Genie Configuration Manager-Version 2 (GCMV2)

Converged Intercom System
5Ghz wireless + IP Key Panels

GCMV2 User Manual (Version V2230705)
(Revision: Channel option, Freq ID 30)

LaON Technology

Contents

GCMV2 (Genie Configuration Manager- Version 2)

This manual describes how to use the GCMV2 to configure and pair Genie devices, Key Panels, Line Router and WAN Link.

The GCMV2 is a convenient tool for creating or editing configurations. The GCMV2 allows you to edit, and restore configurations from each device, such as Key Panels, Base Stations (BS1000, BS850) and all the Genie devices. You can edit the configuration and resend it to each device or use it later. It can also be used to recover each device in the event of a system failure. The GCMV2 configures and pairs each device over an Ethernet connection. It also monitors the connection status of each device and provides the ability to modify and apply some items immediately. In the monitoring function, the battery level of the wireless Beltpacks, and the RSSI (Received Signal Strength Indication) of each Antenna in its place are displayed.

To install the system, all Genie devices connected to the Ethernet must be set up and paired using the GCMV2.

However, the pairing of the wireless Beltpack is paired in the Pair Belt menu on the Base Station.

Note: The 128 channel Key Panel and the 128 channel Line Router can only configure and pair devices with GCMV2.
GCM and GCMW can configure and pair 20 channel Key Panels and 20 channel Line Router devices.

Using the GCMV2, install the Genie devices as follows:
1. Configure and pair the Base Stations.
2. Configure and pair the Remote Antenna.
3. If you are using the Repeater or Ethernet Beltpack, configure and pair each device.
4. When using the wireless Beltpack, the wireless Beltpack is paired only through the Pair Belt menu of the Base Station.
5. Placing the Base Station, Remote Antennas and Repeaters
   See Genie User Manual, 3.3 Placing the Base Station, Remote Antenna, Repeater
6. Monitoring each device
   Using the GCMV2, check the status of each installed device, test and modify the settings.

Using the GCMV2, install the Key Panels in the following sequence:
1. Configure and pair the Key Panels or Line Routers.
   Configure and pair the Key Panels or Line Routers. In case of use in conjunction with a Genie Base Station (use the wireless Genie group channels), configure them with the Remote Antenna.
2. If you are using the WAN Link, configure and pair the WAN Link.
   Configure and pair the WAN Links. In case of use in conjunction with a Genie Base Station, connect the WAN Link to the Base Station's Line (4-Wire).
3. Monitoring each device
   Using the GCMV2, check the status of each installed device, test and modify the settings.
!!! Note: When pairing each device for the first time, only one device should be connected to the LAN port on the PC to perform pairing. When two or more devices are connected and paired, all devices have the same settings, so they do not operate normally. Once paired (Write), you can pair (upgrade) again even when all the devices are connected.
!!! Note: Connect the PC to the PoE IN port on the Key Panel. When connected to the daisy-chain PoE Line, it can be damaged depending on the PC.

Once the installation has been completed in accordance with the above procedure, the settings can be modified and updated for each device in its place. GCMV2 monitoring can be used for frequency spectrum analysis, RF rescan, change RF band, radio transmission power attenuation, and power-on sequence of Antennas. Through these tests and verification, devices can be site-optimized in the field environment and conveniently installed. In addition, you can monitor the connection status of each device in real time during operation.

Loading the GCMV2.
Install the GCMV2 on your PC and run the GCMV2.
!!! Note: Enter **C:\LaON\Genie** in the entry window that specifies the installation folder when installing.
**!!! Note:** Adjust the screen size to 100% in your PC's display settings. At 125% size, you may not see the color description shown below the GCMV2 screen.

Windows Firewall
If you are running GCMV2, the 2001 and 30001 ports of Windows Firewall must be allowed under the Laon GCMV2 name. This port number must be the same as the PC port number registered in GCMV2's Admin menu.
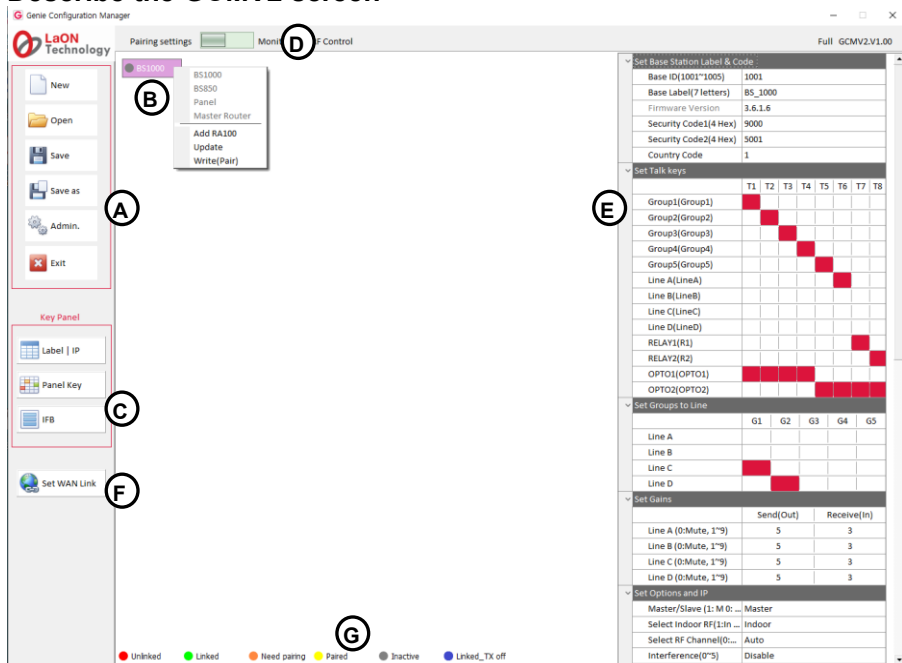See GCMV2 Installation Guide.

When you run the GCMV2, the following screen appears. Enter your password. The factory setting is 1234.
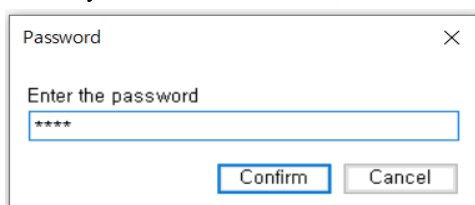
Section 1: Configure Genie devices

This section describes configuring and setting up Genie devices BS1000, RA100, RBS85, ISS800, and IBP10. The settings of the Key Panels are described in Section 2.

Describe the GCMV2 screen

Management icons (A)
New: Create a GCMV2 file. Click the New icon and enter the file name to create. A Genie device icon **(B)** will appear on the screen.
Open: To open the GCMV2 file, click the Open icon to select a file.
Save: Save as GCMV2 file name in use.
Save As: Save as a new GCMV2 file name.
Admin: The Administrator screen appears for default IP settings and password changes. The factory setting password is 1234.
Exit: Exit the GCMV2.

Genie device Icons (B)
The created Genie devices appear in this display area.

Key Panel Icons (C)
The three icons below are used only for the Key Panel settings.
Label I IP: Select this icon to set the ID, label, and IP of the Key Panels.
Panel key: Select this icon to set the Talk keys and Line Router GLR4.
IFB: Select this icon to set the IFB members, IFB destinations, and FB sources (Program).

Mode selection icon (D)
You can select the required function by selecting the icon left or right.
Pairing settings: A screen is displayed for creating devices and editing settings.
Monitor & RF Control: The Monitoring screen is displayed.

Setting window (E)
When you click each device icon at the center of the screen, the setting window for that device appears on the right side of the screen.

Set WAN Link icon (F)
Set the WAN Link.

Icon colors, depending on the status of each device (G)
Appears at the bottom of the screen.
Unlinked (red): Indicates that the device is not connected.
**Linked (green):** Indicates that the device is connected.
Need Pairing (Amber): Settings have been edited, indicating a condition that needs to be paired.
Paired (Yellow): The settings are paired with the device.
Inactive (Gray): Indicates that none of the edited settings are present.
Linked_Tx_off (Blue): Indicates the state in which wireless transmission is off while the device is connected.

◆ Create and add the devices
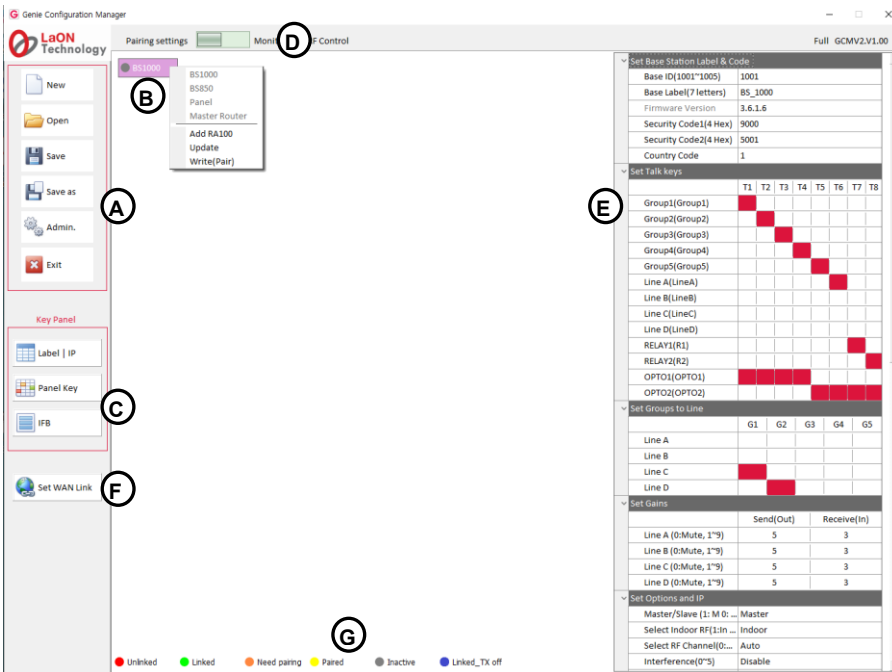
Right-click on the icon **(B)** after creating or open the file, the following items are displayed on the screen:

BS1000:
Selecting this option creates a Base Station BS1000 icon on the icon **(B)**.

BS850:
Selecting this option creates a Base Station BS850 icon on the icon **(B)**.

Panel:
Selecting this option creates a Key Panel icon on the icon **(B)**. Select this option if you are not using a Base Station (BS1000, BS850) but only configured with Key Panels. You can create 128 Key Panels and Line Routers.

Master Router:
Selecting this option creates a Line Router set to Master mode on the icon **(B)**. If you do not use a Base Station (BS1000, BS850) and use a Genie group channel (conferencing mode) configured only by Key Panels, you will use Line Router to create a Master Router. You can create 128 Key Panels, Line Routers, or IBP10s to connect to. When you create a Master Router, you can use the Genie group channel for wired devices. With these features, you can connect and use IBP10 using the Genie group channel.

Add RA100:
When selected, up to six Remote Antenna icons are added below the BS1000 icon, or up to three Remote Antenna icons are added for the BS850 icon.

Add Panel:
When selected, up to 128 Key Panel icons are added below the Key Panel or Remote Antenna icon. If a Genie Base Station is selected on the icon **(B)**, the Key Panels can only be added below the Remote Antenna icon. The icon of the Key Panel is displayed in a light blue color.

Add Router:
When selected, the Line Router icon is added under the Key Panel, Master Router, or Remote Antenna icons. If you select the Genie Base Station on the icon **(B)**, the Line Router can only be added under the Remote Antenna icon. The icon of the Line Router is displayed in a light gray color.

Add IBP10:
When selected, the Ethernet Beltpack IBP10 icon is added under the Master Router or Remote Antenna icons.

Update:
You can pair (Update) the modified settings back to the device. The update is available after each device has been paired (Write). It can also be used when all devices are connected.

Write (Pair):
The ability to pair new settings for the first time by connecting only one device.   Do not run a pair (write) if more than one device is connected. The same settings are paired to multiple devices and do not work properly.

Note: For the Key Panels, only one current Page selected in the Panel key**(C)** screen is paired (or updated) to the Key Panel. When updating to the Key Panel, it is convenient to run it on the Panel key **(C)** screen.

Add the devices to RA100

Right-click on the RA100 icon, the following items are displayed in the drop-down menu:

Add ISS800: Up to10 Speaker Stations will be added below the RA100 icon.
Add RBS85: Up to 10 Repeaters will be added below the RA100 icon.
Add IBP10: Up to 22 Ethernet Beltpacks will be added below the RA100 icon.
Add Panel: Up to 22 Key Panels will be added below the RA100 icon.
Add Router: Up to 22 Line Routers will be added below the RA100 icon.
Update: Pair the modified settings to the device.
Write(pair): Pair the new settings to device.
Delete: Delete the created device.

Note: The radio device icon (BS1000, BS850, RA100, RBS85) displays a frequency ID that is in use after the delimiter.

If you click on the RA100 icon, the settings window **(E)** appears on the right side of the screen, as shown above. You can set up each device (BS1000, BS850, RA100, ISS800, IBP100) in the same way.

1. Configure the Base Station BS1000

Click the BS1000 icon, the setting window **(E)** will appear. Set each item in the setting window by referring to the description below.

Set Base Station Label & Code
Base ID: Set the Base Station ID to identify. Select one Base Station from the drop-down menu.
Base Label (7 letters): Set the Base Station label, by entering seven English letters or numbers.
Firmware Version: Once the device has been paired, it will automatically be displayed here.
Security Code1 (4 Hex), Security Code2 (4 Hex): Enter Hex 4 digits. When paired with a Base Station, these codes are displayed. For special system operation, use only if the same code setting is required for both Base Stations. Devices to be connected to Base Station that have changed the code should be paired again by selecting Write(pair). Only devices paired to the Base Station of the same code can be connected to each other.
Country code
Set the corresponding country code. The available RF bands are country specific, so you must set the country code for the area where you use the system. Enter a number from 1 to 9.

Country	Code	Country	Code
Korea	1	Taiwan	7
Japan	2	Israel	8
EU	3	Australia, New Zealand	9
USA	4	All Channels	5
China	6		

For RF bands available in each country, see the table on page 8.
Note: The Base Station must be rebooted after changing the country code.

Channel option: Set whether to use Frequency ID 30 (Channel No 144), a new RF band available in some countries. **(This has been applied to GCMV2 version V1.22)**

Set Talk keys:
Double-click each item to enter the LABEL for Genie Group Channel, Line, Opto-isolated input, Relay, in the settings window. Assign each Talk key from T1 to T8. Users can set up Genie group channels, Line, Relay, or Opto-isolated input on Talk key. Click the icon in each Talk key column to select one Genie group channel, Line, or Relay. Press the Talk key set to Relay to trigger the relay pin on the rear panel of the Base Station. Click the OPTO1 or OPTO2 row icon to set opto-isolated input on Talk key. When this input is detected, the Talk path for that Talk key is created.

Opto-isolated Input 1 (Label--)
Opto-isolated Input 2 (Label--)
Relay1 (Label--) (This has been applied to BS1000 version V3516)
Relay2 (Label--) (This has been applied to BS1000 version V3516)

Pinout RELAY/OPTO/AUX(D) connector

Pin	Description	Pin	Description
1	Reserved (Tx+)	14	12VDC +
2	Reserved (Tx-)	15	12VDC +
3	Reserved (Rx+)	16	GND (12VDC)
4	Reserved (Rx -)	17	GND (12VDC)
5	Relay 1 (Open)	18	Relay 1 Common
6	Relay 2 (Open)	19	Relay 2 Common
7	SA Relay (Open)	20	SA Relay Common
8	Opto-isolated input 1	21	Opto-isolated input 1 Common
9	Opto-isolated input 2	22	Opto-isolated input 2 Common
10	Not connected	23	Not connected
11	Not connected	24	Unbalanced Audio Input _GND
12	Unbalanced Audio Input	25	Unbalanced Audio Output GND
13	Unbalanced Audio Output		

Opto-isolated Inputs (OPTO1, OPTO2)
Base Station provides two optically isolated inputs.
You can trigger Talk channels by connecting the foot switch or other control to the Opto-isolated Input.
Each input consists of a pair of pins (pin 8/21 or pin 9/21) with an operating range of 5 VDC to 20 VDC. The inputs are operated by applying a voltage between 5 VDC and 20 VDC across the pins and is detected by the opto-coupler. The voltage may be derived from the Base Station itself using the 12V (pin 14,15) and 0V (pin 16,17) pins or it may be from an external source. These inputs can be used for user programmable functions such as switching a Talk on or off. Click the OPTO1 or OPTO2 row icon to set opto-isolated input on Talk key. When this input is detected, the corresponding Talk paths are created. You can assign one Opto-isolated input to multiple Talk keys. You can set up a Genie group channel and Opto-isolated input together on a Talk key.

Relays

The Relay output allows the use of a Talk key to trigger any external device that allows standard contact closure. The Relay can activate an external device, such as a cue light, or a walkie-talkie. All Relay contacts can support 1Amp 30 VDC. These pins do not supply any power to the circuit.

Base Station provides three Relay outputs. One is activated by pressing the SA button. Press the SA button to activates a Relay 7 (SA) pin. Two Relays can be allocated to the Talk key. When the Talk key set to Relay 1 is pressed, Relay 1 (pin 5,18) is activated. In the same way, pressing the Talk key set to Relay 2, activates Relay 2 (pin 6,19). Relay cannot be set on one Talk key with a Genie group channel.

Click the corresponding Talk channel column (T1 ~T8) icon in the Relay row to assign Relay to the Talk Key.

AUX D (unbalanced audio)

Pin 12,13,24,25 are unbalanced audio signal pins that are shared with Line D (4-wire). If this AUX D is used, 4-wire Line D shall not be used. These pins can be connected to a gooseneck microphone or a walkie-talkie, etc. In some cases, additional connections such as resistor may be required when connecting a specific walkie-talkie.

Set Groups to Line

Line A / G1 G2 G3 G4 G5
Line B / G1 G2 G3 G4 G5
Line C / G1 G2 G3 G4 G5
Line D / G1 G2 G3 G4 G5:

Set the Line audio routing:

The Line audio routing provides the ability to connect the input/output (full duplex) audio of the Line to the Genie group channels.

Without using the Talk Key, the Line input and output audio is sent and received to the Genie group channels. Click the icon in the row of the Line A to Line D to set the Genie group channels (Routing Destinations: G1~ G5). The input and output of the Line audio is routed to the set Genie Group channels (G1 to G5). Up to five Genie Group channels can be set up on a Line.

If the Genie Group channels are assigned to a Line (AUX, 4-Wire, 2-Wire) device, the Base Station or Beltpacks can communicate with the Line device by selecting the same Genie Group channel. For each Line, you can select up to five Genie group channels by clicking on the five Group columns (G1, G2, G3, G4, G5). Click in the Group column (G1, G2, G3, G4, G5) to set up single or multiple Genie group channels for each Line.

Note: After you have set the Line audio routing, you can set the same Genie group channel on the Talk key. In this case, do not set the same Line to the Talk key. If the same Line is set to the Talk key, the audio may be distorted.

Set gains

Set the Line sending and receiving gains

Click the column icon in Receive (In) or Send (Out) on each Line to select level from the drop-down menu.

Line A (0: Mute, 1~9) / Receive (In)
Line B (0: Mute, 1~9) / Receive (In)
Line C (0: Mute, 1~9) / Receive (In)
Line D (0: Mute, 1~9) / Receive (In)

To set the Line input level for each Line (Line A, B, C, D), select a number from 0 (mute) to 9. The Line input levels can be set from -20 dB to +6 dB (default 0 dB).

Line A (0: Mute, 1~9) / Send (Out)
Line B (0: Mute, 1~9) / Send (Out)
Line C (0: Mute, 1~9) / Send (Out)
Line D (0: Mute, 1~9) / Send (Out)

To set the Line output level for each Line (Line A, B, C, D), select a number from 0 (mute) to 9. The Line output levels can be set from -20 dB to +6 dB (default 0 dB).

Set the options and IP

Master/Slave

Select Master or Slave from the drop-down menu. The selected item will appear in the row icon.

Using multiple Base Stations in an Antenna coverage zone.

The Genie is designed so multiple Base Stations, Remote Antennas and Repeaters can work in one antenna coverage zone. To ensure smooth coexistence of these devices, you will need set the Ethernet synchronization and connecting the Multi-Sync cable. If multiple Base Stations are connected by Multi-Sync cable, one Base Station should be set to 'Primary on' (Master) in the Multi BS menu and all other Base Stations should be set to 'Primary off' (Slave). With this setting, Remote Antennas and Repeaters automatically act as Master or Slave. If you are using one Base Station, you must set the Base station to 'Primary On' (Master) to apply Ethernet synchronization to all devices.

See Genie User Manual, 3.2 Notes on Installation, Ethernet synchronization

Select Indoor RF

Select Indoor or Outdoor from the drop-down menu.

Select RF band

On 5GHz UNII RF bands, there is a separate definition and guideline for RF band to be used in indoor environments. Select the indoor if you use the system at any indoor environments. **Selecting the Indoor allows the use of indoor and outdoor RF bands.** When using the system at any outdoor environments, the outdoor should be selected. Refer to the table below.

Note: If the Indoor or Outdoor setting is changed, you must reboot the Base Station to use the changed setting.

RF bands

In the Base Station menu or GCMV2, ID numbers stands for each frequency band as shown in the table. The following table lists the RF bands that can be used in 5GHz UNII band. The ID of RF band currently being used will be shown on the menu or GCMV2. Genie devices which operate in the 5GHz UNII RF bands have been approved for license free use in most countries. However, some countries may restrict the use of some RF band or spectrum operations. Therefore, it is your responsibility to find out whether the Genie is permitted in your country or not.

Note: In the Base Station menu or GCMV2, ID numbers stands for each RF band as shown in the table.

Freq ID	Channel No.	Frequency	Band width	Korea, AUS, NZ	Japan	EU	US	China	Taiwan	Israel
01	32	5160MHz	20MHz	X	X	X	X	X	X	X
02	36	5180MHz	20MHz	Indoor	Indoor	Indoor	O	Indoor	Indoor	Indoor
03	40	5200MHz	20MHz	Indoor	Indoor	Indoor	O	Indoor	Indoor	Indoor
04	44	5220MHz	20MHz	Indoor	Indoor	Indoor	O	Indoor	Indoor	Indoor
05	48	5240MHz	20MHz	Indoor	Indoor	Indoor	O	Indoor	Indoor	Indoor
06	52	5260MHz	20MHz	O	Indoor	Indoor	O	O	Indoor	Indoor
07	56	5280MHz	20MHz	O	Indoor	Indoor	O	O	Indoor	Indoor
08	60	5300MHz	20MHz	O	Indoor	Indoor	O	O	Indoor	Indoor
09	64	5320MHz	20MHz	O	Indoor	Indoor	O	O	Indoor	Indoor
10	68	5340MHz	20MHz	X	X	X	X	X	X	X
11	96	5480MHz	20MHz	X	X	X	X	X	X	X
12	100	5500MHz	20MHz	O	O	O	O	X	O	Indoor
13	104	5520MHz	20MHz	O	O	O	O	X	O	Indoor
14	108	5540MHz	20MHz	O	O	O	O	X	O	Indoor
15	112	5560MHz	20MHz	O	O	O	O	X	O	Indoor
16	116	5580MHz	20MHz	O	O	O	O	X	O	Indoor
17	120	5600MHz	20MHz	O	O	O	O	X	O	Indoor
18	124	5620MHz	20MHz	O	O	O	O	X	O	Indoor
19	128	5640MHz	20MHz	O	O	O	O	X	O	Indoor
20	132	5660MHz	20MHz	O	O	O	O	X	O	Indoor
21	136	5680MHz	20MHz	O	O	O	O	X	X	Indoor
22	140	5700MHz	20MHz	O	O	O	O	X	O	Indoor
30*	144	5720Mhz	20Mhz	**O***	**O***	X	X	X	**O***	**O***Indoor
23	149	5745MHz	20MHz	O	X	SRD	O	O	O	Indoor
24	153	5765MHz	20MHz	O	X	SRD	O	O	O	Indoor
25	157	5785MHz	20MHz	O	X	SRD	O	O	O	Indoor
26	161	5805MHz	20MHz	O	X	SRD	O	O	O	Indoor
27	165	5825MHz	20MHz	O	X	SRD	O	O	O	Indoor
28	169	5845MHz	20MHz	X	X	SRD	X	X	X	Indoor
29	173	5865MHz	20MHz	X	X	SRD	X	X	X	X

Table. Typical Radio frequency (RF) bands

Indoor: RF band that can only be used indoors. Outdoor frequencies are also used when the Indoor is selected.

O*: New added RF band. Applies to BS1000 V4250, RA100 V5000, RBS85 V5000, and BP850 V500. If this RF band is used in these devices (BS1000, RA100, RBS85), the BP850 with a lower version than V500 is not connected to them. Therefore, Beltpack BP850 with a low version than V500 cannot be used together with them.

O*: For the BS1000, Remote antenna, Repeater, you can use this RF band (Frequency ID 30, Channel No 144) by enabling the Channel option in GCMV2. **(This has been applied to GCMV2 version V1.22)**

Select RF channel (0: Auto, 1~29)

Select Auto or one number from the drop-down menu.

If you select Auto, the RF band is automatically selected. If you select one RF band ID between 1 and 29, the Base Station uses that RF band.

RF band ID: See RF bands Table.

Interference: Reserved

TX attenuation

In the drop-down menu, select one of the following: 0dB, -3db, -6db, -9db, -12db.

If it is required to attenuate the radio wave to avoid RF interference, use this item to attenuate radio transmission power of each device.

Base RF On/Off

In the drop-down menu, select one of the following: RF On, RF Off.

Select RF Off if the Base Station does not need to transmit and receive radio wave.

Note: Cannot pair with Beltpack in RF Off state. Change to RF on when pairing with the Beltpack.

Screen Saver (10~900)

Set the period when the screen will automatically turn off. The Base Station display will turn off if key is not used or there is no incoming call during a set period.

Selection range: 10 to 900 minutes (10 minutes per step)

VOX Level (0: Off, 1~9)

If the audio level of the Talk channels is higher than this level, the audio is detected, and the Talk key LEDs flash green. The same level applies to Ethernet Beltpack.

Selection range: 0: disable, 1 to 9 (From -58dB to -10dB)

Note: When using in a noisy place, adjust this level if the Talk key LED is always off.

Set 2-Wire to Line A, B

Before using a Line, Line type should be set to ensure that the volume level and the call signal operate normally. In the drop-down menu, select Line to use as the 2-Wire from among the following: Line A and B, Line A, Line B, None

BP redundant
BS redundant

In the drop-down menu, select one of the following: No Redundant, Redundant, Assign Antenna.

No Redundant:

On a Standalone system that uses one Base Station, select the BP redundant as the No Redundant. If you set the Redundant, radio roaming time may increase. In this setting, you must select the BS Redundant as the No Redundant.

Redundant: (This has been applied to BS1000 version V4030)

The redundancy system consists of the BP redundant (and BS redundant) setting and a Genie Duo system and daisy chain ring connection. One Base Station BS1000 or Remote Antenna in monitoring mode monitors for failure of another Base Station or Remote Antenna. When a fault occurs, it automatically changes from monitoring mode to normal operating mode. When these BP redundant and BS redundant are set, and each device is paired with Base Station1 and Base Station2, the wireless Beltpack, Speaker Station, and Ethernet Beltpack are automatically connected to another Base Station 2 if no Base Station 1 or Remote Antenna 1 is detected. Each device perform automatic access to another Base Station in case one Base Station fails. In this setting, you must select BS Redundant as the Redundant.

Note: After you set this item, pair wireless Beltpack again, turn it off and turn it back on.

Redundant system with intercom system
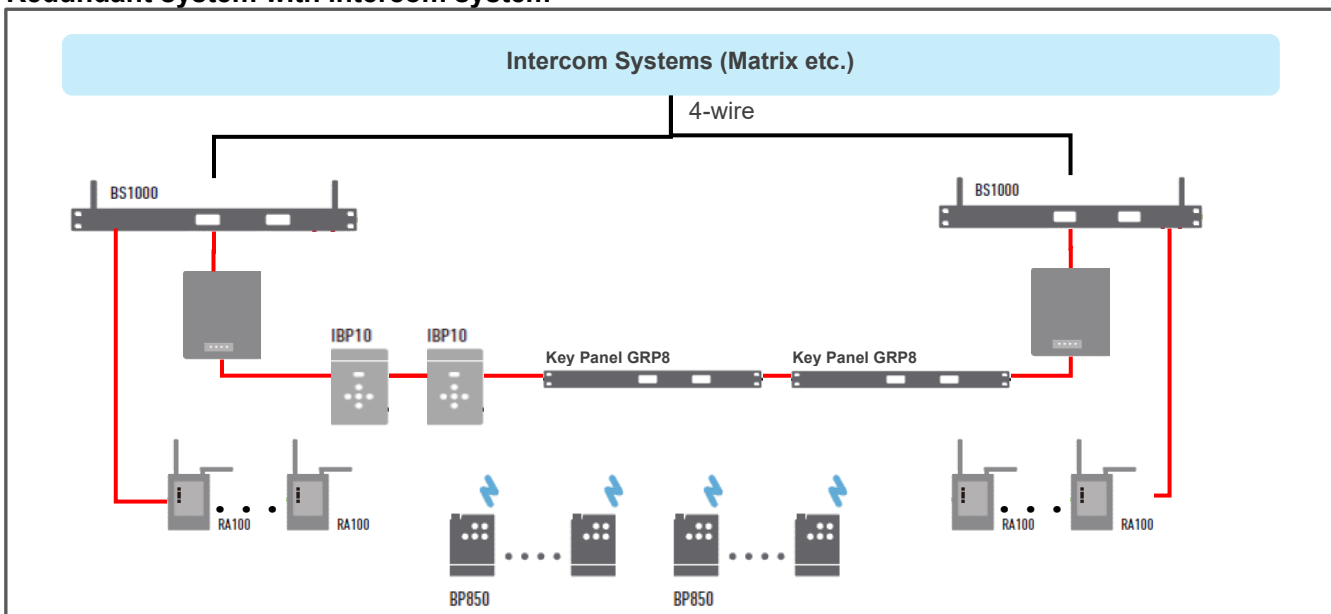
Antenna designation:

If you install three Remote Antennas in one antenna coverage zone and use simultaneous 30 Talk paths for the wireless Beltpacks, this can be selected. When this is selected, wireless Beltpack ID 1 to 10 is connected to Remote Antenna 1. In 10 units, ID numbers 11 to 20 are connected to Remote Antenna 2 and 21 to 30 to Remote Antenna 3. In the same way, ID numbers 31 to 40 are connected to Remote Antenna 1. In this setting, you must select BS Redundant as the No Redundant.

Note: After you set this item, pair wireless Beltpack again, turn it off and turn it back on.

Date Paired (YYYY)
Date Paired (MM/DD)
In this item, the date the device was paired with GCMV2 appears. This paired date is also displayed on the device's menu screen.

PC IP
PC Port
To connect your PC, click the Admin icon to set up your PC IP and port. This will automatically appear here.

Set FB, IFB group, Dim level
When IFB is created to a Genie group channel, the relevant FB audio (Program audio) is dimmed or muted. You can adjust the level of this dimming.

> **FB audio input Line:** Specify one Line that connects FB audio. Select one Line to connect FB audio from Line A, B, C, and D. If you send FB audio (Program) back to the output of the selected Line, you must select the Feed.
> **IFB group:** Select the Genie group channel that connects to the Line where FB audio is entered.
> **Dim level:** In the drop-down menu, select one of the Dim level of FB audio below:
>> 0dB, -12dB, -15dB, -18dB, -21dB, Cut

> **Note:** When IFB group and Feed are selected together, FB audio and Genie group channels are mixed and output to the Line.

You can specify the IFB group channel and dim level of the Program input (FB audio). With this setting on the BS1000, when a Talk path (IFB) is created on a Genie group channel set as the FB audio, the FB audio is dimmed and mixed with IFB. With this function, the wireless Beltpack may be used as the IFB caller or destination.
You can also apply IFB to set up to send Line input audio back to Line output.
(This has been applied to BS1000 version V4030)
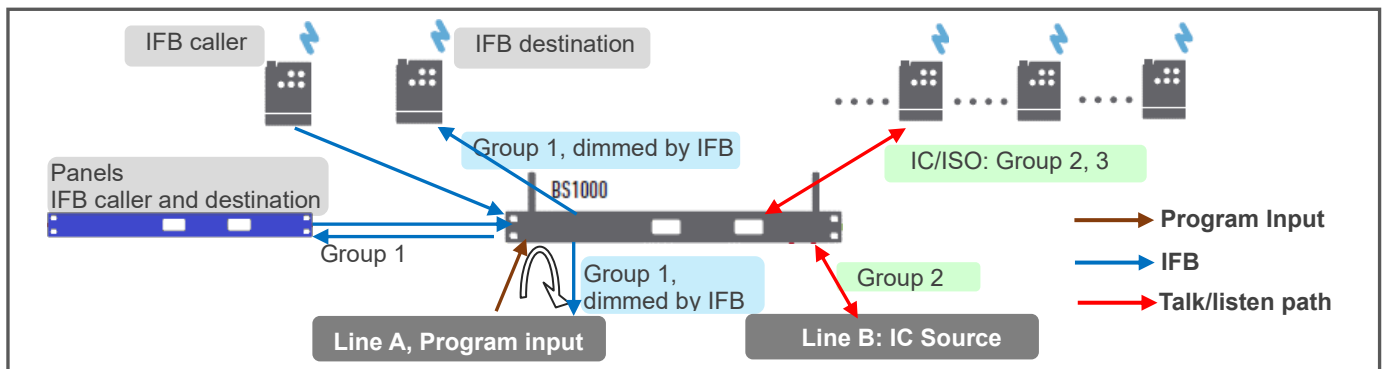
Set Network
  MAC Code
  Local IP
  Subnet Mask
  Gateway
  Config Port
  FW Update Port
  SCF Port
  Remote IP
  Tx AF IP
  Tx AF Port
  Rx AF Port
  We recommend using exclusive networks. If you are using an exclusive network, use factory settings.

RA100, RBS On Sequence
Specify the order in which to turn on the Remote Antenna or Repeater. Enter the ID number of the Remote Antenna or Repeater in the order that you turn it on.
With these settings, the Remote Antenna or Repeater can be efficiently located on the radio interference.

See Genie User Manual, 3.3 Placing the Base Station, Remote Antenna and Repeater,

The Remote Antennas and Repeaters are installed sequentially from the nearest location at the Base Station (A1, A2, A3, R1, R2 to RA).

Remote antennas and Repeaters paired to the Base Station have their own ID such as 3001. You must use that ID here.

Note: If you set a fixed RF band on a Remote antenna or Repeater, register the ID of that device as 0.

2. Configure the Base Station BS850

Click the BS850 icon, the setting window **(E)** will appear. Set each item in the setting window by referring to the description below.

Set Base Station Label & Code
Base ID: Set the Base Station ID to identify. Select one Base Station from the drop-down menu.
Base Label (7 letters): Set the Base Station label, by entering seven English letters or numbers.
Firmware Version: Once the device has been paired, it will automatically be displayed here.
Security Code1 (4 Hex), Security Code2 (4 Hex): Enter Hex 4 digits. When paired with a Base Station, these codes are displayed. For special system operation, use only if the same code setting is required for both Base Stations. Devices to be connected to Base Station that have changed the code should be paired again by selecting Write(pair). Only devices paired to the Base Station of the same code can be connected to each other.

Country code
Set the corresponding country code. The available RF bands are country specific, so you must set the country code for the area where you use the system. Enter a number from 1 to 9.

Country	Code	Country	Code
Korea	1	Taiwan	7
Japan	2	Israel	8
EU	3	Australia, New Zealand	9
USA	4	All Channels	5
China	6		

For RF bands available in each country, see the table on next page.
Note: The Base Station must be rebooted after changing the country code.

Channel option: Reserved

Set the Talk keys
Double-click each item to enter the LABEL for Genie Group Channel, Line in the settings window.

Set the Genie group channels for the Line or Base Station
Set available Genie group channels for the Line (4-wire or AUX) or Base Station.
Click in the group channels column (Headset, 4Wire, AUX I/O) to set single or multiple Genie group channels (Group 1 to Group 5) for each Line or Base Station headset. Users can select Genie group channels for each device within the scope set here.
Once the Genie Group channel is selected for the Line (AUX, 4-Wire), the Base Station and Beltpacks can communicate with the Line devices by selecting the same Genie group channel.

Set gains
Set the Line sending and receiving gains
Click the column icon in Receive (In) or Send (Out) on each Line to select level from the drop-down menu.

4-Wire A(0: Mute, 1~9) /Receive (In)
AUX IO B(0: Mute, 1~9) /Receive (In)
To set the Line input level for each Line (4-Wire, AUX IO), enter a number from 0 (mute) to 9. The Line input levels can be set from -20 dB to +6 dB (default 0 dB).

4-Wire A(0: Mute, 1~9) /Send (Out)
AUX IO B (0: Mute, 1~9) /Send (Out)
To set the Line output level for each Line (4-Wire, AUX IO), enter a number from 0 (mute) to 9.

Set the options and IP
Master/Slave
Select Master or Slave from the drop-down menu. The selected item will appear in the row icon.

Using multiple Base Stations in an Antenna coverage zone.
The Genie is designed so multiple Base Stations, Remote Antennas and Repeaters can work in one antenna coverage zone. To ensure smooth coexistence of these devices, you will need set the Ethernet synchronization and connecting the Multi-Sync cable. If multiple Base Stations are connected by Multi-Sync cable, one Base Station should be set to 'Primary on' (Master) in the Multi BS menu and all other Base Stations should be set to 'Primary off' (Slave). With this setting, Remote Antennas and Repeaters automatically act as Master or Slave. If you are using one Base Station, you must set the Base station to 'Primary On' (Master) to apply Ethernet synchronization to all devices.
See Genie User Manual, 3.2 Notes on Installation, Ethernet synchronization

Select Indoor RF

Select Indoor or Outdoor from the drop-down menu.

Select RF band

On 5GHz UNII RF bands, there is a separate definition and guideline for RF band to be used in indoor environments. Select the indoor if you use the system at any indoor environments. **Selecting the Indoor allows the use of indoor and outdoor RF bands.** When using the system at any outdoor environments, the outdoor should be selected. Refer to the table below.

Note: If the Indoor or Outdoor setting is changed, you must reboot the Base Station to use the changed setting.

RF bands

In the Base Station menu or GCMV2, ID numbers stands for each frequency band as shown in the table. The following table lists the RF bands that can be used in 5GHz UNII band. The ID of RF band currently being used will be shown on the menu or GCMV2. Genie devices which operate in the 5GHz UNII RF bands have been approved for license free use in most countries. However, some countries may restrict the use of some RF band or spectrum operations. Therefore, it is your responsibility to find out whether the Genie is permitted in your country or not.

Note: In the Base Station menu or GCMV2, ID numbers stands for each RF band as shown in the table.

Freq ID	Channel No.	Frequency	Band width	Korea, AUS, NZ	Japan	EU	US	China	Taiwan	Israel
01	32	5160MHz	20MHz	X	X	X	X	X	X	X
02	36	5180MHz	20MHz	Indoor	Indoor	Indoor	O	Indoor	Indoor	Indoor
03	40	5200MHz	20MHz	Indoor	Indoor	Indoor	O	Indoor	Indoor	Indoor
04	44	5220MHz	20MHz	Indoor	Indoor	Indoor	O	Indoor	Indoor	Indoor
05	48	5240MHz	20MHz	Indoor	Indoor	Indoor	O	Indoor	Indoor	Indoor
06	52	5260MHz	20MHz	O	Indoor	Indoor	O	O	Indoor	Indoor
07	56	5280MHz	20MHz	O	Indoor	Indoor	O	O	Indoor	Indoor
08	60	5300MHz	20MHz	O	Indoor	Indoor	O	O	Indoor	Indoor
09	64	5320MHz	20MHz	O	Indoor	Indoor	O	O	Indoor	Indoor
10	68	5340MHz	20MHz	X	X	X	X	X	X	X
11	96	5480MHz	20MHz	X	X	X	X	X	X	X
12	100	5500MHz	20MHz	O	O	O	O	X	O	Indoor
13	104	5520MHz	20MHz	O	O	O	O	X	O	Indoor
14	108	5540MHz	20MHz	O	O	O	O	X	O	Indoor
15	112	5560MHz	20MHz	O	O	O	O	X	O	Indoor
16	116	5580MHz	20MHz	O	O	O	O	X	O	Indoor
17	120	5600MHz	20MHz	O	O	O	O	X	O	Indoor
18	124	5620MHz	20MHz	O	O	O	O	X	O	Indoor
19	128	5640MHz	20MHz	O	O	O	O	X	O	Indoor
20	132	5660MHz	20MHz	O	O	O	O	X	O	Indoor
21	136	5680MHz	20MHz	O	O	O	O	X	X	Indoor
22	140	5700MHz	20MHz	O	O	O	O	X	O	Indoor
30*	144	5720Mhz	20Mhz	**O***	**O***	X	X	X	**O***	**O***Indoor
23	149	5745MHz	20MHz	O	X	SRD	O	O	O	Indoor
24	153	5765MHz	20MHz	O	X	SRD	O	O	O	Indoor
25	157	5785MHz	20MHz	O	X	SRD	O	O	O	Indoor
26	161	5805MHz	20MHz	O	X	SRD	O	O	O	Indoor
27	165	5825MHz	20MHz	O	X	SRD	O	O	O	Indoor
28	169	5845MHz	20MHz	X	X	SRD	X	X	X	Indoor
29	173	5865MHz	20MHz	X	X	SRD	X	X	X	X

Table. Typical Radio frequency (RF) bands

Indoor: RF band that can only be used indoors. Outdoor frequencies are also used when the Indoor is selected.

O*: New added RF band. Applies to BS1000 V4250, RA100 V5000, RBS85 V5000, and BP850 V500. If this RF band is used in these devices (BS1000, RA100, RBS85), the BP850 with a lower version than V500 is not connected to them. Therefore, Beltpack BP850 with a low version than V500 cannot be used together with them.

O*: For the BS1000, Remote antenna, Repeater, you can use this RF band (Frequency ID 30, Channel No 144) by enabling the Channel option in GCMV2. **(This has been applied to GCMV2 version V1.22)**

Select RF channel (0: Auto, 1~29)

Select Auto or one number from the drop-down menu.

If you select Auto, the RF band is automatically selected. If you select one RF band ID between 1 and 29, the Base Station uses that RF band. RF band ID: See RF bands Table.

Interference: Reserved

TX attenuation

In the drop-down menu, select one of the following: 0dB, -3db, -6db, -9db, -12db.

Attenuate radio transmission power:

If it is required to attenuate the radio wave to avoid RF interference, use this item to attenuate radio transmission power of each device.

Base RF On/Off

In the drop-down menu, select one of the following: RF On, RF Off.

Select RF Off if the Base Station does not need to transmit and receive radio wave.

Note: Cannot pair with Beltpack in RF Off state. Change to RF on when pairing with the Beltpack.

Screen Saver (10~900)

Set the period when the screen will automatically turn off. The Base Station display will turn off if key is not used or there is no incoming call during a set period.

Selection range: 10 to 900 minutes (10 minutes per step)

VOX Level (0: Off, 1~9)

You can set the VOX level.

If the audio level of the Talk channels is higher than this level, the audio is detected, and the Talk key LEDs flash green. The same level applies to Ethernet Beltpack.

Selection range: 0: disable, 1 to 9 (From -58dB to -10dB)

Note: When using in a noisy place, adjust this level if the Talk key LED is always off.

BP Redundant

In the drop-down menu, select one of the following: No Redundant, Redundant, Assign Antenna.

No Redundant:

Select the No Redundant on a standalone system that uses one Base Station. If it is set to the Redundant, radio roaming time may be increased.

Redundant:

This has been applied to BS1000 version V4030, BS850 does not provide this feature.

Assign Antenna:

If you install three Remote Antennas in one antenna coverage zone and use 30 channels of full-duplex wireless, this Redundant can be set to 2. When this Redundant is set to 2, wireless Beltpack ID 1 to 10 are connected to Remote Antenna 1. In 10 units, Beltpack ID 11 to 20 are connected to Remote Antenna 2 and Beltpack 21 to 30 are connected to Remote Antenna 3. In the same way, Beltpack ID 31 to 40 are connected to Remote Antenna 1.

Note: After you set this item, pair wireless Beltpack again, turn it off and turn it back on.

Reserved

Date Paired (YYYY)
Date Paired (MM/DD)

In this item, the date the device was paired with GCMV2 appears. This paired date is also displayed on the device's menu screen.

PC IP
PC Port

To connect your PC, click the Admin icon to set up your PC IP and port. This will automatically appear here.

Reserved

Set Network
MAC Code
Local IP
Subnet Mask
Gateway
Config Port
FW Update Port
SCF Port
Remote IP
Tx AF IP(Multi)
Tx AF Port(Multi)
Rx AF Port

We recommend using exclusive networks. If you are using an exclusive network, use factory settings.

RA100, RBS On Sequence

Specify the order in which to turn on the Remote Antenna or Repeater. Enter the ID number of the Remote Antenna or Repeater in the order that you turn it on.

With these settings, the Remote Antenna or Repeater can be efficiently located on the radio interference.

See Genie User Manual, 3.3 Placing the Base Station, Remote Antenna and Repeater,

The Remote Antennas and Repeaters are installed sequentially from the nearest location at the Base Station (A1, A2, A3, R1, R2 to RA).

Remote antennas and Repeaters paired to the Base Station have their own ID such as 3001. You must use that ID here.

Note: If you set a fixed RF band on a Remote antenna or Repeater, register the ID of that device as 0.

3. Configure the Remote Antenna RA100DW and RA100

Click the RA100 icon, the setting window **(E)** will appear. Set each item in the setting window by referring to the description below.

Set the Remote Antenna Label & Code
RA100_ID (3001~3030)
Set the Remote Antenna ID. Enter an ID number from 3001 to 3030.
RA100 Label(Axlabel/x:1~6)
Set the Remote Antenna label, by entering seven English letters or numbers. The first two digits enter A1 to A6, and the next five digits enter for the Remote Antenna label. The Beltpack screen shows the first two digits from A1 to A6, indicating the identity of the connected Remote Antenna.
Firmware Version:
Once the device has been paired, it will automatically be displayed here.
Selected Base ID
Displays the paired Base Station ID with the Remote Antenna.
Base Label
Displays the paired Base Station label with the Remote Antenna.
Security code 1, Security code 2
Once the device has been paired, these codes are displayed here.
Country code:
Once the device has been paired, this code is displayed here.
Channel option:
Set whether to use Frequency ID 30 (Channel No 144), a new RF band available in some countries. **(This has been applied to GCMV2 version V1.22)**

Set the options and IP
Master/Slave
Select Master or Slave from the drop-down menu. The selected item will appear in the row icon.

Using multiple Base Stations in an Antenna coverage zone.
The Genie is designed so multiple Base Stations, Remote Antennas and Repeaters can work in one antenna coverage. To ensure smooth coexistence of these devices, you will need set the Ethernet synchronization and connecting the Multi-Sync cable. If multiple Base Stations are connected by Multi-Sync cable, a Base Station should be set to 'Primary on' (Master) in the Multi BS menu and all other Base Stations should be set to 'Primary off' (Slave). With this setting, the Remote Antennas and Repeaters are automatically set to the Master or Slave. If you are using one Base Station, you must set the Base station to 'Primary On' (Master) to apply Ethernet synchronization to all devices.
See 3.2 Notes on Installation, Ethernet synchronization

Multi-Sync connections can also be made between the closely installed RA100DWs (may be within 2m) for more accurate Ethernet synchronization. In this case, the RA100DW connected to the Base Station designated as Master will be the Master, and the RA100DW connected to the Base Station designated as Slave will be operated as Slave. Regardless of which Base Station is connected, the Remote Antenna will act as Master or Slave, depending on this setting.

Local/Remote: Reserved

Tx Attenuation
In the drop-down menu, select one of the following: 0dB, -3db, -6db, -9db, -12db.
Attenuate radio transmission power
If it is required to attenuate the radio wave to avoid RF interference, use this item to attenuate radio transmission power on the Remote Antenna.

Select RF channel (0: Auto, 1~29)
Select Auto or one number from the drop-down menu.
If you select Auto, the RF band is automatically selected. If you select one RF band ID between 1 and 29, the Remote Antenna uses that RF band.
RF band ID: See RF bands Table.

Interference: Reserved

RF On/Off
In the drop-down menu, select one of the following: RF On, RF Off.
Select RF Off if the Remote Antenna does not need to transmit and receive radio wave.

PC IP
PC Port
To connect your PC, click the Admin icon to set up your PC IP and port. This will automatically appear here.

Set Network
  MAC Code
  Local IP
  Subnet Mask
  Gateway
  Config Port
  FW Update Port
  SCF Port(BS)
  Remote IP(BS)
  Rx AF IP(Multi)
  Rx AF Port(Multi)
  Tx AF port
  We recommend using exclusive networks. If you are using an exclusive network, use factory settings.

Set Network (RBS) :
  Config Port
  FW Update Port
  SCF Port(RBS)
  Remote IP(RBS)
  Tx AF IP(Multi)
  Tx AF Port(Multi)
  Rx AF port

  Note: These settings must be entered when the RA100 is first paired. If you click "Save data" to update the settings in the Admin settings window, they are automatically registered on all devices. Refer to the GCMV2 example file for the settings to enter.

4. Configure the Repeater RBS85

Click the RBS icon, the setting window **(E)** will appear. Set each item in the setting window by referring to the description below.

  Set the Repeater Label & Code
  RBS85_ID (4001~4099)
  Set the Repeater ID. Enter an ID number from 4001 to 4099.
  RBS Label (Rxlabel/x:1~9,A)
  Set the Repeater label, by entering seven English letters or numbers. The first two digits enter R1 to RA, and the next five digits enter for the Repeater label. The Beltpack screen shows the first two digits from R1 to RA, indicating the identity of the connected Repeater.
  Firmware Version:
  Once the device has been paired, it will automatically be displayed here.
  Selected RA100 ID:
  Displays the paired Remoter Antenna ID with the Repeater.
  Base Label
  Displays the paired Base Station label with the Repeater.
  Security code 1, Security code 2
  Once the device has been paired, these codes are displayed here.
  Country code:
  Once the device has been paired, this code is displayed here.
  Channel option:
  Set whether to use Frequency ID 30 (Channel No 144), a new RF band available in some countries. **(This has been applied to GCMV2 version V1.22)**

  Set the options and IP

  Tx Attenuation
  In the drop-down menu, select one of the following: 0dB, -3db, -6db, -9db, -12db.
    Attenuate radio transmission power
    If it is required to attenuate the radio wave to avoid RF interference, use this item to attenuate radio transmission power on the Repeater.

  Select RF channel (0: Auto, 1~29)
  Select Auto or one number from the drop-down menu.
  If you select Auto, the RF band is automatically selected. If you select one RF band ID between 1 and 29, the Repeater uses that RF band.
  RF band ID: See RF bands Table.

  Interference: Reserved

RF On/Off
　In the drop-down menu, select one of the following: RF On, RF Off.
　Select RF Off if the Repeater does not need to transmit and receive radio wave.

PC IP
PC Port
To connect your PC, click the Admin icon to set up your PC IP and port. This will automatically appear here.

Set Network
　MAC Code
　Local IP
　Subnet Mask
　Gateway
　Config Port
　FW Update Port
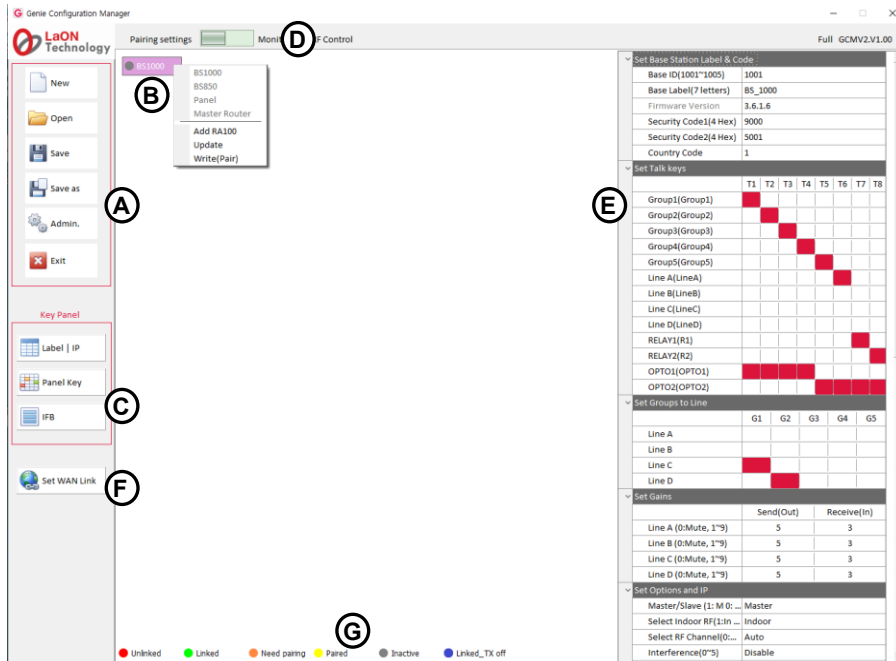　**SCF Port(RA)**
　Remote IP(RA100)
　Rx AF IP(Multi)
　Rx AF Port(Multi)
　Tx AF port
We recommend using exclusive networks. If you are using an exclusive network, use factory settings.

5. Configure the Ethernet Beltpack IBP10

Click the IBP10 icon, the setting window **(E)** will appear. Set each item in the setting window by referring to the description below.

You can pair the Ethernet Beltpack to two Base Stations. Each Talk key can be set one of the Genie group channels provided by two Base Stations.

Set Ethernet Beltpack Label & Code

IBP10 ID (5001~5060)
Set the Ethernet Beltpack ID. Enter an ID number from 5001 to 5060.

IBP10 Label (7 letters)
Set the Ethernet Beltpack label, by entering seven English letters or numbers.

Firmware Version
Once the device has been paired, it will automatically be displayed here.

RA100 ID
Displays the selected 1'st Remote Antenna ID.

Base label
Displays the selected 1'st Base Station label.

Pair Base (1:BS1 2:BS2)
In the drop-down menu, select one of the following: Base Station 1, Base Station 2.

The Base station 1 or Base Station 2 can be selected as the Base Station to be paired. If you are using only one Base Station, select Base Station 1. The Genie group channel of the Base Station 2 can also be registered on the Ethernet Beltpack's Talk key. Refer to the GCMV2 example file for registration.

Set Talk keys:

If there is a connected Base Station, the Genie group channel labels are automatically displayed. Double-click each item to enter the LABEL for Genie Group Channels in the settings window.

Assign each Talk key from T1 to T8. You can set the Genie group channels to the Talk key. Click the icon in each Talk key column to select one Genie group channel.

One Ethernet Beltpack can be connected to two Base Stations. The Ethernet Beltpack shall be paired to each of the two Base Stations. To set the Genie Group channel of another Base Station on the Talk key, the Base Station must be created and the Ethernet Beltpack must be paired with that Base Station.

Note: The T5 to T8 Talk keys are operated as the Shift Talk channels.

Set options and IP

Screen Saver (10~900)
Set the period when the screen will automatically turn off. The Ethernet Beltpack display will turn off if key is not used or there is no incoming call during a set period.
Selection range: 10 to 900 minutes (10 minutes per step)

PC IP:
PC Port:
To connect your PC, click the Admin icon to set up your PC IP and port. This will automatically appear here.

Set Network
MAC Code
Local IP
Subnet Mask
Gateway

RA100 Network
Config Port
FW Update Port
SCF Port
Remote IP(RA100)
Rx AF IP (Multi)
Rx AF Port (Multi)
Tx AF Port:

We recommend using exclusive networks. If you are using an exclusive network, use factory settings.

Section 2: Configure the Key Panels
Describe the GCMV2 screen

Management icons (A)
New: Create a GCMV2 file. Click the New icon and enter the file name to create. A Genie device icon **(B)** will appear on the screen.

Open: To open the GCMV2 file, click the Open icon to select a file.

Save: Save as GCMV2 file name in use.

Save As: Save as a new GCMV2 file name.

Admin: The Administrator screen appears for default IP settings and password changes. The factory setting password is 1234.

Exit: Exit the GCMV2.

Genie device icons (B)
The created Genie devices appear in this display area.

Key Panel icons (C)
The three icons below are used only for the Key Panel settings.

Label I IP: Select this icon to set the ID, label, and IP of the Key Panels.

Panel key: Select this icon to set the Talk keys and Line Router GLR4.

IFB: Select this icon to set the IFB members, IFB destinations, and FB sources (Program).

Mode selection icon (D)
You can select the required function by selecting the icon left or right.

Pairing settings: A screen is displayed for creating devices and editing settings.

Monitor & RF Control: The Monitoring screen is displayed.

Setting window (E)
When you click each device icon at the center of the screen, the setting window for that device appears on the right side of the screen.

Set WAN Link icon (F)
Set the WAN Link.

Icon colors, depending on the status of each device (G)
Appears at the bottom of the screen.

Unlinked (red): Indicates that the device is not connected.

Linked (green): Indicates that the device is connected.

Need Pairing (Amber): Settings have been edited, indicating a condition that needs to be paired.

Paired (Yellow): The settings are paired with the device.

Inactive (Gray): Indicates that none of the edited settings are present.

Linked_Tx_off (Blue): Indicates the state in which wireless transmission is off while the device is connected.

Installation procedure:

◆ **Set the label and IP of the Key Panels:** Click the Label I IP icon **(C)** at the lower left corner of the screen.
◆ **Create and add the Key Panels:** Right click on the Key Panel icon **(B)**.
◆ **Basic settings of the Key Panel:** Click the Key Panel icon **(B)** and set them in the right window **(C)**.
◆ **Set the IFB configuration:** Click the IFB icon **(C)** and set the IFB configuration.
◆ **Set the Panel keys:** Click the Panel key icon **(C)** at the lower left corner of the screen and set the Talk keys.
◆ **Pair (Write) to the Key Panel:** Connect each Key Panel to the PC alone, right click on the Key Panel icon **(B)** and Pair it.
◆ **Set the WAN Links:** If necessary, click the WAN Link **(F)** icon and set the WAN Links.
◆ **Checking the connection status:** Select the Monitor & RF Control **(D)**, and check the installed Genie devices.

The descriptions in this manual are listed in the order of the above installation procedures.

◆ Set the label and IP of the Key Panels and Line Router:

Click the Label IP icon **(C)** at the bottom left corner of the screen. Set the ID, label, IP and port number for up to 128 Key Panels. In an exclusive network, IP and port settings can use as the factory defaults. The factory settings of Key Panel label are Panel1 to Panel128, without the distinction of Key Panel and Line Router. The Labels entered here are displayed on the device icons. After you create a Line Router, we recommend that you click the Label IP icon **(C)** again to enter a Label that distinguishes it from the Key Panel. The icon color of the Key Panel and Line Router is distinguished.

◆ Create and add the Key Panels:

◆
Right-click on the icon **(B)** after creating or open the file, the following items are displayed on the screen:

BS1000:
Selecting this option creates a Base Station BS1000 icon on the icon **(B)**.

BS850:
Selecting this option creates a Base Station BS850 icon on the icon **(B)**.

Panel:
Selecting this option creates a Key Panel icon on the icon **(B)**. Select this option if you are not using a Base Station (BS1000, BS850) but only configured with Key Panels. You can create 128 Key Panels and Line Routers.

Master Router:
Selecting this option creates a Line Router set to Master mode on the icon **(B)**. If you do not use a Base Station (BS1000, BS850) and use the Genie group channels (conferencing mode) configured only by Key Panels, you will use Line Router to create a Master Router. You can create 128 Key Panels, Line Routers, or IBP10s to connect to. When you create a Master Router, you can use the Genie group channel for wired devices. With these features, you can connect and use IBP10 using the Genie group channel.

Add RA100:
When selected, up to six Remote Antenna icons are added below the BS1000 icon, or up to three Remote Antenna icons are added for the BS850 icon.

Add Panel:
When selected, up to 128 Key Panel icons are added below the Key Panel or Remote Antenna icon. If a Genie Base Station is selected on the icon **(B)**, the Key Panels can only be added below the Remote Antenna icon. The icon of the Key Panel is displayed in a light blue color.

Add Router:
When selected, the Line Router icon is added under the Key Panel, Master Router, or Remote Antenna icons. If you select the Genie Base Station on the icon **(B)**, the Line Router can only be added under the Remote Antenna icon. The icon of the Line Router is displayed in a light gray color.

Add IBP10:
When selected, the Ethernet Beltpack IBP10 icon is added under the Master Router or Remote Antenna icons.

Update:
You can pair (Update) the modified settings back to the device. The update is available after each device has been paired (Write). It can also be used when all devices are connected.

Write (Pair):
The ability to pair new settings for the first time by connecting only one device.   Do not run a pair (write) if more than one device is connected. The same settings are paired to all connected devices and do not work properly.

Note: For the Key Panels, only one current Page selected in the Panel key**(C)** screen is paired (or updated) to the Key Panel. When updating to the Key Panel, it is convenient to run it on the Panel key **(C)** screen.

When configured with Key Panels only
Select the Key Panel or Master Router on the icon **(B)** and create it. Right-click on the created Key Panel (or Master Router) icon and select the Add Panel (or Router) and add it. Up to 128 Key Panels (or Line Router) can be configured as shown below.
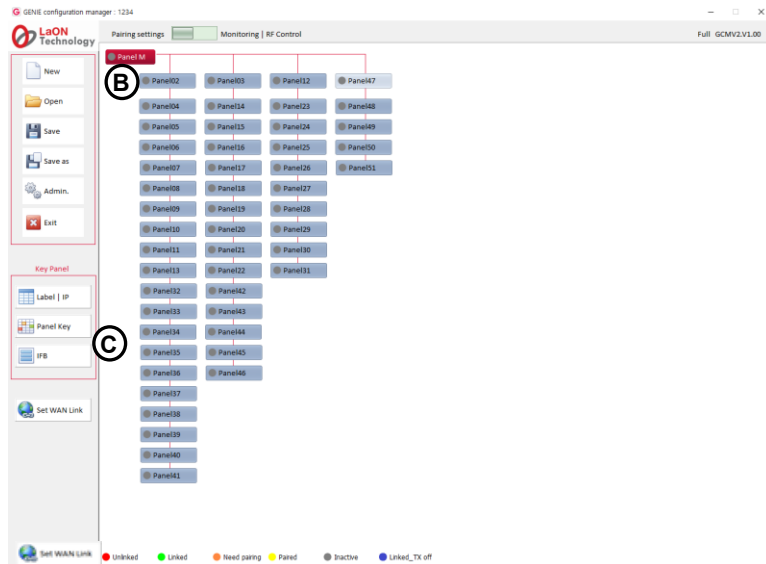
When you connect Key Panels with a Base Station (BS1000 or BS850) to use wireless Genie group channels
Create a Base Station (BS1000 or BS850) icon on the icon **(B)**. Right-click the Base Station icon and select Add RA100. You can add up to six Remote Antenna icons. Right-click the RA100 icon and select Add Panel (or Router). Up to 22 Key Panels (or Line Routers) can be configured per RA100 icon.

If you use more than 22 Key Panels, create an additional Remote Antenna icon to configure 22 Key Panels. You can add a Remote Antenna icon even if you do not actually install the Remote Antenna. In this case, the Remote Antenna is not paired to the Base Station, so it cannot be used to connect with the wireless device of the Base Station. Add Key Panels here that do not use Genie group channels for wireless on the Base Station. The unpaired Remote Antenna icon is grayed out in the Inactive state.
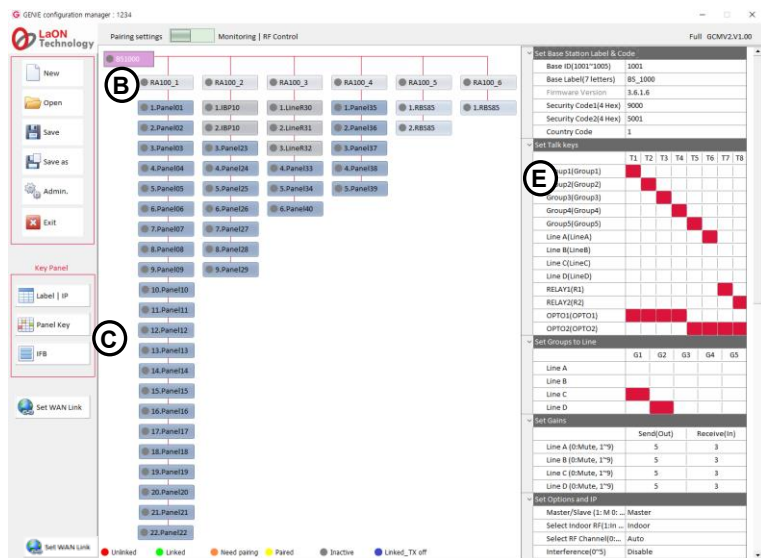
Genie group channels (conference mode)
You can connect the Key Panels to the Remote Antenna of the Base Station (BS1000, BS850) to use the wireless Genie group channels. For configurations without a Base Station, Key Panels can also be connected to Line Router GLR4 to use Genie group channels. One Remote Antenna or Line Router provides 128 Listen paths and 10 simultaneous Talk paths for the Genie group channels.
Up to five Genie group channels can be set on one Talk channel.

Talk/listen audio paths when connected with Base Station (BS1000, BS850)
When the Key Panels (or Line Router GLR4) use Genie group channels, a Remote Antenna provides unrestricted listen paths and ten simultaneous Talk paths (full-duplex, Shared with wireless Beltpacks). When you set up Genie group channels on Key Panel or Line Router's Line (4-Wire), it occupies one Talk path of the Remote Antenna. If you set up Genie group channels on the Talk channel of the Key Panel and open the Talk path, it occupies one Talk path of the Remote Antenna. The Talk/listen path between Key Panel does not occupy the Talk path of the Remote Antenna.
In the system design, you need to distribute the connection between the Key Panel and the Remote Antenna according to the maximum number of simultaneous Talk paths.

◆ **Basic settings of the Key Panel**:
Click on each Key Panel icon **(B)** at the center of the screen, the basic setting window **(E)** will appear as below.
In the setting window, set the items below for each Key Panel.

Panel ID:
If you click the Label I IP icon **(C)** at the lower left corner of the screen to set it, Key Panel ID will automatically appear here.
Panel Label:
If you click the Label I IP icon **(C)** to set it, Key Panel label will automatically appear here.
Firmware Version: When paired, it will automatically be displayed here.
RA100 ID:
When the Key Panel is used by connecting with the Base Station (BS1000 or BS850), the Remote Antenna ID connected to the Key Panel is automatically displayed.
Base Label:
When the Key Panel is used by connecting with the Base Station (BS1000 or BS850), the Base Station Label connected to the Key Panel is automatically displayed.
RA100 Name:
When the Key Panel is used by connecting with the Base Station (BS1000 or BS850), the Remote Antenna Label connected to the Key Panel is automatically displayed
Page No.:
If you click the Panel key icon **(C)** at the lower left corner of the screen to set it, the last selected Page number will automatically appear here. Only one Page shown here is paired to the Key Panel.
Page Label:
If you click the Panel key icon **(C)** to set it, the last selected Page label will automatically appear here. Only one Page shown here is paired to the Key Panel.
Panel No.:
The automatically assigned number from P1 to P128 is displayed. This number is also used as a delimiter in the Panel key **(C)** setting window.

Set gains

Set the Line (4-Wire) sending and receiving levels
Click the column icon for each Line Receive (In) or Send (Out) to enter a number representing the level.
Line A (0: Mute, 1~9) / Receive (In)
Line B (0: Mute, 1~9) / Receive (In)
Line C (0: Mute, 1~9) / Receive (In)
Line D (0: Mute, 1~9) / Receive (In)
To set the Line input level for each Line (Line A, B, C, D), enter a number from 0 (mute) to 9. The Line input levels can be set from -20 dB to +6 dB (default 0 dB). This feature is not supported on the Key Panel GDP4.

Line A (0: Mute, 1~9) / Send (Out)
Line B (0: Mute, 1~9) / Send (Out)
Line C (0: Mute, 1~9) / Send (Out)
Line D (0: Mute, 1~9) / Send (Out)
To set the Line output level for each Line (Line A, B, C, D), enter a number from 0 (mute) to 9. The Line output levels can be set from -20 dB to +6 dB (default 0 dB). This feature is not supported on the Key Panel GDP4.

Set options

Screen Save (10~900)
Set the time period when the screen will automatically turn off.
Selection range: 10 to 900 minutes (10 minutes per step)
If the key is not used for a set time period or there is no incoming Call, the display will turn off.
Master/Slave
If you select Key Panel or Master Router on the icon **(B)**, this item is automatically set to Master.
Ethernet synchronization is applied between all devices connected to the Ethernet, avoiding radio interference, packet loss, delay, and jitter among devices being connected to the Ethernet. To ensure that these Ethernet synchronizations apply to all devices, in the case of a system only with Key Panels (not connected to the Genie Base Station), one of the Key Panels must be assigned as a Master. When Key Panels are used in conjunction with a Genie Base Station set to Master, all Key Panels are automatically set to Slave. With only these settings, the Ethernet synchronization is applied to all Genie devices connected to the network.
VOX Level (0: Off, 1~9)
You can set the VOX level.
If the audio level of the Talk channels is higher than this level, audio is detected, and the LED on the Talk key flashes green.
Selection range: 0: disable, 1 to 9 (From -58dB to -10dB)
   Note: When using in a noisy place, adjust this level if the Talk key LED is always off.

Date Paired (YYYY)
Date Paired (MM/DD)
This item displays the date the device is paired with GCMV2. When the device is paired, this date is displayed on the device's menu screen.
PC IP:
PC Port:
Click the Admin icon to set the PC IP and port for connecting the PC.

Set Router
  Line Feed
  If each Line selects Line Feed, it sends the Line input back to the Line output. The Line Router GLR4 only allows these settings and does not apply to the Key Panels. With these settings, IFB dim level can be applied to Line output on GLR4.
Set Network
  MAC Code
  Local IP
  Subnet Mask
  Gateway
RA100 Network
  Config Port
  SCF Port
  We recommend using exclusive networks. If you are using an exclusive network, use factory settings.

◆ **Set the IFB configuration:**

Click IFB icon **(C)** at the lower left corner of the screen. Up to five IFB members can be configured. For each IFB member, you can specify the Key Panel's Line as FB source (Program input). And you can set the IFB destinations as below.

Add IFB members:
One IFB Member was created by default. You can edit and use this.
Right clicking on the IFB member icon **(a)**, the following items will appear.
  Add IFB Member: Add up to four IFB member icons below the created IFB member icon **(a)**.
  Delete: Delete the added IFB member.

Set IFB items:
Click on each IFB member icon **(a)**, the IFB setting window **(b)** will appear as above. In the setting window, set the items below for each IFB member. The edited settings are color-coded in the Panel key **(C)** screen.

  Label (10 letters): Enter the IFB Member label.
  FB source (Program input): Specifies the FB source that IFB members (IFB destination) will receive. For the FB source, you can set one Line of the Line Router GLR4 (or Key Panel) that routes the Program audio. Only one FB source can be specified. Click one Key Panel label icon and Line icon. On the IFB Destination, the selected FB source is automatically set to the listen path to the 1'st Talk channel **(T1)**.
    Note: If you specify the wireless Genie group channel as FB source, connect the FB source to a Line of the Base Station (BS1000 or BS850) and set the IFB in GCMV2's Base Station settings window. IFB is applied to all Talk paths to the wireless Genie group channel that is set.
  IFB destinations: To set up IFB destinations (Key Panel), click the Key Panel icons. The Key Panel icons that are set will turn sky-blue color. On the IFB Destination, set the IFB (Caller) to each Talk key. When receiving IFB from IFB (Caller), Program audio can be dimmed to 0db, -12db, -15db, -18db, -21db, or mute. These Dim levels can be set per Key Panel (IFB caller) in the Panel key **(C)** settings.
  Resend audio and listen only: Set whether to send the IFB destination's listen audio to the IFB (Caller) for monitoring on the IFB (Caller). When you click the Key Panel icons, the selected Key Panels (IFB destination) send listening audio to IFB (Caller) and all Talk channels on the IFB destination are set to listen only. The Key Panel icon turns red. The selected Key Panels are applied to all IFB member **(a)**.
    Note: When this Resend is enabled, all Talk channels on that Key Panel are set to listen only, and the Talk path cannot be created.

◆ Set the Panel keys:

Click the Panel key icon **(C)** to set the Talk keys for up to 128 Key Panels or Line Routers.

Describe the Panel key screen

Colors depending on the status of the Genie devices (11)

The Source Key Panel **(10)** icon to edit shows the colors below.

Amber: This color indicates the Key Panel or Line Router set to the FB source (Program) in the IFB **(C)** settings.

Green: This color indicates the Key Panels set to the IFB destination in the IFB **(C)** settings.

Purple: This color indicates that it was created as a Line Router.

Blue: This color represents a Source Key Panel **(10)** currently selected for editing.

Clear Page (1): Initialize the settings for the edited current Page.

Confirm Page (1): Click the confirm icon to save your settings and end editing. After it has been edited, you must run Pair or Upgrade on its device icons **(B)**.

Page selection icons: (2)

You can edit up to 4 Pages per selected Source Key Panel **(10)**.

When you run the Write (Pair) or Upgrade icon, only one Page confirmed in this Panel key screen is paired to the Key Panel.

Talk channels: (3)

Click each Talk channel icon (**T1 through T32**) to set the Talk channel label, the FL (Forced Listen) level, AL (Auto Listen) level, Tx group and Talk to GLR4 Line.

Line audio routings: (4)

Line audio routing on the Line Router GLR4:

The input/output audio from GLR4 Line can be connected to Key Panels and Genie group channels.

Line audio routing on the Key Panel GRP-12V:

On the Key Panel, Line input/output audios can be connected to Genie group channels (and Key Panels) without setting them on the Talk channel. You can set up to five Genie group channels and Key Panels on the Line (4-Wire).

Key Panel provides the same Line audio routing function as Line Router GLR4. In addition to Line audio routing, Line Router GLR4 also provides the ability to use Genie group channels without a Base Station and provides Line audio feed.

Note: On a Line Router or Key Panel, you can send and receive Line audio to 128 Key Panels simultaneously per Genie group channel. Apart from connecting to Genie group channels, you can specify up to 20 additional Key Panels to send and receive Line audio simultaneously.

If you specify more than 20 Key Panels and use them, you can connect them to a separate Line Router or Key Panel.

On the Key Panel GRP8-12V, there is one limitation when specifying Key Panels to transmit and receive Line audio.

● If you send and receive Line audio from Source GRP8-12V to the Destination (Key Panel), you cannot hear the Line audio being routed on the Source GRP8-12V. This means that you cannot set that the Line (Line being routed) to the Talk channel on the Source GRP8-12V.

Note: From Version 3705 of GRP8-12V, there is no such limitation.

Note: Key Panel GRP16, GDP16, GRP32 do not have this limitation.

Destination Labels: (5)
Destination labels that can be set on the Talk channel **(3)** are displayed. These Labels are set in the Label IP **(C)** setting.

Genie group channel Labels: (6)
You can set the Genie group channel to Talk channel **(3)**. You can double-click the Group channel Label to edit it.
When using Key Panels in conjunction with Genie Base Station (BS1000, BS850), Genie group channel label set up on the Genie Base Station is displayed. When you use Master Line Router without a connection with a Base Station (BS1000, BS850), it is used as a wired Genie group channel of Master Line Router.

Lines, Opto-isolated Inputs, Relays: (7)
The Lines can be assigned to the Talk channel **(3)**. On each Talk channel, the relay and opto-isolated input functions can be set together in addition to the Talk channels.

IFB/Dim: (8)
Specify FB source (Program input) and IFB destinations in IFB **(C)** settings. Set IFB destination **(5)** on the Talk channel **(3)** and click the IFB/Dim row icon in the Talk channel **(3)** column to set the IFB (Caller) as the Talk channel property. With this setting, the label of the IFB (Caller) appears as inverted text in the Key Panel's Normal menu, and the Talk key LED appears amber. Double click the IFB/DIM icon itself **(8)** to select the dim level (0, -12dB, -15dB, -18dB, -21dB, Mute) for a selected Source Key Panel **(10)**. If you press IFB key (IFB caller) on this selected Key Panel **(10)**, Program audio will be dimmed on the IFB destination by the set level here.

Source Key Panels: (10)
Of the 128 Key Panel or Line Router icons, click the icon you want to edit. After it has been edited, you must run Pair or Upgrade on its device icons **(B)**.

Set the Talk channel (3)
Double click each Talk channel icon **(3)** to set the Talk channel label, FL level, Tx group and Talk to GLR4 Line.
The FB source (Program) selected in the IFB **(C)** setting is automatically set to the listen path to the first Talk channel **(T1)** on the IFB destinations.

Genie group channels
Up to five Genie group channels can be set on each Talk channel **(3)**.
Click the Genie group channels **(6)** row icon in the Talk channels **(3)** column to set the destinations on each Talk channel.
> **Note:** Key Panels can only be connected to one Genie Base Station or Master Router. As a result, Key Panels can use five Genie group channels.

Peer to Peer: One Key Panel or Line can be set on the Talk channel for setting point-to-point communication path. Click the Key Panels **(5)** or Line **(7)** row icon in the Talk channels **(3)** column to set the destination on each Talk channel.

Group key: Up to twenty Key Panels (or Lines or Genie group channels) can be set on one Talk channel. Click the Key Panel **(5)**, Line **(7)** or Genie group channel **(6)** row icons in each Talk channel **(3)** column to set the destinations for each Talk channel.

Line: This is to set up Line directly to Talk channel. Audio input from the Line can also be heard, and the Talk key can be pressed to create a Talk path to the Line. Click a Line **(7)** row icon in the Talk channel **(3)** column to set the destination for each Talk channel. Up to four Lines can be set on one Talk channel at the same time.

Add-on functions on the Talk channel
- Two relays and two opto-isolated inputs
- Forced Listen, Auto Listen
- Tx group
- Talk to GLR4 Line

  Relay, Opto-isolated Input: On each Talk channel, the relay and opto-isolated input functions can be set together in addition to the Talk channels. Click a OPTO1 (or OPTO2) row icon in the Talk channel **(3)** column to set this opto-isolated input to the Talk channel. When the opto-isolated input is detected, the corresponding Talk keys are triggered. You can assign one opto-isolated input to multiple Talk channels. The opto-isolated input can be used to trigger Talk Keys by connecting the foot switch or other controls.
  Click the Relay1 (or Relay2) row icon in the Talk channels **(3)** column to set this relay function to the Talk channel.
  When the relay function is set on the Talk channel, pressing this Talk key triggers the corresponding relay pin on the GPIO. The relay can activate an external device, such as a cue light, or a walkie-talkie.

  If you set up the opto- isolated input and Relay together on a Talk channel, if the opto-isolated input is detected, Relay will also be activated.

Relay activation:
Genie can activate the Relays as follows. WAN Link can transmit Relay signals marked in blue.

	Other Key Panel's Relay	Own Relay
Key Panel's call button	**O**	
Key Panel's Talk key		O
Base Station's Talk key or SA button		O
Opto-input		O

Activate the Destination Key Panel's Relay from the Source Key Panel
In the Panel key settings screen, set the Opto-input and Relay together on the Talk channel of the Destination Key Panel. When you press Call on the Source Key Panel, the Destination Key Panel displays the Call signal, and at the same time the Relay is also triggered while a Call is pressed.
With these features, you can turn on a cue light connected to the Destination Key Panel. If the cue light connected to the Destination Key Panel is operated in conjunction with Relay, Relay is activated only while a Call is pressed, and a cue light is also turned on by this Relay.

Call signals: Genie can transmit call signals between devices as follows. Call signal is sent while a Call is pressed, and when released, it stops sending.
Wan Link can transmit Call signals for items shown in blue in the table below.

	Key Panel	BS (Base Station)	Wireless Beltpack	2-Wire Intercom
Key Panel to	**O**	O	O	X
BS1000 to	O(Group)	X	O	O
BS1000 2-Wire to	X	O	X	O

FL (Forced Listen): Double-click the Talk channel icon **(3)** to select the Forced Listen and set FL level.

Normal menu on the Panel
Listen-level graphics for FL Talk key
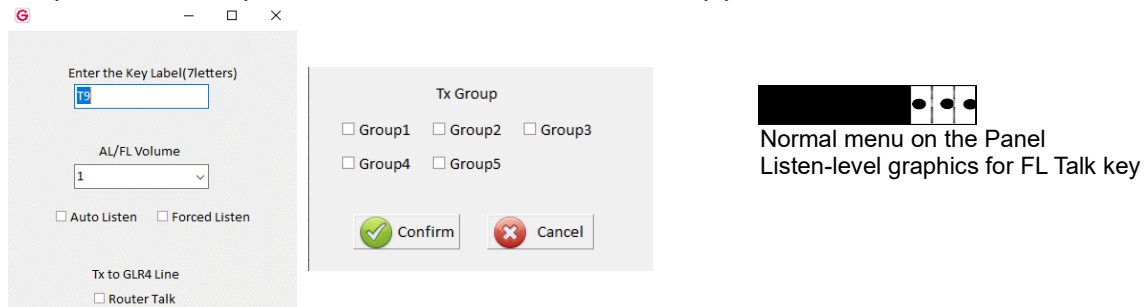
FL can be set on the Talk channel if the listener tries to avoid missing an important call. FL can be set in addition to the Talk channel. On the Talk channel set to FL, the listen level is not adjusted below the FL level set here. The Listen level of a Talk channel set to FL is displayed in the Normal menu as shown above, or FL is displayed on the right side of the Level graph.

AL (Auto Listen): Double-click the Talk key icon **(3)** to select the Auto Listen and set AL level.
Note: In the case of GRP16 and GDP16, you only select AL and do not need to select AL level.
For operation methods, see 4.2 Key Panel GRP16.
If the listen level of the Talk channel is muted or below the AL level, pressing Talk key automatically adjusts the listen level to AL level. You can always adjust listen level. If you listen only when you press Talk key, adjust the listen level to mute and operate it. When you press Talk key, the AL level is displayed on the screen, and the listen level is automatically adjusted to the AL level that is set. When Talk is released, it returns to the previous level.

Tx group: Double click each Talk channel icon **(3)** to set the Tx group.
On one Key Panel, if you create a Talk path to a Genie group channel (pressing the Talk key), the listen path opens on all Key Panels with the Genie group channel set up. If you use a separate Genie group channel of sending and receiving from one Talk channel, you can prevent these listen paths from opening on other Key Panels other than the Key Panel that creates the Talk path. The wireless Beltpack uses the Two Group function to listen to the Key Panel's transmission group channel (this can be used as an ISO channel in the wireless Beltpack), and creates a Talk path to the Key Panel's receiving group channel (this can be used as an IC channel in a wireless Beltpack).
Click the Genie group channel **(6)** row icon in the Talk channel **(3)** column to set the Destination as the Genie group channel. If you separate the Talk (Tx) group from the Genie group channel selected here, select another Talk (Tx) group from the Tx group in the figure above.

Talk to GLR4 Line: Double click each Talk channel icon **(3)** to set the 'Talk to GLR4 Line'.
If you want to create a Talk/listen path with Line input and output on a Line Router GLR4, select 'Talk to GLR4 Line' and click the Key Panel **(5)** (specified as a Line Router) and Line **(7)** row icon together in the Talk channel **(3)** column.

Line audio routing on the Line Router GLR4

The Line audio routing is the function that provides full-duplex communication by connecting the input and output audio of a Line to specific Key Panels or Genie group channels, without setting up on the Talk channel. The Line audio routing can be used effectively on the Line Router GLR4.

GLR4 master mode provides the ability a new function to use five Genie group channels without the connection of a Base Station (BS1000, BS850). With this feature, the Ethernet Beltpack IBP10 can be connected to GLR4, and you can configure the wired system with GLR4, Key Panels and IBP10. Wire-only systems can also be configured using Key Panels.

On the GLR4, the setting to send Line input audio to the Key Panels (Destinations)

Icons **(10)** created by the Line Router are displayed in purple colors.

To select the destinations that receive input audio from each Line of GRP4, click the Key Panels **(5)** or Genie Group Channels **(6)** row icons in the Line audio routing column **(4)** (Line A ~ Line D). You can select Key Panels and Genie group channels as the Destination.

On the Key Panel, the setting to create a talk/listen path to the GLR4 Line (Destination)

Select Source Key Panel **(10)**. Double click the Talk channel icon **(3)** to set the 'Talk to GLR4 Line'. In the Talk channel **(3)** column, click the Line Router (Destination) **(5)** and Line **(7)** row icons.

If it matches the Line audio routing **(4)** information set on the GLR4, the Talk/listen paths between Line of the GRP4 and Key Panel will work normally.

Line audio routing on the Key Panel

On the Key Panel, Line input/output audios can be connected to Genie group channels (and Key Panels) without setting them on the Talk channel. You can set up to five Genie group channels and Key Panels on the Line (4-Wire).

Key Panel provides the same Line audio routing function as Line Router GLR4. In addition to Line audio routing, Line Router GLR4 also provides the ability to use Genie group channels without a Base Station and provides Line audio feed.

Note: On a Line Router or Key Panel, you can send and receive Line audio to 128 Key Panels simultaneously per Genie group channel. Apart from connecting to Genie group channels, you can specify up to 20 additional Key Panels to send and receive Line audio simultaneously.
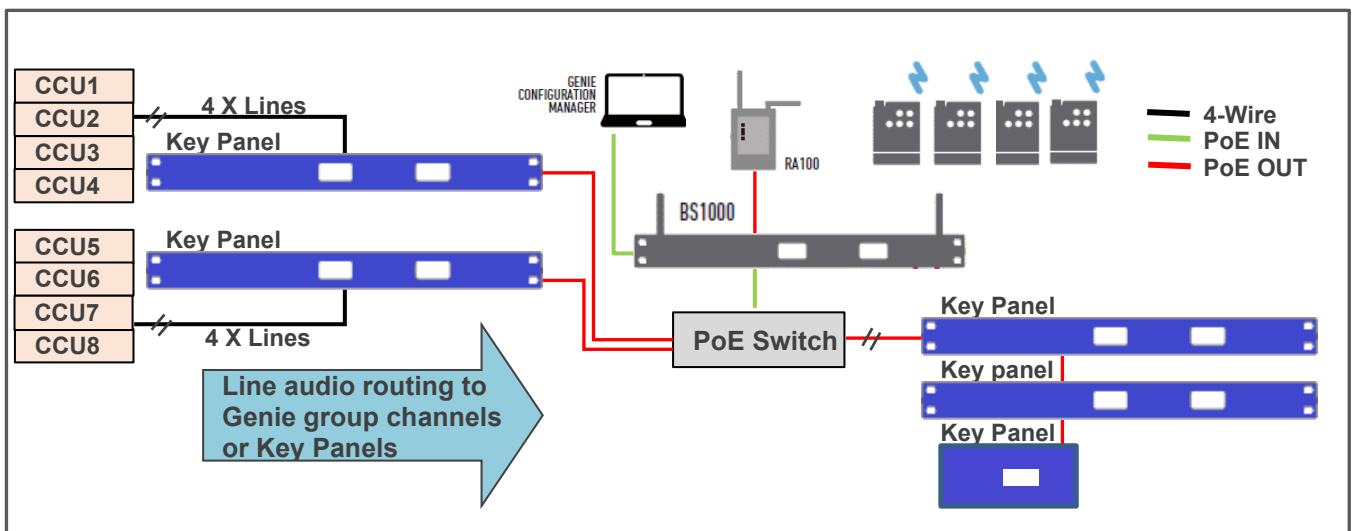
If you specify more than 20 Key Panels and use them, you can connect them to a separate Line Router or Key Panel.

On the Key Panel GRP8-12V, there is one limitation when specifying Key Panels to transmit and receive Line audio.

● If you send and receive Line audio from Source GRP8-12V to the Destination (Key Panel), you cannot hear the Line audio being routed on the Source GRP8-12V. This means that you cannot set that the Line (Line being routed) to the Talk channel on the Source GRP8-12V.

**Note:** From Version 3705 of GRP8-12V, there is no such limitation.
**Note:** Key Panel GRP16, GDP16, GRP32 do not have this limitation.

Set IFB (Callers)

Click a source Key Panel **(10)** and click the IFB row icon **(12)** in the Talk channel **(3)** column to set each Talk channel to the IFB (Caller). Source Key Panel **(10)** icons set to IFB destination appears green. In the Talk channel **(3)** column, click the IFB destination (Key Panel) **(5)** row icon. Click the IFB/DIM **(8)** icon to set the Program audio dim level at the IFB destination. On the IFB destination, Program audio is dimmed to the level set here. With these settings, the Talk channel is set to the IFB (Caller) and pressing Talk key creates the IFB audio path.

When a Talk channel is set to IFB (Caller), the Talk channel label is displayed in inverted text in the Key Panel's Normal menu, and the Talk key LED is lit amber.

If Resend Audio is set on the IFB destination, you can adjust the listen level of the IFB (caller) channel to monitor the listen audio status of the IFB destination.

IFB operations using Line Router GLR4
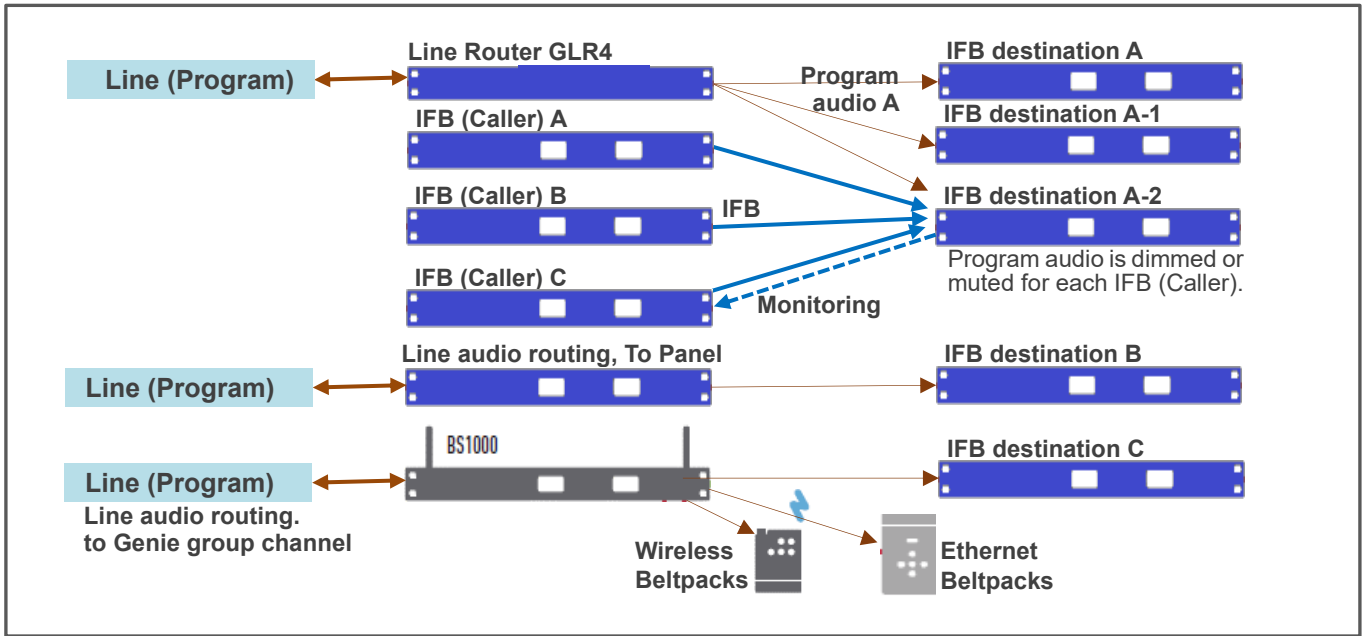
The input/output audio on the GLR4 Line can be connected to all IFB destinations or Genie group channels. Program audio can be transferred directly to the Genie group channel by connecting to the Base Station BS1000 (or BS850). If you are using a Line connection to BS1000, the IFB dim level applies to Genie group channels, so you can use the wireless Beltpack BP850 as an IFB Caller or IFB Destination (Receiver). You can also use the IFB receiver WR850 as an IFB Destination.
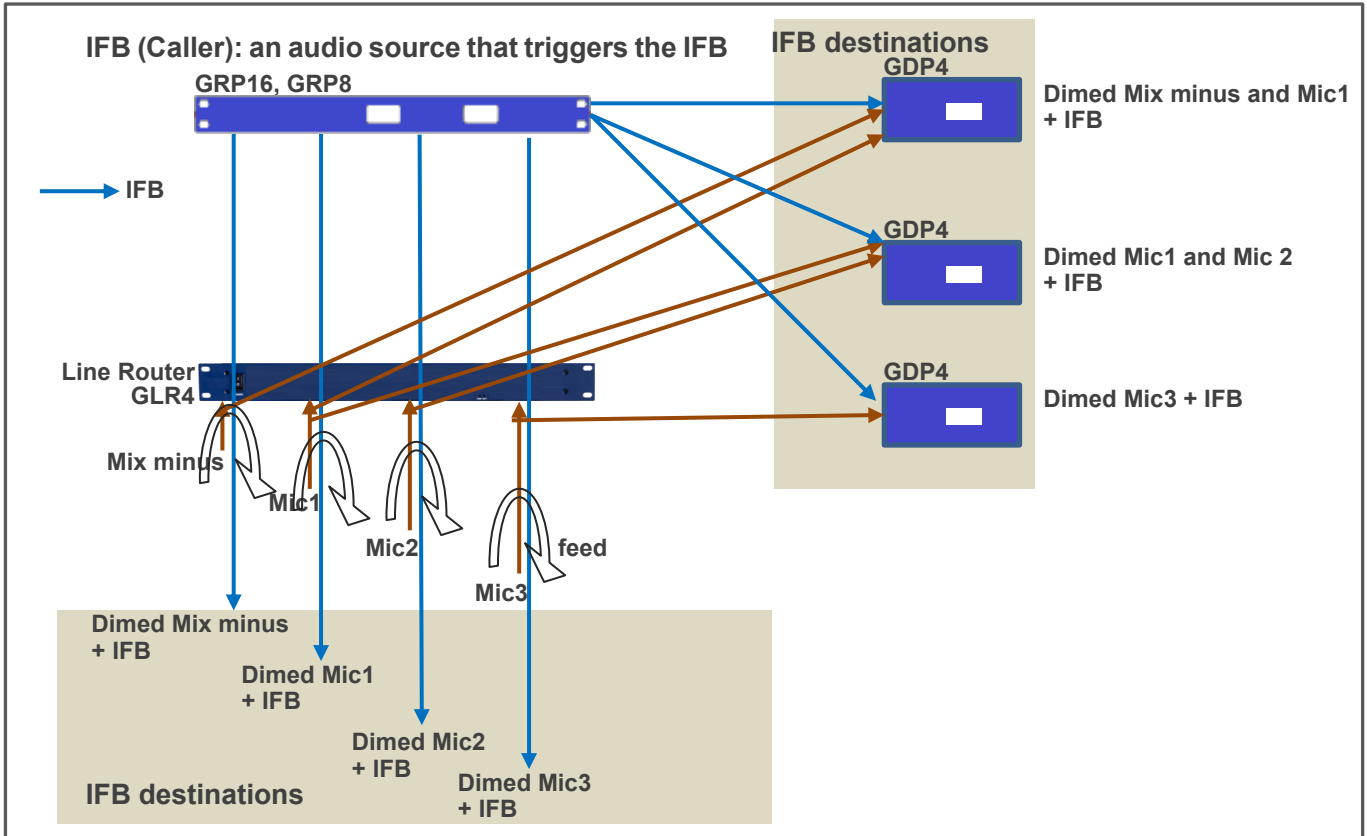
By setting the Talk channel on the IFB destination, you can do different types of IFB configurations. Line input audio from the Line Router GLR4 can be sent back to the Line output. Even so, IFB dim level applies to the Line output audio.

When the Program audio is sent to the Genie group channel
Use Program input by connecting to the Genie group channel of the BS1000. It can be sent to any destinations, wired and wireless. In addition, all wired and wireless devices can transmit IFB audio to the Genie group channel. You can also send IFB audio to a Line where Program audio is connected.

    IFB settings on the Base Station BS1000 (This has been applied to BS1000 Version 4030)
    Connect Program audio to the Line of the BS1000.
    You can specify the Genie group channel and Dim level for IFB in the GCMV2' setting for the Base Station BS1000. If the IFB path is created to the Genie group channel set to FB source (Program, Mix minus etc.), the Program audio is adjusted to the set level and mixed with IFB audio. This feature allows you to use a wireless Beltpack as IFB (Caller) or IFB destination.
   **Note**: The IFB dim level or mute function for the Genie group channel ignores the settings on IFB Destination (Key Panel) and behaves according to the settings of the BS1000.

IFB on the BS1000
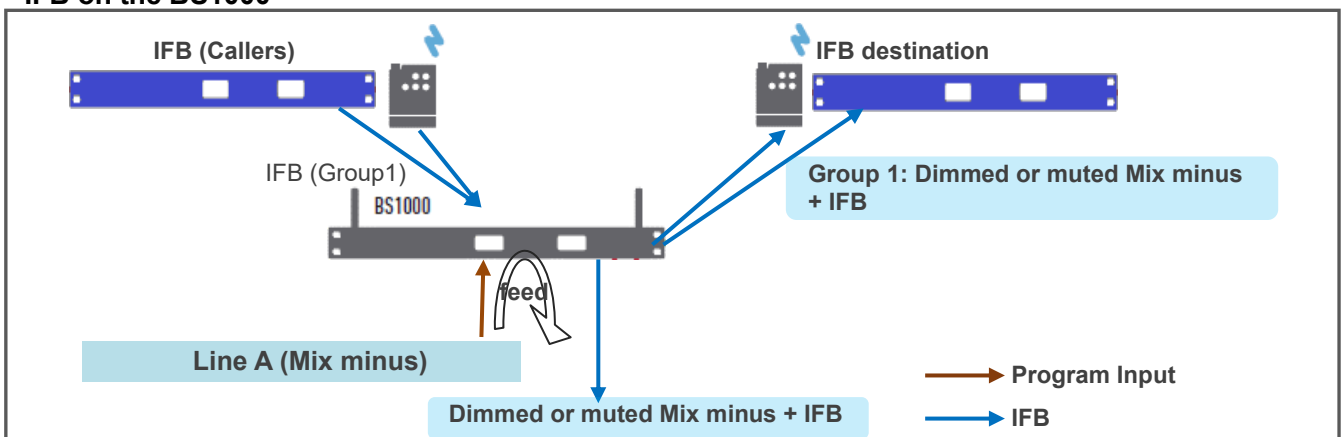
For information for the IFB settings on the BS1000, refer the BS1000 settings in the GCMV2 User Manual. In the BS1000 settings, if you select the Line Feed and a Genie group channel that applies the IFB, the Program audio (Mute or dimmed) and Genie group channel are mixed and output to the Line.

Examples of the wireless IFB
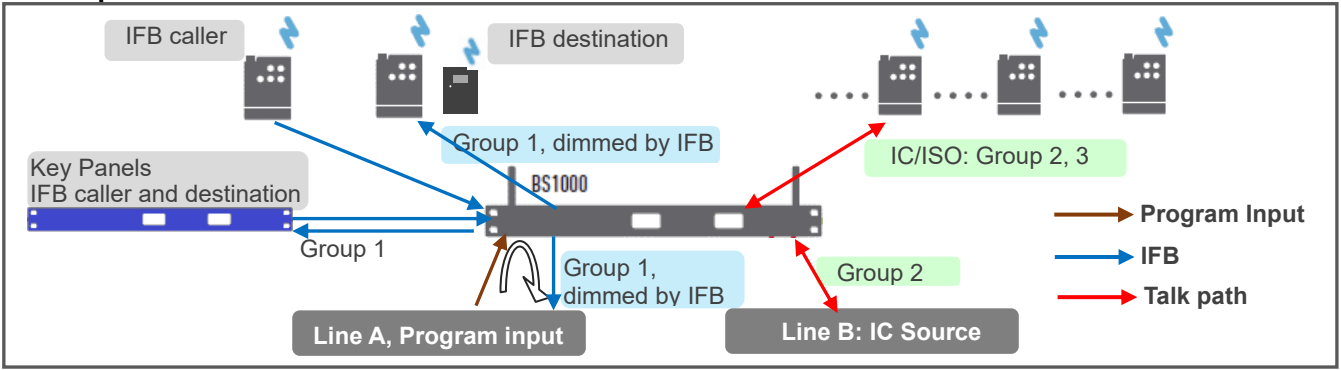
If Program audio is connected to a Genie group channel, you should not connect the Program audio to a Line on the Key Panel or Line Router GLR4. In this kind of the connection, the dim level or mute feature for the Program audio does not apply to Genie group channels. You should connect the Program audio to the Line of the BS1000.
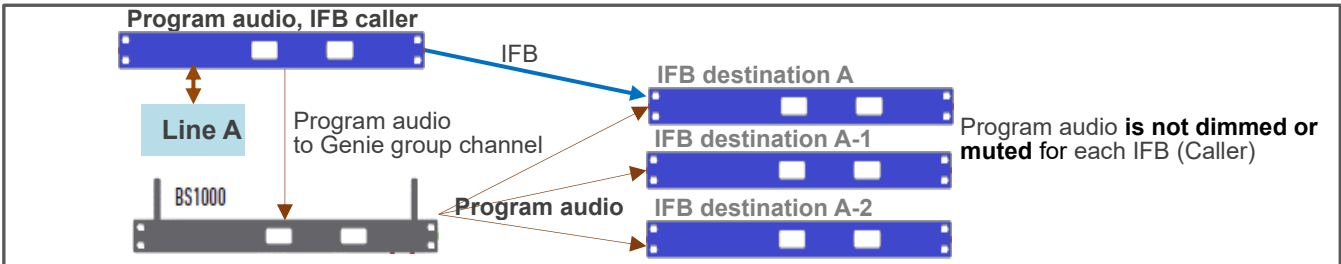
◆ **Pair (Write) to the Key Panel:**

Right-click the device icon (B) to select this. Only connect each Key Panel to your PC one at a time, right click on the Key Panel icon at the center of the screen and select the Write (Pair). Do not run a pair (write) if more than one device is connected. The same settings are paired to multiple devices and do not work properly. Once paired (Write), the Upgrade feature can be used even when multiple Key Panels are connected.

Note: For the Key Panels, only one current Page selected in the Panel key screen is paired to the Key Panel.

◆ Set the WAN Links:

Set WAN Link

NetWork (1) (2)

Label	Static IP	MAC	Local IP	Subnet Mask	Gateway	Firmware Ver.
WAN1			192.168.0.201	255.255.255.0	192.168.0.1	

RX PORT-1	RX PORT-2	RX PORT-3	RX PORT-4	RX PORT-5	RX PORT-6	PC IP	PC PORT	WAN PORT
7001	7002	7003	7004	7005	7006	192.168.0.234	2001	7000

Link Channels (3)

	Channel 1				Channel 2		
Destination WAN INFO		Source Line	Destination Line	Destination WAN INFO		Source Line	Destinatin Line
WAN2	Channel1	Line A	Line A	WAN2	Channel2	None	None

(dropdown: None, WAN1, **WAN2**, WAN3, WAN4, WAN5, WAN6)

	Channel 3				Channel 4		
WAN INFO	Source Line	Destination Line		Destination WAN INFO		Source Line	Destination Line
Channel3	None	None		WAN3	Channel4	None	None

	Channel 5				Channel 6		
WAN INFO	Source Line	Destination Line		Destination WAN INFO		Source Line	Destination Line
None	None	None		None	None	None	None

I/O Levels (4)

Line A		Line B		Line C		Line D	
Send (Out)	Receive(In)	Send (Out)	Receive(In)	Send (Out)	Receive(In)	Send (Out)	Receive(In)
3	5	3	5	3	5	3	5

Panels to be connected (5)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112
113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128

(Left side icons: WAN1, WAN2, WAN3, WAN4, WAN5, WAN6, Read Connection Status (10), Update Panels (9))

(Bottom buttons: Confirm (6), Write (WAN Link) (7), Update (WAN Link) (8))

Select a WAN Link and set the label: (1)
Register and display labels on WAN Link icon.
When you click each WAN Link icon **(1)**, the setting window for that device appears on the right side of the screen.
When you click the Read connection status icon **(10)**, the connection status of the WAN Link is displayed in color-coded circle on the icon.

Set Network: (2)
Network settings for WAN Link.

Set the Link channels: (3)
- A WAN Link offer six full-duplex channels. For each channel, select the WAN Link (Destination) you want to connect to in the drop-down menu. You can select different WAN Links (Destinations) for each channel.
  The Key Panel automatically selects WAN-Link's unused channel (Source). If you are configuring a mesh network between WAN Links, select Destination channel number in the drop-down menu.
- When connecting the Line (4-Wire) of the WAN Link (Source) to the Line of the WAN Link (Destination), select a Line in the drop-down menu. These Lines are used by connecting to the 4-Wire of a Base Station or Intercom device.

  Using the Genie group channels
- The WAN Link is used by connecting with Base Stations (such as BS1000, BS850, BS750) using four Lines (4-Wire).
- If communication between wireless Beltpacks is required, connect the Lines (4-Wire) of the WAN Link to the Base Station. Then assign Genie group channels to the connected Lines.
- One Genie group channel (or Line connection) occupies one full-duplex channel of the WAN Link. The 128 wireless Beltpacks connected to the Base Station can be connected to this WAN Link channel.
- Other intercoms other than Genie system can also be connected to WAN Link Lines.

Set the I/O levels of WAN Link Lines (4-Wire): (4)
Set the level of the Line input and output.

Select Key Panels that connect to a WAN Link: (5)
Select the Key Panels that you want to connect to the WAN Link (Source).

Confirm (6)
Click the confirm icon to save your settings and end editing.

Write (Pair) settings to the WAN Link (7)
When pairing each WAN Link for the first time, you only connect one WAN Link to your PC to perform Write (Pair).
After you write (Pair) to a WAN Link once, you can update **(8)** even if multiple devices are connected.

!!! Note: When pairing each device for the first time, only one device should be connected to the LAN port on the PC to perform pairing. When two or more devices are connected and paired, all devices have the same settings, so they do not operate normally.

Update settings to the WAN Link (8)
Update the modified settings to the WAN Link.

Update WAN Link settings to the Key Panels: (9)
When you click the Update Panels icon **(9)**, the screen below appears. Click the Update icon **(A)** to update the WAN Link settings to the Key Panels. The updated state is displayed in a color-coded circle on each Key Panel icon **(B)**.
    The color-coded circle, depending on the status:
        Need Pairing (Amber): The settings have been edited. Indicates the condition that needs to be updated.
        Paired (Yellow): The settings have been updated with the device.
        Inactive (Gray): Indicates that none of the edited settings are present.
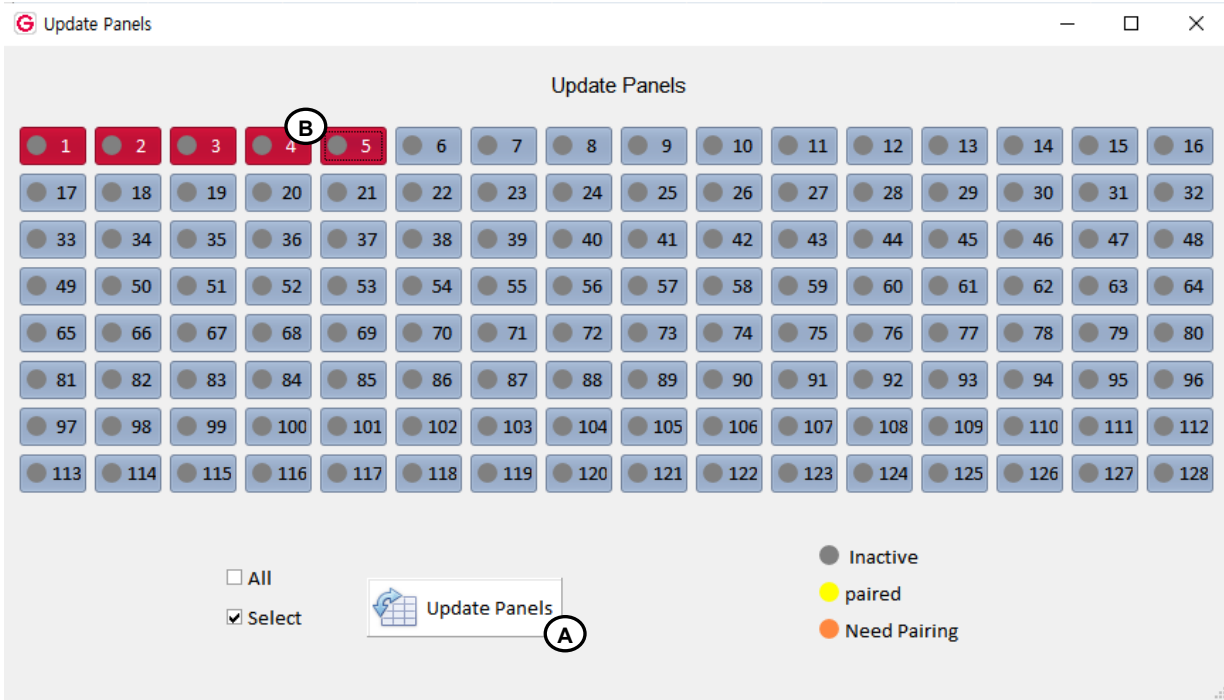

Read connection status: (10)
Click the Read connection status icon to check the connection status. The connection status of the WAN Link is displayed in color-coded circle on the icon **(1)**.

Router configuration
While it is difficult to describe the steps required to set up all available routers to work with WAN Link, the router's capabilities are usually the same, so the same recommendations apply for basic connectivity, security, and port forwarding and must meet specific requirements.

◆ **Checking the connection status:**

Install all the Key Panels and check it on the Monitor & RF Control screen.

Section 3: Monitoring & RF Control
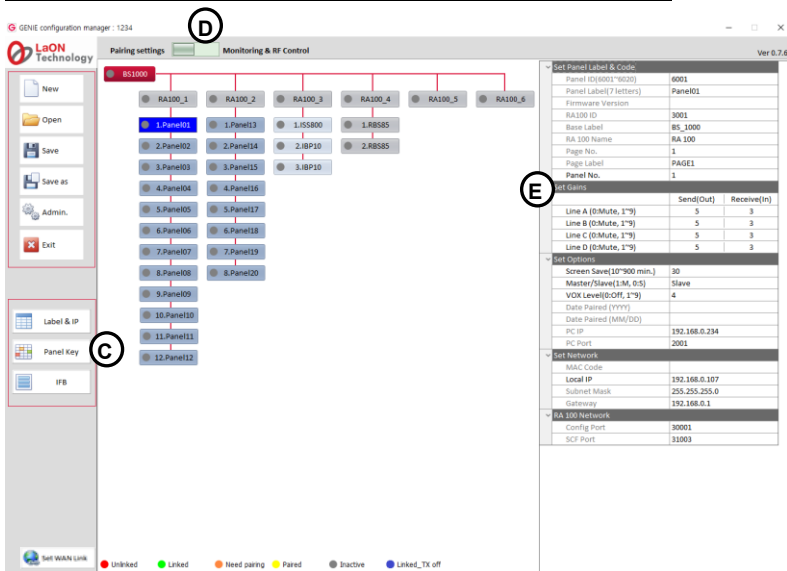
Icon at the top of the screen (D)
You can select the required function by selecting the icon left or right.

Pairing settings: A screen is displayed for creating devices and editing settings.

Monitor & RF Control: The Monitoring screen is displayed.

Icon colors, depending on the status of each device
Appears at the bottom of the screen.

Unlinked (red): Indicates that the device is not connected.

Linked (green): Indicates that the device is connected.

Need Pairing (Amber): Settings have been edited, indicating a condition that needs to be paired.

Paired (Yellow): The settings are paired with the device.

Inactive (Gray): Indicates that none of the edited settings are present.

Linked_Tx_off (Blue): Indicates the state in which wireless transmission is off while the device is connected.

Select the Monitor & RF Control icon, the monitoring screen is displayed. Some items can be paired by modifying them immediately.

Read Connection status (C)
Click the Read connection status icon at the lower left corner of the screen to gather the current connection status.

On the screen below, if you collect the connection state only once and display it on the screen, select Manual check. If you collect the connection every 10 seconds and automatically display it on the screen, select Auto refresh.
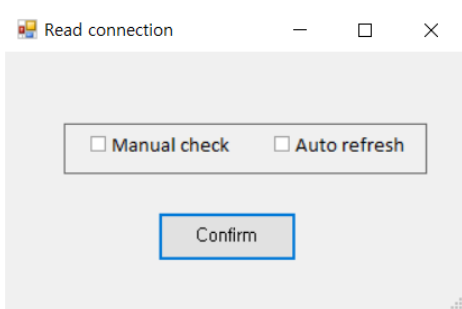
BP Monitoring (C)
Click the BP Monitoring icon at the lower left corner of the screen to gather the current status of the wireless Beltpack. Displays the collected information at the right side of the screen.

Shows the Remote Antenna, Repeater, or Base Station ID that each wireless Beltpack is connected to. It also shows RSSi, battery and microphone levels for each wireless Beltpack.

IBP Monitoring (C)
Click the IBP Monitoring icon at the lower left corner of the screen to gather the current status of the Ethernet Beltpack. Displays the collected information at the right side of the screen.

Shows the Remote Antenna, Repeater, or Base Station ID that each Ethernet Beltpack is connected to. It also shows microphone levels for each Ethernet Beltpack.

Modify the settings

When you right-click on each device (Base Station, Remote Antenna, and Repeater) icon at the center of the screen, the setting window for that device appears.

Here, you can modify the settings and then update them to the selected device.
You can modify the following items:

RF Control
RF On/Off
Turn off Base Station or Remote Antenna or Repeater radio transmission
Select RF off if you do not need to transmit and receive radio waves for each device.
On the Remote antenna or Repeater that have been stopped radio transmission, the power LED flashes green.

Tx Attenuation Control(dBm):
Attenuate radio transmission power
If it is required to attenuate the radio wave to avoid RF interference, use this item to attenuate radio transmission power of each device.
To attenuate the radio transmission power, select one of the following: -3dB, -6dB, -9dB, -12dB.
0dB: Do not attenuate, -3dB attenuation, -6dB attenuation, -9dB attenuation, -12dB attenuation

Set RF Channel ID
Automatic
When you select Automatic, the RF band is automatically selected.
1~30
Select from 1 to 30: If you set an RF band ID, the Base Station uses the RF band that is set.
RF band ID: See RF bands Table.
Upload
When you click the Upload icon, the modified settings are immediately updated on that device.
Note: If you do not click the Upload, it does not apply to that device.

RF Scan Data
Rescan
At the current location where each device is installed, RF bands are scanned again to collect RSSI (Received Signal Strength Indication) data. The RSSI data for all RF bands collected is displayed on the screen. The lowest RSSI is the best RF band to use.
Sorting out
All collected RSSIs can be sorted in large or small numbers. If you select Automatic from the Select RF channel (0: Auto, 1-29) in the GCMV2 settings, each device automatically selects the RF band with the least RSSI.
RF band ID: See RF bands Table.

All modified settings in this settings window must be re-paired on the Pairing setting screen. If you do not pair again, the modifications will not be stored on each device, and if you turn off the power, the modifications will be lost.

The RF band ID used by wireless devices is displayed on each device icon.
For example, RA100-08 or BS1000-08: 08 is the frequency ID in use.

Check WAN Link connection status
You can check it in the settings screen of the WAN Link.

Read connection status: (10)
Click the Read connection status icon to check the connection status. The connection status of the WAN Link is displayed in color-coded circle on the icon **(1)**.

Section 4: Glossary

Talk channel: If Genie group channel or Line to be connected is set to the Talk key, this Talk key is called the Talk channel.

Genie group channel: A function provided by the Genie Base Station (BS1000 or BS850), a group that allows more than one person to have full-duplex conversations at the same time.
In a Genie group channel, the operator communicates with all members of a group at the same time. Then, when a group member responds by pressing the Talk key, the audio path
 is passed to all members simultaneously. Up to 10 members of one group can speak to all other members at the same time. And all members can listen these conversations at the same time.

Genie Base Station: Genie Base Station BS1000 or BS850

Group key: Set up multiple members (such as Key Panels, Line, and Genie group channels) on one Talk key, enabling simultaneous call with all set devices. the operator communicates with all members of a Group key at the same time. Then, when a Group key member responds by pressing the Talk key, the audio path is passed to all members simultaneously. Up to 8 members of one Group key can speak to all other members at the same time. And all members can listen these conversations at the same time.

Line audio routing: A function that provides full-duplex communication by connecting the input and output audio of a Line to specific Key Panels or Genie group channels, without setting up on the Talk key.

Key Panel, Panel: An intelligent IP intercom device connected to a Genie system.

IFB: Interruptible Foldback: This is commonly used in television news and live events. The term foldback refers to the sending of a program audio/feed or other audio mix. By sending these audios back to the broadcast host, the broadcast host can monitor himself and also monitor mixed audio from other hosts and other sources. Broadcast hosts only listen to foldback audio with small earphone. The Director shall interrupt these foldback audio to give instructions to the broadcast host on air or to inform him of any changes to the program. To this end, the Director uses a Talk channel set to IFB to interrupts the foldback audio.

Source: In this manual, the term source refers to a Key Panel that sends audio signal. A Key Panel to which audio signal is transmitted is called a Destination.

Destination: In this manual, a device such as a Key Panel to which audio signals are sent. A Key Panel from which audio signals are sent is called a Source.

Program, FB (Fold Back) audio: A separate audio source that is fed into the intercom channel. For example, in a live event, program audio is a live audio.

Label: A Label is up to seven alphanumeric names that identifies a source, destination, Key Panel, Line, or group channel. Labels appear on the Key Panel display.

Partyline: A wired shared communication system based on 2-wires. A Partyline is a group of intercom ports which can always talk and/or listen to each other.

Line: A communications system where the path is different for talk and listen. In electrical pathways there are, in fact, four wires (Input and output paths). Line is 4-Wire balanced.

Sidetone: The sound of the Key Panel operator's voice is literally heard on his earphone.

Call signal: A call signal is an electronic signal sent from one Key Panel to another. A call signal can be audible and/or Vibration. Typically, a call signal is sent to get the attention of a Key Panel operator who may have turned down their intercom speaker's volume level or removed their headset.

Talk/listen (full-duplex) audio path: Duplex communication allows simultaneous two-way conversations, that is one person can interrupt the other.

Ethernet Synchronization: This function eliminates inter-interference by simultaneously transmitting and receiving all devices connected to one Master Key Panel with Ethernet.

Ethernet: Ethernet is a family of computer networking technologies commonly used in local area networks (LAN), metropolitan area networks (MAN) and wide area networks (WAN).

Pair: Key Panels are registered to the GCMV2 over the LAN. This pairing process allows Key Panels to recognize each other and an own cryptic code will be given for the corresponding system.

Rack Unit (RU): A standard unit of measure used when dealing with electronic equipment racks. 1 RU = 1.75" (44.45 mm). For example, a particular piece of equipment is described as being 3 RU in height. This means that it is 5.25" (3 x 1.75") in height. Detailed information on the specification of standard electronic equipment racks can be found in EIA RS-310-D.

Daisy-chain PoE Line1, Line2: Provides Daisy-chain connection function to supply data and power from PoE to another PoE Line. PoE Line1 and Line2 provide the ability to use the input power from the PoE and supply the remaining power to the other Line. Only use the network switch according to the standard PoE specification when connecting the network switch to the Daisy-chain Lines.

Thank you.

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