

FUNCTIONAL SPECIFICATION OF IPLDK-RSG

Version 1.3



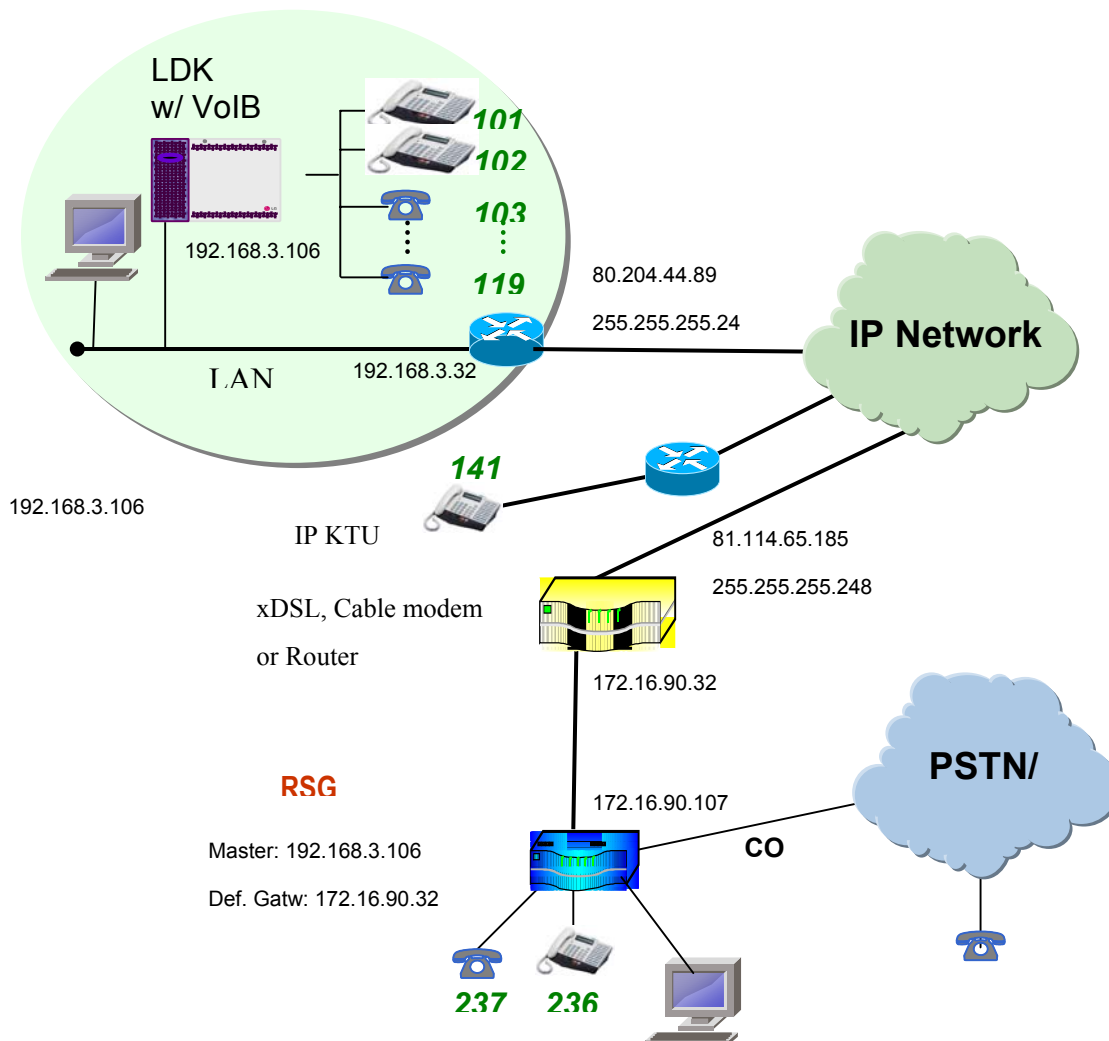
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1. OVERVIEW

1.1 Network Diagram

Remote-Service permits remote users and interface services to the LDK System over broadband IP networks. Remote Services are implemented with the Remote Services Gateway (RSG). The following diagram is the typical remote LDK network connection.



2. CONFIGURATION

2.1 Capacity

System Capacity for RSG (Remote Services Gateway)

RSG	RSG numbers can be serviced by LDK	128 (LDK-300) 32 (LDK-100)
	Devices per RSG	1) 1 Digital Keypad and 1 Single Line Telephone 2) 1 PSTN
RTP Relay Channel for RSG		Up to channel number of VOIP assigned for RSG
IP Phone numbers can be serviced by LDK		128 (LDK-300) 64 (LDK-100)

- System Capacity for RSG/IP Phone is limited by PGM 381/Btn 1&2.

2.2 Appliance of Security Application

Security is needed for the communication between local and remote devices.

Between local device and RSG associated device, the Voice communication channel is established via VOIP gateway because of public routing path.

2.3 Regulatory Spec. of RSG

- Interface:
 - . PPPoE for ADSL
 - . 2 Lan Port (1 uplink, 1 PC)
 - . 1 Digital Keypad Interface
 - . 1 Single Line Interface
 - . 1 PSTN Interface
 - . 2 External Contact Relays
 - . 1 Internal MOH, 1 External MOH
 - . 1 Alarm Port
- Voice Quality:
 - G.711_ALAW / G.711_ULAW / G.723.1
- IP Address:
 - Fixed or Dynamic
- Security
 - IPsec, STUN
- NAT (Network Address Translation)

3. CALL FEATURES

For the most of Call features, stations and co lines on RSG is same as local devices.

(Refer to the RSG Call Feature List).

3.1 VOIB Configuration for RSG

The RSG is serviced through VOIB. So, the VOIB for RSG should be assigned in PGM 380.

If several VOIBs are assigned in PGM 380, please assign the first VOIB slot for RSG for STA and COL Board in PGM 103/BTN 1 & 2. And reset the system for board configuration.

3.2 RSG Registration

For registration of RSG to the LDK system, enter the MAC of RSG in PGM 383 after VOIB Configuration.

3.3 RSG Associated CO Line Usage

1. CO Outgoing.

By Dial '0' the RSG devices can access their local CO Line if 'First Access RSG CO' (PGM 382.BTN 6) is set to ON.

2. CO Incoming

The RSG devices can receive the CO incoming ring of their RSG CO without CO ring assignment if the 'RING w/o CO Ring Assign' is set to ON. But it can be extended to the other stations by ring assignment in PGM-144.

3. Emergency Call

Local Emergency Call from RSG devices is done via their RSG CO Line.

3.4 RSG Associated Resource Usage

There are the following resources on RSG.

1. External Relay Control

- There are two external contact relays on the RSG.
- They can be used for LBC or Door Open. It is assigned in PGM 384/Btn 5&6.
- To assign to the LBC, please enter '1' and the associated station number. Then the LBC is working when the association station receives a ring.

- To assign to the Door Open, please enter '2'. Then it can be activated by dialing RSG Door Open Code (PGM 109/ Btn 2 &3) from RSG devices.

2. Local MOH

- The RSG has one internal and one external MOH source.
- RSG associated devices use their local MOH source in the RSG.
- The music will be heard when RSG devices on RSG are held or digital keyset on RSG activates the BGM.

3. Alarm Signal

- When Alarm Signal is detected from RSG, the LDK system gives the Alarm Ring to the Alarm assign station in PGM 385. And the alarm will be stop by Alarm Reset code.
- To activate an Alarm on RSG, the Alarm should be enabled in PGM 384/Btn 7.

4. RSG SETTING

4.1 Hardware/Software Requirements

- RSG board
 - Firmware Version GS30E- 0.1Ea or later
- Terminal Emulator Software
 - Z-Modem protocol should be supported (e.g. Hyper Terminal, Procomm Plus, etc)
- RS-232C Cable
 - RSG board
 - Z-Modem protocol should be supported (e.g. Hyper Terminal, Procomm Plus, etc)
- Baud Rate
 - 38400, should not be changed

4.2 Hardware Configuration

In order to use serial connection between PC and RSG board, the serial port of PC should be connected to the serial port of RSG board with RS-232C type cable (serial cable).

Firmware upgrade commands can be executed only under "LAN Firmware Upgrade Mode". In order to enter this mode, please follow the procedure below.

1. If you did not log into the trace mode yet, log into the trace mode by entering password at "Password" prompt. After entering password, you will see "root" prompt that means that you are now in root mode.
2. If you are not in root mode, you are probably in one of the sub-modes. In this case, type 'b' to go back to root mode.
3. After you confirm that you are now in root mode, enter 'u' to enter "LAN Firmware Upgrade Mode". Then, you will see "swup" prompt.

4.3 Operations

4.3.1 Set Master's IP Address

- If the RSG wants to operate, the master IP address should be input.

Operations

1. Press 'Enter' Key, the 'main:>' is out after menu list.
Ex)

Command	Description
wan	Change to WAN Configuration
lan	Change to LAN Configuration
system	Change to System Configuration
status	Change to System Status

<i>trace</i>	<i>Change to Trace Options</i>
<i>passwd</i>	<i>Change Password</i>
<i>reset</i>	<i>Reset RSG</i>
<i>exit (or x)</i>	<i>Exit Monitor Mode</i>
<i>help (or ?)</i>	<i>Display Help on Menu</i>

main:>

2. Type 'system' and enter.

Ex)

*main:> **system***

<i>Command</i>	<i>Description</i>
<i>/</i>	<i>Change to Root Catalog</i>
<i>..</i>	<i>Change to Parent Catalog</i>
<i>get all</i>	<i>Read All Parameters</i>
<i>get [arg]</i>	<i>Read [arg] Parameter</i> <i>{ver VOIB http vtag ptag}</i>
<i>set VOIB [ipaddr]</i>	<i>Write VOIB IP Address</i>
<i>set http</i>	<i>Write HTTP Access Mode</i> <i>{wan lan} {yes no}</i>
<i>set vtag [digt]</i>	<i>Write RTP VLAN Tag (0-4094 del)</i>
<i>set ptag [digt]</i>	<i>Write RTP Priority Tag (0-7 del)</i>

3. If you want to have the current information for system, type 'get all' and enter.

Ex)

get all

Software Version: GS30E-0.1Ea
Revision Date: 24 Feb 2003

Master IP Address: 150.150.54.117

HTTP WAN Access: YES
HTTP LAN Access: YES

RTP VLAN Tag: N/A
RTP Priority Tag: N/A

4. If you want to set the Master's IP address, type 'set master xxx.xxx.xxx.xxx'.

The 'xxx.xxx.xxx.xxx' means the IP address number.

After entering the new Master's IP address, you would check the changed IP address by entering 'get all' command.

Ex) If the IP address of master is 192.168.3.106.

set master 192.168.3.106

VOIB IP Address Changed Successfully: 192.168.3.106

get all

Software Version: GS30E-0.1Ea

Revision Date: 24 Feb 2003

VOIB IP Address: 192.168.3.106

HTTP WAN Access: YES

HTTP LAN Access: YES

RTP VLAN Tag: N/A

RTP Priority Tag: N/A

5. Let's go to the upper level by typing '.' and enter, then the help menu is displayed again.

Ex)

main:/system> ..

Command	Description
wan	Change to WAN Configuration
lan	Change to LAN Configuration
system	Change to System Configuration
status	Change to System Status
trace	Change to Trace Options
passwd	Change Password
reset	Reset RSG
exit (or x)	Exit Monitor Mode
help (or ?)	Display Help on Menu

main:>

4.3.2 Set the WAN and get information

- The RSG could select WAN set and PPPoE set alternatively.
If the WAN set is selected, the PPPoE set should be disabled. Otherwise, if the PPPoE set is selected, the WAN set should be disabled. The default mode of WAN is 'fixed'.

Operations

1. At 'main:>', type '**wan**' and confirm to display the help menu.

Ex)

main:> wan

Command	Description
/	Change to Root Catalog
..	Change to Parent Catalog
wanset	Change to WAN Settings Catalog
pppoe	Change to PPPoE Catalog
wanvlan	Change to VLAN Catalog

```
main:/wan>
```

2. At 'main:/wan', type '**wanset**' and it displays the help menu and the current value of mode.

Ex)

```
main:/wan> wanset
```

Command	Description	Mode
/	Change to Root Catalog	
..	Change to Parent Catalog	
mode	Toggle Address Config Mode : <i>FIXED</i>	
get all	Read All Parameters	
get [arg]	Read [arg] Parameter {ip subnet gateway dns host domain mac blimit mlimit}	
set ip [ipaddr]	Write (Fixed Mode) IP Address	
set subnet [ipaddr]	Write (Fixed Mode) Subnet Mask	
set gateway [ipaddr]	Write (Fixed Mode) Gateway Address	
set dns [ipaddr]	Write (Fixed Mode) DNS Address (.. del)	
set host [string]	Write (Fixed Mode) Host Name (.. del)	
set domain [domain]	Write (Fixed Mode) Doamin Name (.. del)	
set blimit [digt]	Write Broadcast Limit(%) (1-100)	
set mlimit [digt]	Write Multicast Limit(%) (1-100)	

```
main:/wan/wanset>
```

- Confirm the value of mode is 'fixed' if you want to set WAN set.

3. As the help menu says, type the value for each setting.
For example, IP address, subnet mask, gateway address, DNS, etc.

Ex) If you want to set IP address of 172.16.90.107

```
main:/wan/wanset> set ip 172.16.90.107
```

```
IP Address Changed Successfully: 172.16.90.107
```

```
main:/wan/wanset>
```

4. If you want to verify the changed value, please type 'get all'.

4.3.3 Set the PPPoE and get information

The default mode of WAN is FIXED. Therefore, if you want to set PPPoE, you need to change the mode of PPPoE from INACTIVE into ACTIVE and need to change the mode of WAN from FIXED into DYNAMIC. That's, The mode is toggled whenever type 'mode'. And then, please input the information for PPPoE at PPPoE menu.

Operations

1. Change the mode of WAN from FIXED into DYNAMIC by typing 'mode' at 'main:/wan/wanset'.

Ex)

```
main:/wan/wanset> mode
```

```
Address Config Mode Changed to DYNAMIC
main:/wan/wanset>
```

2. Change the mode of PPPoE from INACTIVE into ACTIVE by typing 'mode' at 'main:/wan/pppoe'.

Ex)

```
main:/wan/wanset> ..
```

Command	Description
/	Change to Root Catalog
..	Change to Parent Catalog
wanset	Change to WAN Settings Catalog
pppoe	Change to PPPoE Catalog
wanvlan	Change to VLAN Catalog

```
main:/wan> pppoe
```

Command	Description	Mode
/	Change to Root Catalog	
..	Change to Parent Catalog	
mode	Toggle PPPoE Activation Mode: INACTIVE	
get all	Read All Parameters	
get [arg]	Read [arg] Parameter	
	{user passwd service ac}	
set user [string]	Write User Name	
set passwd [string]	Write Password	
set service [string]	Write Service Name (.. del)	
set ac [string]	Write AC Name (.. del)	

```
main:/wan/pppoe> mode
```

```
PPPoE Activation Mode Changed to ACTIVE
```

```
main:/wan/pppoe>
```

3. As the help menu says, type the value for each setting.
For example, ID, password, etc.

Ex)

```
main:/wan/pppoe> set user 1g0000002
```

```
User Name Changed Successfully: 1g0000002
```

```
main:/wan/pppoe>
```

4. If you want to verify the changed value, please type 'get all'.

4.3.4 Select trace of call traffic

While the RSG is operating, sometimes you need to get some trace data for something.

At that time, type 'bt' of 'trace' menu at main. The result is displayed with other information.
And then, it starts to display the call traffic trace.

Operations

1. The board trace mode is toggled whenever typing 'bt'.

Ex)

```
main:/trace> bt
```

```
=====
Command                Description                Status
=====
/                        Change to Root Catalog
..                       Change to Parent Catalog
bt                      Toggle Board Trace Mode      : Y
g_bMFIMConnected[TYPE] View TRUE or FALSE      :
g_SystemRelayEnable     View LDK or LIK RSGM : LDK
=====
```

```
main:/trace>
```

5. RSG / IP Phone Admin Programming

5.1 VOIP IP SETTING (PGM 340)

PROCEDURE

VOIP IP SETTING
ENTER VOIB SLOT NUMBER

(1) [TRANS/PGM] + 340.

To program VOIB at slot 03, dial 03.

VOIB 03 NET SETTING
PRESS FLEX KEY (1-10)

(2) To program IP Address of VOIB 1, Press Flex Btn 1

IP ADDR(SKIP:#)
165.147. 3. 1

● To skip entering digit, press #.

IP ADDR(SKIP:#)
165.147. 3. 1

(3) Press the [HOLD/SAVE] button for saving database permanently.

VOIB 1 NET SETTING
PRESS FLEX KEY (1-10)

● Press [CONF] button instead of the [HOLD/SAVE] button, then system goes to step (1) without updating system memory.

BTN	ITEM	INTERCOM RANGE	DEFAULT	REMARK
1	IP Address(SKIP:#)	12 Digits	0.0.0.0.	
2	GATEWAY Address (SKIP:#)	12 Digits	0.0.0.0.	
3	SUBNET Mask(SKIP:#)	12 Digits	0.0.0.0.	
4	DNS Address (SKIP:#)	12 Digits	0.0.0.0.	
5	TRACE Password	10 Digits	
6	Default Codec	0 – 3	0	
7	Default Gain	1 – 62	31	
8	No Delay (TOS)	ON / OFF	OFF	
9	Throughput (TOS)	HIGH / NORMAL	NORMAL	
10	Reliability (TOS)	HIGH / NORMAL	NORMAL	

TABLE 5.1.1 VOIB SETTING (PGM 340)

5.2 VOIB SLOT ASSIGNMENT for RSG/IP Phone (PGM 380)

The RSG/IP Phone receives call service through VOIB.

Then the VOIB for RSG/IP can be assigned.

If several boards are assigned, please assign the first VOIB slot on STA/COL Board in PGM 103/BTN 1 & 2.

PROCEDURE

VOIB SLOT FOR RSG/IP F1:SLOT	(1) [TRANS/PGM] + 380
06	(2) For VOIB slot assignment, Press Flex_1. Dial slot numbers.
VOIB SLOT FOR RSG/IP PRESS FLEX_BTN 1	(3) Press the [HOLD/SAVE] button for saving database permanently. ● Press the [CONF] button instead of the [HOLD/SAVE] button, then system goes to step (1) without updating system memory.

BTN	ITEM	RANGE	DEFAULT	REMARK
1	VOIB SLOT for RSG/IP Phone		-	VOIB slot assignment for RSG/IP Phone

TABLE 5.2.1 VOIB Slot Assignment for RSG/IP Phone (PGM 380)

5.3 RSG/IP Phone Port Number ASSIGNMENT (PGM 381)

The port number for RSG /IP Phone can be assigned.

PROCEDURE

RSG/IP NO ASSIGN F1:RSG F2:IP PHONE	(1) [TRANS/PGM] + 381
RSG NO (001 ~ 128): 008	(2) To program the number of to be serviced RSG number, press FLEX BTN 1 and dial RSG number.
IP PHONE NO (001 ~ 128): 000	(3) To program the number of to be serviced IP Phone number, press FLEX BTN 2 and dial IP Phone number.
RSG/IP NO ASSIGN F1:RSG F2:IP PHONE	(4) Press the [HOLD/SAVE] button for saving database permanently.

BTN	ITEM	RANGE	DEFAULT	REMARK
F1	RSG NO	000~128 (00-32)	008 (08)	The RSG number to be serviced from system
F2	IP PHONE NO	000~128 (00-64)	000 (00)	The IP Phone number to be serviced from system

TABLE 5.3.1 Port Number Assignment for RSG/ IP Phone

5.4 RSG / IP Phone ATTRIBUTE (PGM 382)

The following is the attributes of RSG/IP Phone.

PROCEDURE

RSG/IP ATTR1 PRESS FLEX KEY (1-5)	(1) [TRANS/PGM] + 382.
TRANSFER MODE (1:IP/0:MAC): IP	(2) To program, press Flex BTN 1-5 for setting each value. After pressing a Flex BTN, the revised value can be set by entered digit.
CASTING MODE (1:MULTI/0:UNI): UNI	
TONE SOURCE (1:REMOTE/0:LDK): REMOTE	
PEER TO PEER (1:ON/0:OFF): ON	
IP/RSG ATTRIBUTE PRESS FLEX KEY (1-5)	(3) Press the [HOLD/SAVE] button for updating database permanently.

BTN	ITEM	RANGE	DEFAULT	REMARK
F1	Transfer Mode	IP or MAC	IP	
F2	Casting Mode	Unicast or Multicast	Unicast	
F3	Tone Generation	LDK or Remote(RSG/IP Phone)	Remote	
F4	Peer to Peer	ON/OFF	ON	
F5	Codec Type	G.711_ALAW(0)/G.711_ULAW(1)/G.723.1(2)	G.711_ALAW(0)	Should be same of VOIB (PGM 340/btn 6)

F6	First Access RSG CO	ON/OFF	ON	If the field is set, the station on RSG can access a CO line on his RSG by dialing CO Line access code in the 1 st available CO group (ex> 9).
F7	RING w/o CO Ring Assign	ON/OFF	ON	If the field is set, stations on RSG will receive the incoming CO ring even though the CO ring is not assigned.

TABLE 5.4.1 RSG/IP Phone Attributes 1 (PGM 382)

5.5 RSG ATTRIBUTE 1 (PGM 383)

The following is the attributes of RSG.

PROCEDURE

RSG ATTR1 ENTER NO (001-128)	(1) [TRANS/PGM] + 383. Enter the RSG number
001 RSG ATTR1 PRESS FLEX (1-7)	
001 SET MAC ADDR 00-40-5A-12-7D-25	(2) To program MAC address, press Flex BTN 1, enter the MAC address and press the [HOLD/SAVE] button for updating database permanently.
001 IP ADDR DISP xx.xxx.xxx.xxx	(3) Press Flex BTN 2 to check the IP address of RSG. Then IP address will be displayed.
	(4)
001 PORT VIEW D(236) S(237) C(005)	(5) Press Flex BTN 3 to check Station Digital, Slt and CO number.

BTN	ITEM	RANGE	DEFAULT	REMARK
F1	MAC ID		0.0.0.0.0-0	[*] : A / [#] : B [CB] : C / [MUTE] : D [DND] : E / [FLASH] : F
F2	RSG IP Address View			
F3	RSG Port View			D(xxxx) S(xxxx) C(xxx)
F4	Port Number View			5588
F5	NAT IP Address View			RSG WAN IP
F6	NAT Port Number View			5588
F7	STUN Enabled View			None, PAT, NAT, NAT/PAT

TABLE 5.5.1 RSG Attributes (PGM 383)

5.6 RSG ATTRIBUTE 2 (PGM 384)

The following is the attributes of RSG.

PROCEDURE

RSG ATTR2 ENTER RANGE(001-128)	(1) [TRANS/PGM] + 384. Enter the RSG range
001-001 RSG ATTR2 PRESS FLEX (1-10)	(2) To program, press Flex BTN 1-10 for setting each value. After pressing a Flex BTN, the revised value can be set by entered digit.
001-001 I-MOH RTP PORT 8186	
001-001 E-MOH RTP PORT 8188	
001-001 MOH TYPE (1:MUSIC/0:H-TN):MUSIC	
001-001 MUSIC SOURCE (1:/EXT1/0:INT): INT	
001-001 EXT CONTACT 1	
001-001 EXT CONTACT 2	
001-001 ALARM ENABLE (1:ON/0:OFF) OFF	
001-001 ALARM CONTACT (1:CLOSE/0:OPEN): CLOSE	
001-001 ALARM MODE (1:ALARM/0:BELL): ALARM	
001-001 ALARM SIGNAL (1:RPT/0:ONCE): RPT	
RSG ATTR2 ENTER RANGE (001-128)	(3) Press the [HOLD/SAVE] button for updating database permanently.

BTN	ITEM	RANGE	DEFAULT	REMARK
F1	RTP Port number of Internal MOH		8186	
F2	RTP Port number of External MOH		8188	
F3	MOH Type	MUSIC/Hold Tone	Hole Tone	
F4	Music Source	EXT1/INT	INT	
F5	External Contact 1	LBC/Door Open	Not Assigned	
F6	External Contact 2	LBC/Door Open	Not Assigned	
F7	Alarm Enable	ON/OFF	OFF	
F8	Alarm Contact Type	Close/Open	Close	
F9	Alarm/Door Bell Mode	Alarm/Door Bell	Alarm	
F10	Alarm Signal	RPT/ONCE	RPT	

TABLE 5.6.1 RSG Attributes (PGM 384)

5.7 RSG ALARM ASSIGNMENT (PGM 385)

The station can receive the alarm ring when the alarm on RSG is detected.

PROCEDURE

RSG ALARM ATT
ENTER STA RANGE

(1) [TRANS/PGM] + 385. Enter the station range

SELECT RSG ALARM ZONE
F1~F6 (6*24)

(2) Press FLEX btn to select RSG Alarm Zone.
Then LEDs of BTNs show currently assigned RSG alarm zone of the first station in range. To assign alarm, press the BTNs for toggle setting.

100-100 (RSG 01-24)
PRESS FLEX KEY (01-24)

RSG ALARM ATT
ENTER STA RANGE

(3) Press the [HOLD/SAVE] button for updating database permanently.

BTN	RANGE	DEFAULT	REMARK
F1	RSG 01~24	None	
F2	RSG 25~48	None	
F3	RSG 49~72	None	
F4	RSG 73~96	None	
F5	RSG 97~120	None	
F6	RSG 121~128	None	

TABLE 5.7.1 RSG Attributes (PGM 385)

5.8 RSG ATTRIBUTE 1 (PGM 386)

The following is the attributes of IP Phone Attribute.

PROCEDURE

IP PHONE ATTR ENTER NO (001-128)	(6) [TRANS/PGM] + 383. Enter the RSG number
001 IP PHONE ATTR PRESS FLEX (1-3)	
001 SET MAC ADDR XX-XX-XX-XX-XX-XX	(7) To program MAC address, press Flex BTN 1, enter the MAC address and press the [HOLD/SAVE] button for updating database permanently.
001 IP ADDR DISP XX.XXX.XXX.XXX	(8) Press Flex BTN 2 to check the IP address. Then IP address will be displayed.
001 PORT VIEW D(XXXX) S(XXXX) C(XXXX)	(9) (10) Press Flex BTN 3 to check Station.

BTN	ITEM	RANGE	DEFAULT	REMARK
F1	MAC ID		0.0.0.0.0.0-	[*] : A / [#] : B [CB] : C / [MUTE] : D [DND] : E / [FLASH] : F
F2	IP Address View			
F3	IP Phone Station Number View			STA (xxxx)
F4	Port Number View			
F5	NAT IP Address View			
F6	NAT Port Number View			
F7	STUN Enabled View			None, PAT, NAT, NAT/PAT

TABLE 5.8.1 IP Phone Attributes (PGM 386)

5.9 EXPANDED FLEXIBLE NUMBERING PLAN (PGM 109)

To serve the expanded flexible numbering plan from PGM106 & 107, PGM 109 is added.

PROCEDURE

FLEX NUMBERING PLAN C
PRESS FLEX KEY (1-3)

- (1) [TRANS/PGM] + 109. You can program the 1 Flex. Numbers. Table 2.9.1 illustrates the programmable list of the 1 flexible Numbering plan used by PGM 109.

MCID REQUEST
ENTER NEW #(*0)

- (2) To change a numbering plan, press the related flexible button. If you press other Flex. BTN, you can assign other numbering plan.

MCID REQUEST
ENTER NEW #(*0)

- (3) If you want to save all changed flexible numbers to system memory, press the [HOLD/SAVE] button. There are no errors in the Flexible Numbers, then confirmation tone will be heard.

If some errors are detected, then error tone will be heard without updating system memory.

BTN	ITEM	DEFAULT	REMARK
F1	MCID REQUEST	*0	ISDN supplementary service -Malicious Caller ID request.
F2	RSG Door Open 1	*1	This can be activated from RSG stations on his RSG.
F3	RSG Door Open 2	*2	

TABLE 5.9.1 Expanded Flexible Numbering Plan (PGM 109)

5.10 RSG DKT RX GAIN CONTROL (PGM 390)

The RX gain of DKT on RSG can be adjusted.

5.11 RSG DKT TX GAIN CONTROL (PGM 391)

The TX gain of DKT on RSG can be adjusted.

5.12 RSG SLT RX GAIN CONTROL (PGM 392)

The RX gain of SLT on RSG can be adjusted.

5.13 RSG SLT TX GAIN CONTROL (PGM 393)

The TX gain of SLT on RSG can be adjusted.

5.14 RSG LCO RX GAIN CONTROL (PGM 394)

The RX gain of LCO on RSG can be adjusted.

5.15 RSG LCO TX GAIN CONTROL (PGM 395)

The TX gain of LCO on RSG can be adjusted.

5.16 IP PHNOE RX GAIN CONTROL (PGM 396)

The RX gain of IP PHONE can be adjusted.

5.17 IP PHONE TX GAIN CONTROL (PGM 397)

The TX gain of IP PHONE can be adjusted.

Appendix A. RSG Installation Procedure on MPB

1. Insert the following boards into the LDK-System
 - 1) MPB
 - 2) Station Boards
 - 3) CO Boards
 - 4) VOIB
2. Power on the system (All switches of MPB are set to ON.)
3. Initialize the system
4. Set the 8th DIP-switch to OFF to preserve the programming data.
5. At the admin station (100)
 - 1) Program the VOIB in PGM 340
 - 2) Enter the VOIB Slot to be used for RSG in PGM 380
 - 3) Enter the RSG No. (or, IP Phone No.) in PGM 381
 - 4) Enter the VOIB (used for RSG) slot # on STA and COL in PGM 103/BTN 1

& 2.

(If several VOIBs will be used for RSG, enter the 1st VOIB slot # in PGM 380)

6. Reset the system for board configuration
7. Re-enter the admin programming mode
 - 1) Enter the MAC ID in PGM 383 (or, 386 in case of IP Tel)
 - 2) Enter the IP Address and Gateway of VOIB in PGM 340.
8. Reset the RSG (or, IP Phone)

** If the RSG no (or, IP Phone No) is changed, reset the system for board reconfiguration

Appendix B. RSG Setting Procedure on RSG

1. baud rate : 38400

2. Set Master's IP Address :

- 1) Press 'Enter' Key, the 'main:>' is out after menu list
- 2) Type '**system**' and enter.
- 3) Type 'set master xxx.xxx.xxx.xxx'. The 'xxx.xxx.xxx.xxx.' is IP address of VOIB used for RSG.
Ex) main:/system> set master xxx.xxx.xxx.xxx
- 4) Return to 'main:>' mode by typing '..' and entering twice.

3. Set the WAN and get information (When setting Fixed IP address)

- 1) At 'main:>', type '**wan**' and confirm to display the help menu.
- 2) At 'main:/wan', type '**wanset**' and it displays the help menu and the current value of mode.
- 3) As the help menu says, type the value of IP address of RSG wan and default Gateway address as well as other setting value.
Ex) main:/wan/wanset> set ip xxx.xxx.xxx.xxx (RSG WAN IP)
Ex) main:/wan/wanset> set gateway xxx.xxx.xxx.xxx (RSG default gateway = LAN IP of router)
- 4) If you want to verify the changed value, please type 'get all'.
- 5) The mode of wan has to be FIXED. Verify the mode by typing 'mode' or 'get all'.
Ex) main:/wan/wanset> get all

4. Set the PPPoE and get information (When setting Dynamic IP address)

- 1) Change the mode of WAN from FIXED into DYNAMIC by typing '**mode**' at 'main:/wan/wanset'.
Ex) main:/wan/wanset> mode
 - 2) Change the mode of PPPoE from INACTIVE into ACTIVE by typing '**mode**' at 'main:/wan/pppoe'.
Ex) main:/wan/pppoe> mode
 - 3) As the help menu says, type the value of ID and password.
Ex) main:/wan/pppoe> **set user** xxxxx
Ex) main:/wan/pppoe> **set passwd** xxxxx
 - 4) If you want to verify the changed value, please type '**get all**'.
 - 5) The ID and password are dedicated value by ADSL provider.
5. Select trace of call traffic
- 1) The board trace mode is toggled whenever typing 'bt'.

Appendix C. IP Phone Setting Procedure

When power up the IP Phone, you will see the following message in LCD.

NO RESPONSE FROM MFIM[L]
SET[*] - RETRY[#]

1. If you want to retry, press [#].

Searching MFIM[2]

2. If you want to change the value related with registration, press [*]

You can move the menu pressing [Volume Up] or [Volume Down].

2.1 You can change the mode (LOCAL/REMOTE).

MODE[R/L]
[LOCAL] - CHANGE[#]

LOCAL Mode: Phone is connected with VOIB not passing through Router.

REMOTE Mode: Phone is connected with VOIB passing through Router. (Recommend)

2.2 You can change the DHCP setting (DISABLED/ENABLED).

DHCP ?

[DISABLED] - CHANGE[#]

ENABLED: enable DHCP Mode

DISABLED: Disable DHCP Mode

2.3 You can change the Device number(Not Used)

INPUT DEVICE NUMBER :

2.4 You can enter or change VOIB IP Address.

MFIM IP ADDRESS(DOT:*)

150.150.54.134

2.5 You can enter or change Router IP Address.

ROUTER IP ADDRESS(DOT:*)

150.150.54.254

2.6 You can enter or change Net Mask.

PHONE NET MASK(DOT:*)

255.255.255.0

2.7 You can enter or change Phone IP Address

PHONE IP ADDRESS(DOT:*)

150.150.54.135