' and a space, and type the file name to save, and press [Enter]. Then, the default DB backup file is created. The file name must be in quotation marks ("").
For example, if you want to save the default DB in a file named defdb.txt, type 'getdefdb "defdb.txt"' at the prompt on the screen, and press [Enter].

```
SMG400:165.213.81.230> ls
<- command used to check the file
value = 0 = 0x0
SMG400:165.213.81.230> getdefdb "defdb.txt"
<- The system initial information is
saved in a file named defdb.txt.
SMG400:165.213.81.230> ls
DEFDB.TXT                <- defdb.txt file is created.
value = 0 = 0x0
SMG400:165.213.81.230>
```

getdb "filename"

Function It saves the DB value currently set for the system in a file.

Procedure At the SMG400 prompt, type 'getdb' and a space, and type the file name to save, and press [Enter]. Then, the system DB backup file is created. The file name must be in quotation marks ("").

For example, if you want to save the DB of the current system in a file named db.txt, type 'getdb "db.txt"' at the prompt on the screen, and press [Enter].

```
SMG400:165.213.81.230> ls
                        <- command used to check the file
value = 0 = 0x0
SMG400:165.213.81.230> getdb "db.txt"
                        <- The system information of the system is saved
                           in a file named defdb.txt.
value = 0 = 0x0
SMG400:165.213.81.230> ls
DB.TXT                  <- db.txt file is created.
value = 0 = 0x0
SMG400:165.213.81.230>
```

putdb "filename"

Function It saves the DB file transmitted via the FTP program in the system. First, use the FTP program to send the saved DB file to the system, and use this command to set the DB for the system.

Procedure At the SMG400 prompt, type 'putdb' and a space, and type the file name of the DB to save in the system, and press [Enter]. Then, the system DB is saved as the applicable DB value. The file name must be in quotation marks ("").

For example, if you want to use the backup DB named db.txt in the system, use the FTP program to send the DB file to the system, and type 'putdb "db.txt"' at the prompt, and press [Enter].

```
SMG400:165.213.81.230> ls
<- Check the system information file.
DB.TXT
value = 0 = 0x0
SMG400:165.213.81.230> putdb "db.txt"
<- Upload the system information saved in db.txt file to the
system.

Good
SMG400:165.213.81.230>
```


dump "filename"

Function It displays the file in the system on the console screen.
For detailed description of system information file configuration, please see "Appendix B. System Information File Configuration."

Procedure At the SMG400 prompt, type 'dump' and a space, and type the name of the file to display, and press enter [Enter]. Then, the file is displayed on the console screen. The file name must be in quotation marks ("").

For example, if you want to display a file named db.txt, type 'dump "db.txt"' at the prompt, and press [Enter].

```
SMG400:165.213.81.230> ls
                        <- Check system information file.
DB.TXT
value = 0 = 0x0
SMG400:165.213.81.230> dump "db.txt"
                        <- Print the system information file on the screen.

system_db()
{
    sys.dhcp()
    {
        sys.dhcp.client = 0 ; def(0) min(0) max(1) (0)no, (1)yes
        sys.dhcp.classid = ; def()
    }
    sys.network_parameter()
    {
        sys.network.my_ipaddr = 165.213.81.230 ; def(0.0.0.0)
                                                My IP Address
        sys.network.my_gateway = 165.213.81.1 ; def(0,0,0,0)
                                                My GateWay Address
        sys.network.my_netmask = 255.255.255.0 ; def(0,0,0,0)
                                                My Subnet Masks
        sys.network.my_tos    = 0    ; def(0) min(0) max(255)
                                                My TOS(Type of Service)
    }
    ...
(abbreviated)
```

```
.....  
    ...  
    voip.caller_id_table(30)  
    {  
    }  
    }  
value = 0 = 0x0  
SMG400:165.213.81.230>
```

load "filename"

Function It creates a file on the console screen, and allows users to enter desired characters. It is used to read the system information file from the console and save it in a file.

- Procedure**
1. At the SMG400 prompt, type 'load' and a space, and type the name of the file for entering characters, and press [Enter]. Then, the prompt on the next line will blink. The file name must be in quotation marks ("").
For example, if you want to display a file named digit.txt, type 'load "digit.txt"' at the prompt on the screen, and press [Enter]. If a file named 'digit.txt' already exists, it is overwritten, and if not, a new file is created.
 2. Enter the desired character string. If you want to finish entering the character string, type a 'period(.),' and press [Enter].
 3. Corresponding files are saved in the system.

```
SMG400:165.213.81.230> ls
      <- Command used to check the file
value = 0 = 0x0
SMG400:165.213.81.230> load "db.txt"
      <- The system information is saved in db.txt file.

system_db()      <- Enter the system information.
{
  sys.dhcp()
  {
    sys.dhcp.client = 0 ;
    sys.dhcp.classid = ;
  }
}
.      <- Enter '.' in the first space to finish.
value = 0 = 0x0
SMG400:165.213.81.230> ls
DB.TXT      <- db.txt file is created.
value = 0 = 0x0
SMG400:165.213.81.230> dump "db.txt"
      <- Check the system information file.

system_db()
{
=====
```

```
sys.dhcp()  
{  
    sys.dhcp.client = 0  
    sys.dhcp.classid = ;  
}  
}  
  
value = 0 = 0x0  
SMG400:165.213.81.230>
```

optionhelp

Function This command displays short descriptions of CLI commands concerning miscellaneous options that can be set in the system.

Procedure At the SMG400 prompt, type 'optionhelp,' and press [Enter]. Then, the following CLI command list for setting options is displayed on the screen.

```
SMG400:23.30.153.217> optionhelp

optionhelp          Print This List
Showoption          Show Option List of the Followings
Off800              Turn Off 800 Dial in Standalone Mode
On800               Turn On 800 Dial in Standalone Mode(Default)
Offhotconnection    Turn Off Hot Connection on Hook Off(Default)
Onhotconnection     Turn On Hot Connection on Hook Off
Offfbcast           Turn Off Speaker Connection on E&M, LOOP(Default)
Onbcast slot,port,tel Turn On Speaker Connection on E&M, LOOP
Offloopcheck        Turn Off Detecting LOOP-Disconnect by
                    Tone(Default)
Onloopcheck frequency Turn On Detecting LOOP-Disconnect by Tone
Setisptype isptype  Set ISP Type(0: Default, 1: SAMSUNG Networks)
Offslcgroup         Turn Off SLC Port Group Service
Onslcgroup          Turn On SLC Port Group Service(Default)
Offdynamicnego      Turn Off Codec Dynamic Nego(Default)
Ondynamicnego       Turn On Codec Dynamic Nego
Offvoiceafterfax    Turn Off Transition From Fax to Voice(Default)
Onvoiceafterfax     Turn On Transition From Fax to Voice
Offrbtrelay         No Relay RealRBT When VirtualRBT is
                    Enabled(Default)
Onrbtrelay          Relay RealRBT When VirtualRBT is Enabled
Setjitterminmax min,max Set Jitter Min, Max(Default:[min]=30, [max]=150)
Setgktimetolive ttl Set Gatekeeper Time To Live(Default=30sec)
Setrrqtimewhenfail ttl Set RRQ Time When GK Link Failed(Default=30sec)
Offwebsession       Turn Off WebSession Service
Onwebsession        Turn On WebSession Service(Default)
Oncheckgwlist       Turn On Checking Permission GW List
Offcheckgwlist      Turn Off Checking Permission
                    GW List(Default)
Offpstnreroute      Turn Off PSTN Rerouting
Onpstnreroute       Turn On PSTN Rerouting(Default)
```

```
Clearrerouteport      Clear PSTN Rerouting to Specific Port
Setrerouteport slot,port Set PSTN Rerouting to Specific Port
Offfurgreasonmode     Turn Off Checking URQ Reason(Default)
Onurgreasonmode        Turn On Checking URQ Reason
Offsystemlog          Turn Off and Close System Log File(Default)
Onsystemlog           Turn On and Create System Log File
copy "filename","filename" Copy from the Input File to the Output File
rm "filename"          Remove File
ll(ls)                List the Contents of a Directory

value = 1 = 0x1
SMG400:23.30.153.217>
```

Showoption

Function It displays the current setting status of the miscellaneous options in the system. If the ISP type is normal, it is not displayed on the screen. Other option CLI commands can be used to change these options.

Default:

800	Off (tandem mode) On (standalone mode)
hot connection	Off
broadcast function	Off
loop disconnect check function	Off
SLC Port Group Service	On
Codec Dynamic Nego	Off
Transition From Fax to Voice	Off
Relay Real RBT When Virtual RBT is Enabled	Off
Current Jitter Value	Min=30msec Max=150msec
Gatekeeper Time To Live	30sec
Web Session Service	On
Checking Permission GW List	Off
Pstn Rereouting	On
Rerouting to Specific Port	Off
URQ Reason Mode	Off
System Log	Off

Procedure Type 'Showoption' at the SMG400 prompt, and press [Enter].

```
SMG400:23.30.153.217> Showoption

ISP Type : None
800 : On
Hot connection : Off
Broadcast function : Off
Loop disconnect check function : Off
SLC Port Group Service : On
Codec Dynamic Nego. : Off
Transition From Fax to Voice : Off
Relay Real RBT When Virtual RBT is Enabled : Off
Current Jitter Value: MIN=30msec MAX=150msec
Current Jitter Value: MIN=30msec MAX=150msec
Gatekeeper Time To Live : 30sec
```

```
RRQ Time When GK Link Failed : 30 sec
Web Session Service : On
Checking Permission GW List : Off
Pstn Rereouting : On
Rerouting to Specific Port : Off
URQ Reason Mode : On
System Log : Off

value = 2 = 0x2
SMG400:23.30.153.217>
```


Off800

Function If a VoIP Call is made in the Stand-alone mode, the system automatically sets the '800' access code so that the VoIP port is seized unconditionally and a call is connected without having to dial the Access Code.

This CLI sets the currently active status, and if the setting needs to be maintained during system booting, it must be saved in the CLI's pstnmenu.

Procedure 1. At the SMG400 prompt, type 'Off800,' and press [Enter].

```
SMG400:165.213.81.230> Off800

Off 800 option...
value = 20 = 0x14
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's pstnmenu and select item 15 '[15] Save & Exit,' and press [Enter].

```
SMG400:165.213.81.230> pstnmenu

<<<<< PSTN Configuration Menu >>>>>

[0] Gateway Operation Mode
[1] PSTN Rerouting Insert Digit
[2] PCM Method
[3] Dial Method
[4] SLI Signal
[5] Trunk Signal
[6] Call Control Method
[7] Ring Cadence
[8] System Tone Cadence
[9] CO Tone Cadence
[10] Gain Control
[11] Diagnosis
[12] MMC Port Block/UnBlock
[13] Display Slot Configuration
[14] Display Port Status
```

```
[15] Save & Exit
```

```
[16] Exit
```

```
Select ? 15  <- Select item 15 'Save & Exit.'
```

```
Save & Exit
```

```
Good
```

On800

Function It suspends the system function to automatically set the '800' access code so that trunk access codes such as 800, 801, 802, and 803 can be dialed and the call is connected in the Stand-alone mode. The user must enter the desired access code, and press the digits(default). This CLI sets the currently active status, and if the setting needs to be maintained during system booting, it must be saved in the CLI's pstnmenu.

Procedure 1. At the SMG400 prompt, type 'On800,' and press [Enter].

```
SMG400:165.213.81.230> On800

On 800 option...
value = 19 = 0x13
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's pstnmenu and select item 15 '[15] Save & Exit,' and press [Enter].

```
SMG400:165.213.81.230> pstnmenu

<<<<< PSTN Configuration Menu >>>>>

[0] Gateway Operation Mode
[1] PSTN Rerouting Insert Digit
[2] PCM Method
[3] Dial Method
[4] SLI Signal
[5] Trunk Signal
[6] Call Control Method
[7] Ring Cadence
[8] System Tone Cadence
[9] CO Tone Cadence
[10] Gain Control
[11] Diagnosis
[12] MMC Port Block/UnBlock
[13] Display Slot Configuration
```

```
[14] Display Port Status
[15] Save & Exit
[16] Exit

Select ? 15  <- Select item 15 'Save & Exit.'
Save & Exit

Good
```

Offhotconnection

Function This command is used to clear the hot connection mode(Default). This CLI sets the currently active status, and if the setting needs to be maintained during system booting, it must be saved in the CLI's pstnmenu.

Procedure 1. At the SMG400 prompt, type 'Offhotconnection,' and press [Enter].

```
SMG400:165.213.81.230> Offhotconnection

Off hot connection...
value = 24 = 0x18
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's pstnmenu and select item 15 '[15] Save & Exit,' and press [Enter].

```
SMG400:165.213.81.230> pstnmenu

<<<<< PSTN Configuration Menu >>>>>

[0] Gateway Operation Mode
[1] PSTN Rerouting Insert Digit
[2] PCM Method
[3] Dial Method
[4] SLI Signal
[5] Trunk Signal
[6] Call Control Method
[7] Ring Cadence
[8] System Tone Cadence
[9] CO Tone Cadence
[10] Gain Control
[11] Diagnosis
[12] MMC Port Block/UnBlock
[13] Display Slot Configuration
[14] Display Port Status
[15] Save & Exit
[16] Exit

Select ? 15  <- Select item 15 'Save & Exit.'
Save & Exit

Good
```

Onhotconnection

Function If a Hook Off Event is detected in the FXS/FXO configuration, it automatically enables a VoIP call. The routing information about access code '9' must be set from the VoIP Outbound Routing Table. This function can be used when a 1:1 connection is made to the other's Gateway, and the VoIP Network is used to do Overlap Dialing. (In case VoIP is used for T/D)
This CLI sets the currently active status, and if the setting needs to be maintained during system booting, it must be saved in the CLI's pstnmenu.

Procedure 1. At the SMG400 prompt, type 'Onhotconnection,' and press [Enter].

```
SMG400:165.213.81.230> Onhotconnection

On hot connection...
value = 23 = 0x17
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's pstnmenu and select item 15 '[15] Save & Exit,' and press [Enter].

```
SMG400:165.213.81.230> pstnmenu
```

```
<<<< PSTN Configuration Menu >>>>
```

- [0] Gateway Operation Mode
- [1] PSTN Rerouting Insert Digit
- [2] PCM Method
- [3] Dial Method
- [4] SLI Signal
- [5] Trunk Signal
- [6] Call Control Method
- [7] Ring Cadence
- [8] System Tone Cadence
- [9] CO Tone Cadence
- [10] Gain Control
- [11] Diagnosis
- [12] MMC Port Block/UnBlock
- [13] Display Slot Configuration
- [14] Display Port Status
- [15] Save & Exit
- [16] Exit

```
Select ? 15  <- Select item 15 'Save & Exit.'
```

```
Save & Exit
```

```
Good
```

Offbcast

Function It clears the function to connect the speaker through E&M and Loop, and broadcast. (default)

This CLI sets the currently active status, and if the setting needs to be maintained during system booting, it must be saved in the CLI's pstnmenu.

Procedure 1. At the SMG400 prompt, type 'Offbcast,' and press [Enter].

```
SMG400:165.213.81.230> Offbcast

Off broadcast function...
value = 28 = 0x1c
SMG400:165.213.81.230>
```


2. To maintain this setting during system booting, enter the CLI's pstnmenu and select item 15 '[15] Save & Exit,' and press [Enter].

```
SMG400:165.213.81.230> pstnmenu
```

```
<<<< PSTN Configuration Menu >>>>
```

- [0] Gateway Operation Mode
- [1] PSTN Rerouting Insert Digit
- [2] PCM Method
- [3] Dial Method
- [4] SLI Signal
- [5] Trunk Signal
- [6] Call Control Method
- [7] Ring Cadence
- [8] System Tone Cadence
- [9] CO Tone Cadence
- [10] Gain Control
- [11] Diagnosis
- [12] MMC Port Block/UnBlock
- [13] Display Slot Configuration
- [14] Display Port Status
- [15] Save & Exit
- [16] Exit

```
Select ? 15  <- Select item 15 'Save & Exit.'
```

```
Save & Exit
```

```
Good
```

Onbcast slot,port,tel

Function It sets the function to connect the speaker through E&M and Loop, and broadcast. If this function is set and a call is tried at the specified phone number, the speaker is connected to the applicable slot and channel of the SMG-400 system, and can be used for broadcasting.

This CLI sets the currently active status, and if the setting needs to be maintained during system booting, it must be saved in the CLI's pstnmenu.

slot :	1 or 2 (1:USL1, 2:USL2)
Channel	the port number of the applicable slot (1~8).
Tel :	telephone number for connecting to the speaker.

Procedure 1. At the SMG400 prompt, type 'Onbcast' and type the desired slot, channel, and telephone number in parentheses, and press [Enter]. The parameter must be in parentheses and separated by commas (,). For example, if you want to set 700 as the telephone number for USL slot 1, and port 1, and connects the speaker, type 'Onbcast(1,1,700)' on the screen, and press [Enter].

```
SMG400:165.213.81.230> Onbcast (1,1,700)
```

```
On broadcast function : slot 1, channel 0, tel 700...  
value = 56 = 0x38 = '8'
```

```
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's pstnmenu and select item 15 '[15] Save & Exit,' and press [Enter].

```
SMG400:165.213.81.230> pstnmenu
```

```
<<<< PSTN Configuration Menu >>>>
```

- [0] Gateway Operation Mode
- [1] PSTN Rerouting Insert Digit
- [2] PCM Method
- [3] Dial Method
- [4] SLI Signal
- [5] Trunk Signal
- [6] Call Control Method
- [7] Ring Cadence
- [8] System Tone Cadence
- [9] CO Tone Cadence
- [10] Gain Control
- [11] Diagnosis
- [12] MMC Port Block/UnBlock
- [13] Display Slot Configuration
- [14] Display Port Status
- [15] Save & Exit
- [16] Exit

```
Select ? 15  <- Select item 15 'Save & Exit.'
```

```
Save & Exit
```

```
Good
```

Offloopcheck

Function This command is used to clear the Onloopcheck function(default). This CLI sets the currently active status, and if the setting needs to be maintained during system booting, it must be saved in the CLI's pstnmenu.

Procedure 1. At the SMG400 prompt, type 'Offloopcheck,' and press [Enter].

```
SMG400:165.213.81.230> Offloopcheck

Off Loop Disconnect Check Function...
value = 40 = 0x28 = '('
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's pstnmenu and select item 15 '[15] Save & Exit,' and press [Enter].

```
SMG400:165.213.81.230> pstnmenu

<<<<< PSTN Configuration Menu >>>>>

[0] Gateway Operation Mode
[1] PSTN Rerouting Insert Digit
[2] PCM Method
[3] Dial Method
[4] SLI Signal
[5] Trunk Signal
[6] Call Control Method
[7] Ring Cadence
[8] System Tone Cadence
[9] CO Tone Cadence
[10] Gain Control
[11] Diagnosis
[12] MMC Port Block/UnBlock
[13] Display Slot Configuration
[14] Display Port Status
[15] Save & Exit
[16] Exit

Select ? 15  <- Select item 15 'Save & Exit.'
Save & Exit

Good
```

Onloopcheck frequency

Function In the Loop incoming mode, the Loop checks the disconnect tone periodically to prevent the channel from being tied up. For example, if the SMG-400 system is in the tandem mode where VoIP enters and then go out with seizing the Loop, the Loop may not detect that the tone has been disconnected in Loop incoming PBX (or KTS) and thereby the Loop and SLC might be tied up. If you set this function, the Loop checks the disconnected tone periodically to cut tied up channel.

If you press [Enter] without entering the disconnected tone (in general, busy tone) frequency, the default frequency of the system is set. 480Hz, 440Hz, and 350Hz are only available for the frequency

This CLI sets the currently active status, and if the setting needs to be maintained during system booting, it must be saved in the CLI's pstnmenu.

- SMG-400 frequency default value: 480Hz

Procedure 1. At the SMG400 prompt, type 'Onloopcheck' and set the desired tone frequency, and press [Enter]. 350Hz, 440Hz and 480Hz are available for the Tone frequency.

```
SMG400:165.213.81.230> Onloopcheck

On Loop Disconnect Check Function(480Hz)...
value = 46 = 0x2e = '.'
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's pstnmenu and select item 15 '[15] Save & Exit,' and press [Enter].

```
SMG400:165.213.81.230> pstnmenu
```

```
<<<< PSTN Configuration Menu >>>>
```

```
[0] Gateway Operation Mode
[1] PSTN Rerouting Insert Digit
[2] PCM Method
[3] Dial Method
[4] SLI Signal
[5] Trunk Signal
[6] Call Control Method
[7] Ring Cadence
[8] System Tone Cadence
[9] CO Tone Cadence
[10] Gain Control
[11] Diagnosis
[12] MMC Port Block/UnBlock
[13] Display Slot Configuration
[14] Display Port Status
[15] Save & Exit
[16] Exit
```

```
Select ? 15  <- Select item 15 'Save & Exit.'
```

```
Save & Exit
```

```
Good
```

Setisptype isptype

Function It sets the desired ISP type of the system. The default ISP type parameter is 0 (normal), and 1 selects the option of a Samsung Network company.

You can use this function to set options for diverse ISPs, and provide differentiated services.

This CLI sets the currently active status, and if the setting needs to be maintained during system booting, it must be saved in the CLI's voipmenu.

Default : ISP type 0

Procedure 1. At the SMG400 prompt, type 'Setisptype' and enter the desired ISP type, and press [Enter].
For example, if you want to set a Samsung Network company as the ISP type (1), type 'Setisptype 1' on the screen, and press [Enter].

```
SMG400:165.213.81.230> Setisptype 1

ISP Type: Unitel
value = 20 = 0x14
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit,' and press [Enter].

```
SMG400:165.213.81.230> voipmenu

<<<< VoIP Configuration Menu >>>>

[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit

Select ? 7    <- Select item 7 'Save & Exit.'
Save & Exit

Good
Exit
```


Offslcgroup

Function Disables 'Onslcgroup' function.

Procedure 1. At the SMG400 prompt, type 'Offslcgroup' and press [Enter].

```
SMG400:165.213.81.230> > Offslcgroup
SLC Port Group Service : Disable
value = 35 = 0x23 = '#'
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's pstnmenu and select item 15 '[15] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> pstnmenu

<<<<< PSTN Configuration Menu >>>>>

[0] Gateway Operation Mode
[1] PSTN Rerouting Insert Digit
[2] PCM Method
[3] Dial Method
[4] SLI Signal
[5] Trunk Signal
[6] Call Control Method
[7] Ring Cadence
[8] System Tone Cadence
[9] CO Tone Cadence
[10] Gain Control
[11] Diagnosis
[12] MMC Port Block/UnBlock
[13] Display Slot Configuration
[14] Display Port Status
[15] Save & Exit
[16] Exit
Select ? 15
Save & Exit
SMG400:165.213.81.230>
```

Onslcgroup

Function Seizes the next SCL port automatically in Stand-alone mode if the current SLC port is busy. For example, if you dial 201, a SLC port number and the number is busy, the system will seize the next port number, 202 and ring automatically. In this case, Port 202 should be in Stand-by mode (default).

Procedure 1. At the SMG400 prompt, type 'Onslcgroup' and press [Enter].

```
SMG400:165.213.81.230> Onslcgroup
SLC Port Group Service : Enable
value = 34 = 0x22 = ''
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's pstnmenu and select item 15 '[15] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> pstnmenu

<<<<< PSTN Configuration Menu >>>>>
[0] Gateway Operation Mode
[1] PSTN Rerouting Insert Digit
[2] PCM Method
[3] Dial Method
[4] SLI Signal
[5] Trunk Signal
[6] Call Control Method
[7] Ring Cadence
[8] System Tone Cadence
[9] CO Tone Cadence
[10] Gain Control
[11] Diagnosis
[12] MMC Port Block/UnBlock
[13] Display Slot Configuration
[14] Display Port Status
[15] Save & Exit
[16] Exit
Select ? 15

Save & Exit
```

Offdynamicnego

Function Disables the 'Ondynamicnego' function.

Procedure 1. At the SMG400 prompt, type 'Offdynamicnego' and press [Enter].

```
SMG400:165.213.81.230> Offdynamicnego
Off Dynamic Nego. for Codec...
value = 33 = 0x21 = '!'
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu

<<<< VoIP Configuration Menu >>>>
[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit
Select ? 7

Save & Exit
```

Ondynamicnego

Function Selects codec for RTP media channel dynamically depending on the codecs of remote gateway. For example, G.723.1 codec will be selected automatically for RTP media channel if remote gateway can G.723.1 codec only and 'Ondynamicnego' is set.

Procedure 1. At the SMG400 prompt, type 'Ondynamicnego' and press [Enter].

```
SMG400:165.213.81.230> Ondynamicnego
On Dynamic Nego. for Codec...
value = 32 = 0x20 = ' '
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu

<<<<< VoIP Configuration Menu >>>>>
[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit
Select ? 7

Save & Exit
```

Offvoiceafterfax

Function Disables 'Onvoiceafterfax' function (default).

Procedure 1. At the SMG400 prompt, type 'Offvoiceafterfax' and press [Enter].

```
SMG400:165.213.81.230> Offvoiceafterfax
Transition From Fax to Voice : Off
value = 37 = 0x25 = '%'
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu

<<<<< VoIP Configuration Menu >>>>>
[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit
Select ? 7

Save & Exit
```

Onvoiceafterfax

Function Enables users to do voice communication through a channel after sending facsimile through the channel.

Procedure 1. At the SMG400 prompt, type 'Onvoiceafterfax' and press [Enter].

```
SMG400:165.213.81.230> Onvoiceafterfax
Transition From Fax to Voice : On
value = 36 = 0x24 = '$'
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu

<<<<< VoIP Configuration Menu >>>>>
[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit
Select ? 7

Save & Exit
```

Offrbtrelay

Function Disables 'Onrbtrelay' Function (default).

Procedure 1. At the SMG400 prompt, type 'Offrbtrelay' and press [Enter].

```
SMG400:165.213.81.230> Offrbtrelay
Relay Real RBT When Virtual RBT is Enabled : Off
value = 52 = 0x34 = '4'
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu

<<<<< VoIP Configuration Menu >>>>>
[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit
Select ? 7

Save & Exit
```

Onrbtrelay

Function If virtual Ring-Back-Tone is set, the system initially sends a virtual Ring-Back-Tone to the PSTN port. When an actual Ring-Back-Tone is transferred from remote side, the system sends the actual Ring-Back-Tone to the PSTN port. (Note: This function operates only if the virtual Ring-Back-Tone is set.)

Procedure 1. At the SMG400 prompt, type 'Onrbtrelay' and press [Enter].

```
SMG400:165.213.81.230> Onrbtrelay
Relay Real RBT When Virtual RBT is Enabled : On
value = 51 = 0x33 = '3'
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu

<<<<< VoIP Configuration Menu >>>>>
[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit
Select ? 7
Save & Exit
```


Setjitterminmax min,max

Function Sets minimum and maximum stay time of packet on Jitter buffer, which is used for QoS configuration. Minimum value is 30 and maximum value is 150 by default. The range of each value is between 10 and 300.

Procedure 1. At the SMG400 prompt, type 'Setjitterminmax' and a space. Enter the minimum and maximum values of Jitter and press [Enter]. The separator of parameters is comma (,).

```
SMG400:165.213.81.230> Setjitterminmax 70,110
Jitter value is Changed as follows: MIN=70msec MAX=110msec
If you want to save DB, select menu 7 of voipmenu in CLI.
value = 120 = 0x78 = 'x'
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu

<<<<< VoIP Configuration Menu >>>>>
[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit
Select ? 7

Save & Exit
```

Setgktimetolive ttl

Function Sets the registration cycle of Gatekeeper. For example, if the registration cycle of the Gatekeeper is set to 10 seconds, the system sends RRQ messages to the Gatekeeper every 10 seconds.

Procedure 1. At the SMG400 prompt, type 'Setgktimetolive' and a space. Enter the value of ttl and press [Enter].

```
SMG400:165.213.81.230> Setgktimetolive 10
Changed Gatekeeper Time To Live ...
Old Gatekeeper Time To Live : 30(sec)
New Gatekeeper Time To Live : 10(sec)
Goodvalue = 0 = 0x0
SMG400:165.213.81.230>
Restore VoIP DB from Flash Memory...
[Stack]H323_config_buffer size(=5788)
[Stack]ciConstructEx (=0xbf0a38)
[Stack]GK_Enable=0
[Stack]msSetDebugLevel(=0), rc(=1)
[Stack]cmGetLocalCallSignalAddress: 165.213.81.230:1720

SMG400:165.213.81.230>
```

Setrrqtimewhenfail

Function Sets the registration resending cycle (second) of Gatekeeper when the registration attempt of Gatekeeper fails. For example, if the registration cycle of the system is set to 30 seconds and the registration resending cycle is set to 20 seconds, the system changes the cycle of RRQ messages to 20 seconds and sends the RRQ messages to Gatekeeper when registration fails at 30 seconds of cycle.

Procedure At the SMG400 prompt, type ' Setrrqtimewhenfail ' and a space. Enter desired resending cycle (TTL) and press [Enter]. Type 'Setrrqtimewhenfail 20' and press [Enter] to set resending cycle to 20 seconds.

```
SMG400:165.213.81.230> Setrrqtimewhenfail 20

Changed TTL when fails the registration ...
Old TimeToLive : 10(sec)
New TimeToLive : 20(sec)

Goodvalue = 0 = 0x0
SMG400:165.213.81.230>
Restore VoIP DB from Flash Memory...
[Stack]H323_config_buffer size(=5788)
[Stack]ciConstructEx (=0xc1a214)
[Stack]GK_Enable=0
[Stack]msSetDebugLevel(=0), rc(=1)
[Stack]cmGetLocalCallSignalAddress: 165.213.81.230:1720

SMG400:165.213.81.230>
```

Offwebsession

Function Disables access to remote web management site for system security.

Procedure 1. At the SMG400 prompt, type 'Offwebsession' and press [Enter].

```
SMG400:165.213.81.230> Offwebsession

Web Session Service is Enable : Off
value = 38 = 0x26 = '&'
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's pstnmenu and select item 15 '[15] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> pstnmenu

<<<<< PSTN Configuration Menu >>>>>
[0] Gateway Operation Mode
[1] PSTN Rerouting Insert Digit
[2] PCM Method
[3] Dial Method
[4] SLI Signal
[5] Trunk Signal
[6] Call Control Method
[7] Ring Cadence
[8] System Tone Cadence
[9] CO Tone Cadence
[10] Gain Control
[11] Diagnosis
[12] MMC Port Block/UnBlock
[13] Display Slot Configuration
[14] Display Port Status
[15] Save & Exit
[16] Exit
Select ? 15

Save & Exit
```

Onwebsession

Function Allows access to web management site to enable remote management through web.

Procedure 1. At the SMG400 prompt, type 'Onwebsession' and press [Enter].

```
SMG400:165.213.81.230> websession

Web Session Service is Enable : On
value = 37 = 0x25 = '%'
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's pstnmenu and select item 15 '[15] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> pstnmenu

<<<<< PSTN Configuration Menu >>>>>
[0] Gateway Operation Mode
[1] PSTN Rerouting Insert Digit
[2] PCM Method
[3] Dial Method
[4] SLI Signal
[5] Trunk Signal
[6] Call Control Method
[7] Ring Cadence
[8] System Tone Cadence
[9] CO Tone Cadence
[10] Gain Control
[11] Diagnosis
[12] MMC Port Block/UnBlock
[13] Display Slot Configuration
[14] Display Port Status
[15] Save & Exit
[16] Exit
Select ? 15

Save & Exit
```

Oncheckgwlist

Function Enables authentication list for VoIP Inbound calls for system security. If the CLI command is set, setup is allowed for only Gatekeeper calls or incoming VoIP calls from IP set in VoIP Remote IP Table. Incoming calls from IP that is not allowed for setup are rejected.

Procedure 1. At the SMG400 prompt, type 'Oncheckgwlist' and press [Enter].

```
SMG400:165.213.81.230> Oncheckgwlist

Using the Incoming Call Permission List : Enable
value = 51 = 0x33 = '3'
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu

<<<<< VoIP Configuration Menu >>>>>
[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit
Select ? 7

Save & Exit
```

Offcheckgwlist

Function Disables the use of authentication list for VoIP Inbound calls.

Procedure 1. At the SMG400 prompt, type 'Offcheckgwlist' and press [Enter].

```
SMG400:165.213.81.230> Offcheckgwlist

Using the Incoming Call Permission List : Disable
value = 52 = 0x34 = '4'
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu

<<<<< VoIP Configuration Menu >>>>>
[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit
Select ? 7

Save & Exit
```

Offpstnreroute

Function Disables PSTN rerouting function.

Procedure 1. At the SMG400 prompt, type 'Offpstnreroute' and press [Enter].

```
SMG400:165.213.81.230> Offpstnreroute

Pstn Rereouting : Off
value = 24 = 0x18
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's pstnmenu and select item 15 '[15] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> pstnmenu

<<<<< PSTN Configuration Menu >>>>>
[0] Gateway Operation Mode
[1] PSTN Rerouting Insert Digit
[2] PCM Method
[3] Dial Method
[4] SLI Signal
[5] Trunk Signal
[6] Call Control Method
[7] Ring Cadence
[8] System Tone Cadence
[9] CO Tone Cadence
[10] Gain Control
[11] Diagnosis
[12] MMC Port Block/UnBlock
[13] Display Slot Configuration
[14] Display Port Status
[15] Save & Exit
[16] Exit
Select ? 15

Save & Exit
```


Onpstnreroute

Function Reroutes VoIP Outbound calls to PSTN port when the VoIP Outbound calls fail for some reasons. Detailed reasons can be set using a CLI command, 'Setivrtable'.

Procedure 1. At the SMG400 prompt, type 'Onpstnreroute' and press [Enter].

```
SMG400:165.213.81.230> Onpstnreroute

Pstn Rereouting : On
value = 23 = 0x17
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's pstnmenu and select item 15 '[15] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> pstnmenu

<<<<< PSTN Configuration Menu >>>>>
[0] Gateway Operation Mode
[1] PSTN Rerouting Insert Digit
[2] PCM Method
[3] Dial Method
[4] SLI Signal
[5] Trunk Signal
[6] Call Control Method
[7] Ring Cadence
[8] System Tone Cadence
[9] CO Tone Cadence
[10] Gain Control
[11] Diagnosis
[12] MMC Port Block/UnBlock
[13] Display Slot Configuration
[14] Display Port Status
[15] Save & Exit
[16] Exit
Select ? 15

Save & Exit
```

Clearrerouteport

Function Disables rerouting to specific PSTN port.

Procedure 1. At the SMG400 prompt, type 'Clearrerouteport' and press [Enter].

```
SMG400:165.213.81.230> Clearrerouteport

Off Reroute port function...
value = 31 = 0x1f
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's pstnmenu and select item 15 '[15] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> pstnmenu

<<<<< PSTN Configuration Menu >>>>>
[0] Gateway Operation Mode
[1] PSTN Rerouting Insert Digit
[2] PCM Method
[3] Dial Method
[4] SLI Signal
[5] Trunk Signal
[6] Call Control Method
[7] Ring Cadence
[8] System Tone Cadence
[9] CO Tone Cadence
[10] Gain Control
[11] Diagnosis
[12] MMC Port Block/UnBlock
[13] Display Slot Configuration
[14] Display Port Status
[15] Save & Exit
[16] Exit
Select ? 15

Save & Exit
```

Setrerouteport

Function Reroutes Outbound calls to a specific PSTN port if the Outbound calls fail. 'Onpstnreroute', a command for the setting of PSTN rerouting should be set first to enable a specific port rerouting function.

Settings:

Slot Value : 1 to 3 (USB1:1, USB2:2, Digital-trunk:3)

Port Value : 1 to 8 (1 to 30 for Digital-trunk)

Procedure 1. At the SMG400 prompt, type 'Setrerouteport' and a space. Enter a specific slot and port to be rerouted by separating them from each other using comma (,) and press [Enter].

```
SMG400:165.213.81.230> Setrerouteport 2,1

On Rerouting to Specific Port : 40(slot 2, port 0)...
value = 56 = 0x38 = '8'
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's pstnmenu and select item 15 '[15] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> pstnmenu

<<<<< PSTN Configuration Menu >>>>>
[0] Gateway Operation Mode
[1] PSTN Rerouting Insert Digit
[2] PCM Method
[3] Dial Method
[4] SLI Signal
[5] Trunk Signal
[6] Call Control Method
[7] Ring Cadence
[8] System Tone Cadence
[9] CO Tone Cadence
[10] Gain Control
[11] Diagnosis
[12] MMC Port Block/UnBlock
[13] Display Slot Configuration
```

```
[14] Display Port Status
```

```
[15] Save & Exit
```

```
[16] Exit
```

```
Select ? 15
```

```
Save & Exit
```

Offurqreasonmode

Function Disables 'Onurqreasonmode'.

Procedure 1. At the SMG400 prompt, type 'Offurqreasonmode' and press [Enter].

```
SMG400:165.213.81.230> Offurqreasonmode

Checking URQ Reason : Off
value = 28 = 0x1c
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu

<<<< VoIP Configuration Menu >>>>
[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit
Select ? 7

Save & Exit
```

Onurqreasonmode

Function Determines whether to resend RRQ or to disable Gatekeeper mode depending on the reason value when the Gatekeeper sends URQ. Sets Non-Gatekeeper mode by self-diagnostic when it is impossible to use the Gatekeeper.

Procedure 1. At the SMG400 prompt, type 'Onurqreasonmode' and press [Enter].

```
SMG400:165.213.81.230> Onurqreasonmode

Checking URQ Reason : On
value = 27 = 0x1b
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu

<<<< VoIP Configuration Menu >>>>
[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit
Select ? 7

Save & Exit
```

Offsystemlog

Function Disables system log save function. Administrator should execute 'Offsystemlog' command first to check the contents of saved log file.

Procedure 1. At the SMG400 prompt, type 'Offsystemlog' and press [Enter].

```

=====
SMG400:165.213.81.230> Offsystemlog

Turn Off and Close System Log File(log.txt)

value = 0 = 0x0
SMG400:165.213.81.230> ll
      <- A command for seeing a file list saved in the system
size      date      time      name
-----
178      JAN-12-2002  20:55:42  LOG.TXT

value = 0 = 0x0
SMG400:165.213.81.230> dump "log.txt"
      <- A command for displaying the contents of a file
      saved in the system on console
Change Access Code(->123)
Change Access Code Length(0->3)
Change Access Code Delete Length(0->3)
Change Access IP Table Index1(255->0)
Change Remote IP Address(0.0.0.0->165.213.81.231)

value = 0 = 0x0
SMG400:165.213.81.230>
=====

```

2. To maintain this setting during system booting, enter the CLI's pstnmenu and select item 15 '[15] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> pstnmenu

<<<<< PSTN Configuration Menu >>>>>
[0] Gateway Operation Mode
[1] PSTN Rerouting Insert Digit
[2] PCM Method
[3] Dial Method
[4] SLI Signal
[5] Trunk Signal
[6] Call Control Method
[7] Ring Cadence
[8] System Tone Cadence
[9] CO Tone Cadence
[10] Gain Control
[11] Diagnosis
[12] MMC Port Block/UnBlock
[13] Display Slot Configuration
[14] Display Port Status
[15] Save & Exit
[16] Exit
Select ? 15

Save & Exit
```


Onsystemlog

Function Generates a log file for system management. The system log file is generated in the name of “log.txt” by default. Administrator can manage the details of system access and DB change through the log file. ‘Offsystemlog’ should be executed to see the contents of the log file. The saved log files can be checked on a local or remote screen through the CLI command of dbfilehelp and can be downloaded on PC.

Procedure 1. At the SMG400 prompt, type 'Onsystemlog' and press [Enter].

```
SMG400:165.213.81.230> Onsystemlog

Turn On and Create System Log File(log.txt)

value = 48 = 0x30 = '0'
SMG400:165.213.81.230>
```

2. To maintain this setting during system booting, enter the CLI's pstnmenu and select item 15 '[15] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> pstnmenu

<<<<< PSTN Configuration Menu >>>>>
[0] Gateway Operation Mode
[1] PSTN Rerouting Insert Digit
[2] PCM Method
[3] Dial Method
[4] SLI Signal
[5] Trunk Signal
[6] Call Control Method
[7] Ring Cadence
[8] System Tone Cadence
[9] CO Tone Cadence
[10] Gain Control
[11] Diagnosis
[12] MMC Port Block/UnBlock
[13] Display Slot Configuration
[14] Display Port Status
[15] Save & Exit
```

```
[16] Exit
Select ? 15

Save & Exit
```

copy

Function Saves files as another name. File names should be enclosed in double quotation marks ("").

Procedure At the SMG400 prompt, type 'copy' and a space. Type the name of source file separated by comma (,) and file name to be copied and press [Enter].

For example, if you want to save 'log.txt' file as '1028log.txt', type 'copy "log.txt","1028log.txt"' and press [Enter].

```
SMG400:165.213.81.230> ll
<- Show a file list saved in the system.
  size      date      time      name
  -----
    308     JAN-12-2002  21:11:00  LOG.TXT

value = 0 = 0x0
SMG400:165.213.81.230> copy "log.txt","1028log.txt"

value = 0 = 0x0
SMG400:165.213.81.230> ll
<- Check a file list saved in the system.
  size      date      time      name
  -----
    308     JAN-12-2002  21:11:00  LOG.TXT
    308     JAN-12-2002  21:19:58  1028LOG.TXT

value = 0 = 0x0
SMG400:165.213.81.230>
```

rm

Function Deletes files that are saved in the system. File names should be enclosed in double quotation marks ("").

Procedure At the SMG400 prompt, type 'rm' and a space. Type the name of files to be deleted and press [Enter]. For example, type 'rm "log.txt" ' and press [Enter] to delete a file named 'log.txt'.

```
SMG400:165.213.81.230> ll
<- Show a file list saved in the system.
  size          date      time      name
  -----
    308    JAN-12-2002  21:11:00  LOG.TXT

value = 0 = 0x0
SMG400:165.213.81.230> rm "log.txt"

value = 0 = 0x0
SMG400:165.213.81.230> ll
<- Check a file list saved in the system.

value = 0 = 0x0
SMG400:165.213.81.230>
```

ll (ls)

Function Displays directories saved in the system.

Procedure At the SMG400 prompt, type 'll' or 'ls' and press [Enter].

```
SMG400:165.213.81.230> ll
value = 0 = 0x0
SMG400:165.213.81.230>
```

snmphelp

Function Displays CLI commands related to SNMP.
Sends trap messages to SNMP Server by inter-working with the SNMP Server for the management of IP network.

Procedure At the SMG400 prompt, type 'snmphelp' and press [Enter].
The following CLI command list for SNMP configuration is displayed on screen.

```
SMG400:23.30.152.227> snmphelp

snmphelp                Print This List(Save in pstnmenu)
Showsnmp                Show SNMP Manager List
Onsnmpagent             Turn On the SNMP Agent
Offsnmpagent            Turn Off the SNMP Agent
Setsnmp "ip",port,"community" Set SNMP Manager
IP&Port&Community
Ontrapcritical          Turn On the Critical Alarm(System
Restart:Default)
Offtrapcritical         Turn Off the Critical Alarm
Ontrapmajor            Turn On the Major Alarm(DTRK Down, GK
Down...:Default)
Offtrapmajor           Turn Off the Major Alarm
Ontrapminor            Turn On the Minor Alarm(Call Fail..)
Offtrapminor           Turn Off the Minor Alarm(Default)
Ontrapusermode         Turn On the User Mode(DB Change, Login..)
Offtrapusermode        Turn Off the User Mode(Default)

value = 1 = 0x1
SMG400:23.30.152.227>
```

Showsnmp

Function Displays the current settings of SNMP.

Procedure At the SMG400 prompt, type 'Showsnmp' and press [Enter].

```
SMG400:23.30.152.227> Showsnmp

>>> SNMP Agent: On
>>> SNMP Manager :
    1. 23.30.153.79 (162) [pubulic]

>>> TrapSend Level
    Critical Alarm : On
    Major Alarm   : On
    Minor Alarm   : Off
    User Mode     : Off
value = 0 = 0x0
SMG400:23.30.152.227>
```

Onsnmpagent

Function Enables SNMP Agent to use SNMP.
SNMP IP, PORT and Community should be set first to use this function.

Procedure 1. At the SMG400 prompt, type 'Onsnmpagent' and press [Enter].

```
SMG400:23.30.152.227> Onsnmpagent
SNMP Agent Turn On.
value = 0 = 0x0
SMG400:23.30.152.227>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu

<<<<< VoIP Configuration Menu >>>>>

[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit

Select ? 7 ← Select item 7, 'Save & Exit.'
Save & Exit

Good
Exit
```


Offsnmpagent

Function Disables 'Onsnmpagent'.

Procedure 1. At the SMG400 prompt, type 'Offsnmpagent' and press [Enter].

```
SMG400:23.30.152.227> Offsnmpagent
SNMP Agent Turn Off.
value = 0 = 0x0
SMG400:23.30.152.227>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu

<<<<< VoIP Configuration Menu >>>>>

      [0] VoIP General Option
      [1] VoIP DSP Option
      [2] VoIP Gatekeeper Option
      [3] VoIP Routing Table
      [4] VoIP Caller ID Table
      [5] VoIP Remote IP Table
      [6] VoIP Remote IP Status
      [7] Save & Exit
      [8] Exit

      Select ? 7    ← Select item 7, 'Save & Exit.'
Save & Exit

Good
Exit
```

Setsnmp "ip",port,"community"

Function SNMP Server IP, PORT, and Community should be set first to use the SNMP Trap.

Procedure 1. At the SMG400 prompt, type 'Setsnmp' and a space. Enter the SNMP Server IP in quotation marks, enter a comma and a space. Enter the PORT number, a comma and a space consecutively, and enter the Community in quotation marks, and press [Enter].

```
SMG400:23.30.152.227> Setsnmp "23.30.153.79", 162, "public"  
value = 0 = 0x0  
SMG400:23.30.152.227>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu  
  
<<<<< VoIP Configuration Menu >>>>>  
  
[0] VoIP General Option  
[1] VoIP DSP Option  
[2] VoIP Gatekeeper Option  
[3] VoIP Routing Table  
[4] VoIP Caller ID Table  
[5] VoIP Remote IP Table  
[6] VoIP Remote IP Status  
[7] Save & Exit  
[8] Exit  
  
Select ? 7 ← Select item 7, 'Save & Exit.'  
Save & Exit  
  
Good  
Exit
```

Ontrapcritical

Function Among the levels of Trap Messages sent to SNMP Server, sends messages for critical alarms (e.g. system down or restarting) to the SNMP Server. This function is set as default.

Procedure 1. At the SMG400 prompt, type 'Ontrapcritical' and press [Enter].

```
SMG400:23.30.152.227> Ontrapcritical

Critical Alarm : On
value = 0 = 0x0
SMG400:23.30.152.227>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu

<<<<< VoIP Configuration Menu >>>>>

[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit

Select ? 7 ← Select item 7, 'Save & Exit.'
Save & Exit

Good
Exit
```

Offtrapcritical

Function Disables 'Ontrapcritical'.

Procedure 1. At the SMG400 prompt, 'Offtrapcritical' and press [Enter].

```
SMG400:23.30.152.227> Offtrapcritical

Critical Alarm : Off
value = 0 = 0x0
SMG400:23.30.152.227>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu

<<<<< VoIP Configuration Menu >>>>>

[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit

Select ? 7    ← Select item 7, 'Save & Exit.'
Good
Exit
```

Ontrapmajor

Function Among the levels of Trap Messages sent to SNMP Server, sends messages for major alarms (e.g. Gatekeeper Down) to the SNMP Server. This function is set as default.

Procedure 1. At the SMG400 prompt, type 'Ontrapmajor' and press [Enter].

```
SMG400:23.30.152.227> Ontrapmajor

Major Alarm : On
value = 0 = 0x0
SMG400:23.30.152.227>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu

<<<<< VoIP Configuration Menu >>>>>

[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit

Select ? 7    ← Select item 7, 'Save & Exit.'
Save & Exit

Good
Exit
```

Offtrapmajor

Function Disables 'Ontrapmajor'.

Procedure 1. At the SMG400 prompt, type 'Offtrapmajor' and press [Enter].

```
SMG400:23.30.152.227> Offtrapmajor

Major Alarm : Off
value = 0 = 0x0
SMG400:23.30.152.227>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu

<<<<< VoIP Configuration Menu >>>>>

[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit

Select ? 7    ← Select item 7, 'Save & Exit.'
Save & Exit

Good
Exit
```

Ontrapminor

Function Among the levels of Trap Messages sent to SNMP Server, sends messages for minor alarms (e.g. reason for call failure) to the SNMP Server. This function is set as default.

Procedure 1. At the SMG400 prompt, type 'Ontrapminor' and press [Enter].

```
SMG400:23.30.152.227> Ontrapminor

Minor Alarm : On
value = 0 = 0x0
SMG400:23.30.152.227>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu

<<<<< VoIP Configuration Menu >>>>>

[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit

Select ? 7 ← Select item 7, 'Save & Exit.'
Save & Exit

Good
Exit
```

Offtrapminor

Function Disables 'Ontrapminor'. This function is set as default.

Procedure 1. At the SMG400 prompt, type 'Offtrapminor' and press [Enter].

```
SMG400:23.30.152.227> Offtrapminor
```

```
Minor Alarm : Off
```

```
value = 0 = 0x0
```

```
SMG400:23.30.152.227>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu
```

```
<<<<< VoIP Configuration Menu >>>>>
```

- [0] VoIP General Option
- [1] VoIP DSP Option
- [2] VoIP Gatekeeper Option
- [3] VoIP Routing Table
- [4] VoIP Caller ID Table
- [5] VoIP Remote IP Table
- [6] VoIP Remote IP Status
- [7] Save & Exit
- [8] Exit

```
Select ? 7 ← Select item 7, 'Save & Exit.'
```

```
Save & Exit
```

```
Good
```

```
Exit
```


Ontrapusermode

Function Among the levels of Trap Messages sent to SNMP Server, sends messages for database changes by User Login or users to the SNMP Server. This function is set as default.

Procedure 1. At the SMG400 prompt, type 'Ontrapusermode' and press [Enter].

```
SMG400:23.30.152.227> Ontrapusermode

User MMC Mode : On
value = 0 = 0x0
SMG400:23.30.152.227>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu

<<<<< VoIP Configuration Menu >>>>>

[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit

Select ? 7 ← Select item 7, 'Save & Exit.'
Save & Exit

Good
Exit
```

Offtrapusermode

Function Disables 'Ontrapusermode'. This function is set as default.

Procedure 1. At the SMG400 prompt, type 'Ontrapusermode' and press [Enter].

```
SMG400:23.30.152.227> Offtrapusermode

User MMC Mode : Off
value = 0 = 0x0
SMG400:23.30.152.227>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu

<<<<< VoIP Configuration Menu >>>>>

[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit

Select ? 7    ← Select item 7, 'Save & Exit.'
Save & Exit

Good
Exit
```

ntphelp

Function Displays CLI commands related to NTP. This function enables inter-working with the NTP server for accurate time setting.

Procedure At the SMG400 prompt, type 'ntphelp' and press [Enter].
The following CLI commands for NTP setting is displayed on screen.

```
SMG400:23.30.152.227> ntphelp

ntphelp          Print This List (Save in pstnmenu)
Onntp            Turn On NTP Time Service
Offntp           Turn Off NTP Time Service (default)
Setntpip "IP"    Set NTP Time Server IP
Setntptimezone   Set NTP Time Zone
Setntptimeperiod Set NTP Period ( 1 ~ 1440(60*24) min )
Showntp          Display NTP Configuration

value = 1 = 0x1
SMG400:23.30.152.227>
```

Onntp

Function Enables NTP Service to use NTP. NTP Server IP, Time Zone and Cycle should be set first to use this function.

Procedure 1. At the SMG400 prompt, type 'Onntp' and press [Enter].

```
SMG400:23.30.153.217> Onntp

NTP Time Service is Enable : On
value = 35 = 0x23 = '#'
SMG400:23.30.153.217>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit,' and press [Enter].

```
SMG400:165.213.81.230> voipmenu
<<<<< VoIP Configuration Menu >>>>>

[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit

Select ? 7 ← Select item 7, 'Save & Exit.'
Save & Exit

Good
Exit
```

Offntp

Function Disables 'Onntp'. This function is set as default.

Procedure 1. At the SMG400 prompt, type 'Offntp' and press [Enter].

```
SMG400:23.30.153.217> Offntp

NTP Time Service is Enable : Off
value = 35 = 0x23 = '#'
SMG400:23.30.153.217>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu

<<<<< VoIP Configuration Menu >>>>>

[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit

Select ? 7    ← Select item 7, 'Save & Exit.'
Save & Exit

Good
Exit
```

Setntpip "IP"

Function Sets the IP of the NTP Server to use NTP service.

Procedure 1. At the SMG400 prompt, type 'Setntpip' and a space. Enter the NTP Server IP in quotation marks and press [Enter].

```
SMG400:23.30.153.217> Setntpip "23.30.153.79"
>>> IP Address = 23.30.153.79
value = 32 = 0x20 = ' '
SMG400:23.30.153.217>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit,' and press [Enter].

```
SMG400:165.213.81.230> voipmenu

<<<<< VoIP Configuration Menu >>>>>

      [0] VoIP General Option
      [1] VoIP DSP Option
      [2] VoIP Gatekeeper Option
      [3] VoIP Routing Table
      [4] VoIP Caller ID Table
      [5] VoIP Remote IP Table
      [6] VoIP Remote IP Status
      [7] Save & Exit
      [8] Exit

      Select ? 7    ← Select item 7, 'Save & Exit.'
Save & Exit

Good
Exit
```

Setntptimezone

Function Sets the time zone of NTP to use NTP.

Range : - 12 to + 12

Procedure 1. At the SMG400 prompt, type 'Setntptimezone' and a space. Press [Enter] and set time.

```
SMG400:23.30.153.217> Setntptimezone
Input your Time Zone (-12<TimeZone<+12) ? 9
Your TIMEZONE is GMT+9.00
value = 26 = 0x1a
SMG400:23.30.153.217>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu

<<<< VoIP Configuration Menu >>>>

[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit

Select ? 7    ← Select item 7, 'Save & Exit.'
Save & Exit

Good
Exit
```

Setntptime period

Function Sets the reception cycle for Time sent from NTP Server to enable the NTP Server.

Range : 1 to 1440 (minute)

Procedure 1. At the SMG400 prompt, type 'Setntptime' and a space. Enter cycle (minute) and press [Enter].

```
SMG400:23.30.153.217> Setntptime 60
Time Service period is 60 (min).
value = 33 = 0x21 = '!'
SMG400:23.30.153.217>
```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu

<<<<< VoIP Configuration Menu >>>>>

      [0] VoIP General Option
      [1] VoIP DSP Option
      [2] VoIP Gatekeeper Option
      [3] VoIP Routing Table
      [4] VoIP Caller ID Table
      [5] VoIP Remote IP Table
      [6] VoIP Remote IP Status
      [7] Save & Exit
      [8] Exit

      Select ? 7   ← Select item 7, 'Save & Exit.'

Good
Exit
```


Showntp

Function Displays the current settings of NTP.

Procedure At the SMG400 prompt, type 'Showntp' and press [Enter].

```
SMG400:23.30.153.217> Showntp

>>> Time Service    : On
>>> Time Server IP  : 23.30.153.79
>>> Your Time zone  : GMT+9.00
>>> Time Service Period : 60 min

value = 1 = 0x1
SMG400:23.30.153.217>
```

loopincall

Function Displays CLI commands related to Loop incoming calls. Administrator can set and manage options related to Loop incoming calls for a specific Loop port by using the CLI commands in Tandem mode.

The functions of Loop incoming call options are as follows.

- Enable and disable the dial tone of loop incoming calls
- Announcement play setup for loop incoming calls
- Auto dialing to a preset dial number

Procedure At the SMG400 prompt, type 'loopincall' and press [Enter]. The following CLI command list for loopincall setup is displayed on screen.

```
SMG400:23.30.153.217> loopincall

loopincall          Print This List (Save in pstnmenu)
Setloopincall port,Tone/IVR,"tel" Set Tone(0)/Off(1)/IVR(2),Auto
Dial Number
Clearloopincall      Clear LOOP Incoming Control Table
Showloopincall       Show LOOP Incoming Control Table

value = 1 = 0x1
SMG400:23.30.153.217>
```

Setloopincall port,Tone/IVR,"tel"

Function Administrator can set the functions of enabling and disabling dial tone for Loop incoming calls, announcement play setup for Loop incoming calls, and auto dialing to a preset dial number for each Loop port by using the command in Tandem mode.
 “Setloopincall” command sets Tone/IVR options and preset dialing number for a specific Loop Port.

* port : 40 to 43

* Tone/IVR option : 0 (Tone On) / 1 (Tone Off) / 2 (announcement)

* tel : Sets a specific preset dial number when auto dialing function is used.
 Dial number should be enclosed in double quotation marks ("").

Procedure 1. At the SMG400 prompt, type ‘Setloopincall’ and a space. Enter a Loop Port number you want to set, a comma, and the Tone/IVR option. Insert a comma, enter the preset dialing number, and press [Enter] to use the auto dialing function. The preset dialing number should be enclosed in double quotation marks (“”). If you do not want to use the auto dialing function, just press [Enter].

```
SMG400:23.30.153.217> Setloopincall 40, 1, "222"

Port : 0x40, Tone/IVR : OFF, Tel : 222
value = 41 = 0x29 = ' ) '
SMG400:23.30.153.217> Setloopincall 41,2

Port : 0x41, Tone/IVR : IVR, Tel : (null)
value = 47 = 0x2f = ' / '
SMG400:165.213.87.138>
```

2. To maintain this setting during system booting, enter the CLI's pstnmenu and select item 15 '[15] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> pstnmenu
```

```
<<<< PSTN Configuration Menu >>>>
```

```
[0] Gateway Operation Mode
[1] PSTN Rerouting Insert Digit
[2] PCM Method
[3] Dial Method
[4] SLI Signal
[5] Trunk Signal
[6] Call Control Method
[7] Ring Cadence
[8] System Tone Cadence
[9] CO Tone Cadence
[10] Gain Control
[11] Diagnosis
[12] MMC Port Block/UnBlock
[13] Display Slot Configuration
[14] Display Port Status
[15] Save & Exit
[16] Exit
```

```
Select ? 15      ← Select item 15, 'Save & Exit.'
```

```
Save & Exit
```

```
Good
```

Clearloopincall

Function Initializes all set-up values of loopincall (by default).

Procedure 1. At the SMG400 prompt, type 'Clearloopincall' and press [Enter].

```
SMG400:23.30.153.217> Clearloopincall

Set Default Vaule at all Loop Incoming Port...
value = 49 = 0x31 = '1'
SMG400:23.30.153.217>
```

2. To maintain this setting during system booting, enter the CLI's pstnmenu and select item 15 '[15] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> pstnmenu

<<<<< PSTN Configuration Menu >>>>>

[0] Gateway Operation Mode
[1] PSTN Rerouting Insert Digit
[2] PCM Method
[3] Dial Method
[4] SLI Signal
[5] Trunk Signal
[6] Call Control Method
[7] Ring Cadence
[8] System Tone Cadence
[9] CO Tone Cadence
[10] Gain Control
[11] Diagnosis
[12] MMC Port Block/UnBlock
[13] Display Slot Configuration
[14] Display Port Status
[15] Save & Exit
[16] Exit

Select ? 15      ← Select item 15, 'Save & Exit.'
Save & Exit

Good
```

Showloopincall

Function Displays values set in loop incoming call control Table.

Procedure 1. At the SMG400 prompt, type 'Showloopincall' and press [Enter].

```
SMG400:23.30.153.217> Showloopincall
<<<<< LOOP Incoming Control Table >>>>>

+----+-----+-----+-----+
| No  | Port  | Tone/IVR | Auto Dialing Number |
+----+-----+-----+-----+
| 0   | 40    | Tone     |                       |
| 1   | 41    | Tone     |                       |
| 2   | 42    | Tone     |                       |
| 3   | 43    | Tone     |                       |
+----+-----+-----+-----+

value = 1 = 0x1
SMG400:23.30.153.217>
```

ivrhelp

Function Displays CLI commands related to IVR Control and VoIP Rerouting. Administrator can enable and disable IVR or Rerouting depending on reasons according to management rules. IVR Control function provides announcement play functionality depending on reasons for VoIP release. IVR sound files should be installed first to use the IVR function.

In addition, administrator can use the function to enable or disable rerouting function if VoIP Release Reason is VoIP Call Block or network failure. 'Onpstnreroute', a command for setting PSTN rerouting should be set first to enable VoIP Rerouting.

Procedure 1. At the SMG400 prompt, type 'ivrhelp' and press [Enter]. The following CLI command list related to IVR is displayed on screen.

```
SMG400:165.213.81.230> ivrhelp
```

ivrhelp	Print This List (Save in voipmenu)
Clearivrtable	Clear IVR Control Table
Showivrtable	Show IVR Control Table
Setivrtable	Set IVR Control Table

```
value = 1 = 0x1
```

```
SMG400:165.213.81.230>
```

Clearivrtable

Function Initializes the current setting of IVR Control table as default.

Procedure 1. At the SMG400 prompt, type 'Clearivrtable' and press [Enter]. The IVR Control table will be initialized.

```
SMG400:165.213.81.230> Showivrtable
<- A command for displaying the IVR Control table

<<<<< IVR Control Table >>>>>

+---+ +-----+ +-----+ +-----+ +
| no | | Release Reason | | IVR on/off | | Rerouting | |
+---+ +-----+ +-----+ +-----+ +
| 0 | | Unassigned Number | | On | | Off | |
| 1 | | User Busy | | Off | | Off | |
| 2 | | Invalid Format | | Off | | Off | |
| 3 | | Call Block | | Off | | Off | |
| 4 | | NetWork Out | | On | | On | |
+---+ +-----+ +-----+ +-----+ +

[ . :Exit, - :Null, Enter :Skip ]

value = 0 = 0x0
SMG400:165.213.81.230> Clearivrtable

value = 0 = 0x0
SMG400:165.213.81.230> Showivrtable
<-Show a screen on which the setting of the IVR
Control table is initialized.

<<<<< IVR Control Table >>>>>

+---+ +-----+ +-----+ +-----+ +
| no | | Release Reason | | IVR on/off | | Rerouting | |
+---+ +-----+ +-----+ +-----+ +
| 0 | | Unassigned Number | | Off | | Off | |
| 1 | | User Busy | | Off | | Off | |
| 2 | | Invalid Format | | Off | | Off | |
| 3 | | Call Block | | Off | | Off | |
| 4 | | NetWork Out | | Off | | Off | |
+---+ +-----+ +-----+ +-----+ +

[ . :Exit, - :Null, Enter :Skip ]

value = 0 = 0x0
SMG400:165.213.81.230>
```


2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu
```

```
<<<< VoIP Configuration Menu >>>>
```

- [0] VoIP General Option
- [1] VoIP DSP Option
- [2] VoIP Gatekeeper Option
- [3] VoIP Routing Table
- [4] VoIP Caller ID Table
- [5] VoIP Remote IP Table
- [6] VoIP Remote IP Status
- [7] Save & Exit
- [8] Exit

```
Select ? 7 ← Select item 7, 'Save & Exit.'
```

```
Save & Exit
```

```
Good
```

```
Exit
```

Showivrtable

Function Displays the current settings of IVR Control table.

Procedure 1. At the SMG400 prompt, type 'Showivrtable' and press [Enter].
The setting of IVR Control table is displayed as follows.

```
SMG400:165.213.81.230> Showivrtable

<<<<< IVR Control Table >>>>>

+----+ +-----+ +-----+ +-----+
| no | | Release Reason | | IVR on/off | | Rerouting | |
+----+ +-----+ +-----+ +-----+
| 0 | | Unassigned Number | | On | | Off | |
| 1 | | User Busy | | Off | | Off | |
| 2 | | Invalid Format | | On | | Off | |
| 3 | | Call Block | | On | | Off | |
| 4 | | NetWork Out | | Off | | Off | |
+----+ +-----+ +-----+ +-----+

[ . :Exit, - :Null, Enter :Skip ]

value = 0 = 0x0
SMG400:165.213.81.230>
```

Setivrtable

Function Sets the IVR and VoIP Rerouting functions of IVR Control table. This CLI command provides announcement play function for a specific reason for VoIP release. Announcement sound files should be installed first to use announcement function. VoIP Rerouting function can be set only if VoIP Release reason is Call Block or network failure. In addition, 'Onpstnreroute' should be set first to use rerouting function.

Procedure 1. At the SMG400 prompt, type 'Setivrtable' and press [Enter].

```
SMG400:165.213.81.230 Setivrtable
```

```
<<<< IVR Control Table >>>>
```

no	Release Reason	IVR on/off	Rerouting
0	Unassigned Number	Off	Off
1	User Busy	Off	Off
2	Invalid Format	Off	Off
3	Call Block	Off	Off
4	NetWork Out	Off	Off

```
[ . :Exit, - :Null, Enter :Skip ]
```

```
Configuration Item Number:
```

2. Select the item number of VoIP Release reason to be set and press [Enter]. For example, if you want to play announcement when user is busy, enter '1', the item number of UserBusy and press [Enter].

```
Configuration Item Number: 1
```

- Set desired IVR option and Rerouting option for the VoIP Release Reason.If you want to play announcement when user is busy, enter '1' (On) on IVR option input screen and press [Enter]. In case of Rerouting option input screen, just press [Enter].

```
IVR Option(0: Off, 1:On): On -> 1
Rerouting Option(0: Off, 1:On): Off ->
```

- Repeat the procedures from the above 2 and 3 to continue setting. Press [Enter] to stop setting.

```
Configuration Item Number:
```

```
value = 0 = 0x0
```

```
SMG400:165.213.81.230> Showivrtable <- Re-displays the settings
```

```
<<<< IVR Control Table >>>>
```

no	Release Reason	IVR on/off	Rerouting
0	Unassigned Number	Off	Off
1	User Busy	On	Off
2	Invalid Format	Off	Off
3	Call Block	Off	Off
4	NetWork Out	Off	Off

[. :Exit, - :Null, Enter :Skip]

```
value = 0 = 0x0
```

```
SMG400:165.213.81.230>
```

5. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu

<<<< VoIP Configuration Menu >>>>

[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit

Select ? 7    ← Select item 7, 'Save & Exit.'
Save & Exit

Good
Exit
```

Callblock

Function Displays CLI commands related to VoIP Call Block function for a specific access code for each PSTN port. VoIP Call Block function limits the transmittance of VoIP Calls that have a specific access code to a specific PSTN port.

Procedure At the SMG400 prompt, type 'callblock' and press [Enter].
The following CLI command list for VoIP call blocks is displayed on screen.

```
SMG400:165.213.81.230> callblock

callblock          Print This List (Save in voipmenu)
Clearcallblock     Set Default Vaule at Call Block Table
Showcallblock      Show Call Block Table
Setcallblock       Set Call Block Table

value = 1 = 0x1
SMG400:165.213.81.230>
```

Clearcallblock

Function Initializes the current setting of Call Block table as default.

Procedure 1. At the SMG400 prompt, type 'Clearcallblock' and press [Enter].
The Call Block table is initialized.

```
SMG400:165.213.81.230> Showcallblock
<-A command for displaying the Call Block table

<<<<< PSTN Call Block Table >>>>>

+-----+-----+-----+-----+-----+-----+-----+-----+
|PSTN|Call |      Call Block Table Index      |
|Port|Block| 0| 1|2|3|4|5|6|7|8|9|10|11|12|13|14|15|
+-----+-----+-----+-----+-----+-----+-----+-----+
| 0 | On  | 4| 5|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 1 | Off | -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 2 | Off | -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 3 | Off | -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 4 | Off | -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 5 | Off | -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 6 | Off | -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 7 | Off | -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
+-----+-----+-----+-----+-----+-----+-----+-----+

[ . :Exit, - :Null, Enter :Skip ]

value = 0 = 0x0
SMG400:165.213.81.230> Clearcallblock

value = 0 = 0x0
SMG400:165.213.81.230>
```

```

SMG400:165.213.81.230> Showcallblock
<- Re-display a screen on which the setting is initialized.

<<<<< PSTN Call Block Table >>>>>

+-----+-----+-----+-----+-----+-----+-----+-----+-----+
|PSTN|Call |      Call Block Table Index      |
|Port|Block| 0| 1|2|3|4|5|6|7|8|9|10|11|12|13|14|15|
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 0 | Off | -| -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 1 | Off | -| -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 2 | Off | -| -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 3 | Off | -| -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 4 | Off | -| -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 5 | Off | -| -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 6 | Off | -| -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 7 | Off | -| -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
[ . :Exit, - :Null, Enter :Skip ]

value = 0 = 0x0
SMG400:165.213.81.230>

```

2. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```

SMG400:165.213.81.230> voipmenu

<<<<< VoIP Configuration Menu >>>>>

[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status

```


[7] Save & Exit

[8] Exit

Select ? 7 ← Select item 7, 'Save & Exit.'

Save & Exit

Good

Exit

Showcallblock

Function Displays the current setting of Call Block table.

Procedure 1. At the SMG400 prompt, type 'Showcallblock' and press [Enter].
The setting of the Call Block table is displayed as follows.

```
SMG400:165.213.81.230> Showcallblock
<-Display the currentsetting of a screen.

<<<<< PSTN Call Block Table >>>>>

+-----+-----+-----+-----+-----+-----+-----+-----+-----+
|PSTN|Call |      Call Block Table Index      |
|Port|Block| 0| 1|2|3|4|5|6|7|8|9|10|11|12|13|14|15|
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 0 | Off | -| -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 1 | Off | -| -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 2 | Off | -| -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 3 | Off | -| -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 4 | Off | -| -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 5 | Off | -| -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 6 | Off | -| -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 7 | Off | -| -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
[ . :Exit, - :Null, Enter :Skip ]

value = 0 = 0x0
SMG400:165.213.81.230>
```

Setcallblock

Function Sets the limitation of sending VoIP Outbound Calls to a specific Access code on each PSTN port.

Enters the number of Access codes specified in the VoIP Outbound Routing Table, which are intended for Call Block, into Call Block Table Index. The number of specific Access codes is limited to up to 16 for each port.

Procedure 1. At the SMG400 prompt, type 'Setcallblock' and press [Enter].

```
SMG400:165.213.81.230> Setcallblock
```

```
<<<<< PSTN Call Block Table >>>>>
```

```
+-----+-----+-----+-----+-----+-----+-----+-----+
|PSTN|Call |      Call Block Table Index      |
|Port|Block| 0| 1|2|3|4|5|6|7|8|9|10|11|12|13|14|15|
+-----+-----+-----+-----+-----+-----+-----+-----+
| 0 | Off | -| -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 1 | Off | -| -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 2 | Off | -| -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 3 | Off | -| -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 4 | Off | -| -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 5 | Off | -| -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 6 | Off | -| -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
| 7 | Off | -| -|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
+-----+-----+-----+-----+-----+-----+-----+-----+
[ . :Exit, - :Null, Enter :Skip ]
```

```
Configuration PSTN Port Number:
```

2. Set whether to limit the transmittance of a specific VoIP Outbound call for a specific port. First, select the number of PSTN ports for which you want to limit transmittance.

```
Configuration PSTN Port Number: 0
```

3. Determine whether to block a call for the port. Enter '1' and press [Enter] to block the call.

```
Call Block Option(0: Off, 1:On): Off -> 1
```

4. Enter the number of empty Call Block Table Index and press [Enter]. In the example below, enter '0' because Index 0 is empty.

```
Call Block Table Index: 0
```

5. Enter Access codes you want to limit. Don't enter the Access codes directly. Enter the item number of Access codes you want to limit in Outbound Routing table. For example, if administrator wants to limit Digit '700' and the Digit '700' is listed in Index 3 from Outbound Routing Table DB, enter '3' into 'Blocking Outbound Table Index'.

```
Blocking Outbound Table Index(Range: 0 ~ 63): - -> 3
```

6. Repeat the procedures from the above 4 and 5 if you want to limit the transmittance of another specific Access code on the same port. Proceed from the setting screen in the above 2 if you want to set a new PSTN port. Press [Enter] to stop setting procedure.

```
Call Block Table Index:
```

```
Configuration PSTN Port Number:
```

```
value = 0 = 0x0
```

```
SMG400:165.213.81.230> Showcallblock <-Check the setting of  
Call Block table.
```

```
<<<<< PSTN Call Block Table >>>>>
```

```
+-----+-----+-----+-----+-----+-----+-----+-----+
|PSTN|Call |      Call Block Table Index      |
|Port|Block| 0| 1|2|3|4|5|6|7|8|9|10|11|12|13|14|15|
+-----+-----+-----+-----+-----+-----+-----+-----+
|  0  | On   | 4| 5|-|-|-|-|-|-|-|-|-|-|-|-|-|
```

```

| 1 | Off | - | - | - | - | - | - | - | - | - | - | - | - |
| 2 | Off | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 | Off | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 | Off | - | - | - | - | - | - | - | - | - | - | - | - |
| 5 | Off | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 | Off | - | - | - | - | - | - | - | - | - | - | - | - |
| 7 | Off | - | - | - | - | - | - | - | - | - | - | - | - |
+---+-----+---+---+---+---+---+---+---+---+---+---+---+
                                [ . :Exit, - :Null, Enter :Skip ]

```

```
value = 0 = 0x0
```

```
SMG400:165.213.81.230>
```

7. To maintain this setting during system booting, enter the CLI's voipmenu and select item 7 '[7] Save & Exit', and press [Enter].

```
SMG400:165.213.81.230> voipmenu
```

```
<<<< VoIP Configuration Menu >>>>
```

```

[0] VoIP General Option
[1] VoIP DSP Option
[2] VoIP Gatekeeper Option
[3] VoIP Routing Table
[4] VoIP Caller ID Table
[5] VoIP Remote IP Table
[6] VoIP Remote IP Status
[7] Save & Exit
[8] Exit

```

```
Select ? 7 ← Select item 7, 'Save & Exit.'
```

```
Save & Exit
```

```
Good
```

```
Exit
```

settime y,M,d,h,m,s

Function Sets system time manually. System time is important for CDR information. Time set by 'settime' might be inaccurate because the system changes time as the system operates. (Error range is approximately 5 seconds a day.) Therefore, accurate time should be maintained by setting time on boot or on a periodical basis.

Procedure At the SMG400 prompt, type 'settime' and a space. Enter time in the sequence of year, month, day, hour, minute, and second and press [Enter]. For example, type 'settime 2002,2,21,10,40,0' and press [Enter] to enter '10:40:00 a.m., Feb 21, 2002'. The system time is set as follows.

```
SMG400:165.213.81.230> settime 2002,2,21,10,40,0
```

```
>>> Old Date: Thu Feb 21 10:43:35 2002
```

```
>>> New Date: Thu Feb 21 10:40:00 2002
```

```
value = 0 = 0x0
```

```
SMG400:165.213.81.230>
```

Chapter 6

Web-based Remote Management

Chapter 6 Web-based Remote Management

The SMG-400 offers web-based management functions that enable configuration and management of the system from a web browser. Internet web browsers are similar to that of Windows in terms of user environment. You only need to use a mouse to configure the browsers.

In this Chapter, you can learn how to login to the web management interface of the SMG-400. The web management interface only provides frequently used functions for system operation among CLI functions. For menus and detailed information you should refer to **Chapter 5 CLI (Command Line Interface)**.

Before you Begin

To use the web management interface of the SMG-400, the IP address, subnet mask and default gateway of the SMG-400 must be set correctly to the site's network. Such setup is described in **Chapter 4 Configuring the System**.

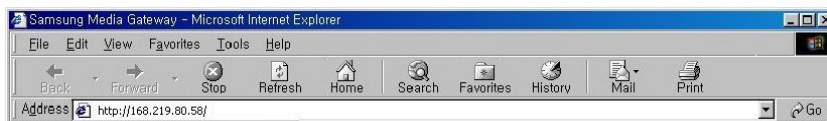
Login

1. Launch a web browser such as Internet Explorer or Netscape Communicator.



Internet Explorer 5.0 has been used as an example in this paper. Please refer to Program Help for detailed information on Internet Explorer.

2. When the web browser of your choice appears on the screen, type the SMG-400 IP address in the 'Location' field.



3. The startup screen of the Web management interface will appear as follows.



4. To login, type your login name and password in **Login ID** and **Password** fields on the bottom of the screen, and press [Enter]. The default login name and password are '**smg400**' and '**smg400v1**' respectively.
5. Upon completion of login, the following main screen of the SMG-400 web management interface will appear.



6. Exit the web browser to logout from the web management interface automatically.

Configuration and Functions of Menu

The overview of each menu of the SMG-400 web management interface is provided below. For more detail, please refer to **Chapter 5 CLI (Command Line Interface)**.

Menu	Functions
Home(Reload Configuration From DB)	Returns to the main screen of the SMG-400 web management interface.(Reloads Configuration From DB.)
Network Configuration	Sets static IP address of the SMG-400, subnet mask, default gateway address and TOS (Type Of Service) values.
VoIP Configuration	Sets general options for VoIP services.
VoIP Caller ID Table	Sets the ID for VoIP call.
VoIP Routing Table	Sets the Prefix to send and receive VoIP call through IP network.
VoIP Remote IP Table	For VoIP call service, at least one IP address need to be assigned in the VoIP IP Table, which is set by VoIP Routing Table.
Gatekeeper Configuration	When the SMG-400 is connected to Gatekeeper, it sets information for Gatekeeper connection.
Voice Packetizer	Sets voice control options for VoIP services.
PSTN Configuration	Sets general options for PSTN services such as operation mode and type of PCM and dial.
PSTN Inbound LCR	Analyzes the dialing digits coming from PBX or KTS connected to SMG-400.
PSTN Call Control Method	Sets the call control method to handle calls.
PSTN Gain Control	Controls the call sensitivity according to the connection type.
PSTN Post Status	Checks the system slots and the ports status.
MMC Port Block	Decides whether to use a specific port.
Version Information	Displays version information on the SMG-400 system program.
Default DB Set	Reset all items with the default values according to the database.
System Restart	Restarts the SMG-400 system.

Chapter 7

Using the CDR

(Call Detail Record)

Chapter 7 Using the CDR (Call Detail Record)

CDR is a function that displays detail record about the system call.

The system administrator uses the CDR function to check the current call information through the CLI command, or uses the TCP Link or UDP Link to receive call information.

Screen for checking current call information

```
SMG400:165.213.81.230> cdrlist
```

```
<<<< Current CDR >>>>
```

```
28. DVO: 2/3/2002 18:46:38 18:46:53 4403 201 165.213.87.76 6a ffff 13
```

```
value = 2 = 0x2
```

```
SMG400:165.213.81.230>
```

How to receive call information - TCP Link

1. Check the current setting.

: The current TCP Link is inactive, and the TCP Port is set as 8200.

```
SMG400:165.213.81.230> CDRsetlist

>>>[CDR] Turn Off CDR Output on TCP Link
>>>[CDR] TCP Port: 8200

>>>[CDR] Turn Off CDR Output on UDP Link
>>>[CDR] UDP Port: Unknown
>>>[CDR] UDP IP Address = Unknown

value = 37 = 0x25 = '%'
SMG400:165.213.81.230>
```

2. Set the TCP port.

: Set the port (8500) for TCP Link connection.

```
SMG400:165.213.81.230> CDRtcpport 8500

>>>[CDR] Set CDR Output on TCP Port(8500)

Goodvalue = 0 = 0x0
SMG400:165.213.81.230> CDRsetlist

>>>[CDR] Turn Off CDR Output on TCP Link
>>>[CDR] TCP Port: 8500                                <- port number is changed.

>>>[CDR] Turn Off CDR Output on UDP Link
>>>[CDR] UDP Port: Unknown
>>>[CDR] UDP IP Address = Unknown

value = 37 = 0x25 = '%'
SMG400:165.213.81.230>
```


3. Activate the TCP Link.

: It is activated to generate CDR information.

```
SMG400:165.213.81.230> Oncdrtcp

>>>[CDR] Turn On CDR Output on TCP Link <- TCP Link is On.
>>>[CDR] TCP Port(8500)

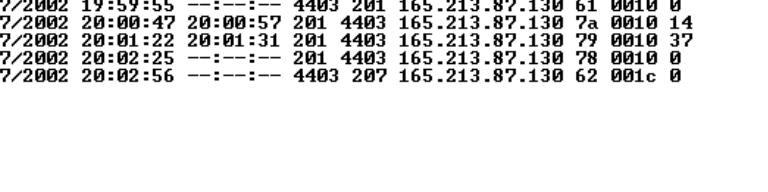
Goodvalue = 0 = 0x0
SMG400:165.213.81.230>
```

4. Receive CDR information.

: TCP Link is established to receive CDR information.

: In the following screen the telnet program offered by Windows 2000 is used to receive CDR information.

E.g.) c:\> telnet 165.213.81.230 8500



```
C:\ Telnet 165.213.81.230
DUO: 2/17/2002 19:58:51 19:59:09 4403 201 165.213.87.130 60 0010 34
DUO: 2/17/2002 19:59:55 --:--:-- 4403 201 165.213.87.130 61 0010 0
DUI: 2/17/2002 20:00:47 20:00:57 201 4403 165.213.87.130 7a 0010 14
DUI: 2/17/2002 20:01:22 20:01:31 201 4403 165.213.87.130 79 0010 37
DUI: 2/17/2002 20:02:25 --:--:-- 201 4403 165.213.87.130 78 0010 0
DUO: 2/17/2002 20:02:56 --:--:-- 4403 207 165.213.87.130 62 001c 0
```

5. If you enter the 'quit' command in the TCP Link input window for receiving CDR, reception is finished and the link is disconnected.

```

C:\ Telnet 165.213.81.230
DUO: 2/17/2002 19:58:51 19:59:09 4403 201 165.213.87.130 60 0010 34
DUO: 2/17/2002 19:59:55 --:--:-- 4403 201 165.213.87.130 61 0010 0
DUI: 2/17/2002 20:00:47 20:00:57 201 4403 165.213.87.130 7a 0010 14
DUI: 2/17/2002 20:01:22 20:01:31 201 4403 165.213.87.130 79 0010 37
DUI: 2/17/2002 20:02:25 --:--:-- 201 4403 165.213.87.130 78 0010 0
DUO: 2/17/2002 20:02:56 --:--:-- 4403 207 165.213.87.130 62 001c 0
quit
SMG3200:165.213.81.230>

```

6. If you do not want to receive CDR information anymore
: Inactivate the TCP Link.

```

.....
SMG400:165.213.81.230> Offcdrtcp

>>>[CDR] Turn Off CDR Output on TCP Link          <- TCP Link is Off.

Goodvalue = 0 = 0x0
SMG400:165.213.81.230>
.....

```

How to receive call information - TCP Link on Client Mode

1. Check the current setting.

: The current TCP Link is inactive, and the TCP Port is set as 8200.

```
SMG400:165.213.81.230> CDRsetlist

>>>[CDR] Turn Off CDR Output on TCP Link
>>>[CDR] TCP Port: 8200

>>>[CDR] Turn Off CDR Output on UDP Link
>>>[CDR] UDP Port: Unknown
>>>[CDR] UDP IP Address = Unknown

value = 37 = 0x25 = '%'
SMG400:165.213.81.230>
```

2. Change the TCP mode

: Change the TCP mode to Client Mode.

```
SMG400:165.213.81.230> Setcdrtcpmode 1

>>>[CDR] Set CDR TCP Client(CDR Can be Sent TCP Server)

Goodvalue = 0 = 0x0
SMG400:165.213.81.230> CDRsetlist

>>>[CDR] Turn Off CDR Output on TCP Link
>>>[CDR] TCP Server IP Address : Unknown
>>>[CDR] TCP Server Port : Unknown

>>>[CDR] Turn Off CDR Output on UDP Link
>>>[CDR] UDP IP Address : Unknown
>>>[CDR] UDP Port : Unknown

value = 30 = 0x1e
SMG400:165.213.81.230>
```


3. Set the IP address and Port number of CDR Server.

```
SMG400:165.213.81.230> CDRtcpserver 165,213,87,129,1213

>>>[CDR] Set CDR Output on TCP Server IP : 165.213.87.129
>>>[CDR] Set CDR Output on TCP Server Port : 1213

Goodvalue = 0 = 0x0
SMG400:165.213.81.230>
```

4. Activate the TCP Link.

: It is activated to generate CDR information.

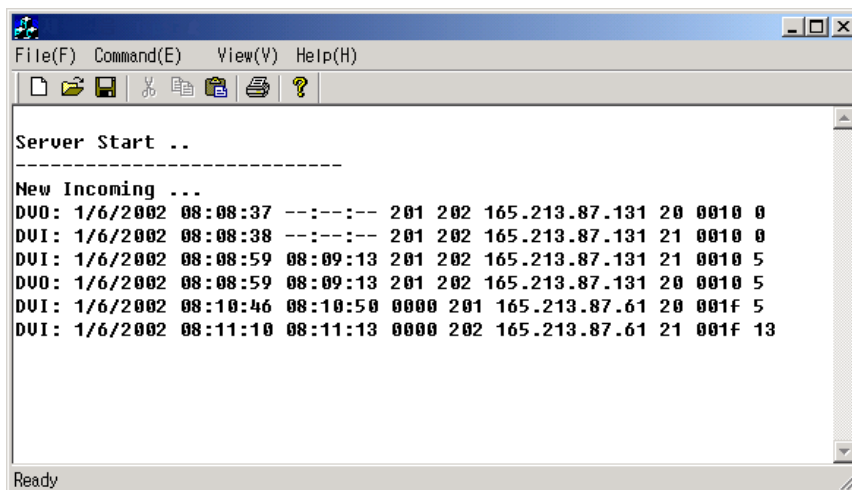
```
SMG400:165.213.81.230> Oncdrtcp

>>>[CDR] Turn On CDR Output on TCP Link
>>>[CDR] TCP IP Address : 165.213.87.129
>>>[CDR] TCP Port : 1213

Goodvalue = 0 = 0x0
SMG400:165.213.81.230>
```

5. Receive CDR information.

: In the following screen the CDR Server receive CDR information.



The screenshot shows a Windows command prompt window titled "Command(E)". The window displays the following text:

```
Server Start ..
-----
New Incoming ...
DU0: 1/6/2002 08:08:37 --:--:-- 201 202 165.213.87.131 20 0010 0
DUI: 1/6/2002 08:08:38 --:--:-- 201 202 165.213.87.131 21 0010 0
DUI: 1/6/2002 08:08:59 08:09:13 201 202 165.213.87.131 21 0010 5
DU0: 1/6/2002 08:08:59 08:09:13 201 202 165.213.87.131 20 0010 5
DUI: 1/6/2002 08:10:46 08:10:50 0000 201 165.213.87.61 20 001f 5
DUI: 1/6/2002 08:11:10 08:11:13 0000 202 165.213.87.61 21 001f 13
```

The status bar at the bottom of the window shows "Ready".

6. If you do not want to receive CDR information anymore
: Inactivate the TCP Link.

```
SMG400:165.213.81.230> Offcdrtcp

>>>[CDR] Turn Off CDR Output on TCP Link

Goodvalue = 0 = 0x0
SMG400:165.213.81.230>
```

How to receive call information - UDP Link

1. Check the current setting status.

: The current UDP Link is inactive, and the UDP Port information and UDP IP Address are not set.

```
SMG400:165.213.81.230> CDRsetlist

>>>[CDR] Turn Off CDR Output on TCP Link
>>>[CDR] TCP Port: 8200

>>>[CDR] Turn Off CDR Output on UDP Link
>>>[CDR] UDP Port: Unknown
>>>[CDR] UDP IP Address = Unknown

value = 37 = 0x25 = '%'
SMG400:165.213.81.230>
```

2. Set the UDP IP Address and Port.

: The IP Address and port for UDP Link connection are set.

```
SMG400:165.213.81.230> CDRudpport 165,213,87,154,50000
                        <- There are dots (.) between Numbers.

>>>[CDR] Set CDR Output on UDP IP = 165.213.87.154
>>>[CDR] Set CDR Output on UDP Port(50000)

Goodvalue = 0 = 0x0
SMG400:165.213.81.230> CDRsetlist

>>>[CDR] Turn Off CDR Output on TCP Link
>>>[CDR] TCP Port: 8200

>>>[CDR] Turn Off CDR Output on UDP Link
>>>[CDR] UDP IP Address = 165.213.87.154    <- IP Address and
>>>[CDR] UDP Port: 50000                    Port number are set up.

value = 26 = 0x1a
SMG400:165.213.81.230>
```

3. Activate the UDP Link.

: It is activated to generate CDR information.



CDR data is lost before UDP Link is generated.

```

Telnet (165.213.87.154)
통신(C) 파일(F) 보기(V) 설정(S) 도움말(H)
[Icons]
opened UDP socket with port no. 50000...
-----
DUO: 2/3/2002 20:09:45 20:09:53 4403 201 165.213.87.76 6F 0010 11
DUO: 2/3/2002 20:10:18 --:--:-- 4403 201 165.213.87.76 70 0010 0
DUO: 2/3/2002 20:10:41 20:10:53 4403 202 165.213.87.76 71 0010 11
DUI: 2/3/2002 20:11:40 --:--:-- 202 4403 165.213.87.76 78 0010 0
DUI: 2/3/2002 20:12:13 20:12:21 202 4403 165.213.87.76 77 0010 6
DUI: 2/3/2002 20:12:42 20:12:53 201 4403 165.213.87.76 76 0010 8
DUO: 2/3/2002 20:13:24 --:--:-- 4403 2453 165.213.87.76 72 001c 0

```

```

=====
SMG400:165.213.81.230> Oncdrudp

>>>[CDR] Turn On CDR Output on UDP Link      <- UDP Link is On.
>>>[CDR] UDP IP Address = 165.213.87.154
>>>[CDR] UDP Port: 50000

Goodvalue = 0 = 0x0
SMG400:165.213.81.230>
=====

```

4. Receive CDR information.

: The UDP Link is made to receive CDR information.

: The following screen is for receiving UDP data.



Program for receiving UDP data is required for UDP Link.

5. If you do not want to receive CDR information anymore.

: Inactivate the UDP Link.

```
SMG400:165.213.81.230> Offcdrudp

>>>[CDR] Turn Off CDR Output on UDP Link      <- UDP Link is Off.

Goodvalue = 0 = 0x0
SMG400:165.213.81.230>
```

CDR Form

Call Type	DVO
Delimiter	:
M/D/Y	12/03/2001
Setup Time	18:20:00
Connected Time	18:21:07
Calling #	2187463
Called #	027798888
Connected IP	165.213.87.38
PSTN Port #	20
Call erm. Code	0010
Call Duration (sec.)	180

DVO : 12/03/2001 18:20:00 18:21:07 2187463 027798888 165.213.79.38 20 0010 180

DVO : 12/03/2001 18:20:00 --:--:-- 2187463 027798888 - 20 0010 180

Call Type (3 bytes)

- First byte (the Connection Type)
 - .G : the Call via Gatekeeper
 - .D : the Direct Call to the other Gateway
- Second byte (Voice/Fax)
 - .V : Voice Call
 - .F : Fax Call
- Third byte (Call Direction)
 - .O : an Outbound call of VoIP
 - .I : an Inbound call of VoIP
 - .R : a Rerouted call
- Examples
 - DVO, DVI, DFO, DFI, GVO, GVI, GFO, GFI, DVR, GVR

Delimiter

: The delimiter between Call Type and Other Field

Month/Day/Year

: Start-up Date (Setup date)

Setup Time

Start-up Time

- * Gatekeeper Mode : the start time to send ARQ
- * Direct Mode : the start time to send Setup signal.

Connected Time

A Connection start time

- * The time to send or receive Connect Message

Calling #

Calling No. (Caller ID)

Called

A called number

- * The original digit that the SMG-400 is received first.

Connected IP

IP address of other gateway which connected to the SMG-400.

RTP voice packet being exchanged with this connected IP.

PSTN Port

The PSTN Port number of SMG-400

- * The Outbound PSTN port number when the call is rerouted.
 - 20: the 1st port of VSL1
 - 40: the 1st port of VSL2
 - 60: the 1st port of digital trunk

Call Term.(Termination) Code

Word value is represent with 4 bytes of Hex Value

- The first 2 bytes : Code Type
 - . 00 : Q.931 Reason Code
 - . 01 : RAS Reason Code
 - . 02 : Rerouting Reason Code
 - . 03 : The reason code of the other's abnormal close
e.g.) IP Address isn't found.
- The second 2 bytes : Code Value.
 - e.g.) When Q.931 reason code is Normal, it's 10.

- * FFFF: The call is not terminated.

- * For detailed information on the codes, please see "Appendix A Call Termination Code."

Call Duration in seconds

The Call duration from connected time to released time.

Appendix A

Call Termination Code

Appendix A Call Termination Code

CDR Form

Call Type	DVO
Delimiter	:
M/D/Y	12/03/2001
Setup Time	18:20:00
Connected Time	18:21:07
Calling #	2187463
Called #	027798888
Connected IP	165.213.87.38
PSTN Port #	20
Call erm. Code	0010
Call Duration (sec.)	180

DVO : 12/03/2001 18:20:00 18:21:07 2187463 027798888 165.213.79.38 20 0010 180

DVO : 12/03/2001 18:20:00 --:--:-- 2187463 027798888 - 20 0010 180

Call Termination Code

1. 00xx : Q.931 Reason Code
: Following Next Pages
2. 01xx : RAS Reason Code
3. 02xx : Rerouting Reason Code
 - 1) for Loop/ E&M / T1E1
GOOD : 0x00
BAD : 0x01
COLLSN : 0x02
 - 2) for PRI :
: Following Next Pages
4. 03xx : Abnormal Reason Code

Q.931 Reason Code (00xx)

Cause Value		Nbr	Cause	Diagnostic
Class bits	Value bits			
7 6 5	4 3 2 1			
Normal event				
0 0 0	0 0 0 1	01	Unsigned number	Transit network identity
0 0 0	0 0 1 0	02	No route to specified transit network	
0 0 0	0 0 1 1	03	No route to destination	
0 0 0	0 1 1 0	06	Channel unacceptable	
0 0 0	0 1 1 1	07	Call awarded and being delivered in an established channel	
Normal event				
0 0 1	0 0 0 0	10	Normal call clearing	User supplied diagnostic New destination
0 0 1	0 0 0 1	11	User busy	
0 0 1	0 0 1 0	12	No user responding	
0 0 1	0 0 1 1	13	No answer from user(user alerted)	
0 0 1	0 1 0 1	15	Call rejected	
0 0 1	0 1 1 0	16	Number changed	
0 0 1	1 0 1 0	1A	Non-selected user clearing	
0 0 1	1 0 1 1	1B	Destination out of order	
0 0 1	1 1 0 0	1C	Invalid number format	
0 0 1	1 1 0 1	1D	Facility rejected	
0 0 1	1 1 1 0	1E	Response to STATUS ENQUIRY	Facility identification
0 0 1	1 1 1 1	1F	Normal unspecified	
Resource unavailable				
0 1 0	0 0 1 0	22	No circuit/channel available	Discarded IE identifier(s)
0 1 0	0 1 1 0	26	Network out of order	
0 1 0	1 0 0 1	29	Temporary failure	
0 1 0	1 0 1 0	2A	Switching equipment congestion	
0 1 0	1 0 1 1	2B	Access information discarded	
0 1 0	1 1 0 0	2C	Requested circuit/chan not available	
0 1 0	1 1 1 1	2F	Resources unavailable, unspecified	

Q.931 Reason Code (00xx)

Cause Value		Nbr	Cause	Diagnostic
Class bits 7 6 5	Value bits 4 3 2 1			
Service/option not available				
0 1 1	0 0 0 1	31	Quality of service unavailable	Facility identification
0 1 1	0 0 1 0	32	Requested facility not subscribed	
0 1 1	1 0 0 1	39	Bearer capability not authorized	
0 1 1	1 0 1 0	3A	Bearer capability not presently avail	
0 1 1	1 1 1 1	3F	Service or option not available	
Service/option not imp.				
1 0 0	0 0 0 1	41	Bearer capability not implemented	Channel type Facility identification
1 0 0	0 0 1 0	42	Channel type not implemented	
1 0 0	0 1 0 1	45	Requested facility not implemented	
1 0 0	0 1 1 0	46	Only restr.Dig.Info BC. Is available	
1 0 0	1 1 1 1	4F	Service or option not implemented	
Invalid message				
1 0 1	0 0 0 1	51	Invalid call reference value	Channel identity
1 0 1	0 0 1 0	52	Identified channel does not exist	
1 0 1	0 0 1 1	53	Call id does not exist for susp call	
1 0 1	0 1 0 0	54	Call identity in use	
1 0 1	0 1 0 1	55	No call suspended	
1 0 1	0 1 1 0	56	Call with the req call id is cleared	Clearing cause Incompatible parameter
1 0 1	1 0 0 0	58	Incompatible destination	
1 0 1	1 0 1 1	5B	Invalid transit network selection	
1 0 1	1 1 1 1	5F	Invalid message, unspecified	

Q.931 Reason Code (00xx)

Cause Value		Nbr	Cause	Diagnostic
Class bits	Value bits			
7 6 5	4 3 2 1			
ETSI cause values				
1 0 1	0 0 0 1	51	Non existent closed user group	
1 0 1	1 0 0 1	59	Called user not member of cug	
1 0 1	1 0 1 0	5A	Called user belongs to cug	
Protocol error				
1 1 0	0 0 0 0	60	Mandatory information element is missing	Information element
1 1 0	0 0 0 1	61	Message type non existing or not implemented	identifier(s)
1 1 0	0 0 1 0	62	Message not compatible with call state or message type non existent or not implemented	Message type
1 1 0	0 0 1 1	63	Information element non existing or not implemented	Message Type
1 1 0	0 1 0 0	64	Invalid information element constants	Information element
1 1 0	0 1 0 1	65	Message not compatible with call state	identifier(s)
1 1 0	0 1 1 0	66	Recovery on timer expiry	Information element
1 1 0	1 1 1 1	6F	Protocol error, unspecified	identifier(s)
Interworking				Message type
1 1 1	1 1 1 1	5F	Interworking, unspecified	Timer number

Cause Value of PRI for SMG System (02xx)

No.	Define	Val	Comment
1	CAUSE_UNASSIGNED	1	Unassigned REL_COM, DISC
2	CAUSE_NOROUTE_TX	2	no route to specified transit network DISC, REL_COM
3	CAUSE_NOROUTE_DEST	3	no route to destination DISC, REL_COM
4	CAUSE_CH_UNEXPT	6	Channel unexpectable REL
5	CAUSE_CALL_AWARD	7	Call awarded and being delivered in an established channel REL
6	CAUSE_NOR_CLEAR	16	Normal call clearing DISC
7	CAUSE_USER_BUSY	17	User busy REL_COM
8	CAUSE_NO_RESPONDING	18	No user responding DISC
9	CAUSE_NO_ANSWER	19	User alerting, No answer DISC
10	CAUSE_CALL_REJ	21	call reject DISC
11	CAUSE_NUM_CHG	22	Number change DISC, REL_COM
12	CAUSE_NON_SELECT	26	Non selected user clearing REL
13	CAUSE_DES_OOO	27	Destination out of order DISC
14	CAUSE_INV_NUM	28	Invalid number format REL_COM, DISC
15	CAUSE_INV_NUM	29	Facility reject REL_COM, DISC
16	CAUSE_STAT_ENRTY	30	Response to status entry STAT
17	CAUSE_NOR_UNSPE	31	Normal unspecified REL_COM, DISC
18	CAUSE_NO_CIRCUIT	34	No circuit available REL_COM, DISC
19	CAUSE_NET_OOS	38	Network out of service
20	CAUSE_TEMP_FAULURE	41	Temporary failure DISC
21	CAUSE_SW_CONGEST	42	Switching equipment congestion REL, REL_COM
22	CAUSE_INFO_DISCARD	43	Access information discard CON, STAT
23	CAUSE_CH_NOTA	44	Circuit channel not available REL_COM, DISC

No.	Define	Val	Comment
24	CAUSE_RES_NOTA	47	Resource not available REL_COM, DISC
25	CAUSE_QUAL_NOTA	49	Quality of service unavailable REL, REL_COM
26	CAUSE_FAC_NOTS	50	Requested facility not subscribed DISC
27	CAUSE_BC_NOTA1	57	Barer capability not authorized REL, REL_COM
28	CAUSE_BC_NOTA2	58	Bearer capability not authorized DISC, REL_COM
29	CAUSE_SRVO_NOTA	63	Service or option not available, not unspecified DISC, REL_COM
30	CAUSE_BC_NOTI	65	Bearer capability not implemented DISC, REL_COM
31	CAUSE_CT_NOTI	66	Channel type not implemented
32	CAUSE_RF_NOTI	69	Requested facility not implemented DISC, REL
33	CAUSE_OR_INFB	70	Only restricted digital information bearer capability is available
34	CAUSE_SRVO_NOTI	79	Service or option not implemented
35	CAUSE_INV_CRV	81	Invalid call reference value REL, REL_COM
36	CAUSE_IC_DNE	82	identified channel does not exist REL_COM
37	CAUSE_SC_EXIST	83	A suspended call exist REL_COM
38	CAUSE_CI_INUSE	84	Call identify in use SUSP, REJ
39	CAUSE_NC_SUSPEND	85	No call suspended RES, REJ
40	CAUSE_RCI_CLEAR	86	Call having the requested call identify has been cleared RES, REJ
41	CAUSE_INC_DEST	88	Incompatible destination DISC
42	CAUSE_INV_TNS	91	Invalid transit network selection DISC, REL, REL_COM
43	CAUSE_INV_MSG	95	Invalid message unspecified REL_COM, STAT

No.	Define	Val	Comment
44	CAUSE_MIE_MISS	96	Mandatory information element is missing REL, REL_COM, STAT
45	CAUSE_MT_NOTE	97	Message type non-existence or not implemented STAT
46	CAUSE_MSG_NOTC1	98	Message not compatible with call state or message type non-existence of not implemented STAT
47	CAUSE_IE_NOTE	99	Information element non-existence or not implemented STAT,REL,REL_COM
48	CAUSE_INV_INFOE	100	Invalid information element contents STAT, REL, REL_COM
49	CAUSE_MSG_NOTC2	101	Message not compatible with call state STAT,DISC,REL, REL_COM
50	CAUSE_ROT_EXP	102	Recovery on time expiry DISC
51	CAUSE_PRO_ERROR	111	Protocol error, unspecified DISC
52	CAUSE_INTW_UNSP	127	Interworking unspecified
53	CAUSE_VOIP_OOS	146	VoIP Out of service

Appendix B

System

Information(Database) File

Structure

Appendix B System Information(Database) File Structure

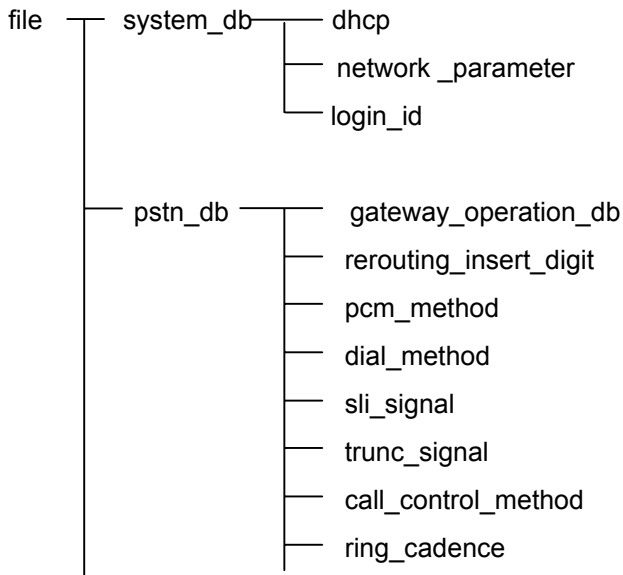
System information managed by the SMG-400 is saved in a text file, and enables the system information to be backed up, restored, and edited.

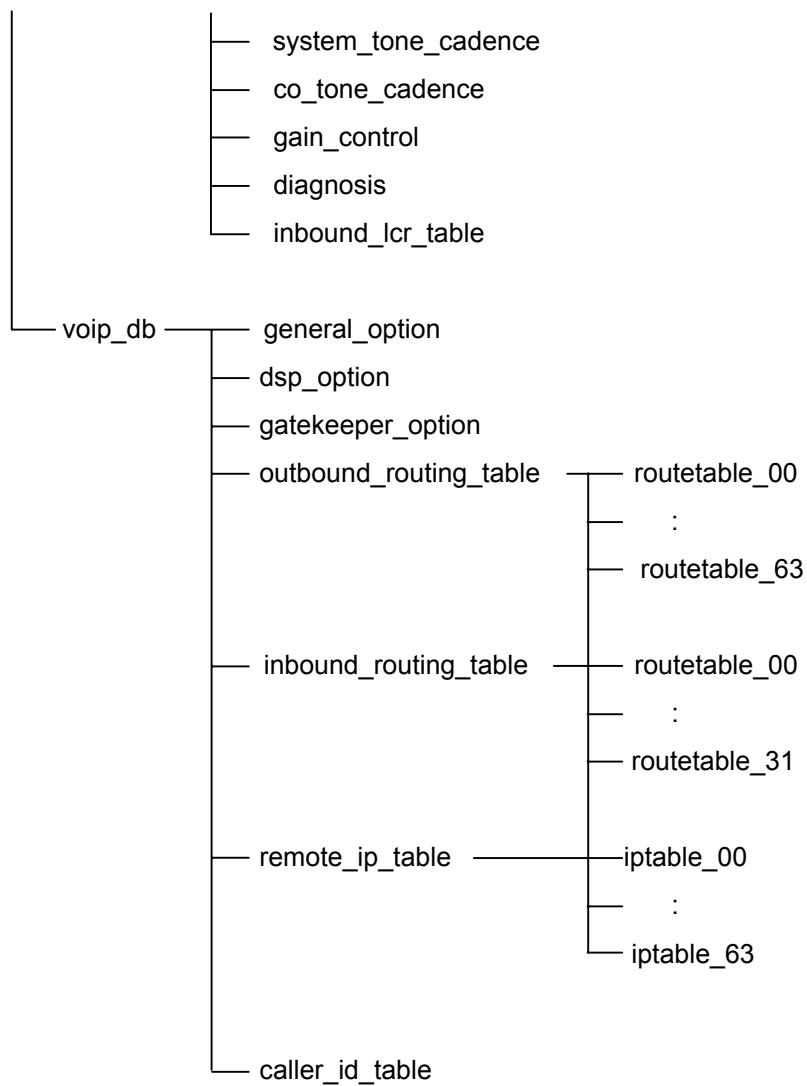
- You can back up the system information externally.
- You can copy information between several systems.
- You can use the text editor to edit the system information.

File Structure

The database file is configured in the CLI (Command Line Interface) menu structure, and has a similar hierarchical structure to that of the CLI menu.

Hierarchical structure



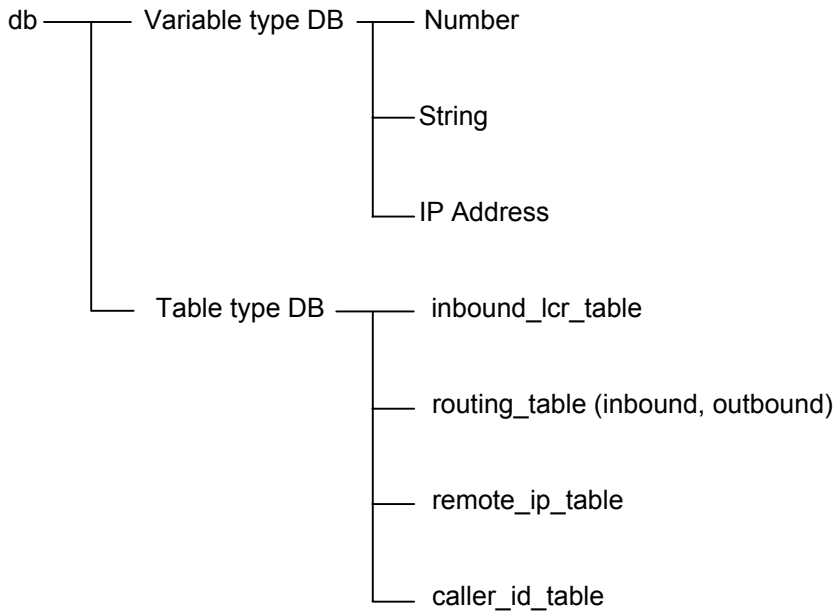


Syntax Structure

DB Types

Most of the data for SMG-400 system DBs can be entered by assigning parameter values to corresponding variables, but data for DBs in table format can be entered differently depending on the type. So the characteristics of each DB will be described here.

DBs can be classified by the characteristics of the input values as follows :



[Classification of DBs by type of value]

Above structure shows that there are two types of DBs: Variable Type DBs and table type DBs.

Variable Type DB

When assigning values to Variable Type DBs, write the variable name in the left side, put the allocation sign '=' in the middle, and write the value in the right side.

```
E.g.> sys.network.my_ipaddr = 165.213.87.145
      pstn.call_control.loop_ok_time = 60
```

If you want to delete String DBs, write "NULL" in the right side.

```
E.g.> voip.option.gateway_id = NULL
```

As the system analyzes DB files by line, only one assignment statement must be used for one line.

If you use the semicolon(;), the part of the line after the semicolon will be commented and not analyzed.

```
E.g.> voip.dsp.multi_frame_counter = 2 ; def(1) 1 ~ 10
      ~~~~~ commented
```

All variables must be predefined in the system to be recognized by the system, and they must be used within the folder to which the applicable DB belongs.

DBs of the same type are classified as a folder, and braces ('{','}') must be used to indicate the beginning and end of the DBs. At this time, the braces must be used in a new line, and cannot be used with other statements.

The ending part of the folder name must be ended with parentheses '()', and in the case of table DBs, the maximum number of entry is written in the parenthesis of the folder name.

E.g.> System DB Configuration

```

system_db()
{
    sys.dhcp()
    {
        sys.dhcp.client = 0 ; def(0) min(0) max(1) (0)no, (1)yes
        sys.dhcp.classid = ; def()
    }

    sys.network_parameter()
    {
        sys.network.my_ipaddr = 165.213.87.145 ; My IP Address
        sys.network.my_gateway = 165.213.87.1 ; My Gateway
                                                Address
        sys.network.my_netmask = 255.255.255.0 ; My Subnet Masks
        sys.network.my_tos = 0 ; def(0) min(0) max(255)
                                                My TOS(Type of Service)
    }

    sys.login_id()
    {
        sys.login.id = SMG-400 ; Login ID
        sys.login.password = SMG-400v1 ; Login Password
        sys.login.id1 = None ; Normal Login ID
        sys.login.password2 = None ; Normal Login Password
    }
}

```

Not all DBs must be entered in the DB file, and you can leave only the DBs to modify, and delete the DBs you don't need to modify from the file before loading them.

Table Type DB

Table type DBs can have slightly different formats depending on the nature of the table.

The SMG-400 system has the following four types of table DBs.

- Inbound LCR Table
- Routing Table (Inbound, Outbound)
- Remote IP Table
- Caller ID Table

1) Inbound LCR Table

The Inbound LCR Table belongs to the PSTN DB, and immediately performs Call Setup by checking predefined prefixes for quick Call Setup even if the End Digit ('#') does not arrive. It can have up to 32 entries, and one entry has 2 fields: 'Inbound Prefix' and 'maximum length.' One entry must be entered on one line, and the Inbound Prefix and the maximum length field must be separated by a comma (,).

An example of data input is given below :

```
pstn.inbound_lcr_table(32) ; Maximum number of entries is 32
{
    1234567, 8 ; First entry [0/32]
    23456, 8 ; Second entry [1/32]
    :
}
```

2) Routing Table

The Routing Table belongs to the VoIP DB, and there are 2 types of routing tables: Outbound Routing Tables and Inbound Routing Tables.

- Outbound Routing Table

The Outbound Routing Table has up to 64 entries, and each entry has the following Variable Type DBs.

voip.routetable.access_code

voip.routetable.code_length

voip.routetable.delete_lenth

voip.routetable.insert_dight

voip.routetable.ipable_1

voip.routetable.call_limit

voip.routetable.ipable_start_point

voip.routetable.gk_use

An example of data input is given below :

```
voip.outbound_routing_table(64)
{
    voip.routetable_00()
    {
voip.routetable.access_code          = 0
        voip.routetable.code_length      = 1
        voip.routetable.delete_lenth     = 0
        voip.routetable.insert_dight     =
        voip.routetable.ipatable_1       = 0
        voip.routetable.call limit       = 0
        voip.routetable.ipatable_start_point = 0
        voip.routetable.gk_use           = 1
    }
        :
    voip.routetable_63()
    {
        :
    }
}
```

- Inbound Routing Table

The Inbound Routing Table has up to 32 entries, and each entry has the following Variable Type DBs.

```
voip.routetable.access_code
voip.routetable.code_length
voip.routetable.delete_lenth
voip.routetable.insert_dight
voip.routetable.route_port
```


An example of data input is given below :

```
voip.inbound_routing_table(32) ; Maximum number of entries is 32
{
    voip.routetable_00()
    {
        voip.routetable.access_code          = 0
        voip.routetable.code_length          = 1
        voip.routetable.delete_lenth         = 0
        voip.routetable.insert_dight         =
        voip.routetable.route_port           = 65535
    }
                                     :
    voip.routetable_31()
    {
        :
    }
}
```

3) Remote IP Table

The Remote IP Table belongs to the VoIP DB, and has up to 64 entries. Each entry consists of tables, and up to 18 IP addresses can be entered in one IP Table entry. When entering IP addresses in the IP Table entry, you must enter one IP address in one line.

An example of data input is given below :

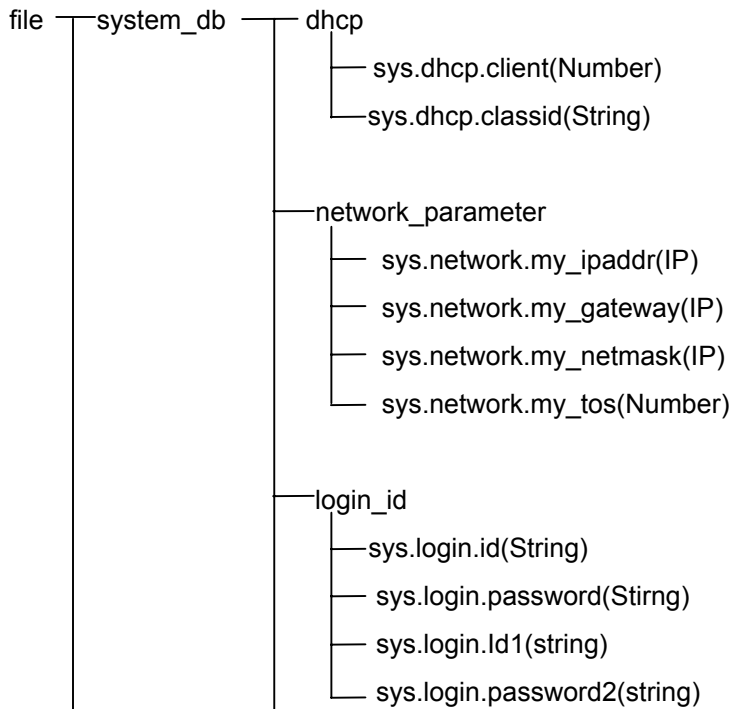
```
voip.remote_ip_table(64) ; Maximum number of entries is 64
{
    voip.ip_table_00() ; Maximum number of IPs entered in one IP
                        Table entry is 16
    {
        165.213.87.145 ; [0/16]
        165.213.87.146 ; [1/16]
        :
    }
    voip.ip_table_01() ; Maximum number of IPs entered in one IP
                        Table entry is 16
    {
        165.213.87.144 ; [0/16]
    }
    :
    voip.ip_table_63() ; Maximum number of IPs entered in one IP
                        Table entry is 16
    {
        165.213.87.55 ; [0/16]
    }
}
```

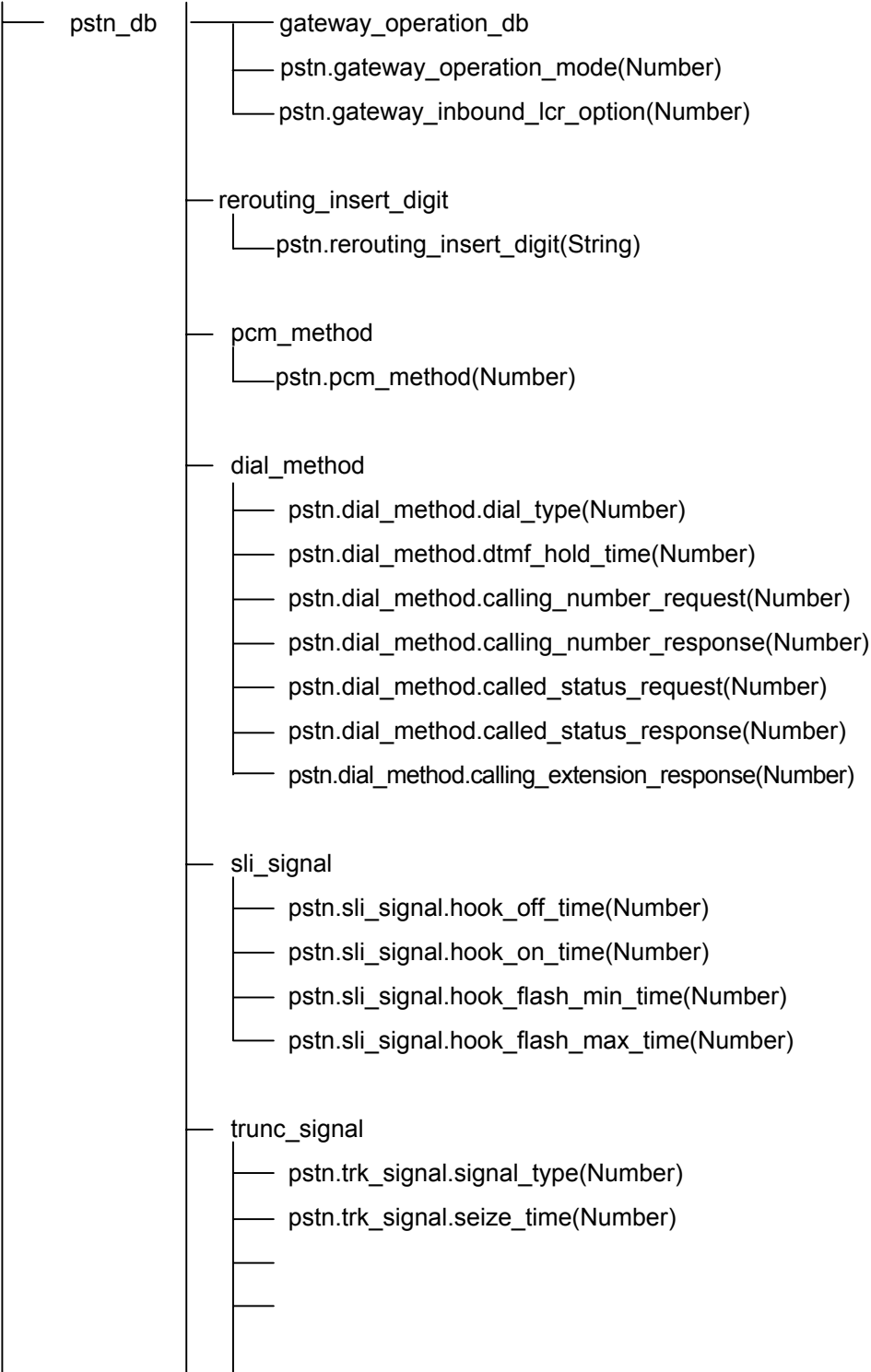
4) Caller ID Table

The Caller ID Table belongs to the VoIP DB, and has up to 8 entries. In this case 8 means the maximum number of trunk ports that the SMG-400 system can have. As each entry is one Variable Type DB, it can be expressed simply as an assignment statement as follows:

```
voip.caller_id_table(8)
{
  voip.calleridtable_00 = 1234
  voip.calleridtable_01 = 2345
  voip.calleridtable_02 = 3456
  voip.calleridtable_07 = 4567
  :
}
```

DB Attribute





pstn.trk_signal.release_time(Number)

pstn.trk_signal.noring_time(Number)

— pstn.trk_signal.answer_holding_time (Number)

— pstn.trk_signal.co_hookon_time(Number)

— pstn.trk_signal.wink_time(Number)

— pstn.trk_signal.insert_eod(Number)

— pstn.trk_signal.t1_line_coding(Number)

— pstn.trk_signal.t1_signal_mode(Number)

— pstn.trk_signal.e1_crc4(Number)

— pstn.trk_signal.pri_country(Number)

— pstn.trk_signal.pri_oper_mode(Number)

— pstn.trk_signal.pri_channel_mode(Number)

— pstn.trk_signal.pri_dial_mode(Number)

— call_control_method

— pstn.call_control.first_digit_time(Number)

— pstn.call_control.inter_digit_time(Number)

— pstn.call_control.loop_ok_time(Number)

— pstn.call_control.ok_release_time(Number)

— ring_cadence

— pstn.ring_cadence.sli_ring_1st_on_time(Number)

— pstn.ring_cadence.sli_ring_1st_off_time(Number)

— pstn.ring_cadence.sli_ring_2nd_on_time(Number)

— pstn.ring_cadence.sli_ring_2nd_off_time(Number)

— pstn.ring_cadence.trk_ring_1st_on_time(Number)

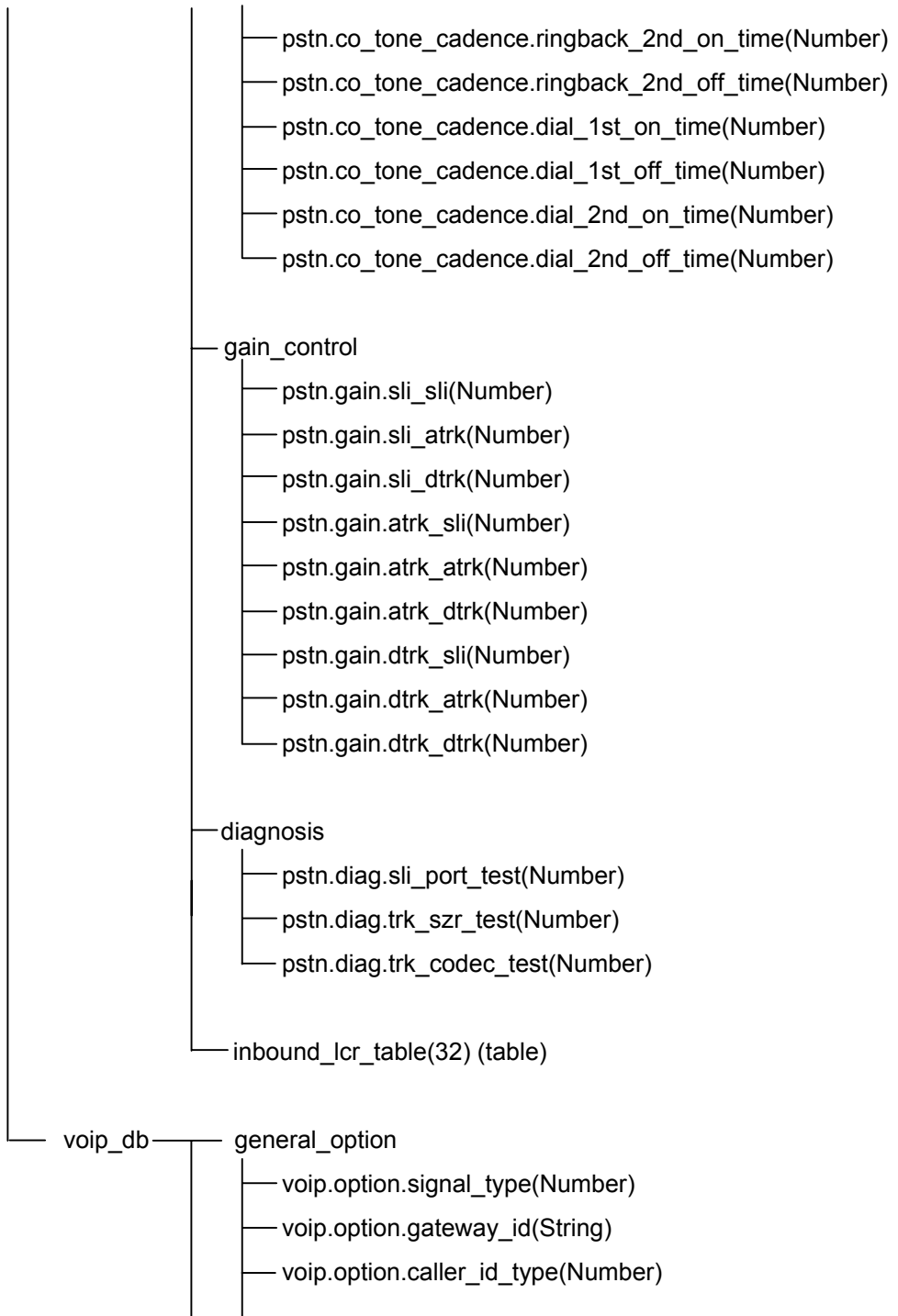
— pstn.ring_cadence.trk_ring_1st_off_time(Number)

— pstn.ring_cadence.trk_ring_2nd_on_time(Number)

— pstn.ring_cadence.trk_ring_2nd_off_time(Number)

```
—system_tone_cadence
  — pstn.systone_cadence.dial_1st_on_time(Number)
  — pstn.systone_cadence.dial_1st_off_time(Number)
  — pstn.systone_cadence.dial_2nd_on_time(Number)
  — pstn.systone_cadence.dial_2nd_off_time(Number)
  — pstn.systone_cadence.busy_1st_on_time(Number)
  — pstn.systone_cadence.busy_1st_off_time(Number)
  — pstn.systone_cadence.busy_2nd_on_time(Number)
  — pstn.systone_cadence.busy_2nd_off_time(Number)
  — pstn.systone_cadence.transfer_1st_on_time(Number)
  — pstn.systone_cadence.transfer_1st_off_time(Number)
  — pstn.systone_cadence.transfer_2nd_on_time (Number)
  — pstn.systone_cadence.transfer_2nd_off_time(Number)
  — pstn.systone_cadence.ringback_1st_on_time(Number)
  — pstn.systone_cadence.ringback_1st_off_time(Number)
  — pstn.systone_cadence.ringback_2nd_on_time(Number)
  — pstn.systone_cadence.ringback_2nd_off_time(Number)
  — pstn.systone_cadence.error_1st_on_time(Number)
  — pstn.systone_cadence.error_1st_off_time(Number)
  — pstn.systone_cadence.error_2nd_on_time(Number)
  — pstn.systone_cadence.error_2nd_off_time(Number)

—co_tone_cadence
  — pstn.co_tone_cadence.busy_1st_on_time(Number)
  — pstn.co_tone_cadence.busy_1st_off_time(Number)
  — pstn.co_tone_cadence.busy_2nd_on_time(Number)
  — pstn.co_tone_cadence.busy_2nd_off_time(Number)
  — pstn.co_tone_cadence.ringback_1st_on_time(Number)
  — pstn.co_tone_cadence.ringback_1st_off_time(Number)
```



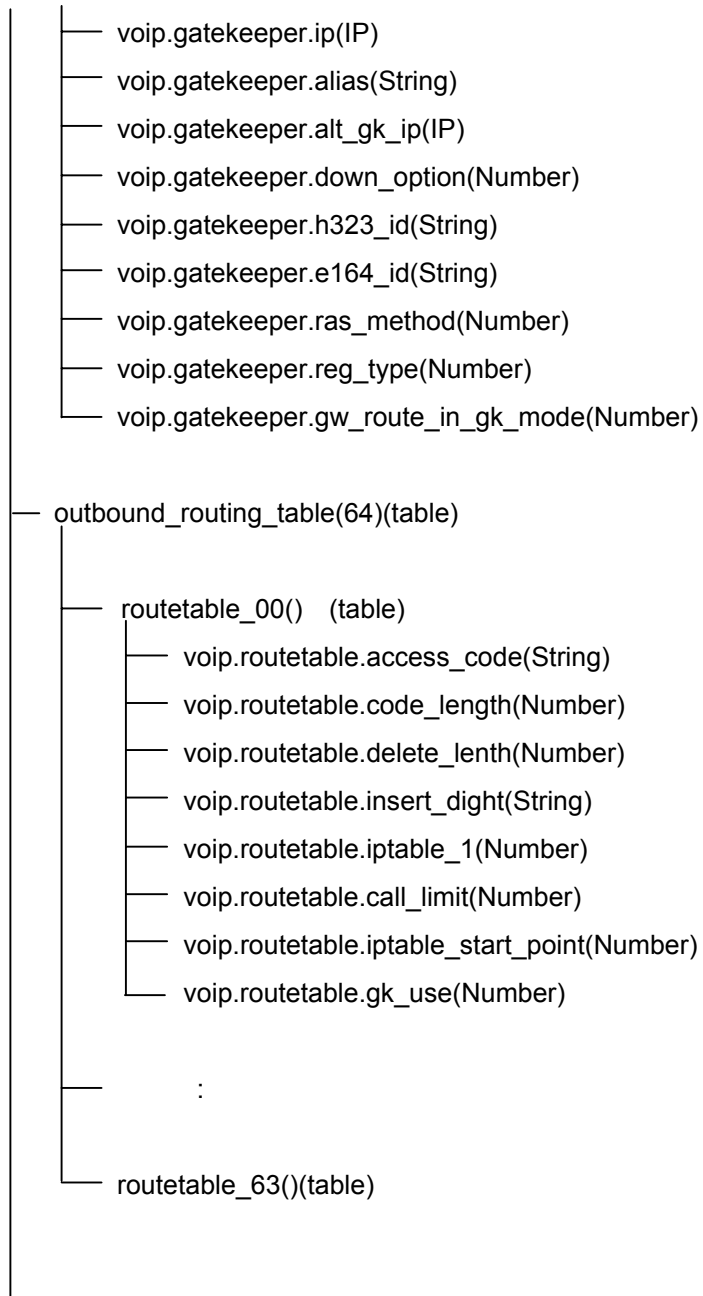
- voip.option.dtmf_type(Number)
- voip.option.fax_signal_type(Number)
- voip.option.h245_open_in_faststart(Number)
- voip.option.Tunneling(Number)
- voip.option.dil_number(String)
- voip.option.snmp_server_ip(IP)
- voip.option.signaling_port(Number)
- voip.option.status_port(Number)
- voip.option.wcs_port(Number)
- voip.option.sigg_access_port(Number)

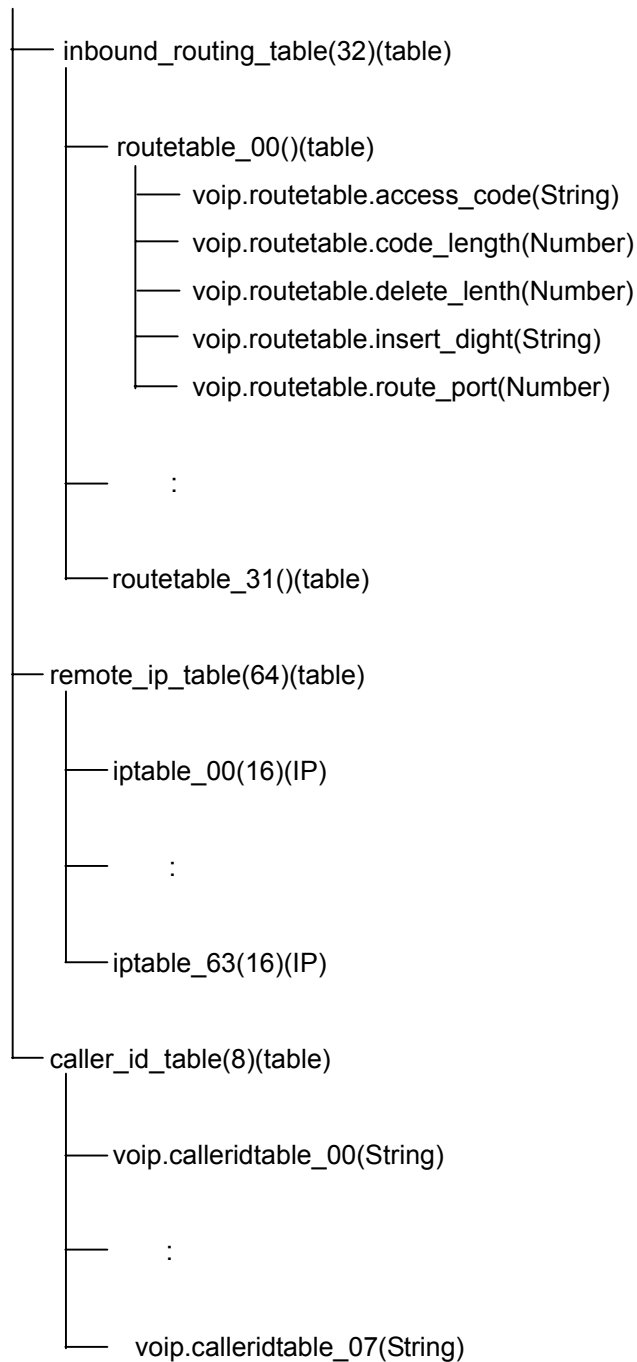
- dsp_option

- voip.dsp.audio_codec(Number)
- voip.dsp.echo_cancellation(Number)
- voip.dsp.silence_suppression(Number)
- voip.dsp.high_pass_filter(Number)
- voip.dsp.post_filter(Number)
- voip.dsp.input_gain(Number)
- voip.dsp.voice_volume(Number)
- voip.dsp.multi_frame_counter(Number)
- voip.dsp.jitter_optimizing_factor(Number)
- voip.dsp.rtp_delay_limit(Number)
- voip.dsp.rtp_loss_limit(Number)
- voip.dsp.rtp_loss_check_period(Number)
- voip.dsp.rtp_over_limit_count(Number)

- gatekeeper_option

- voip.gatekeeper.connection(Number)
- voip.gatekeeper.type(Number)





Appendix C

Glossary

Appendix C Glossary

Brief definitions of terms used in this guide are given in this appendix. **Bold** items in the text indicate that the item is defined in the list.

A-law

An encoding scheme that determines how an analog speech signal is converted to a digital signal. A-law encoding is used in Europe. The other algorithm, **U-law**, is used in North America and Japan.

Alias

A name given to each host to distinguish it from one another within an **H.323** network. While using the same Internet address, each host name can be set differently.

Automatic Number Identification (ANI)

ANI enables call recipients to recognize a caller's telephone number. How this works varies from provider to provider. This service is often provided by sending DTMF tones with a call.

Channel

A channel through a device, controlling data delivery between two devices, for information delivery. As the channel is a logical connection channel rather than a physical one connecting devices, a number of logical channels can exist even through only one physical communication line is present.

CODEC (COder-DECoder)

Converts analog voice to digital bit stream, and digital bit stream to analog voice. It can be also referred to as a type of compression (e.g. G729 CODEC).

Delay Start

A trunk signal method. A call is initiated when the trunk is seized at the sending end. The **Off-Hook** status of the PBX at the receiving end lasts until it becomes ready to receive call data. Once it is ready to receive, it is changed to On-Hook status. When the PBX at the sending end sends call data, the PBX at the receiving end receives it and calls the subscriber at the receiving end.

When the subscriber at the receiving end lifts the phone (in the Off-Hook status), the call begins. The call is ended when either subscriber replaces the phone (in the **On-Hook** status).

Digital Signal Processor (DSP)

A special computer chip designed to handle digital signals, which are fast and complex. It is widely used for real-time processing of voice and image.

Dual Tone Multi Frequency (DTMF)

An in-band signaling system that uses two simultaneous voice-band tones for dialing.

Dynamic Host Configuration Protocol (DHCP)

Provides a mechanism for allocating **IP Addresses** dynamically so that addresses can be reused when hosts no longer need them.

E.164

The international numbering system for remote communication using telephone.

Ear & Mouth (E&M) Signaling Signaling

A method of sending and monitoring signals between signaling equipment independent of trunk devices. E (Ear) receives open or earth signals from signaling equipment. M (Mouth) sends earth signals or voltage status. It monitors PBX's status depending on the changes in voltage of E and M. It also connects or disconnects connections.

Echo Cancellation

A process of removing echo from lines. Echo normally is created due to difference in impedance in wires of a telephone network. Echo Cancellers store a voice sample it sends, and extracts the voice from the returned voice in the reverse direction.

Fax On Demand (FOD)

Upon request of information using a telephone, you can receive information through fax. Such service is provided on a 24 hour a day basis.

Fast Start

Fast Start is one of the **H.323** signal methods. It exchanges all information through a connection at the connection stage, and the media connection is made without connecting to **H.245**. As it is faster and simpler than Slow Start, it is now more widely used.

File Transfer Protocol (FTP)

A client/server protocol for exchanging files with a host computer. Examples are X-modem, Y-modem, Z-modem and Kermit.

Foreign eXchange Office (FXO)

Being connected to a signal at a loop start signal type PBX, it receives power current and RING signals from the PBX, and sends them to the corresponding system. It forms the subscribers' telephone lines by processing voice signals at the sending end to PCM data.

Foreign eXchange Station/Subscriber (FXS)

Sends dial tones to ordinary telephones. It accommodates subscriber lines in loop start signal type exchangers, supplies current call RING signals to subscribers, sends voice signals, and dials signals of DTMF and LOOP ON/OFF by processing them into PCM data to the corresponding systems.

Gatekeeper

H.323 Gatekeeper performs important functions which allow the deployment of an accountable and manageable multi-media network. A Gatekeeper is typically assumed to provide functions such as directory services, address translation, bandwidth management, authentication, accounting, authorization, and billing.

Gateway

A device that connects two computer networks that use different protocols. It translates between protocols so that computers on the connected networks can exchange data. For example, commercial online services often have gateways for sending e-mail to Internet addresses.

G.711

G.711 is a CCITT recommendation detailing a 74 kbps, 7 kHz bandwidth audio

coding algorithm.

G.723.1

G.723.1 (previously just "G.723") is a standards-based voice codec. It was designed for video conferencing / telephony over standard phone lines, and is optimized for real-time encode & decode. G.723.1 is part of the **H.323** (IP) and **H.324** (POTS) standards for video conferencing. Has a compression ratio 5.3 and /or 6.3 Kbits/sec (0.7-0.8 Kbytes/sec), depending on implantation.

G.729

The ITU-U G.729 recommendation contains the description of an algorithm for the coding of speech signals at 8 kbit/s using Conjugate-Structure Algebraic-Code Excited Linear Prediction (CS-ACELP). The CS-ACELP coder is fed with a digital signal resulting from telephone bandwidth filtering (Recommendation G.712) of an analog signal sampled at 8 kHz, followed by conversion to 16-bit linear PCM for input to the encoder. The output of the decoder is converted back into analog signal by similar means.

H.245

H.245 is line transmission of non-telephone signals. It includes receiving and transmitting capabilities as well as mode preference from the receiving end, logical channel signaling, and Control and Indication. Acknowledged signaling procedures are specified to ensure reliable audiovisual and data communication.

H.323

The H.323 standard provides a foundation for audio, video, and data communications across IP-based networks, including the Internet. H.323 is an umbrella recommendation from the International Telecommunications Union (ITU) that sets standards for multimedia communications over Local Area Networks (LANs) that do not provide a guaranteed Quality of Service (QoS). These networks dominate today's corporate desktops and include packet-switched TCP/IP and IPX over Ethernet, Fast Ethernet and Token Ring network technologies. Therefore, the H.323 standards are important building blocks for a broad new range of collaborative, LAN-based applications for multimedia communications. It includes parts of H.225.0 - RAS, Q.931, H.245 RTP/RTCP and audio/video Codecs, such as the audio Codecs (G.711, G.723.1, G.728, etc.) and video Codecs (H.261, H.263) that compress and decompress media streams.

Internet Protocol (IP)

Network layer protocol in the TCP/IP stack offering a connectionless internetwork service. IP provides features for addressing, type-of-service specification, fragmentation and reassembly, and security. Defined in RFC 791.

IP Address

32-bit address assigned to hosts using TCP/IP. An IP address belongs to one of five classes (A, B, C, D, or E) and is written as 4 octets separated by periods (dotted decimal format). Each address consists of a network number, an optional subnetwork number, and a host number. The network and subnetwork numbers together are used for routing, while the host number is used to address an individual host within the network or subnetwork. A subnet mask is used to extract network and subnetwork information from the IP address. CIDR provides a new way of representing IP addresses and subnet masks. Also called an Internet address. See also **Internet Protocol**, and **Subnet Mask**.

Jitter

The deviation of a transmission signal in time or phase. It can introduce errors and loss of synchronization in high-speed synchronous communications.

Off-Hook

The active state of a customer telephone circuit. The term is derived from old telephone sets where the receiver, when in use, was lifted from a hook attached to a switch. The opposite condition is **On-Hook**.

On-Hook

Means the handset of a telephone is replaced. The connection is closed and the bell is in standby mode.

Quality of Service (QoS)

The quality of the services that are provided. When specified values of QoS variables are satisfied, it indicates that the quality of the corresponding service is satisfactory.

Real-time Transport Protocol (RTP)

An Internet protocol sending real-time data such as audio and video. Although RTP itself does not guarantee real-time transmission, transmission application programs provide devices for streaming data support. In general, RTP works on UDP protocol.

Slow Start

A type of **H.323** signaling. It exchanges all information through a connection at the Q931 connection stage, and connects to **H.245** followed by a media connection.

Subnet Mask

32-bit address mask used in **IP** to indicate the bits of an **IP address** that are being used for the subnet address. Sometimes referred to simply as mask.

TOS (Type Of Service)

TOS parameters consist of 3 bits which are used to set services on Delay, Throughput and Reliability.

	Delay (4)	Throughput (2)	Reliability (1)
Set	Low	High	High
Clear	Normal	Normal	Normal

Combinations of TOS bits and their meanings are shown below:

7	111	Network Control
6	110	Internetworking Control
5	101	CRITIC/ECP
4	100	Flash Override
3	011	Flash
2	010	Immediate
1	001	Priority
0	000	Routine

Trivial File Transfer Protocol (TFTP)

A simpler version of **FTP** that uses UDP (User Datagram Protocol) rather than TCP (Transmission Control Protocol) for data transport. It is easier to program than FTP but lacks directory and authentication services. It is often used to allow diskless workstations to boot over the network.

U-law

One of two algorithms used in telephony to logarithmically compress or expand digitized speech. U-law is used in North America and Japan. **A-law** is the other algorithm used in European networks.

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