GENIE Key Panels

GENIE Rack Panel GRP8
GENIE Expansion Panel GXP12
GENIE Desktop/Wall Panel GDP4
GENIE Line Router GLR4
GENIE WAN Link GWL

Converged Intercom System, 5Ghz wireless + IP Key Panels

GENIE Panels User Manual (Version V1210601)
(Upgraded Version for WAN Link, 20 channels/20 keys)

LaON Technology

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Important Safety Instructions

- Read these instructions
- Keep these instructions
- Heed all warnings
- Follow all instructions
- Do not use this apparatus near water
- Clean only with a dry cloth
- Do not block any ventilation openings. Install in accordance with manufacturer's instructions
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat
- Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has 2 blades with one wider than the other. A grounding type plug has 2 blades and third grounding prong. The wider blade or the 3rd prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet
- Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles and the point where they exit from the apparatus
- Only use attachments/ accessories specified/ supplied by the manufacturer
- Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus combination to avoid injury from tip over
- Unplug tis apparatus during lightning storms or when unused for long periods of time
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped
- Do not attempt to modify this product. Doing so could result in personal injury and/ or product failure

NOTICE

Illustrations, figures and images of this publication are only for explaining equipment's operations and functions and may roughly reflect the actual equipment.

Contact the designated distributors or retailers to avoid erroneous interpretations or language translations that may cause equipment malfunctioning.

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Section 1: Introduction

GENIE is an interoperable 5Ghz wireless + IP Key Panel system.
Genie Key Panel

- **'Matrix-free' IP network intercom system**
- **Peer-to-peer communications, Group keys**
- **Interoperability with Genie group channels**
- **Line connections and Line audio routing**
- **Various configuring IFBs**

Genie Panels are 'matrix-free' IP network intercom system. It is also designed to be used in conjunction with Genie, an integrated system of IP intercoms and wireless Beltpacks. The Genie Panels provide various audio paths such as the peer-to-peer talk/listen paths and group key, interoperation with Genie group channels, Line connections, Line audio routings and configuring IFBs. By the interoperation between Genie and Genie Panels, Genie provides an integrated 'matrix-free' IP networking intercom solution that comprises IP intercom, wireless devices and Panels.

Genie Panel provides redundant power design powered by PoE (Power over Ethernet) or two 48 VDC PSUs. This DC power source is used as primary power if PoE is not available, or as redundant power with PoE. It provides daisy-chain connections between Panels using PoE, which transmits both data and power. These special features allow for the use of cat-5e STP cables to easily wire and install complex systems with a minimal workload.

And the GCMW (Genie Configuration Manager-WAN) supports for an efficient and integrated management of the system by its easy setup of the configurations and various monitoring functions with full visibility.

WAN Link
WAN Link is a device that connects Genie Panel and Genie wireless devices over the WAN or the Internet. The intercoms other than Genie devices can also be used with 4-Wire connections.

Panel versions that can be connected to WAN Link
The Panel can be connected to WAN Link starting with the version listed below.
Genie Rack Panel GRP8: Version V3330
Genie Desk Panel GDP4: Version V0730

Versions lower than those described above are available for WAN Link connections after a firmware upgrade.

GCMW (Genie Configuration Manager WAN)
GCMW is a software for PC that can set up WAN Link. GCMW can set up and monitor all Genie devices and WAN Link.
Note: GCM does not support WAN Link settings.

1.1 Overview

Genie Panels

Model	Description	Talk key	4-Wire	Expansion I/O	Daisy-chain PoE	PoE In	Relay	Opto Input	Format	Power Redundancy
GRP8	Rack Panel	8	4	1	2	1	2	2	1RU	2PSU+(3xPOE)
GXP12	Expansion Panel	12		2					1RU	2 x (12VDC)
GDP4	Desktop/Wall Panel	4				1			Desktop, Wall	PoE
GLR4	Line Router		4		2	1			1RU	2PSU+(3xPOE)

Genie Panel Talk keys

Description	GRP8	GDP4	GXP12 (Expansion)
Using the Expansion Panel	1	X	Daisy-chain
Talk keys	8	4	12
Talk keys with one Expansion Panel	20	X	X
Talk keys (Shift)	+8	X	X
Pages	8	X	X
Talk channels in one Group key	8	8	X

Panel main features

Set the Talk keys
Talk keys communicate with the destinations using one of the following settings:

- Genie group channels of the Genie Base Station (BS1000 or BS850)
- Peer to Peer: One Panel
- Group key: Up to eight Panels or Genie group channels, Lines (4-Wire)
- Four Lines (4-Wire) of the Panel or Line Router
- IFB destinations: IFB functions such as IFB members, IFB (Callers), IFB dim levels, Monitoring, etc.

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Features that can be added to Talk key

- Two relays and two opto-isolated inputs
- Forced Listen, Auto Listen
- Tx group

Shift Talk keys (16 Talk keys in one Page)

While listening to 16 Talk channels (Master + Shift), press the Shift button to change to another eight Talk key labels without interruption.

Eight Pages

Each Page consists of twenty Panels and five Genie group channels (BS1000 or BS850).

Line Router and Line audio Routing

- Line Router GLR4's Input and output audios from the Lines (A, B,C,D) can be routed to Genie group channels or Panels.
- Genie group channels can be used as wireless and wired IFBs by connecting the BS1000 Line to Foldback Audio.

GPIO

Two relays, two opto-isolated inputs, expansion Panel I/O and AUX D.
Up to two Expansion Panels can be connected by daisy-chaining.
AUX D provides an unbalance audio input and output functions. When the relay and AUX D are set on the Talk key, you can press the Talk key to communicate with the Walkie-talkie.

Line A, B, C, D

Line Input / Output ports are provided to secure seamless connections with 4-wired intercom systems, external audio devices etc.

Ethernet synchronizations

Ethernet synchronization avoids RF interference, packet loss, delay, and jitter between devices. Ethernet synchronization applies to all devices which are connected on the Ethernet.

GCMW (Genie Configuration Manager-WAN) for setting and monitoring

With GCMW, users can pair and set each device over the Ethernet connection and monitor the connectivity status of each device. In the monitoring function, the battery and microphone level of the wireless Beltpacks, and the RSSI (Received Signal Strength Indication) of each Antenna in its place are displayed.

1.2 Panel Configurations

GENIE + Genie Panel

GENIE	Genie Panel	GENIE + Genie Panel
IP intercom with wireless devices	IP Key Panels	IP intercom with wireless devices IP Key Panels
Eight Talk keys	Twenty Talk keys	Twenty Talk keys
Five Genie group channels per Base Station	Peer to peer, Group keys	Five Genie group channels, Peer to peer, Group keys
Wireless IFB	IFB for Panels	Wireless IFB + IFB for Panels
4 Lines(4-Wire/2-Wire) Line audio routing to Genie group	4 Lines(4-Wire) Line audio routing to the Panels	4 Lines(4-Wire/2-Wire), Line audio routing to the Panels and Genie groups
	Expansion Panel I/O	Expansion Panel I/O

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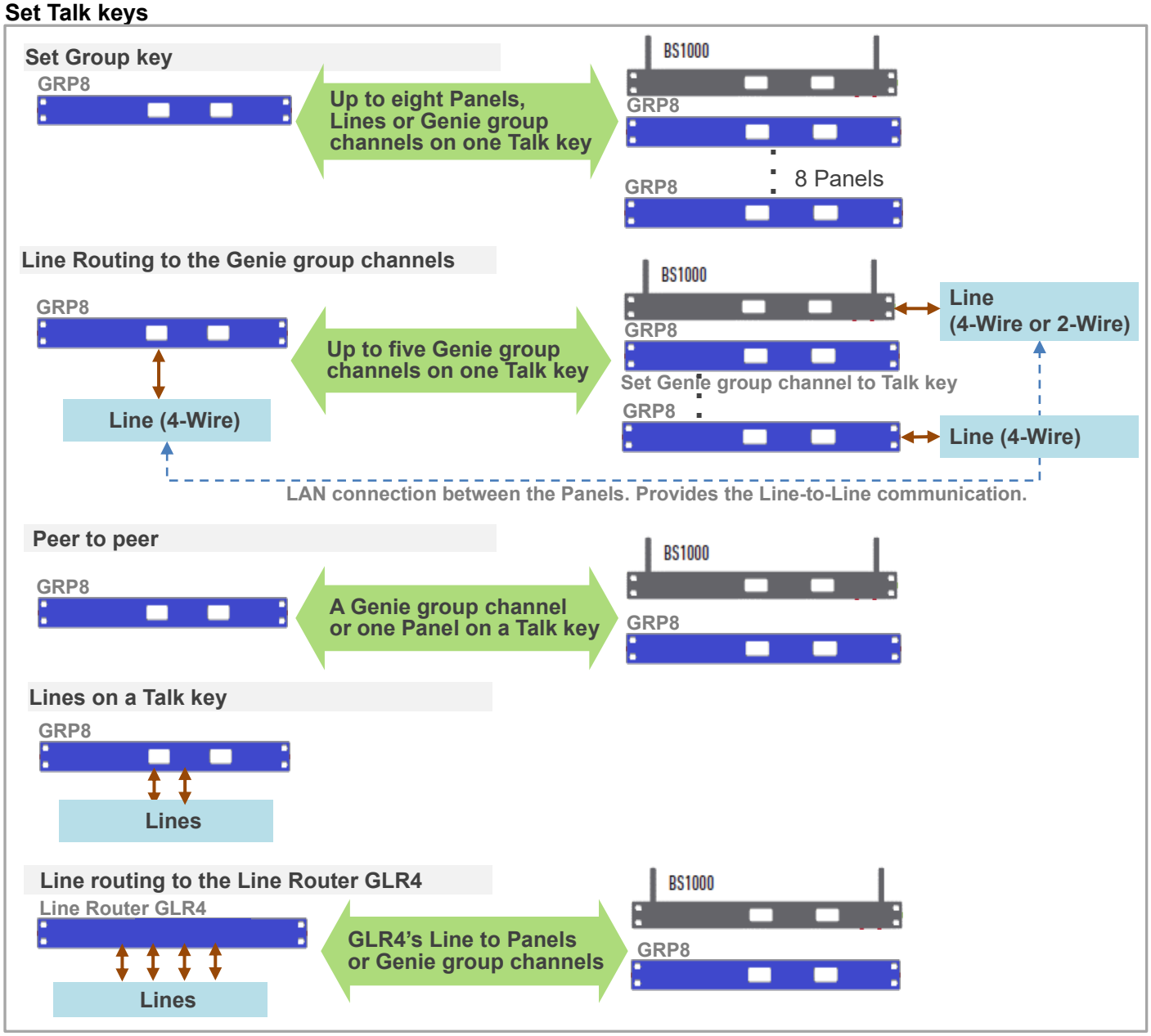
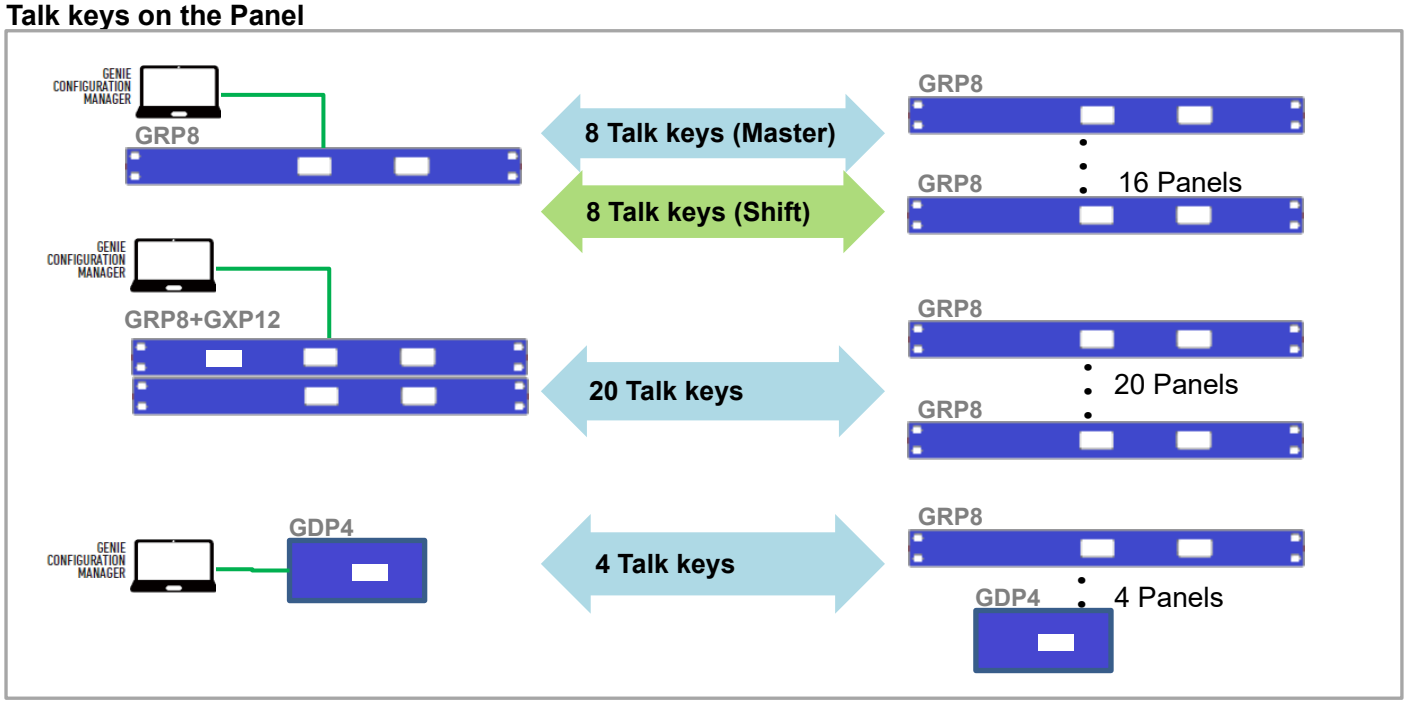
Set Talk keys



Talk keys on the Panel



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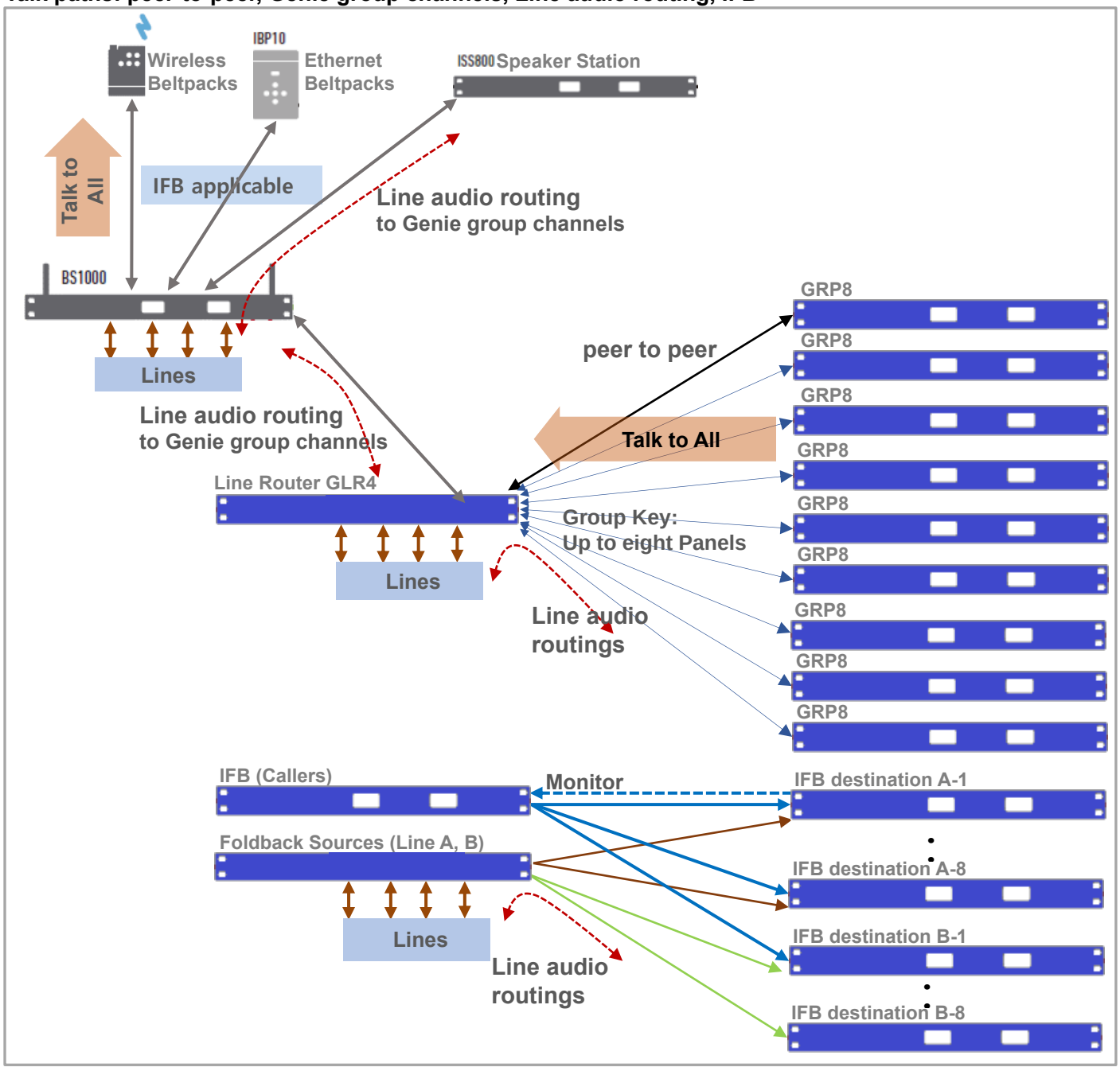
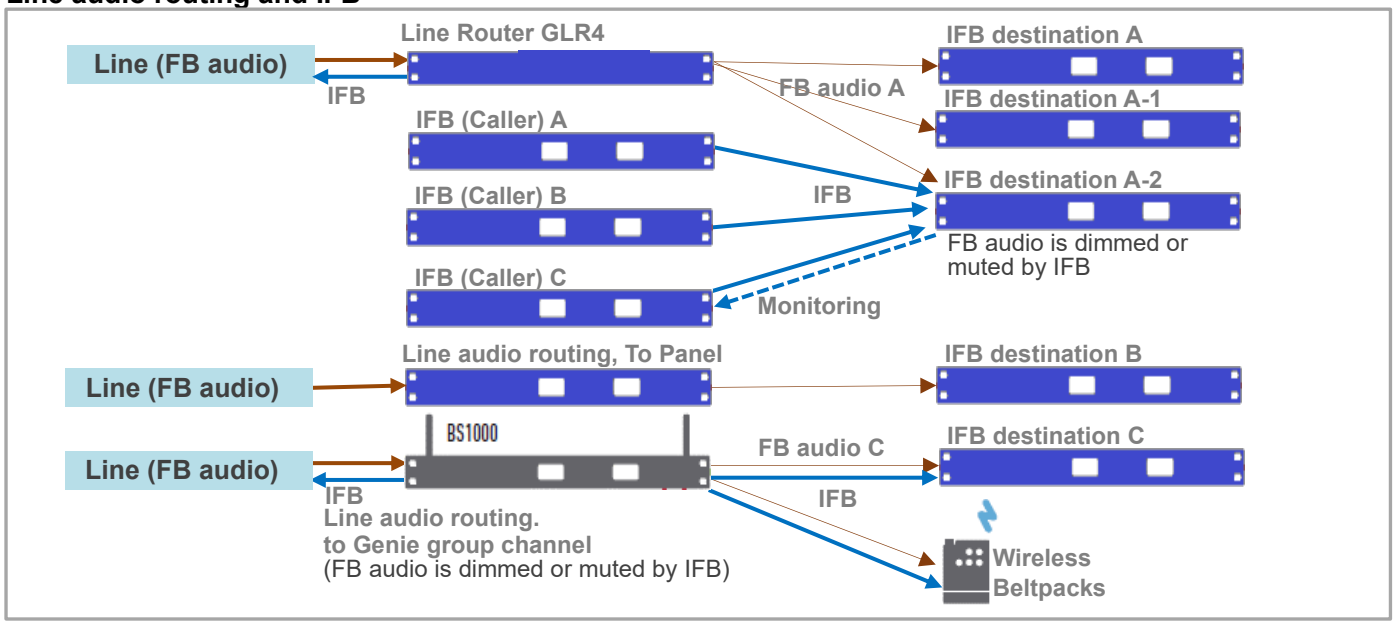
Talk paths: peer-to-peer, Genie group channels, Line audio routing, IFB



Line audio routing and IFB



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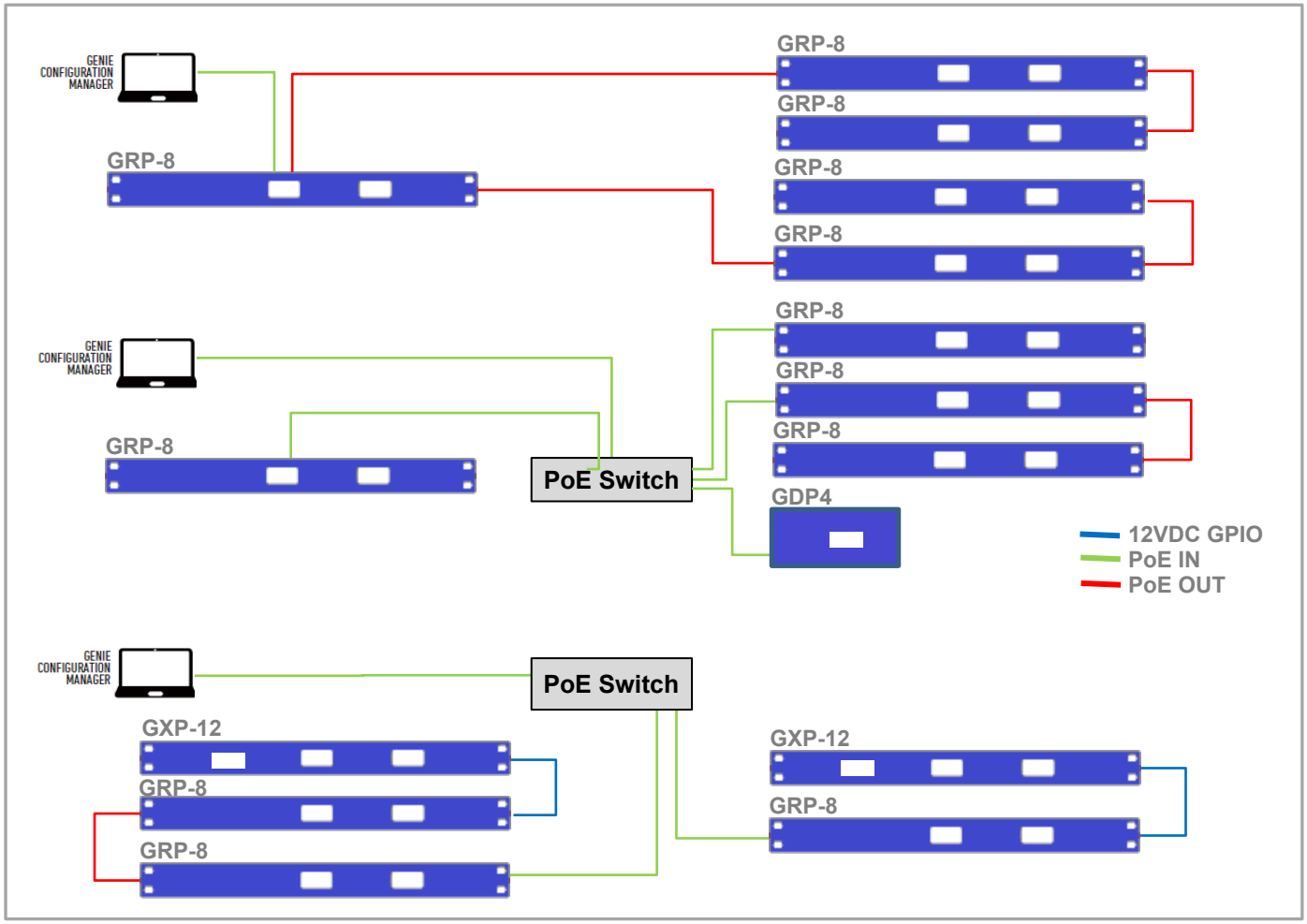
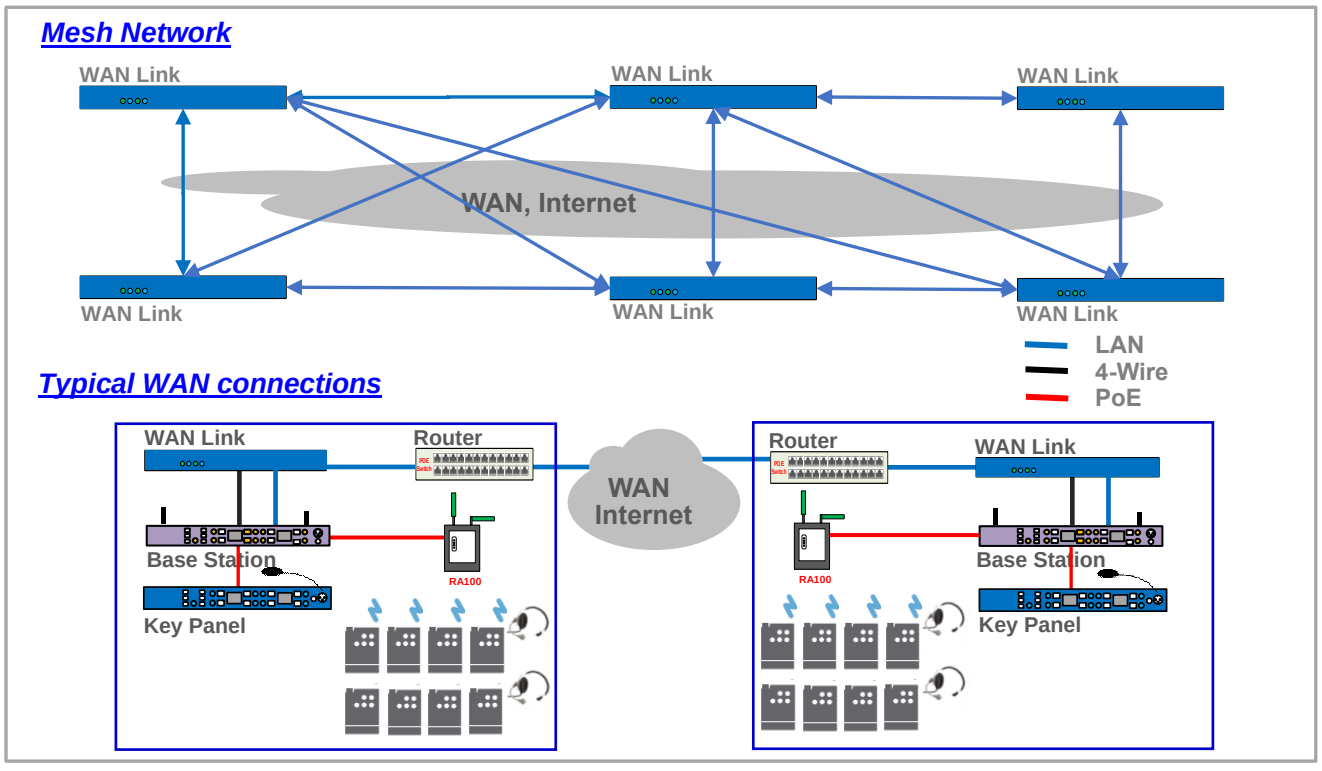
Panel connections



WAN connections

WAN Links establish a robust mesh network when transporting audio. Six WAN Links can be connected to any other WAN Link. Communication is possible between the wireless Beltpacks of Base Stations connected to the Line (4-Wire) of each WAN Link. Peer to Peer communication is also possible between the Key Panel connected to any WAN Link. For more information, see WAN Link User Manual.

Genie Rack Panel GRP8: Version V3330, Genie Desk Panel GDP4: Version V0730
Versions lower than those described above are available for WAN Link connections after a firmware upgrade.



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Section 2: Product overview

2.1 Panel equipment

Genie Rack Panel GRP8 equipment

48-56VDC 2.5A Power Supply
(One more is available as an option)

- Rear panel: 4 Lines (4-Wire), Two relays and two opto-isolated inputs, Expansion I/O with 12VDC, PC Programming (Firmware), PoE In, Two daisy-chain PoE (PoE standard power and data), 2 Power input 48VDC
- Front panel: Power switch, Loudspeaker, Gooseneck Mic, Headset connector (6pin Mini-Din Receptacle), Master Volume with Push to Select, Mic/SPKR/Menu/Shift/Page and TTA buttons, 8 Talk keys, 8 Volumes with push to call, 2 OLED displays

Genie Expansion Panel GXP12 equipment

11.4-12.6VDC 3.33A Power Supply

- Rear panel: PC Programming (Firmware), 2 Expansion I/O with 12VDC (RJ-45), 12VDC
- Front panel: Power switch, Master Volume with Push to Select, 12 Talk keys, 12 Volumes with push to call, 3 OLED displays

Genie Desktop/Wall Panel GDP4 equipment

Wall Mount Kit (Optional)

- Right panel: PoE In, Headset connector (6pin Mini-Din Receptacle)
- Front panel: Loudspeaker, Gooseneck Mic, Master Volume with Push to Select, Menu button, 4 Talk keys, 4 Volumes with push to call, OLED display

Genie Line Router GLR4 equipment

11.4-12.6VDC 3.33A Power Supply

- Rear panel: 4 Lines (4-Wire), PC Programming (Firmware), PoE In, Two LANs, 2 Power input 12VDC
- Front panel: Power switch, Status LEDs

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WAN Link equipment

11.4-12.6VDC 3.33A Power Supply

- Rear panel: 4 Lines (4-Wire), PC Programming (Firmware), PoE In, Two LANs, 2 Power input 12VDC
- Front panel: Power switch, Status LEDs

Headsets and gooseneck microphones

LSH-S125D (Dynamic)

LMH-125D (Dynamic)

LMH-10 (Dynamic)

LNH-20D (Neckband, Dynamic)

PTE-850 (Electret)

GM8 (7.5inch, Electret)
GM26 (17.5~26inch, Electret)

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2.2 Menu maps

Genie Configuration Manager-WAN (GCMW)

Menu	Setting window	Descriptions
Pairing	Panels and all Genie devices	Set and pairing
Monitoring	Panels and all Genie devices	Monitoring

Genie Rack Panel GRP8 menu

Normal menu	Main menu	Sub menu 1
Display Panel labels.	**Screen 2:** Display Panel label, Paired date, Page#, Linked Base Station's label, Master/Slaver/IFB destination, Firmware version **Screen 1's items are as follow**	
Each Channel Listen level	**Set Gains:** Set the levels	**GN Mic:** Gooseneck microphone level **HS Mic**: Headset microphone level **A In**: Line A input level **A Out**: Line A output level **B In**: Line B input level **B Out**: Line B output level **C In**: Line C input level **C Out**: Line C output level **D In**: Line D input level **D Out**: Line D output level
	Set Panel: Set the Panel	**GN ELECT DYN:** Select gooseneck Mic as Electret or Dynamic **Call Tone On Off:** Enable or disable call tone. **LowCut Off -3 -6:** Reduce the low frequency -3dB or -6dB. **VOX Level #:** Set the VOX level. **Latched Talk** **1 2 3 4 5 6 7 8**. **9 0 1 2 3 4 5 6** **7 8 9 0 :** Set the latch options for 20 Talk channels **Sidetone Option** **Track Non-Track:** Set sidetone Tracking or non-tracking **Screen Save ###:** Setting the display off timeout, Range: 10~900 minute **Master on Off;** Set Master Panel **Talk1 Talk2** **Talk3 Talk4** **Talk5 Talk6** **Talk7 Talk8** **Talk9 Talk10** **Talk11 Talk12** **Talk13 Talk14** **Talk15 Talk16** **Talk17 Talk18** **Talk19 Talk20 :** Displays the Group key settings
	Set Expansion	**Expansion Pair** **GXP12 1 2** **LINK O X:** Pair with the expansion Panels

Genie Desktop/Wall Panel GDP4 menu

Normal menu	Main menu	Sub menu 1
Display Panel labels.	Display Panel's label, Paired date, Linked Base Station's label, Master/Slaver/IFB destination, Firmware version Press Set to display the following items.	
Each Channel Listen level	**Set Gains:** Set the levels	**GN Mic:** Gooseneck microphone level **HS Mic**: Headset microphone level
	Set Panel: Set the Panel	**GN ELECT DYN:** Select gooseneck Mic as Electret or Dynamic **Call Tone On Off:** Enable or disable call tone. **LowCut Off -3 -6:** Reduce the low frequency -3dB or -6dB. **VOX Level #:** Set the VOX level. **Latched Talk** **Talk1 Talk2** **Talk3 Talk4:** Set the latch options for the main Talk channels. **Sidetone Option** **Track Non-Track:** Set sidetone Tracking or non-tracking **Screen Save ###:** Setting the display off timeout, Range: 10~900 minute **Master on Off;** Set master Panel

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Section 3: Installing Genie Panels

3.1 Installation procedure

Installation procedure is as follows

1. Configure and pair Panels using GCMW (Genie Configuration Manager-WAN).
2. Connecting Panels.
   See 4.1 Connecting the Panels.
3. Monitoring each device
   Use the GCMW to check the status of each Panel, test and modify its settings. See GCMW user manual.

The GCMW configures and pairs each Panel over an Ethernet connection. It also provides monitoring capabilities such as the connectivity status of each Panel. To install the system, Panels must be set and paired using the GCMW.
See Section 6, Genie Configuration Manager-WAN.

3.2 Notes on Installation

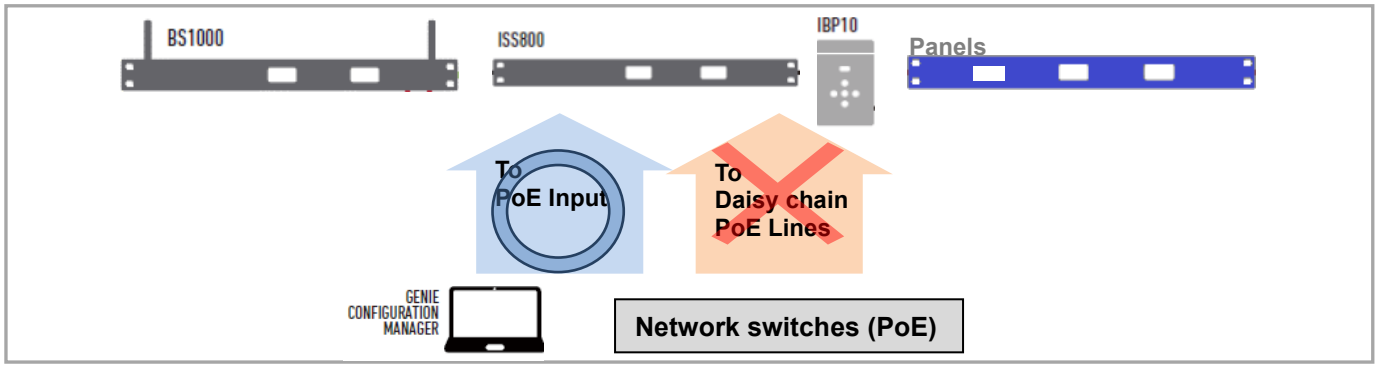
Talk/listen audio paths when connected with Base Station (BS1000, BS850)
When the Panels (or Line Router GLR4) use Genie group channels, a Remote Antenna gives you simultaneous access to up to 10 talk/listen audio paths (full-duplex, Shared with wireless Beltpacks). When setting a Line audio routing on the Panel (or Line Router GLR4) to the Genie group channel, it occupies one talk/listen paths of the Remote Antenna. In addition, if you set the Genie group channel on the Talk key of the Panel and open the Talk path, it occupies one talk/listen path of the Remote Antenna. The Talk/listen path between Panel does not occupy the Genie group channel. In the system design, Remote Antennas should be placed according to the maximum simultaneous use of these Genie group channels.

Network Switch Specifications
Network switches and Panels can also be connected and used. Use the network switch with **1 Gbps or 100 Mbps and 802.3 at (PoE)** specification. When connecting more than one Panel using a daisy chain, use the daisy chain PoE Line1, Line2 on the Genie device.

LAN Cable
Use a LAN cable higher specification/quality than CAT-5e STP (Shield Twisted Pair). The use of the UTP cable can cause several problems depending on the installation environments.
!!! Note: Make sure that you **use straight cable for the LAN. Cross cables can cause serious damage** to the device.

Caution needed on the connection between network switches and Panels.
Each network switch has **different power mode** depending on the type of device. Therefore, make ensure the connection as below.

- Make sure that the network switch is connected only to the **'PoE In' port of Panel and do not connect it to Daisy-chain PoE Line ports.** Otherwise, the Panel may possibly be **damaged** causing the stop of PoE power output and etc due to a cut in the fuse.
- **In case of GDP4:** The GDP4 Panel provides only one 'PoE In' port, which is used to connect to network switches and other Panels.
- **PC connection for GCM program:** When connecting a PC to execute the GCM program, make sure you connect it to PoE In port of Panel. You can also connect the PC to the network switch.



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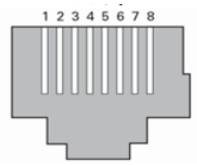
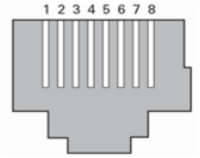
PoE input (PoE In) Pinout



Pin	Wire Color	Mode B		Mode A		Power
		Data	Power	Data	Power	
1	White/Orange	TxRx A +		TxRx A +	DC +	+PWR
2	Orange	TxRx A −		TxRx A −	DC +	+PWR
3	White/Green	TxRx B +		TxRx B +	DC −	-PWR
4	Blue	TxRx C +	DC +	TxRx C +		+PWR
5	White/Blue	TxRx C −	DC +	TxRx C −		+PWR
6	Green	TxRx B −		TxRx B −	DC −	-PWR
7	White/Brown	TxRx D +	DC −	TxRx D +		-PWR
8	Brown	TxRx D −	DC −	TxRx D −		-PWR

Daisy-chain PoE Line1, Line2

Provides Daisy-chain connection function to supply data and power from PoE to another PoE Line.
PoE Line1 and PoE Line2 provide the ability to use the input power from the PoE and supply the remaining power to the other Line. Make sure that you use only those network switches that follow the standard PoE specification when connecting the network switch to the Daisy-chain PoE Lines.



Pin	Wire Color	Mode B		Mode A		Power
		Data	Power	Data	Power	
1	White/Orange	Rx +		Rx +	DC +	+PWR
2	Orange	Rx −		Rx −	DC +	+PWR
3	White/Green	Tx +		Tx +	DC −	-PWR
4	Blue		DC +	Unused		+PWR
5	White/Blue		DC +	Unused		+PWR
6	Green	Tx −		Tx −	DC −	-PWR
7	White/Brown		DC −	Unused		-PWR
8	Brown		DC −	Unused		-PWR

!!! Note: Without the use of standard PoE specification network switches, **devices connected to the Daisy-chain PoE Line can be severely damaged.** Connect the network switch to the PoE In port.

!!! Note: Do not connect the PoE Daisy-Chain Lines to the PoE port on **the BSCCK550 cascade kit (for BS750, BS550, BS250)**.

Power-on Sequence

- **Power on the network switch** directly connected to the Genie Base Station or Master Panel first, and then power on the Genie devices.
- For use in conjunction with a Genie Base Station, only the Genie Base Station shall be set to Master. If Panels are used only, set one Panel to Master. Always power on the device that is set to Master first.

Verify and Monitor with GCMW program after Installation

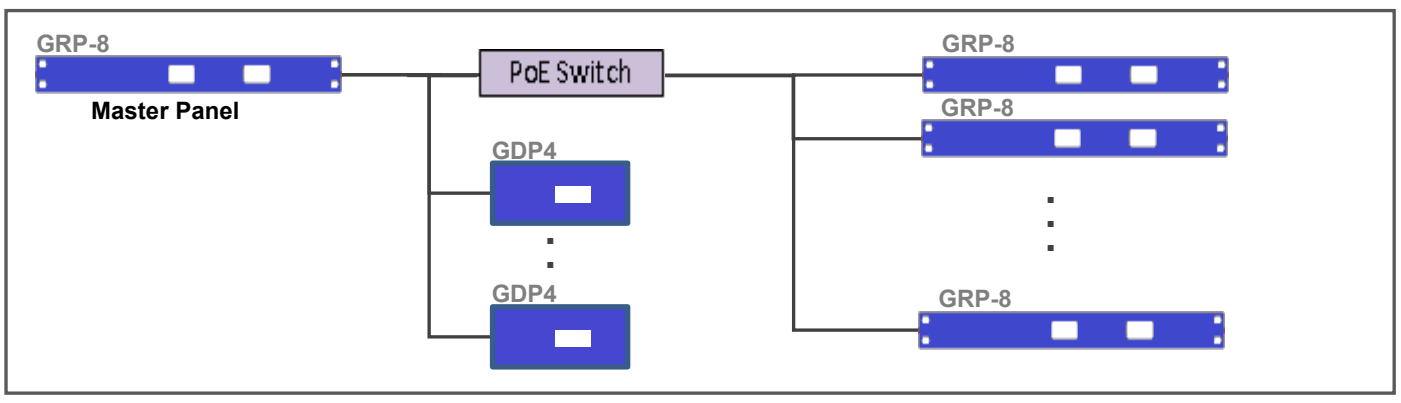
- Check out the LAN connection status of the devices.

Other Recommendations

- When connecting external equipment such as Matrix by using a 4Wire Line of the Panel, make sure you perform the ground connection or ground cut to avoid any possible audio noise.
- Install the Ethercon connector on the LAN cable.

Ethernet Synchronization

Ethernet synchronization is applied between devices connected to the Ethernet, avoiding radio interference, packet loss, delay, and jitter among all devices being connected to the Ethernet. To ensure that these Ethernet synchronizations apply to all devices, in the case of a system only with Panels (not connected to the Genie Base Station), one of the Panels must be assigned as a Master. When connecting Panels to **Genie Base Station set as Master, all Panels must be set to Slave**. With only these settings, Ethernet synchronization is applied to all Panels connected to the network.



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Section 4: Operating the Panels

4.1 Connecting the Panels

Genie Rack Panel GRP8: Front panel

Genie Desktop/Wall Panel GDP4: Front panel

1. Power switch of the GRP8
2. Loudspeaker, 3 watts
3. Mic on/off button (LED indicator)
4. Loudspeaker on/off button (LED indicator)
5. Menu/Exit/Lock button (LED indicator)
6. Master Volume, Push select DIM, CUT, Sidetone
7. Shift button (LED indicator)
8. Page button (LED indicator)
9. TTA: Talk to All button (LED indicator)
10. CH1 Volume, push to call, setting when in menu mode
11. CH1 Talk key (LED indicator)
12. CH3 Volume, push to call
13. CH3 Talk key (LED indicator)
14. Display screen 1
15. CH2 Talk key (LED indicator)
16. CH2 Volume, push to call, operation when in menu mode
17. CH4 Talk key (LED indicator)
18. CH4 Volume, push to call
19. CH5 Volume, push to call
20. CH5 Talk key (LED indicator)
21. CH7 Volume, push to call
22. CH7 Talk key (LED indicator)
23. Display screen 2
24. Network status LEDs (Link/Active)
25. CH6 Talk key (LED indicator)
26. CH6 Volume, push to call
27. CH8 Talk key (LED indicator)
28. CH8 Volume, push to call
29. Gooseneck microphone connector (XLR3F)
30. Headset connector (6pin Mini-Din Receptacle)
31. Headset Select button (GDP4 only)
32. GRP8, Ear for rack mounting

Power switch of the GRP8

Press the Power switch on the front panel to turn on the GRP8 Panel. Normal menu will appear.

1. Loudspeaker

Loudspeaker, 3 watt, +18dBu before clipping, max level 18dB.

24. Network status LEDs (Link/Active)

Status indicators on the Panel's front panel

Link: On the Panel set to Master, the LED is lit solid green. On the Panel set to Slave, the LED flashes when receiving data.

Active: The Panel is connected to the network and the Active LED flashes when audio data is exchanged.

29. Gooseneck microphone connector (XLR3F)

Pinout

Pin	Description
1	Ground
2	Audio +
3	Audio -

Select the type of gooseneck microphone from the 'GN ELECT DYN' item in the Set Panel menu. ELECT stands for electret microphone, and DYN stands for dynamic microphone.

The gooseneck microphone and loudspeaker will automatically switch off when you connect the headset. Even when the headset is connected, press the SPK button to re-enable the loudspeaker. When a headset is connected, the Mic button controls the headset microphone only. Do not connect the headset when using the gooseneck microphone.

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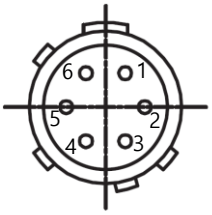
30. Headset connector (6pin Mini-Din Receptacle)

The gooseneck microphone and loudspeaker will automatically switch off when you connect the headset. Even when the headset is connected, press the SPK button to re-enable the loudspeaker. When a headset is connected, the Mic button controls the headset microphone only. Do not connect the headset when using the gooseneck microphone. The headset is with 'Push-Pull Lock' type connector. Put a headset into the headset connector on the front panel of the Panel. To remove the headset, hold the entire external metal plug on the headset connector and lift it slightly up to unlock it.

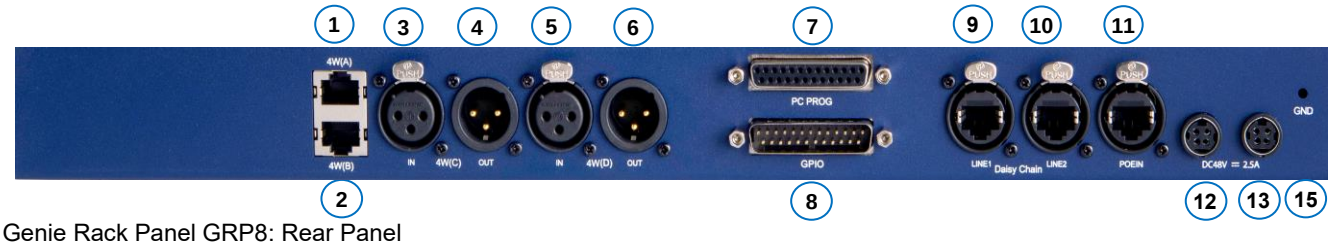


Pinout
1. Microphone VCC +2V (For electret mic.)
2. Microphone – (GND)
3. Microphone + (For dynamic mic.)
4. Push-To-Talk (PTT)
5. Earphone -
6. Earphone +

32. GRP8 Ear for rack mounting

Ear for rack mounting Panel GRP8

GRP8 rear and GDP4 right panel

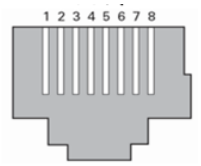


Genie Rack Panel GRP8: Rear Panel

Genie Desktop/Wall Panel GDP4: Right Panel

1. **4-Wire intercom channel A connector (RJ-45)**
2. **4-Wire intercom channel B connector (RJ-45)**

The pinout for the RJ-45 4-Wire port is following.



Pin	Wire Color	Description
1	White/Orange	No connection
2	Orange	No connection
3	White/Green	Audio out +
4	Blue	Audio in +
5	White/Blue	Audio in -
6	Green	Audio out -
7	White/Brown	No connection
8	Brown	No connection

3. **4-Wire intercom channel (C) input connector (XLR-3F)**
4. **4-Wire intercom channel (C) output connector (XLR-3M)**
5. **4-Wire intercom channel (D) input connector (XLR-3F)**
6. **4-Wire intercom channel (D) output connector (XLR-3M)**

Pin	Description
1	Ground
2	Audio +
3	Audio -

If this 4-wire Line D is used, GPIO AUX Line D shall not be used.

7. **PC PROG connector**

Firmware upgrade, 25-pin female D-type. For firmware upgrades.

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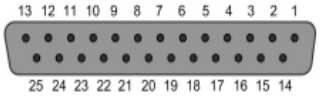
8. GPIO connector (25-pin female D-type)



Pin	Description	Pin	Description
1	Tx + (Expansion Panel)	14	12VDC + (Expansion Panel)
2	Tx - (Expansion Panel)	15	12VDC + (Expansion Panel)
3	Rx + (Expansion Panel)	16	GND (Expansion Panel)
4	Rx - (Expansion Panel)	17	GND (Expansion Panel)
5	Relay 1 (Open)	18	Relay 1 Common
6	Relay 2 (Open)	19	Relay 2 Common
7	Reserved	20	Reserved
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		

Expansion Panel
Pin1~4, Pin14~17 are used for connection with Expansion Panel. Supply 12 VDC to the Expansion Panel.

Opto-isolated Inputs
Panel 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 (pin8/21 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 Panel 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.
Assign this opto-isolated input to the Talk channels. When this input is detected, the corresponding Talk channels are activated. You can assign one opto-isolated input to multiple Talk channels. One Talk key can be assigned the opto-isolated input function with other Talk channels.

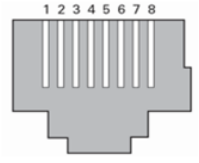
Relays
Panel provides two relay outputs.
The relay outputs enable you to use Talk channels to trigger any external device that accepts a standard contact closure. The relay can activate an external device, such as a cue light, or a walkie-talkie. All relay contacts can support 1Amp 30 VDC. Panel does not supply any power to the circuit.

The function of activating the relay pin can be set on any Talk key. When the Talk key set to the relay 1 is pressed, the relay 1 pin (pin 5,18) is activated. In the same way, pressing the Talk key set to the relay 2, activates the relay 2 pin (pin 6,19). One Talk key can be assigned the relay and opto-isolated input function with other Talk channels.

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.

9. Daisy-chain PoE Line1 connector (Ethercon RJ45, PSE)
10. Daisy-chain PoE Line2 connector (Ethercon RJ45, PSE)

Provides Daisy-chain connection function to supply data and power from PoE to another Line.
PoE Line1 and 2 provide the ability to use the input power from the PoE and supply the remaining power to the other PoE Line. Make sure that you use only those network switches that follow the standard PoE specification when connecting the network switch to the Daisy-chain Lines.



Pin	Wire Color	100Mbit, Mode B		100 Mbit, Mode A		
		Data	Power	Data	Power	Power
1	White/Orange	Rx +		Rx +	DC +	+PWR
2	Orange	Rx −		Rx −	DC +	+PWR
3	White/Green	Tx +		Tx +	DC −	-PWR
4	Blue		DC +	Unused		+PWR
5	White/Blue		DC +	Unused		+PWR
6	Green	Tx −		Tx −	DC −	-PWR
7	White/Brown		DC −	Unused		-PWR
8	Brown		DC −	Unused		-PWR

!!! Note: Without the use of standard PoE specification network switches, **devices connected to the Daisy-chain PoE Line may be damaged.** Connect the network switch to the PoE In port on the Panel.
!!! Note: Be sure to **use straight cable for LAN. Cross cables can cause damage** to the device.
!!! Note: Do not connect the PoE Daisy-Chain Lines on the Panel to the PoE port on **the BSCCK550 cascade kit (for BS750, BS550, BS250)**.

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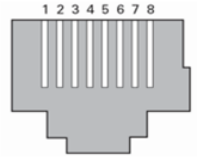
11. 100Mbps, PoE input connector (Ethercon RJ45, PD)

A Panel supplies power to itself and the daisy-chain PoE Line 1 and 2, using power from PoE In or two power input sockets. Panel uses maximum 15 watts of power. A Panel can provide up to 75 watts of power for the two Daisy-chain PoE Lines. The Panel can automatically select and use any power from the PoE In and two power input sockets. You can use these ports to configure power redundancy.
See 3.2 Notes on Installation

LAN cable must be of higher quality than CAT-5e STP. The use of the UTP cable can cause several problems depending on the installation environment. If you are using a network switch, use the **1 Gbps or 100 Mbps and 802.3 at (PoE)** specification.

!!! Note: Be sure to **use straight cable for LAN. Cross cables can cause damage to the device.**

PoE input (PoE In) Pinout



Pin	Wire Color	Mode B		Mode A		Power
		Data	Power	Data	Power	
1	White/Orange	TxRx A +		TxRx A +	DC +	+PWR
2	Orange	TxRx A −		TxRx A −	DC +	+PWR
3	White/Green	TxRx B +		TxRx B +	DC −	-PWR
4	Blue	TxRx C +	DC +	TxRx C +		+PWR
5	White/Blue	TxRx C −	DC +	TxRx C −		+PWR
6	Green	TxRx B −		TxRx B −	DC −	-PWR
7	White/Brown	TxRx D +	DC −	TxRx D +		-PWR
8	Brown	TxRx D −	DC −	TxRx D −		-PWR

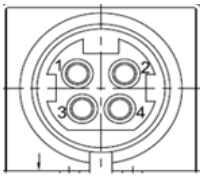
12. 48VDC 2.5A Power input connector (4-pin Din)

13. 48VDC 2.5A Power input connector for duplex (4-pin Din)

Each power input connector is 48-56VDC at a max power of 90Watt. The external PSU provides the 48VDC 2.5A required and at its input takes 100-240VAC, 47-63Hz.

A Panel supplies power to itself and the daisy-chain Poe Line1 and 2, using power from PoE In or two power input sockets. Panel uses maximum 15 watts of power. A Panel can provide up to 75 watts of power for the two Lines. The Panel can automatically select and use any power from the PoE In and two power input sockets. You can use these ports to configure power redundancy.
Plug the DC cable from the enclosed PSU into the 48VDC power input connectors (#12 or #13) on the rear panel.

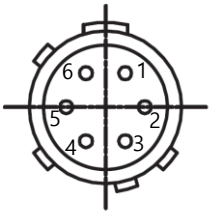
Pinout



Pin	Description
1	48VDC +
2	48VDC +
3	Ground
4	Ground

14. Genie Desktop/Wall Panel GDP4 Headset connector (6pin Mini-Din Receptacle)

The gooseneck microphone and loudspeaker will automatically switch off when you connect the headset. Even when the headset is connected, press the SPK button to re-enable the loudspeaker. When a headset is connected, the Mic button controls the headset microphone only. Do not connect the headset when using the gooseneck microphone.
The headset is with 'Push-Pull Lock' type connector. Put a headset into the headset connector on the front panel of the Panel. To remove the headset, hold the entire external metal plug on the headset connector and lift it slightly up to unlock it.



Pinout
1. Microphone VCC +2V (For electret mic.)
2. Microphone – (GND)
3. Microphone + (For dynamic mic.)
4. Push-To-Talk (PTT)
5. Earphone -
6. Earphone +

15. Chassis ground hole

Fix the screws in the chassis ground hole and use it for grounding.

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4.2 Operating the Panels

Front panel controls

Genie Rack Panel GRP8: Front panel

Genie Desktop/Wall Panel GDP4: Front panel

1. Power switch of the GRP8
2. Loudspeaker, 3 watts
3. Mic on/off button (LED indicator)
4. Loudspeaker on/off button (LED indicator)
5. Menu/Exit/Lock button (LED indicator)
6. Master Volume, Push select DIM, CUT, Sidetone
7. Shift button (LED indicator)
8. Page button (LED indicator)
9. TTA: Talk to All button (LED indicator)
10. CH1 Volume, push to call, setting when in menu mode
11. CH1 Talk key (LED indicator)
12. CH3 Volume, push to call
13. CH3 Talk key (LED indicator)
14. Display screen 1
15. CH2 Talk key (LED indicator)
16. CH2 Volume, push to call, operation when in menu mode
17. CH4 Talk key (LED indicator)
18. CH4 Volume, push to call
19. CH5 Volume, push to call
20. CH5 Talk key (LED indicator)
21. CH7 Volume, push to call
22. CH7 Talk key (LED indicator)
23. Display screen 2
24. Network status LEDs (Link/Active)
25. CH6 Talk key (LED indicator)
26. CH6 Volume, push to call
27. CH8 Talk key (LED indicator)
28. CH8 Volume, push to call
29. Gooseneck microphone connector (XLR3F)
30. Headset connector (6pin Mini-Din Receptacle)
31. Headset Select button (GDP4 only)
32. GRP8, Ear for rack mounting

3. Mic on/off button (LED indicator)

Gooseneck or headset microphone audio is activated when the LED is lit by pressing the microphone button. When the LED is turned off by pressing the microphone button again, the gooseneck or headset microphone audio is disabled.
When the headset is connected, the gooseneck microphone is automatically disabled. The audio output to the loudspeaker is also disabled. You can activate the loudspeaker (#4) by pressing the loudspeaker button again.
When a headset is connected, the Mic button controls the headset microphone only. Do not connect the headset when using the gooseneck microphone. This button is operated Momentary/Latching, Momentary is the Talk path is open while the button is pressed, the Latching opens the Talk path when the button is quickly tapped, and the second tab will release it.

Note: On the Panel GDP4 with the Headset Select button, the gooseneck microphone works even when the headset is connected. On this device, pressing the Headset Select button only operates the headset, and the gooseneck microphone and loudspeakers are not.

4. Loudspeaker on/off button (LED indicator)

The loudspeaker audio is activated when the LED is lit by pressing this button. When the LED is turned off by pressing the loudspeaker button again, the loudspeaker audio is disabled.
When the headset is connected, the gooseneck microphone is automatically disabled. The audio output to the loudspeaker is also disabled. You can activate the loudspeaker (#4) by pressing the loudspeaker button again.
This button is operated Momentary/Latching, Momentary is the Talk path is open while the button is pressed, Latching opens the Talk path when the button is quickly tapped, and the second tab will release it.

Note: On the Panel GDP4 with the Headset Select button, the loudspeaker works even when the headset is connected. On this device, pressing the Headset Select button only operates the headset, and the gooseneck microphone and loudspeakers are not.

5. Menu/Exit/Lock button (LED indicator)

Press Menu button to turn the LED on and display the Panel menus. Use the rotary control (#10: up/down, #16 left/right) for display to scroll and select menu items. Press the Menu button again to return to the Normal screen.

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Lock the Menu
Press the Menu button for 3 seconds to lock or unlock the menu. Press the Menu button for more than 3 seconds and Menu button is locked.
In the lock mode, Menu button do not work, and 'Locked' is displayed on the screen for 3 seconds when any button is pressed. Lock mode does not release when power is turned back on, and the lock status remains. Press the Menu button again for more than 3 seconds to release the lock mode.

6. **Master volume, (Press to select DIM, CUT, Sidetone)**
To increase the listen level for the loudspeaker or headphone, turn clockwise. To decrease the listen level, turn anticlockwise. With Rotary control, adjust the listen level from -11dB to +11dB. When this switch is pressed and released, it is selected in the order of DIM, CUT, and Off.
Press this switch for more than 2 seconds, and release it, and the Sidetone level menu will appear. Adjust the sidetone level using the rotary control.
Status LEDs
DIM: When the Talk key is activated, the listen level of all channels except the active Talk channel is reduced to - 6 dB.
CUT: When the Talk key is activated, the listen level of all channels except the active Talk channel is muted.
Side: Adjust the sidetone. If there is no level adjustment, the Sidetone menu returns to the Normal menu after 8 seconds, and the Sidetone LED is off.

7. **Shift button (LED indicator)**
You can toggle the key labels between the Master and Shift by tapping the shift button. In the Shift, the Shift button LED is lit green. In Master or Shift, you can listen to incoming audio from all Talk channels registered with Master and Shift. However, the Talk key LEDs only work with the Talk keys currently displayed.
Shift function within one Page.
- A Page consists of up to 20 Talk keys. Using the Shift button, you can toggle the Talk key labels within one Page (Master and Shift). You can always listen to incoming audio from all Talk channels registered with the Master and Shift, and you can create Talk paths.
- When you press the Shift button, the green LED will turn on, and the key labels for the Shift will be displayed. When pressed again, the key labels for the Master will be displayed and the green LED is turned off.

Note: Latched Talk key (in talk state) remains latched Talk key status, even when switching to the Shift or Master. In this case, the Shift button LED flashes green

Note: The Shift is only used on the GRP8 Panel and is not available on the expansion Panel.

8. **Page button (LED indicator)**
Each Page can consist of 20 programmable Talk keys. On each Page, the Talk key can be configured and set with different Genie group channels and Panels.
Press and release the Page button, Page menu appears, and the green Page LED is lit. You can select one of the eight Pages. Page numbers and corresponding labels appears on screen 1 and 2. The current Page is displayed in inverted text, and the Talk key LEDs are lit solid green. When you press the Talk key for the Page you want to select, the Panel is placed in selected Page. When Page other than the Page 1 is selected, the Page LED is lit green. It takes up to 2 seconds to change the Page.
Register Page labels using GCMW. All audio registered to Talk channels on different Pages cannot be heard on the current Page.

9. **TTA: Talk to All button (LED indicator)**
Pressing the TTA button transmits the microphone audio (create the talk path) to all Talk channels set on the Master and Shift. When the TTA button is latched, the listen level of all channels is muted, and microphone audio is automatically active either gooseneck or headset microphone. The Mic button is lit red. This button is operated Momentary and Latching, Momentary is the TTA path is open while the button is pressed, Latching opens the TTA path when the button is quickly tapped, and the second tab will release it.

10. **12. 16. 18. 19. 21. 26. 28. Talk channel T1~T8 Volume controls, and push to call (or Relay)**
Tune to increase or decrease the listen level of each channel. Adjust rotary control from -61dB to -12dB, mute. Press the rotary control for more than a second to send a call signal to the corresponding Talk channel of the Line or each device.
10. In the menu: Up/down/set. Turn the rotary control to scroll through, press to select a menu item.
16. In the menu: Left/right/set. Turn the rotary control to scroll through, press to select a menu item.
When Rotary control is pressed for more than a second, the call or Relay signals can be sent to the Talk channel. These signals can be transmitted through the WAN Link.
Call signals: Genie can transmit call signals between devices as follows. WAN Link can transmit call signals marked in blue.

	Panel	BS (Base Station)	WBP (Wireless Beltpack)	2-Wire Intercom
From Panel key to	**O**	O	O	X
From BS key to	O(Group)	X	O	O
From BS 2-Wire to	X	O	X	O

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Relay activation

The Relay can activate an external device, such as an applause light in a studio, a cue light.
Genie can activate the Relays as follows:
WAN Link can transmit Relay signals marked in blue.

	Other Panel's GPIO	Own GPIO
Panel's call switch	**O**	
Panel's Talk key		O
Base Station's Talk key or SA button		O

In the Panel key settings screen of the GCMW, set the Opto-input and Relay together on the Talk key of the Destination Panel. When you press Call on the Source Panel, the Destination Panel displays the Call signal, and at the same time the Relay is also triggered.
See Section 6, Genie Configuration Manager, Set the Panel keys

11. 13. 15. 17. 20. 22. 25. 27. T1~T8 Talk keys (LED indicator)

The attributes of the Talk key

Talk key can be set to five attributes below:

- Talk + Auto Listen
- Talk only
- Forced Listen, Auto Listen
- IFB Key
- Latching or Momentary

Talk + Listen: When programming a Panel, all Talk keys will default to Talk + Listen. This mode ensures that all Talk keys have talk/listen (full-duplex) paths with the associated Panels. The listener can simply mute the listen level by turning the rotary switch on the corresponding Talk channel.
Talk only: For each Talk key, the listen level can be adjusted and muted. For Talk only, mute the listen level on the Talk channel.
FL (Forced Listen): FL can be set on the Talk key if the listener tries to avoid missing an important call.
AL (Auto Listen): Even if you mute the Listen level, pressing talk key will act at the AL level, where the listen level is set automatically. You can also adjust listen level to enable listen.
IFB Key: Press an IFB (Caller) set to IFB key to create a Talk path to the IFB Destination. You can also monitor listening audio on the IFB Destination. The IFB key's label in the Normal menu is displayed as inverted text, and the Talk key LED is lit amber
Latching or Momentary: You can specify either the Latching or Momentary on the Talk key, Momentary is the Talk path is open while the button is pressed, Latching opens the Talk path by quickly tapping the Talk key, and taps Talk key again to release the Talk path.

Set the Talk keys

Talk keys communicate with the destinations using one of the following settings:

- Genie group channels of the Genie Base Station (BS1000 or BS8500
- Peer to Peer: One Panel
- Group key: Up to eight Panels or Genie group channels, Lines (4-Wire)
- Four Lines (4-Wire) of the Panel or Line Router
- IFB destinations: IFB functions such as IFB members, IFB (Callers), IFB dim levels, Monitoring, etc.

Add-on functions on the Talk key

- Two relays and two opto-isolated inputs
- Forced Listen, Auto Listen
- Tx group

Genie group channels

Genie group channels, which can have up to ten full-duplex(talk/listen) channels simultaneously per Remote Antenna, is provided by connecting the Panel to the Genie Base Station (BS1000, BS850). Up to five Genie group channels can be set on the Panel Talk key.

Talk/listen audio paths when connected with Base Station (BS1000, BS850)

When the Panels (or Line Router GLR4) use Genie group channels, a Remote Antenna gives you simultaneous access to up to 10 talk/listen audio paths (full-duplex, Shared with wireless Beltpacks). When setting a Line audio routing on the Panel (or Line Router GLR4) to the Genie group channel, it occupies one talk/listen paths of the Remote Antenna. In addition, if you set the Genie group channel on the Talk key of the Panel and open the Talk path, it occupies one talk/listen path of the Remote Antenna. The Talk/listen path between Panel does not occupy the Genie group channel. In the system design, Remote Antennas should be placed according to the maximum simultaneous use of these Genie group channels.

Note: Only one Genie Base Station can be set. Therefore, only five Genie group channels can be registered.

Peer to Peer: One Panel can be set on the Talk key for setting point-to-point communication path.
Group key: Up to eight Panels, Lines or Genie group channels can be set on one Talk key.

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Line: You set the Lines (4-wire) directly to the Talk key. You can hear audio input from Line, and you can press Talk key to create a Talk path to the Line output. You can set up to four Lines on one Talk key.
IFB: For detailed use examples, see Section 6, Genie Configuration Manager, IFB operations.
Relay, Opto-isolated Input
On each Talk key, the relay and opto-isolated input functions can be set together in addition to the Talk channels. Assign this opto-isolated input on the Talk keys. When the opto-isolated input is detected, the corresponding Talk keys are triggered. You can assign one opto-isolated input to multiple Talk keys. The opto-isolated input can be used to trigger Talk Keys by connecting the foot switch or other controls.
When the relay function is set on the Talk key, 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.
Set Opto-input and Relay together on the Talk key of the Destination Panel. When you press Call on the Source Panel, the Destination Panel displays the Call signal, and at the same time the Relay is also triggered. These signals can be transmitted through the WAN Link.
See Section 6, Genie Configuration Manager, Set the Panel keys
FL (Forced Listen): FL can be set on the Talk key 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 in the GCMW. The level bar of the Talk channel set to FL is shown below.


Level bar, Forced Listen Talk channel

AL (Auto Listen): (This has been applied to Version V3324 (GRP8), V0612 (GDP4)
If the listen level of the Talk channel is muted or below the AL level, pressing Talk key automatically adjusts the listen level to THE 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: If you create a Talk path from one Panel to a Genie group channel (pressing the Talk key), the listen path opens on all Panels with the Genie group channel set up. By using a setting that separates the transmitting (Tx) and receiving Genie group channels from one Talk key, you can prevent these listen paths from opening on Panels other than the Panel that creates the Talk path. The wireless Beltpack listens to the Panel's Tx group channel and creates a Talk path to the Panel's receiving group channel. On the wireless Beltpack, this Tx group can be used as ISO group channel between Beltpacks.
Talk to GLR4 Line: You can create a Talk path by specifying a Line (A,B,C,D) on the Line Router GLR4.

Line audio routing on the Line Router GLR4:
The input/output audio from GLR4 Line can be connected to all Panels and Genie group channels.

Line audio routing on the Panel:
On the Panel, Line input audio can be sent to Destinations (Genie group channels) without setting them on the Talk key. With the setting of Line audio routing, up to five Genie group channels can be connected to one Line.
For detailed use example of the Talk key settings, see Section 6, Genie Configuration Manager.

The Talk keys themselves act as status indicators. The status LEDs signal is as following.

LED state	Description	Display
Red steady	A Talk key is latched	Channel label and listen level
Green flashing slowly	Received audio above VOX level	Channel label and listen level
Solid Green	A listen path is open	Channel label and listen level
Amber flashing slowly	IFB Key received audio above VOX level	Channel label and listen level
Solid amber	IFB Key is latched	Channel label and listen level
Red flashing slowly	Either incoming call from the last caller or calling	Channel label and listen level
LED is off	Only the relay is set to the Talk key.	Label
	Talk key is not assigned.	'Not set'
	Not paired	'Not paired'
	Not linked	'Unlink'
	Channel is busy (When press the Talk key, LED is not on)	'Channel is busy'

Note: LED status for Call
In the case of an incoming call from the last caller, the LED flashes red until any key is pressed.
When making a call signal, The LED is lit solid red for 3 seconds.

24. Network status LEDs (Link/Active)
Status LEDs on the front panel.
Link: On the Panel set to Master, the LED is lit solid green. On the Panel set to Slave, the LED flashes when receiving data.
Active: The Panel is connected to the network and the Active LED flashes when audio data is exchanged.

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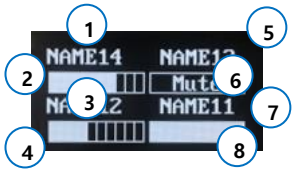
31. Headset Select button

Only the headset audio is activated when the LED is lit by pressing this button. When the LED is turned off by pressing the Headset select button again, the gooseneck microphone and loudspeaker audio is activated, and the headset audio is disabled.

Applies only to the Panel GDP4 with a Headset select button.

Menu controls

Normal menu



The labels and listen levels of the eight Talk channels are displayed on two screens. You can set when the screen automatically turns off. The display will turn off if key is not used or there is no incoming call during a set timeout period. If there is any operation of the key, the display will turn on again. The listen level of each Talk channel is controlled by each Rotary control, with each Talk path is created by pressing each Talk key.

First screen (Front panel left screen):

1: Label of the Talk channel 1
2: Listen level of the Talk channel 1
3: Label of the Talk channel 3
4: Listen level of the Talk channel 3
5: Label of the Talk channel 2
6: Listen level of the Talk channel 2
7: Label of the Talk channel 4
8: Listen level of the Talk channel 4

Turn a rotary control to increase or decrease the listen level for each Talk channel.

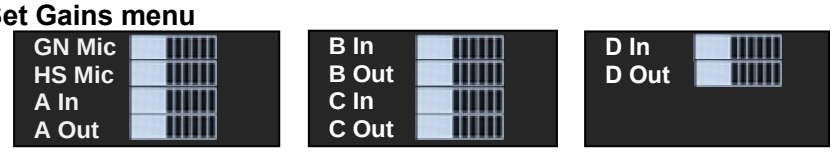
Second screen (Front panel right screen): Mark Talk channel 5 to 8 in the same way.

Main menu

You enter Menu mode by pressing and releasing the Menu button.
The Main menu appears on the first screen, and Panel label, Paired date from the GCMW, Page number currently in use, Linked Base Station label, Master/Slave/Destination (IFB), Model and Firmware version is displayed on the second screen. When the Panel is set to Master, 'Master' is displayed, and 'Slave' is displayed when set to Slave. The Panel set to the IFB destination displays 'Destination'.
In GDP4, when the Menu button is pressed, information on the second screen is displayed. The Main menu is displayed by pressing or turning the UP/Down or Left/Right rotary control.
Note: If Menu is locked, you must unlock the Menu by pressing the Menu button for 3 seconds.

For each menu, turn the right hand rotary control(#16) clockwise to scroll down the menu items and turn counter clockwise to scroll up the menu items. The menu item in the current cursor position is displayed in inverted text. Turn the left hand Rotary control(#10) clockwise to increase a setting and turn counter clockwise to decrease a setting. When you have selected a setting by rotating the left hand rotary control, press that rotary control or turn the right hand rotary control to enable the setting on the Panel.
To exit Menu mode, press the Menu button.

Set Gains menu



GN Mic:
Pre-amplifier: 40dB(dynamic), 20dB(electret)
Turn the left rotary control (#10) to set the gooseneck microphone input level from -8 dB to 0 dB (default 0 dB).
To confirm the selected settings, press right rotary control (#16) to return to the main menu or rotate to scroll to the next item.

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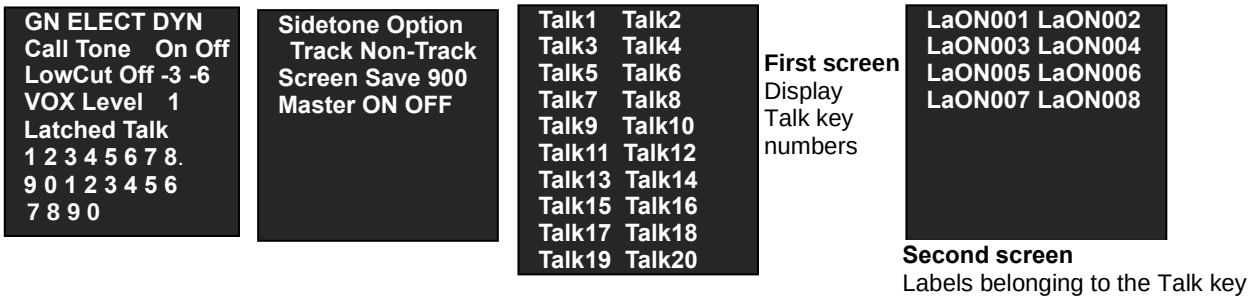
HS Mic:
Pre-amplifier: 40dB(dynamic), 20dB(electret)
Turn the left rotary control (#10) to set the headset microphone input level from -8 dB to 0 dB (default 0 dB). To confirm the selected settings, press right rotary control (#16) to return to the main menu or rotate to scroll to the next item.

A In, B In, C In, D In:
Turn the left rotary control (#10) to set the Line input levels from -20 dB to +6 dB (default 0 dB). To confirm the selected settings, press right rotary control (#16) to return to the main menu or rotate to scroll to the next item.
Note: This feature is not supported on the GDP4 Panel

A Out, B Out, C Out, D Out':
Turn the left rotary control (#10) to set the Line output levels from -20 dB to +6 dB (default 0 dB). To confirm the selected settings, press right rotary control (#16) to return to the main menu or rotate to scroll to the next item.

Note: This feature is not supported on the GDP4 Panel

Set Panel menu



GN ELECT DYN:
In the menu, select Electret (ELECT) or Dynamic (DYN) to set the type of Gooseneck microphone.
To save the selected setting, press rotary control or scroll to the next item.

Call Tone On Off:
In the Call Tone menu, select On (enable) or Off (disable). When enabled, the user can hear the tone when a call occurs. To save the selected settings, press rotary control or scroll to the next item.

LowCut off
In Low Cut menu, you can set the cutoff level of low-frequency audio such as wind noise and air conditioning. The maximum cutoff level is -6dB.

VOX Level:
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)

Latched Talk:
The user can set on the Talk key that the latch is enabled or disabled. If each Talk channel number is selected, the latch can be enabled. If the latch is disabled (Momentary) the Talk path is only open while the Talk key is pressed. If the latch is enabled, quickly tapping the Talk key will latch a key, and a second tap will release it.
Sidetone Option:
Track (default): The sidetone level will track the master volume level.
Non-track: The sidetone level is fixed to the set level.
If sidetone level is set to zero, it is muted.

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

Talk1 to Talk20:
For the GRP8 Panel, the first screen shows 20 Talk channel numbers, including the Talk keys for the Shift or Expansion. The second screen shows labels for up to eight Panels or Genie group channels belonging to the Talk key corresponding to the current first-screen cursor position.

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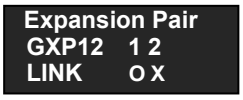
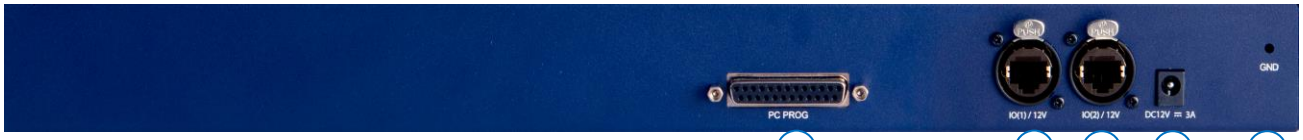
Expansion Pair menu



Pair the expansion Panels to the master Panel (GRP8).
Connect the Expansion Panel to the master Panel GPIO. In the menu, scroll to the ID number of the expansion Panel (1 or 2). Pressing the rotary control (#10) will pair the corresponding expansion Panel to the master Panel. If the pair is successful, O is displayed in the LINK row and X is displayed if it fails.

4.3 Expansion Panel GXP12

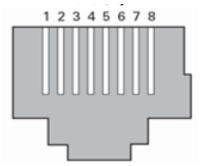
Connecting the Expansion Panel



GXP12: Rear panel

1. **PC PROG connector**
   Firmware upgrade, 25-pin female D-type. For firmware upgrades.

2. **3. Daisy-chain Expansion Input/output and 12VDC connector (Ethercon RJ45)**
   Pinout



Pin	Wire Color	Description
1	White/Orange	Tx+
2	Orange	Tx-
3	White/Green	Rx+
4	Blue	12VDC +
5	White/Blue	12VDC +
6	Green	Rx −
7	White/Brown	GND
8	Brown	GND

   Provides Daisy-chain connection function to supply data and power from the Master Panel or 12VDC inputs to another expansion Panel.
   The Expansion Panel is powered by Expansion IO and external power input and supply the remaining power to another daisy-chain Expansion IO. You can use these functions to configure power redundancy. You can connect to any Expansion IO without distinction between input and output.

   !!! Note: Connecting this Expansion IO connector with the PoE network switch can cause serious damage to the device.
   !!! Note: Be sure to use straight cables for LAN cables. Cross cables can cause damage to the device

4. **12VDC 3.33A Power input connector**
   The power input connector is 11.4-12.6VDC at a max power of 10.8Watt. The external PSU provides the 12VDC 3.33A required and at its input takes 100-240VAC, 47-63Hz.
   Plug the DC cable from the enclosed PSU into the 12VDC power input connector (#4) on the rear panel.

5. **Chassis ground hole**
   Fix the screws in the chassis ground hole and use it for grounding.

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Operating the Expansion Panel

Expansion Panel GXP12: Front panel

1. Expansion Panel CH1 Volume, push to call
2. Expansion Panel CH1 Talk key (LED indicator)
3. Expansion Panel CH2 Talk key (LED indicator)
4. Expansion Panel CH2 Volume, push to call
5. Expansion Panel CH3 Volume, push to call
6. Expansion Panel CH3 Talk key (LED indicator)
7. Display screen 1
8. Expansion Panel CH4 Talk key (LED indicator)
9. Expansion Panel CH4 Volume, push to call
10. Expansion Panel CH5 Volume, push to call
11. Expansion Panel CH5 Talk key (LED indicator)
12. Expansion Panel CH6 Talk key (LED indicator)
13. Expansion Panel CH6 Volume, push to call
14. Expansion Panel CH7 Volume, push to call
15. Expansion Panel CH7 Talk key (LED indicator)
16. Display screen 2
17. Expansion Panel CH8 Talk key (LED indicator)
18. Expansion Panel CH8 Volume, push to call
19. Expansion Panel CH9 Volume, push to call
20. Expansion Panel CH9 Talk key (LED indicator)
21. Expansion Panel CH10 Talk key (LED indicator)
22. Expansion Panel CH10 Volume, push to call
23. Expansion Panel CH11 Volume, push to call
24. Expansion Panel CH11 Talk key (LED indicator)
25. Display screen 3
26. Expansion Panel CH12 Talk key (LED indicator)
27. Expansion Panel CH12 Volume, push to call
28. Ear for rack mounting

Each Expansion Panel GXP12 provides an additional 12 Talk keys to a GRP8 Master Panel. When one GXP12 are connected to the Master Panel, the Panel consists of 20 Talk keys.

Talk channel T1~T12 Volume controls, and push to call (# 1, 4, 5, 9, 10, 13, 14, 18, 19, 22, 23, 27)
Tune to increase or decrease the listen level of each channel. Adjust rotary control from -61dB to -12dB, mute. Press the rotary control for more than a second to send a call signal to the corresponding Talk channel of the Line or each device

T1~T12 Talk keys with the indicator LED (# 2, 3, 6, 8, 11,12, 15, 17, 20, 21, 24, 26)

Refer 4.2 Operating the Panels, T1~T8 Talk key.

When connecting one expansion Panel to the GRP8 Master Panel, the Talk keys on the expansion Panel are specified as Talk keys 9 to 20.

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Section 5: Genie Line Router GLR4

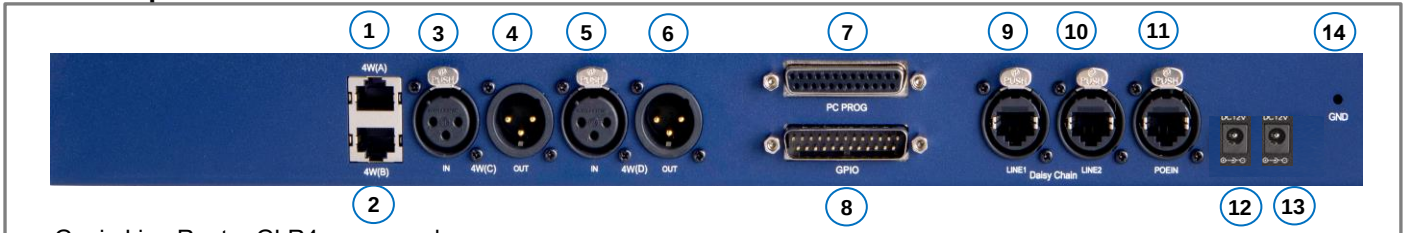
5.1 Connecting the Genie Line Router GLR4

Genie Line Router GLR4: front panel

1. Power switch of the GLR4
2. Power LED
3. Network status LEDs (Link/Active)
4. Ear for rack mounting

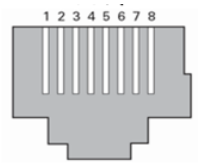
1. **Power switch of the GLR4**
   Press the Power switch on the front panel to turn on the GLR4. Normal menu will appear.
2. **Power LED**
3. **Network status LED (Link/Active)**
   Status indicators on the front panel
   Link: When connected to the network, the LED will lit solid green.
   Active: The GLR4 is connected to the network and the Active LED flashes when audio data is exchanged
4. **GLR4 Ear for rack mounting**
   Ear for rack mounting Line Router GLR4.

GLR4 rear panel



Genie Line Router GLR4: rear panel

1. **4-Wire intercom channel A connector (RJ-45)**
2. **4-Wire intercom channel B connector (RJ-45)**
   The pinout for the RJ-45 4-Wire port is following.



Pin	Color	Description
2	Orange	No connection
3	White/Green	Audio out +
4	Blue	Audio in +
5	White/Blue	Audio in -
6	Green	Audio out -
7	White/Brown	No connection
8	Brown	No connection

3. **4-Wire intercom channel (C) input connector (XLR-3F)**
4. **4-Wire intercom channel (C) output connector (XLR-3M)**
5. **4-Wire intercom channel (D) input connector (XLR-3F)**
6. **4-Wire intercom channel (D) output connector (XLR-3M)**

Pin	Description
1	Ground
2	Audio +
3	Audio -

If this 4-wire Line D is used, GPIO AUX Line D shall not be used.

7. **PC PROG connector**
   Firmware upgrade, 25-pin female D-type. For firmware upgrades.

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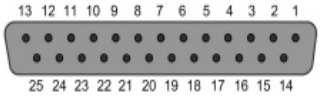
8. GPIO connector (25-pin female D-type)

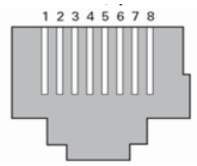


Pin	Description	Pin	Description
1	Reserved	14	12VDC -
2	Reserved	15	12VDC +
3	Reserved	16	GND
4	Reserved	17	GND
5	Reserved	18	Reserved
6	Reserved	19	Reserved
7	Reserved	20	Reserved
8	Reserved	21	Reserved
9	Reserved	22	Reserved
10	Not connected	23	Not connected
11	Not connected	24	Unbalanced Audio Input _GND
12	Unbalanced Audio Input	25	Unbalanced Audio Output GND
13	Unbalanced Audio Output		

AUX D (unbalanced audio)
Pin 12,13,24,25 are unbalanced audio signal pins that are shared with Line D (4-Wire). 4-Wire Line D **(5,6)** is not available when using this GPIO AUX D.

9. 10. LAN connectors (Ethercon RJ45)

LAN Pinout



	Color	Data
1	White/Orange	TxRx A +
2	Orange	TxRx A −
3	White/Green	TxRx B +
4	Blue	TxRx C +
5	White/Blue	TxRx C −
6	Green	TxRx B −
7	White/Brown	TxRx D +
8	Brown	TxRx D −

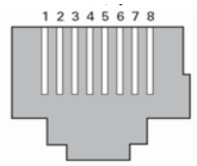
11. PoE In connector (Ethercon RJ45, PD)

GLR4 uses maximum 15 watts of power.

LAN cable must be of higher quality than CAT-5e STP. The use of the UTP cable can cause several problems depending on the installation environment. If you are using a network switch, use the **1 Gbps or 100 Mbps and 802.3 at (PoE)** specification.

!!! Note: Be sure to **use straight cable for LAN. Cross cables can cause serious damage to the device.**

PoE input (PoE In) Pinout



	Wire Color	Data	Power	Data	Power	
1	White/Orange	TxRx A +		TxRx A +	DC +	+PWR
2	Orange	TxRx A −		TxRx A −	DC +	+PWR
3	White/Green	TxRx B +		TxRx B +	DC −	-PWR
4	Blue	TxRx C +	DC +	TxRx C +		+PWR
5	White/Blue	TxRx C −	DC +	TxRx C −		+PWR
6	Green	TxRx B −		TxRx B −	DC −	-PWR
7	White/Brown	TxRx D +	DC −	TxRx D +		-PWR
8	Brown	TxRx D −	DC −	TxRx D −		-PWR

12. 12VDC 3.33A Power input connector

13. 12VDC 3.33A Power input connector for duplex

The external PSU provides the 12VDC 3.33A required and at its input takes 100-240VAC, 47-63Hz.
Line Router GLR4 uses maximum 14 watts of power.

14. Chassis ground hole

Fix the screws in the chassis ground hole and use it for grounding.

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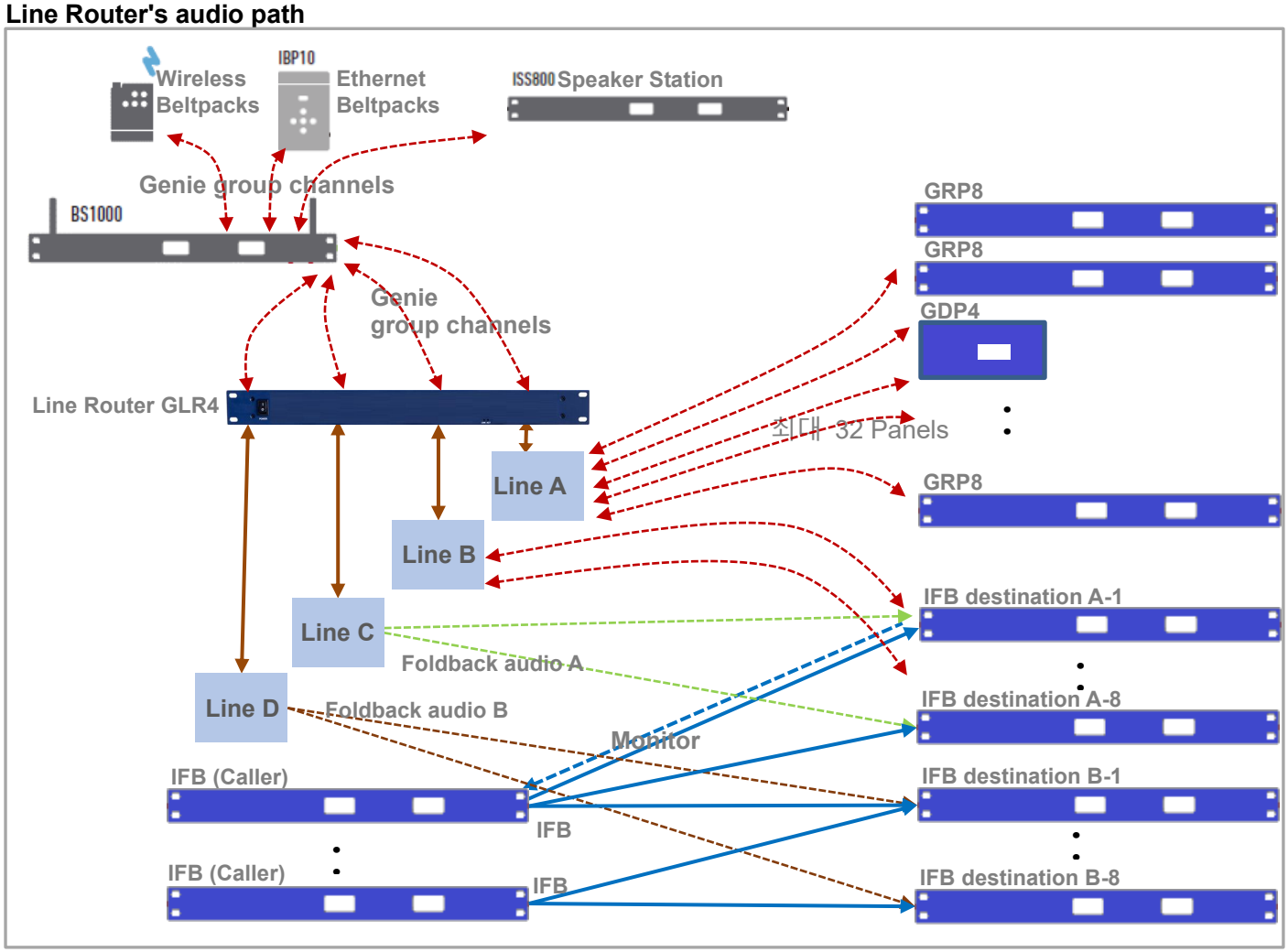
5.2 Operating the Genie Line Router GLR4

The Line audio routing is the function that provides full-duplex communication by connecting the input and output audio of a Line to specific Panels or Genie group channels, without setting up on the Talk key. The Line audio routing can be used effectively on the Line Router GLR4.
The Line audio routing is also available on the Panel. You can use the Line audio routing feature on the Panel to connect to **the Genie group channel without restrictions**. However, Line audio routing on the Panel is only available for limited design because of the following limitations when connecting **with other Panels**.

- The Line audio routing setting on the Panel allows only one-way transmission of Line's input audio to the Panels.
- Line audio routing can only be run on up to eight Destination Panels.
- You cannot send audio from Line A and B to one Destination Panel the same time.
- On the Panel 1 that is sending Line's input audio to the Panel 2, you can't create a Talk path to the Panel 2.

The Line Router GLR4 allows you to use features without these limitations. Each of GLR4's four Line audios can be routed to a specified Panel (or Panels), and each Panel can specify each Line on the Line Router GLR4 to create a Talk/listen path.
To set Talk key from Panel to Line Router, see Section 6, Panel Key Settings.

Line Router's audio path



Line Router GLR4 provides flexible connectivity configuration of the Panels with external devices such as CCU (Camera Control Unit), Console and mobile phones.

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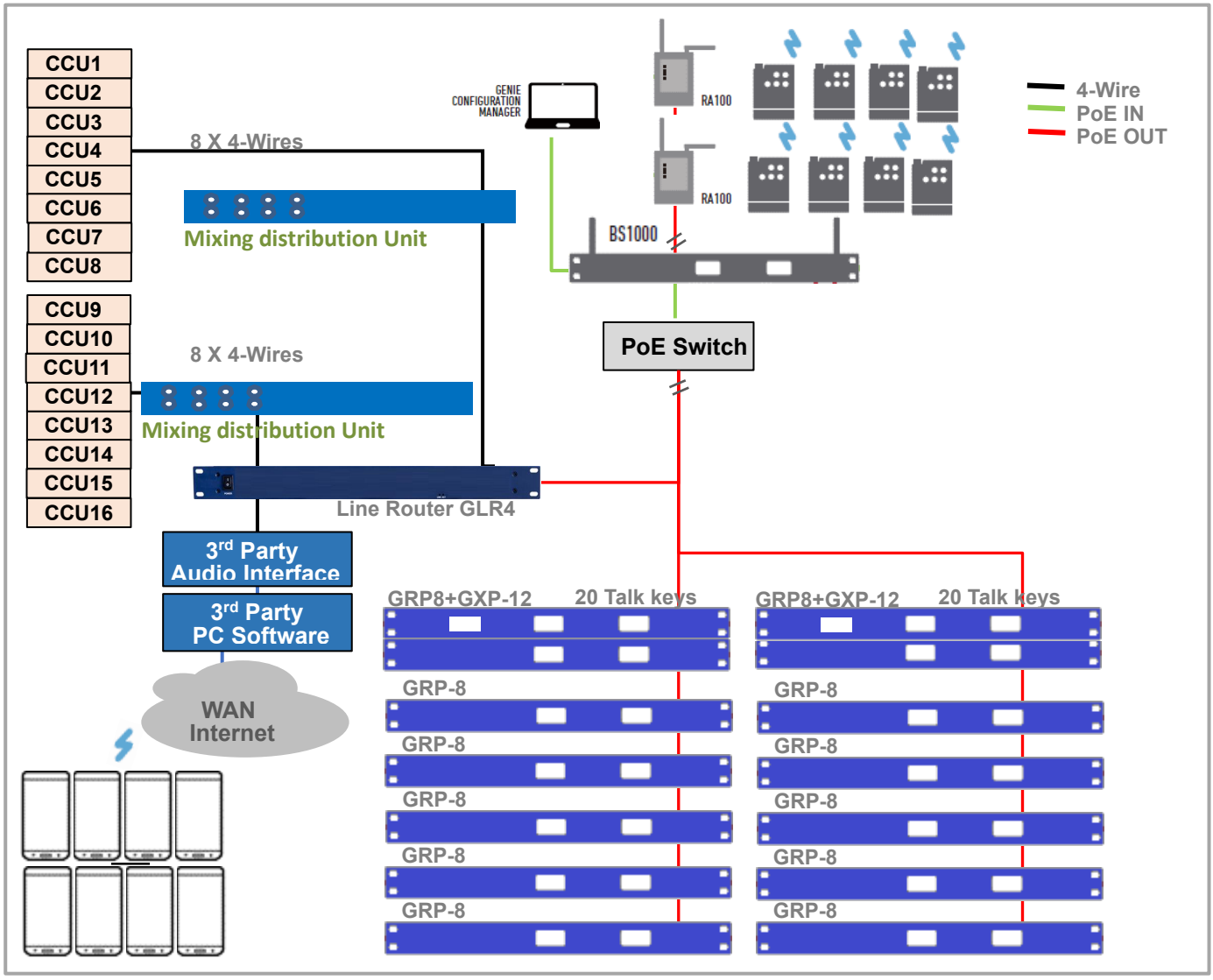
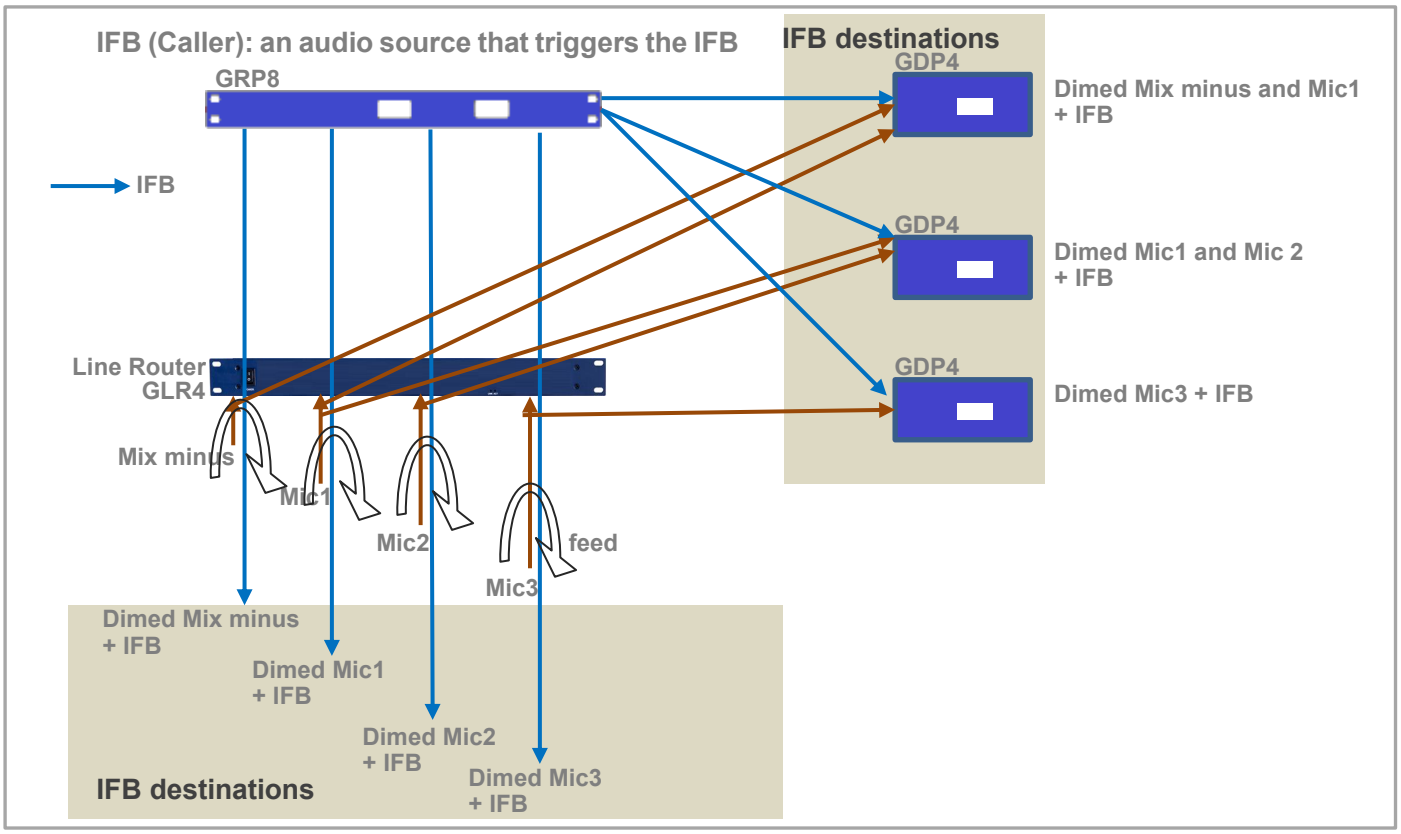
Example of connection configuration



IFB configuration with Line Router GLR4



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Section 6: WAN Link GWL

WAN Link is a device that connects Genie Panel and Genie wireless devices over the WAN or the Internet. The intercoms other than Genie devices can also be used with 4-Wire connections.

Panel versions that can be connected to WAN Link
The Panel can be connected to WAN Link starting with the version listed below.
Genie Rack Panel GRP8: Version V3330
Genie Desk Panel GDP4: Version V0730

A lower numbered version than described above is available after firmware upgrade.

GCMW (Genie Configuration Manager WAN)
GCMW is a software for PC that can set up WAN Link. GCMW can set up and monitor all Genie devices and WAN Link.

6.1 Overview

WAN Link main features

Model	Description	Talk key	4-Wire	Expansion I/O	LAN	PoE In	Format	Power Redundancy
GWL	WAN Link		4		2	1	1RU	2PSU+(1xPOE)

WAN Link provide Genie group channel communication and Panel-to-Panel communication over the WAN or Internet. This allows Genie wired and wireless devices to be connected between remote locations via the Internet.

WAN Link connections
- **Up to six WAN Links can be connected to each other.**
- **Supports six simultaneous full-duplex channels per one WAN Link. (WAN Jitter Max 200ms)**
- **Up to 20 Panels are configured, including remote locations.**

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.
- Other intercoms other than Genie system can also be connected to WAN Link Lines.

Mesh Network
WAN Links establish a robust mesh network when transporting audio. Six WAN Links can be connected to any other WAN Link. Communication is possible between the wireless Beltpacks of Base Stations connected to the Line (4-Wire) of each WAN Link. Peer to Peer communication is also possible between panel connected to any WAN Link.

GPIO
AUX D (Line D) provides an unbalance audio input and output functions.

Line A, B, C, D
Line Input / Output ports are provided to secure seamless connections with 4-wired intercom systems, external audio devices etc.

Call and Relay signals
WAN Link can transmit call and Relay signals.

Ethernet synchronizations
Ethernet synchronization avoids RF interference, packet loss, delay, and jitter between devices. Ethernet synchronization applies to all devices which are connected on the Ethernet.

GCMW (Genie Configuration Manager-WAN)
GCMW allows users to pair and set each Genie device, including WAN Link, over an Ethernet connection and monitor the connection status of each device. The monitoring function displays the battery and microphone levels of the wireless Beltpack and the RSSI (received signal strength display) of each Antenna at its place.

For detailed usage, see WAN Link User Manual.

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Section 7: GCMW (Genie Configuration manager-WAN, Version V1.1.0w)

GCMW is an added version of the ability to configure WAN Link on an existing GCM.
This section describes how to use the GCMW to configure and pair the WAN Links and Panels. For configuration of all Genie devices, see GCMW User Manual.

The GCMW is a convenient tool for creating or editing configurations. The GCMW allows you to edit, and restore configurations from each device, such as 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 GCMW 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 GCMW.
However, the pairing of the wireless Beltpack is paired in the Pair Belt menu on the Base Station.

Using the GCMW, install the Panels in the following sequence:
1. Configure and pair the Panels or Line Router.
   In case of use in conjunction with a Genie Base Station, pair them with the Remote Antenna.
2. If you are using the WAN Link, configure and pair the WAN Link.
   Connect the PC to the PoE IN or LAN port on 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 GCMW, 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.
!!! Note: Connect the PC to the PoE IN port on the 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.
GCMW 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.

Loading the GCMW.
Install the GCMW on your PC and run the GCMW.

!!! 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 GCMW screen.

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

When you run the GCMW, the following screen appears. Enter your password. The factory setting is 1234.

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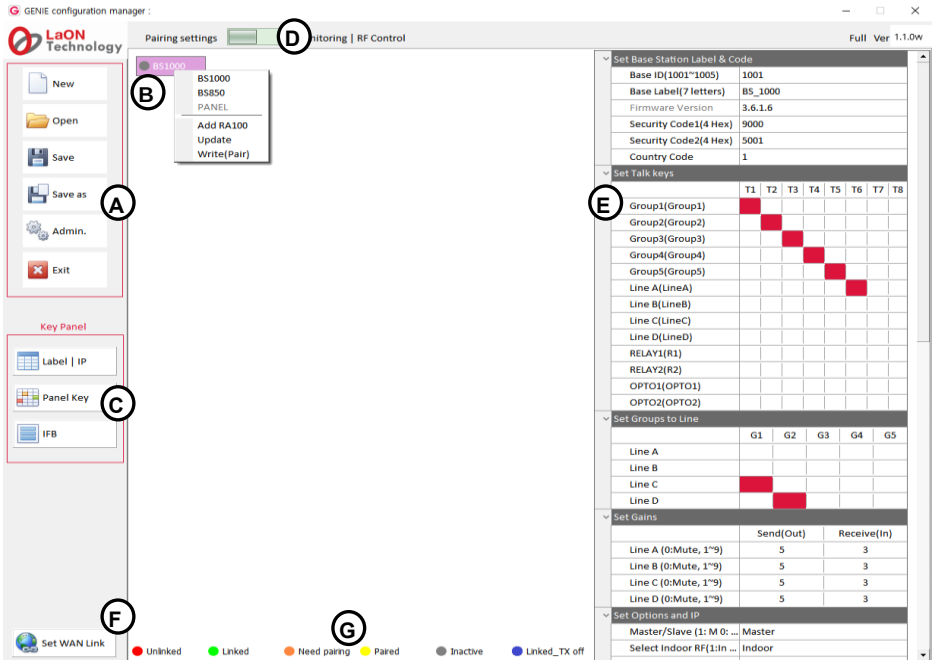
Configure the Panels

Describe the GCMW screen



Management icons (A)

New: Create a GCMW 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 GCMW file, click the Open icon to select a file.

Save: Save as GCMW file name in use.

Save As: Save as a new GCMW file name.

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

Exit: Exit the GCMW.

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 Panel settings.

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

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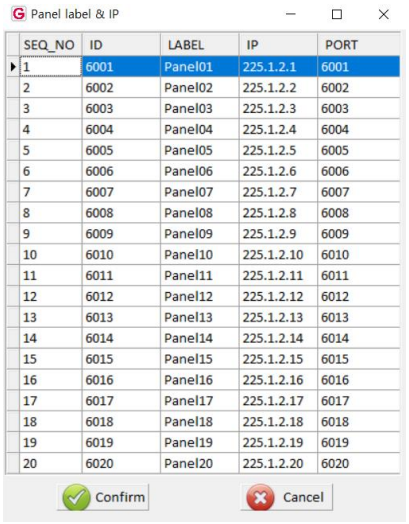
Installation procedure:

- ◆ **Set the label and IP of the Panels:** Click the Label I IP icon **(C)** at the lower left corner of the screen.
- ◆ **Create and add the Panels:** Right click on the Panel icon **(B)**.
- ◆ **Basic settings of the Panel:** Click the 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 Panel:** Connect each Panel to the PC alone, right click on the 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.

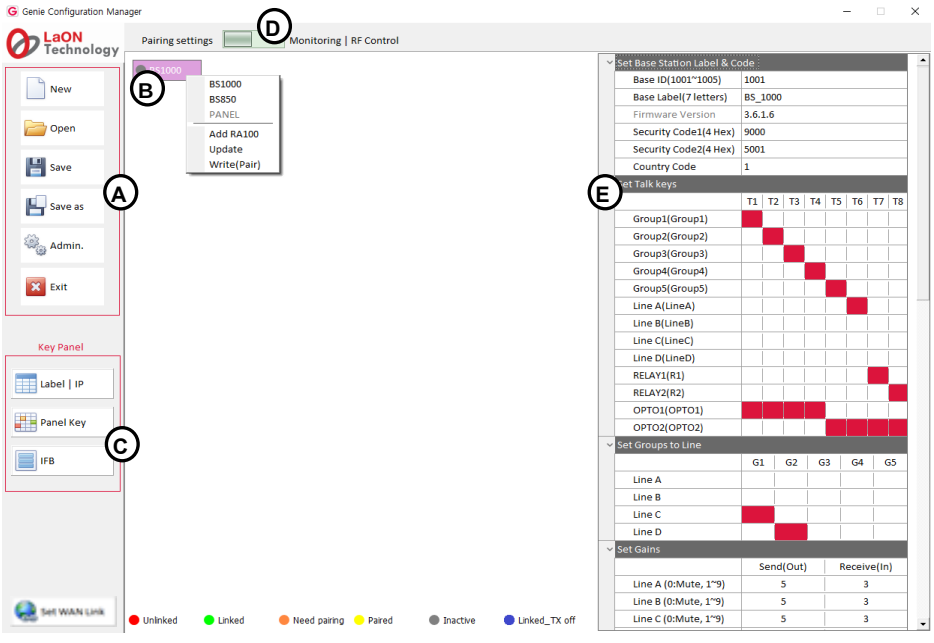
The descriptions in this manual are listed in the order of the above installation procedures.

◆ Set the label and IP of the Panels:

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 twenty Panels. In an exclusive network, IP and port settings can use as the factory defaults.



◆ Create and add the 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 Panel icon on the icon **(B)**.

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.

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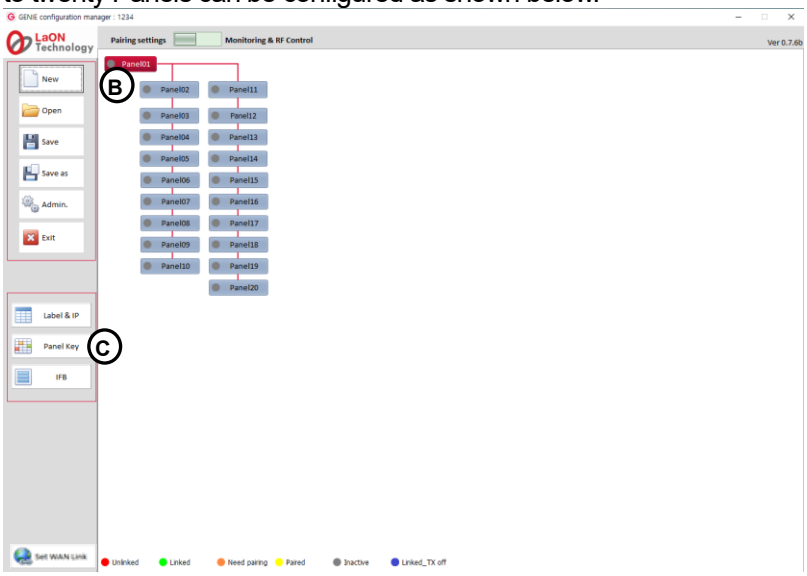
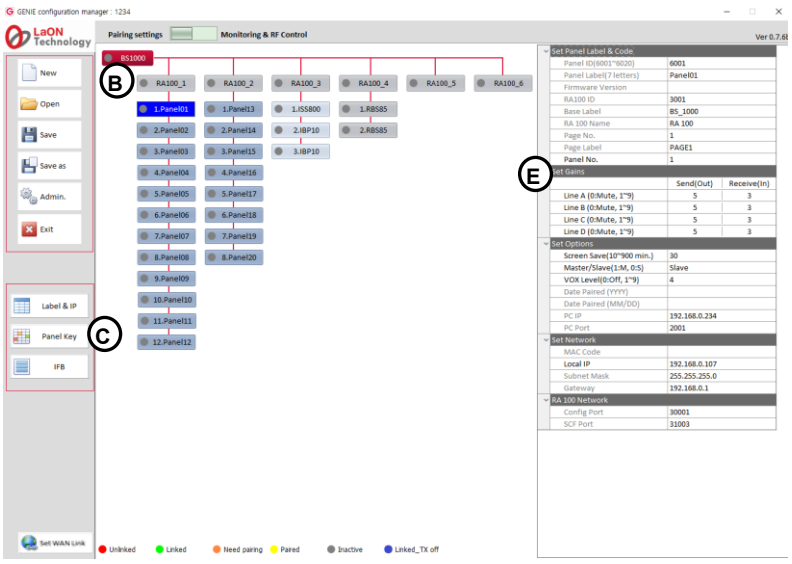
Add Panel:
When selected, up to nineteen Panel icons are added below the Panel icon. If a Genie Base Station is selected on the icon **(B)**, the Panels can only be added below the Remote Antenna icon.
Update:
You can pair (Update) the modified settings back to the device. The update is available after 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 Panels, only one current Page selected in the Panel key**(C)** screen is paired (or updated) to the Panel. When updating to the Panel, it is convenient to run it on the Panel key **(C)** screen.

When configured with Panels only
Select the Panel on the icon **(B)** and create it. Right-click on the created Panel icon and select the Add Panel and add it. Up to twenty Panels can be configured as shown below.



Panels are used in conjunction with the Base Station (BS1000, BS850)
Create a Base Station (BS1000 or BS850) icon on the icon **(B)**. Right-click the Base Station icon and select Add RA100. Right-click the RA100 icon and select Add Panel. Up to twenty Panels can be configured per RA100 icon.



Talk/listen audio paths when connected with Base Station (BS1000, BS850)
When the Panels (or Line Router GLR4) use Genie group channels, a Remote Antenna gives you simultaneous access to up to 10 talk/listen audio paths (full-duplex, Shared with wireless Beltpacks). When setting a Line audio routing on the Panel (or Line Router GLR4) to the Genie group channel, it occupies one talk/listen paths of the Remote Antenna. In addition, if you set the Genie group channel on the Talk key of the Panel and open the Talk path, it occupies one talk/listen path of the Remote Antenna. **The Talk/listen path between Panel does not occupy the Genie group channel.** In the system design, Remote Antennas should be placed according to the maximum simultaneous use of these Genie group channels.

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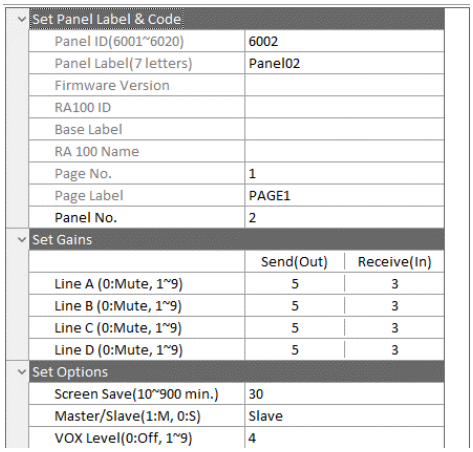
◆ Basic settings of the Panel:

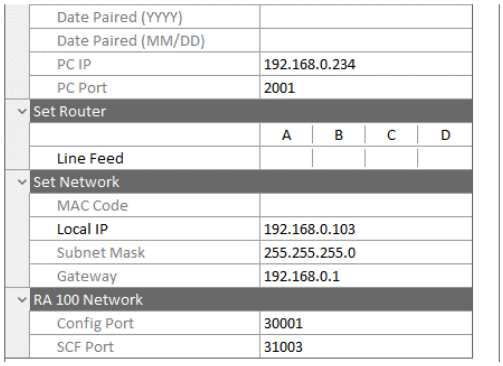
Click on each Panel icon **(B)** at the center of the screen, the basic setting window **(E)** will appear as below. In the setting window, set the items below for each Panel.



Set Panel Label & Code	
Panel ID(6001~6020)	6002
Panel Label(7 letters)	Panel02
Firmware Version	
RA100 ID	
Base Label	
RA 100 Name	
Page No.	1
Page Label	PAGE1
Panel No.	2

Set Gains	Send(Out)	Receive(In)
Line A (0:Mute, 1~9)	5	3
Line B (0:Mute, 1~9)	5	3
Line C (0:Mute, 1~9)	5	3
Line D (0:Mute, 1~9)	5	3

Set Options	
Screen Save(10~900 min.)	30
Master/Slave(1:M, 0:S)	Slave
VOX Level(0:Off, 1~9)	4



Date Paired (YYYY)	
Date Paired (MM/DD)	
PC IP	192.168.0.234
PC Port	2001
Set Router	
A B C D	
Line Feed	
Set Network	
MAC Code	
Local IP	192.168.0.103
Subnet Mask	255.255.255.0
Gateway	192.168.0.1
RA 100 Network	
Config Port	30001
SCF Port	31003

Panel ID:
If you click the Label I IP icon **(C)** at the lower left corner of the screen to set it, Panel ID will automatically appear here.
Panel Label:
If you click the Label I IP icon **(C)** to set it, Panel label will automatically appear here.
Firmware Version: When paired, it will automatically be displayed here.
RA100 ID:
When the Panel is used by connecting with the Base Station (BS1000 or BS850), the Remote Antenna ID connected to the Panel is automatically displayed.
Base Label:
When the Panel is used by connecting with the Base Station (BS1000 or BS850), the Base Station Label connected to the Panel is automatically displayed.
RA100 Name:
When the Panel is used by connecting with the Base Station (BS1000 or BS850), the Remote Antenna Label connected to the 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 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 Panel.
Panel No.:
The automatically assigned number from P1 to P20 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 GDP4 Panel

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 GDP4 Panel

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.

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Master/Slave
Click the icon window to open a drop-down menu and select the required item (Master or Slave). The selected item will appear in the icon window. 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 Panels (not connected to the Genie Base Station), one of the Panels must be assigned as a Master. If you connect the Panels with a **Genie Base Station that is set to Master, you must set all Panels to Slave**. With only these settings, the Ethernet synchronization is applied to all Panels 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)

Date Paired (YYYY)
Date Paired (MM/DD)
This item displays the date the device is paired with GCMW. 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 Panels. With these settings, IFB dim level can be applied to Line output on GLR4.

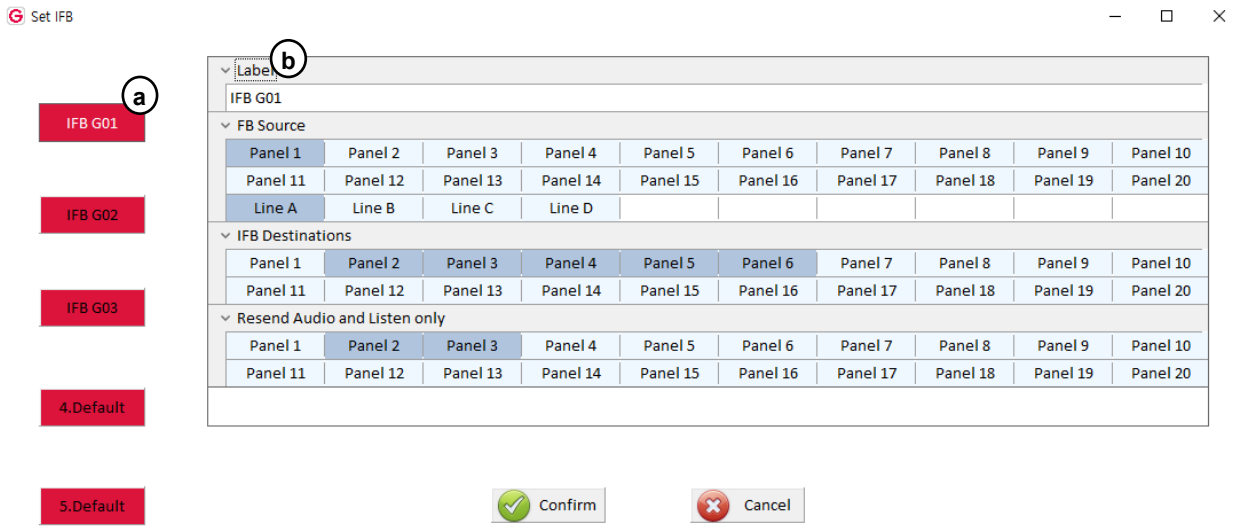
Set Network
MAC Code
Local IP
Subnet Mask
Gateway

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 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.

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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: Specifies the FB source (Program) that IFB members (IFB destination) will receive. For the FB source, you can set one Line of the Line Router GLR4 (or Panel) that routes the FB audio. The Line Router GLR4 is used by changing it to a Line Router for one Panel in the Panel key **(C)** setting. Only one FB source can be specified. Click one Panel label icon and Line icon. On the IFB Destination, the selected FB source is automatically set to the listen path to Talk key 1 **(T1)**.

Note: If you specify the Genie group channel as FB source, connect the FB source (Program input) to a Line of the Base Station (BS1000 or BS850) and set the IFB in GCMW's Base Station settings window.

IFB destinations: To set up IFB destinations (Panel), click the Panel icons. The panel icons that are set will turn skyblue. On the IFB Destination, set the IFB (Caller) to each Talk key. When receiving IFB from IFB (Caller), FB audio (program input) can be dimmed to 0db, -12db, -15db, -18db, -21db, or mute. These Dim levels can be set per Panel (IFB caller) in the Panel key **(C)** settings.

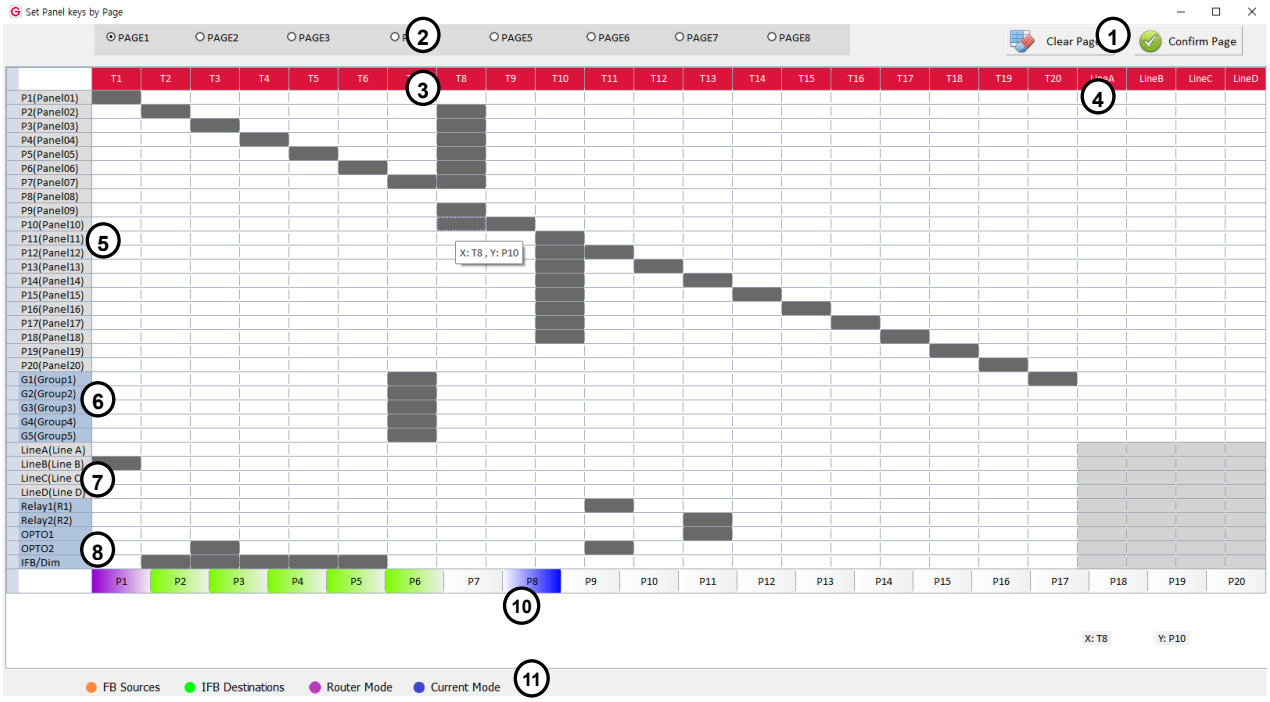
Resend audio and listen only: Set whether to send the IFB destination's listen audio to the IFB (Caller) for monitoring on the IFB (Caller). When you click the Panel icons, the selected Panels (IFB destination) send listen audio to IFB (Caller) and all Talk keys on the IFB destination are set to listen only. The Panel icon turns red. The selected Panels are applied to all IFB member **(a)**.

Note: When this Resend is enabled, all Talk keys on that 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 twenty Panels.

Note: To set up 32 Talk keys, see the 128 channels/32 keys User Manual.



Describe the Panel key screen

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

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

Amber: This color indicates the Panels set to the FB source (Program) in the IFB **(C)** settings.

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

Purple: This color indicates that it has been specified as a Line Router.

Blue: This color represents a Source 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.

Page selection icons: (2)

You can edit up to 8 Pages per selected Source Panel **(10)**.

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

Talk keys: (3)

Click each Talk key icon (T1 through T20) to set the Talk key label, the FL (Forced Listen) level, AL (Auto Listen) level, Tx group and Talk to GLR4 Line.

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Line audio routings: (4)

Line audio routing on the Line Router GLR4:

Each Line input/output audio on the Line Router GLR4 can be connected to all Panels and Genie group channels. The input/output audio from GLR4 Line can be connected to all Panels and Genie group channels.

Line audio routing on the Panel:

On the Panel, Line input audio can be sent to Destinations (Panel or Genie group channels) without setting them on the Talk key. With the setting of Line audio routing, up to eight Panels and Genie group channels can be connected to one Line.

Destination Labels: (5)

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

Genie group channel Labels: (6)

When using Panels in conjunction with Genie Base Station (BS1000, BS850), Genie group channel label set up on the Genie Base Station is displayed. The Genie group channels can be set on the Talk key **(3)**.

Lines, Opto-isolated Inputs, Relays: (7)

The Lines can be assigned to the Talk key **(3)**. On each Talk key, the relay and opto-isolated input functions can be set together in addition to the Talk paths.

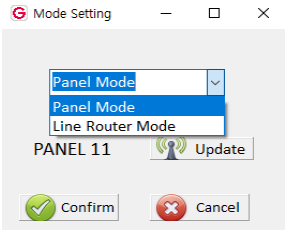
IFB/Dim: (8)

Specify FB source (Program) and IFB destinations in IFB **(C)** settings. Set IFB destination **(5)** on the Talk key **(3)** and click the IFB/Dim row icon in the Talk key **(3)** column to set the IFB (Caller) as the Talk key property. With this setting, the label of the IFB (Caller) appears as inverted text in the 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 Panel **(10)**. If you press IFB key (IFB caller) on this selected Panel **(10)**, FB audio (program input) will be dimmed on the IFB destination by the set level here.

Source Panels: (10)

Of the 20 Panel icons, click the Panel icon you want to edit. Right-click to specify the properties of the selected Panel as a Line Router or Panel.

You can also update the Panel's modified settings to the Panel by clicking on the Update icon.



Set the Talk keys (3)

Double click each Talk key icon **(3)** to set the Talk key 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 key **(T1)** on the IFB destinations.

Genie group channels

Genie group channels, which can have up to sixty talk/listen paths simultaneously, is provided by connecting the Panel to the Genie Base Station (BS1000, BS850). Up to five Genie group channels can be set on the Panel Talk key.

Click the Genie group channels **(6)** row icon in the Talk keys **(3)** column to set the destinations on each Talk key.

Note: Panels can only be connected to one Genie Base Station. As a result, Panels can use five Genie group channels.

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

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

Line: This is to set up Line directly to Talk key. 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 key **(3)** column to set the destination for each Talk key. Up to four Lines can be set on one Talk key at the same time.

Add-on functions on the Talk key

- Two relays and two opto-isolated inputs
- Forced Listen, Auto Listen
- Tx group
- Talk to GLR4 Line

Relay, Opto-isolated Input: On each Talk key, 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 key **(3)** column to set this opto-isolated input to the Talk key. When the opto-isolated input is detected, the corresponding Talk keys are triggered. You can assign one opto-isolated input to multiple Talk keys. 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 keys **(3)** column to set this relay function to the Talk key.

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When the relay function is set on the Talk key, 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.

Relay activation:

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

	Other Panel's GPIO	Own GPIO
Panel's call switch	**O**	
Panel's Talk key		O
Base Station's Talk key or SA button		O

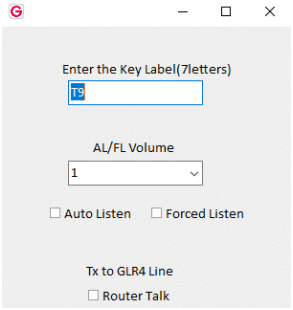
In the Panel key settings screen of the GCMW, set the Opto-input and Relay together on the Talk key of the Destination Panel. When you press a call on the Source Panel, the Destination Panel displays the Call signal, and at the same time the Relay is also triggered.

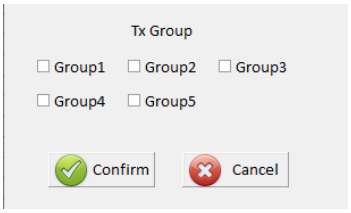
Call signals: Genie can transmit call signals between devices as follows.

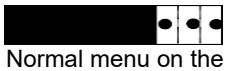
WAN Link can transmit call signals marked in blue.

	Panel	BS (Base Station)	WBP (Wireless Beltpack)	2-Wire Intercom
From Panel key to	**O**	O	O	X
From BS key to	O(Group)	X	O	O
From BS 2-Wire to	X	O	X	O

FL (Forced Listen): Double-click the Talk key 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 key if the listener tries to avoid missing an important call. FL can be set in addition to the Talk channel. On the Talk key set to FL, the listen level is not adjusted below the FL level set here. The Listen level of talk key set to the FL is displayed in the Normal menu as above.

AL (Auto Listen): (This has been applied to Version V3324 (GRP8), V0612 (GDP4)

Double-click the Talk key icon **(3)** to select the Auto Listen and set AL level.

If the listen level of the Talk channel is muted or below the AL level, pressing Talk key automatically adjusts the listen level to THE 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 key icon **(3)** to set the Tx group.

On one Panel, if you create a Talk path to a Genie group channel (pressing the Talk key), the listen path opens on all Panels with the Genie group channel set up. Other than the Panel that creates the Talk path, you can separate the Talk (Tx) and Listen (Rx) groups so that these listen paths do not open. In the wireless Beltpack, you set up the Two groups menu, open the listen path to the Talk group (Tx) of the Panel, and create a Talk path as the listen (Rx) group on the Panel. On the wireless Beltpack, this Tx group can be used as ISO group channel between Beltpacks. Click the Genie group channel **(6)** row icon in the Talk key **(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 key 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 Panel **(5)** (specified as a Line Router) and Line **(7)** row icon together in the Talk key **(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 Panels or Genie group channels, without setting up on the Talk key. The Line audio routing can be used effectively on the Line Router GLR4.

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

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

Right-click on Source Panel **(10)** to specify the properties of the Panel as a Line Router.

However, devices specified as FB Source (Program) or IFB Destination in IFB **(C)** settings cannot change this property. If you make changes, turn them off first in the IFB **(C)** settings and then change them.

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

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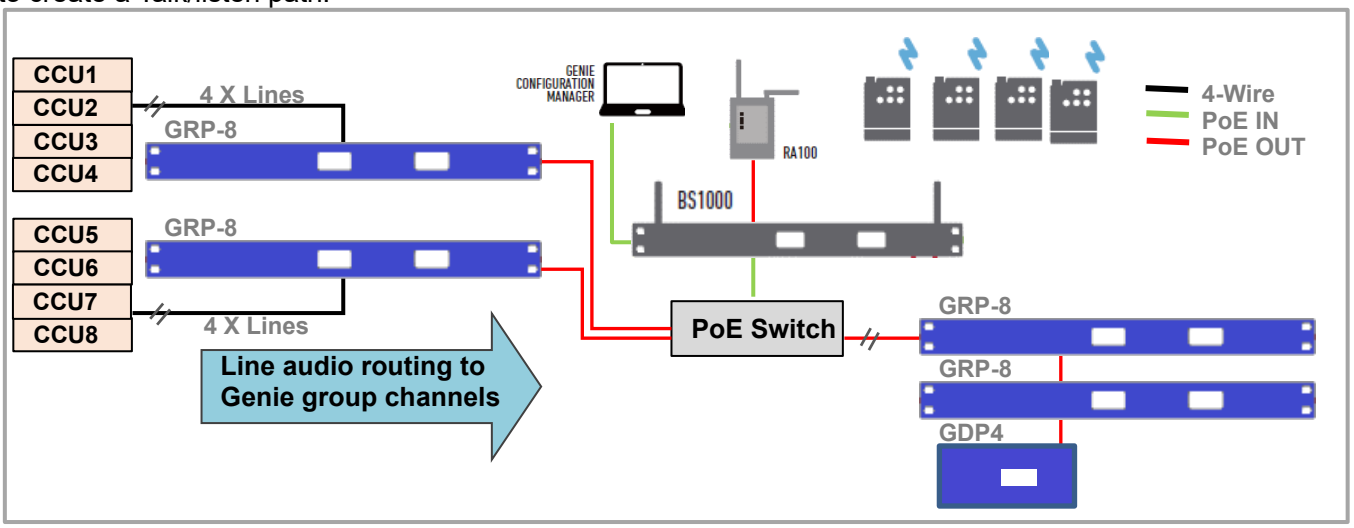
On the Panel, the setting to create a talk/listen path to the GLR4 Line (Destination):
Select Source Panel **(10)**. Double click the Talk key icon **(3)** to set the 'Talk to GLR4 Line'. In the Talk key **(3)** column, click the Panel (Destination) **(5)** and Line **(7)** row icons specified as the Line Router.
If it matches the Line audio routing **(4)** information set on the GLR4, the Talk/listen paths between Line of the GRP4 and Panel will work normally.

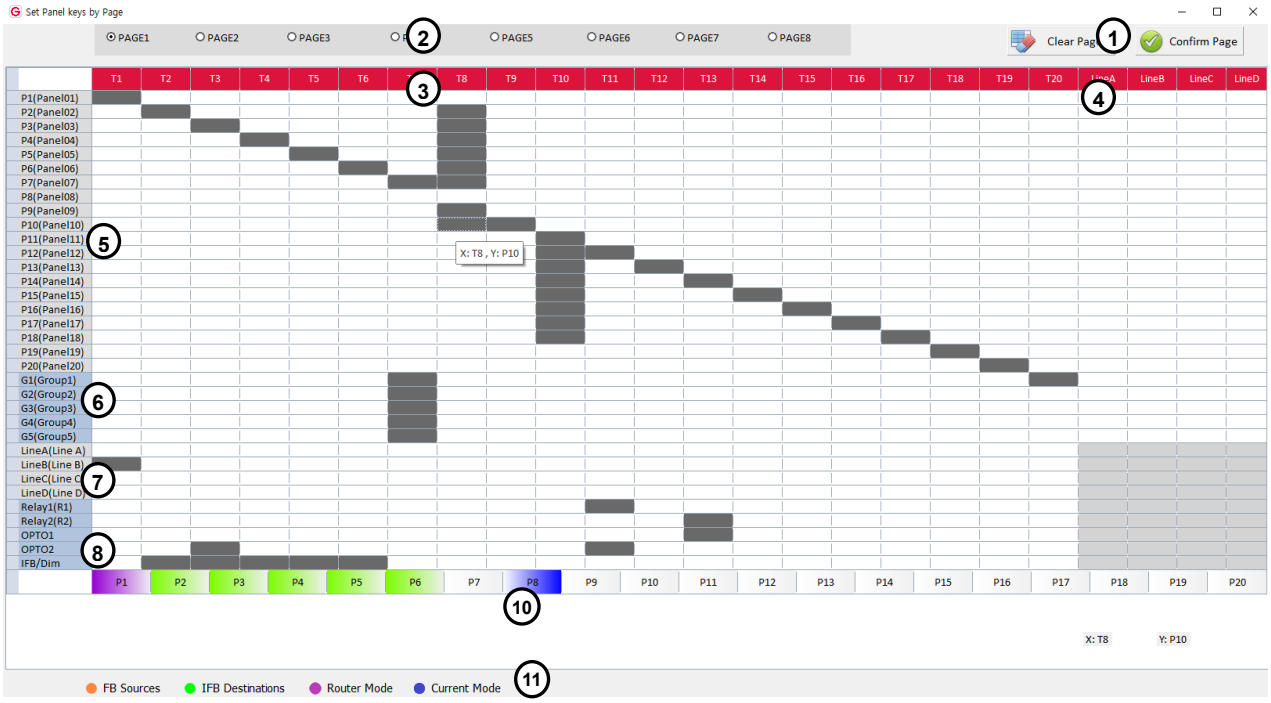
Line audio routing on the Panel:
The Line audio routing is also available on the Panel. This can be useful when connecting the Lines from multiple external devices (such as CCU) to a Panel, and create the Talk/listen paths to the Genie group channels.
You can use the Line audio routing feature on the Panel to connect to **the Genie group channel without restrictions**. However, Line audio routing on the Panel is only available for limited design because of the following limitations when connecting **with other Panels**.

- The Line audio routing setting on the Panel allows only one-way transmission of Line's input audio to the Panels.
- Line audio routing can only be run on up to eight Destination Panels.
- You cannot send audio from Line A and B to one Destination Panel the same time.
- On the Panel 1 that is sending Line's input audio to the Panel 2, you can't create a Talk path to the Panel 2.

The Line Router GLR4 allows you to use features without these limitations. Each of GLR4's four Line audios can be routed to a specified Panel (or Panels), and each Panel can specify each Line on the Line Router GLR4 to create a Talk/listen path.



Set IFB
Set IFB (Callers)



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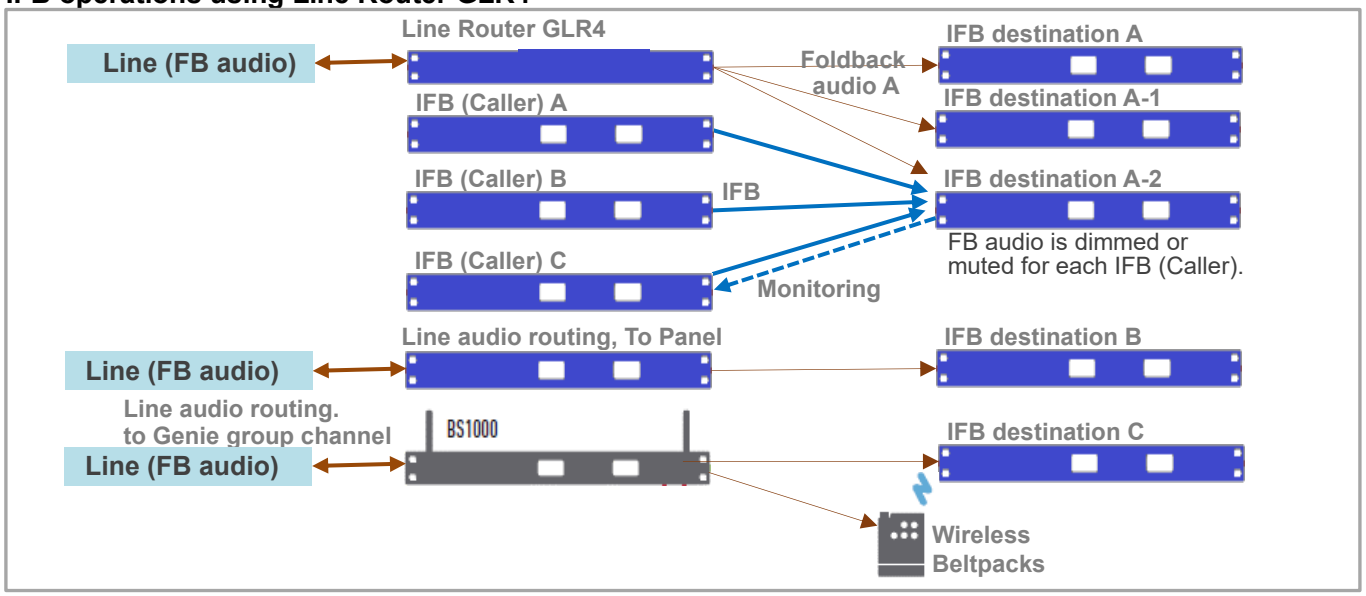
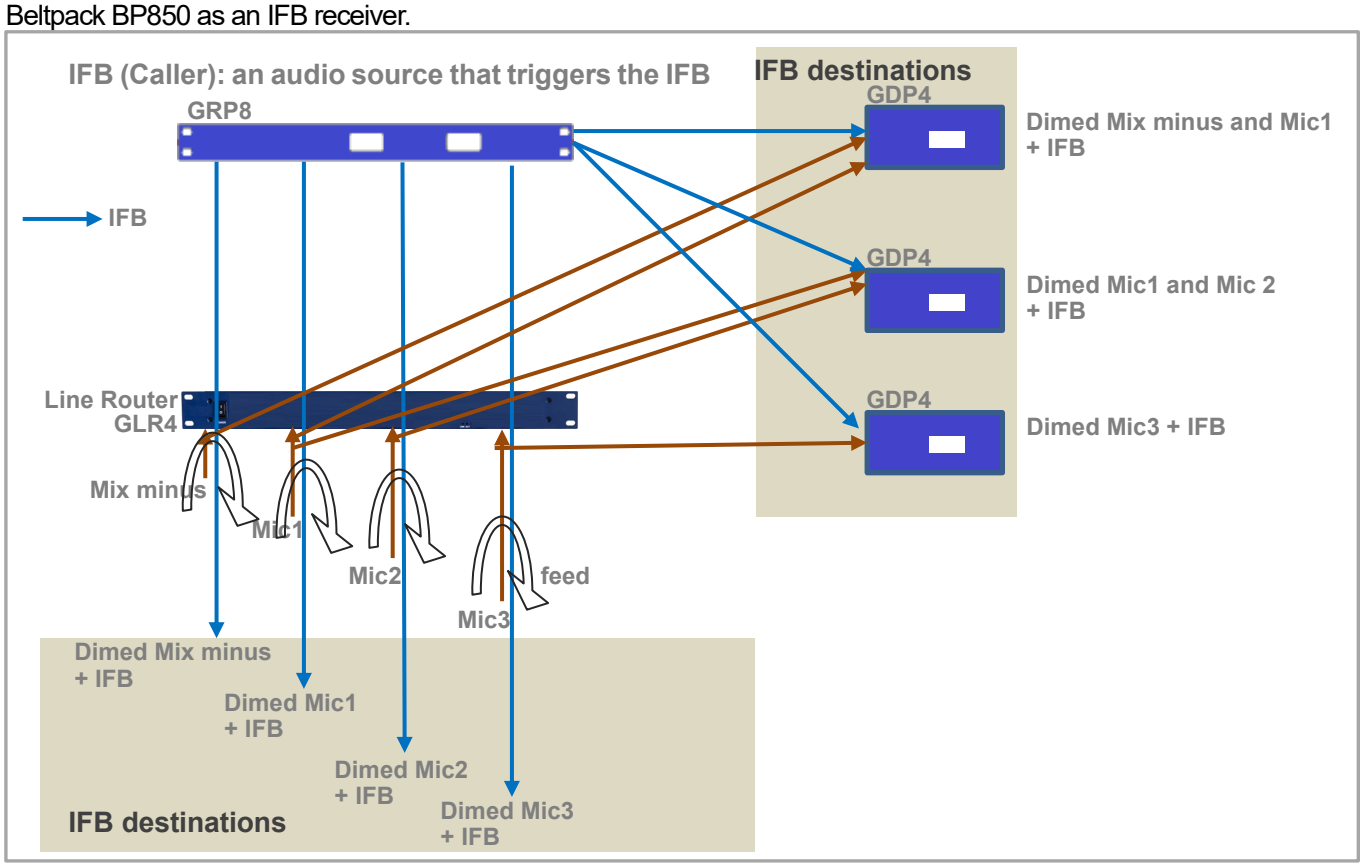
Click a source Panel **(10)** and click the IFB row icon **(12)** in the Talk key **(3)** column to set each Talk key to the IFB (Caller). Source Panel **(10)** icons set to IFB destination appears green. In the Talk key **(3)** column, click the IFB destination (Panel) **(5)** row icon. Click the IFB/DIM **(8)** icon to set the FB audio dim level at the IFB destination. On the IFB destination, FB audio is dimmed to the level set here. With these settings, the Talk key is set to the IFB (Caller), and pressing it creates the IFB audio path.
When a Talk key is set to IFB (Caller), the Talk key label is displayed in inverted text in the 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 volume level of the IFB 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 and Genie group channels. FB 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 receiver.



By setting the Talk key 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.

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When the FB audio is sent to the Genie group channel

Use FB audio 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 FB audio is connected.

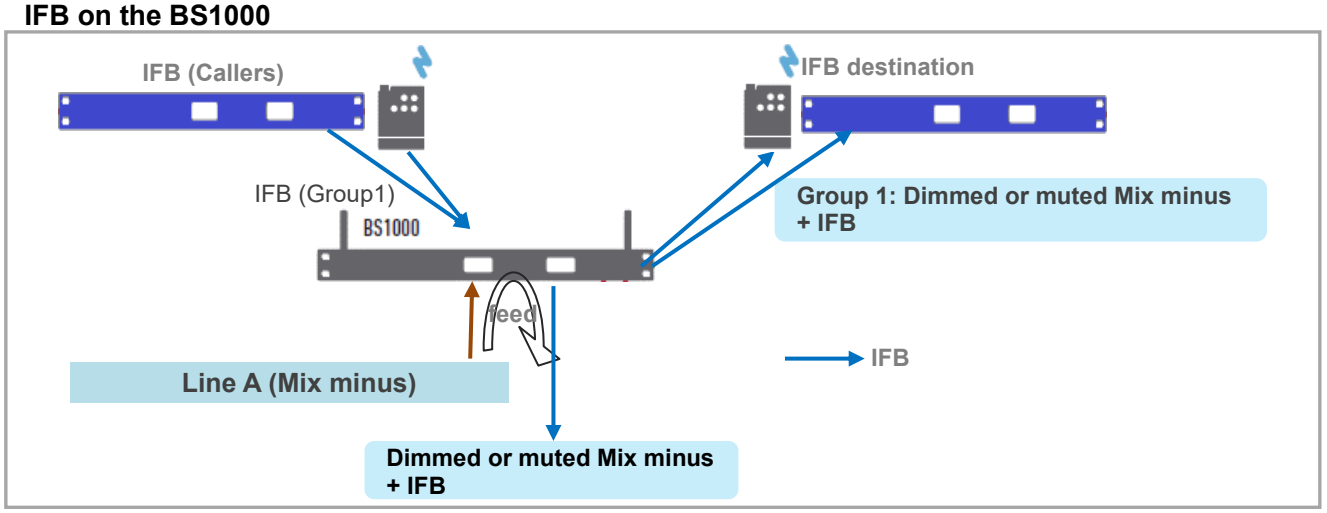
IFB settings on the Base Station BS1000 (This has been applied to BS1000 Version 4030)

Connect FB audio to the Line of the BS1000.

You can specify the Genie group channel and Dim level for IFB in the GCMW' setting for the Base Station BS1000. If the IFB path is created to the Genie group channel set to FB source (Mix minus etc.), the FB 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.

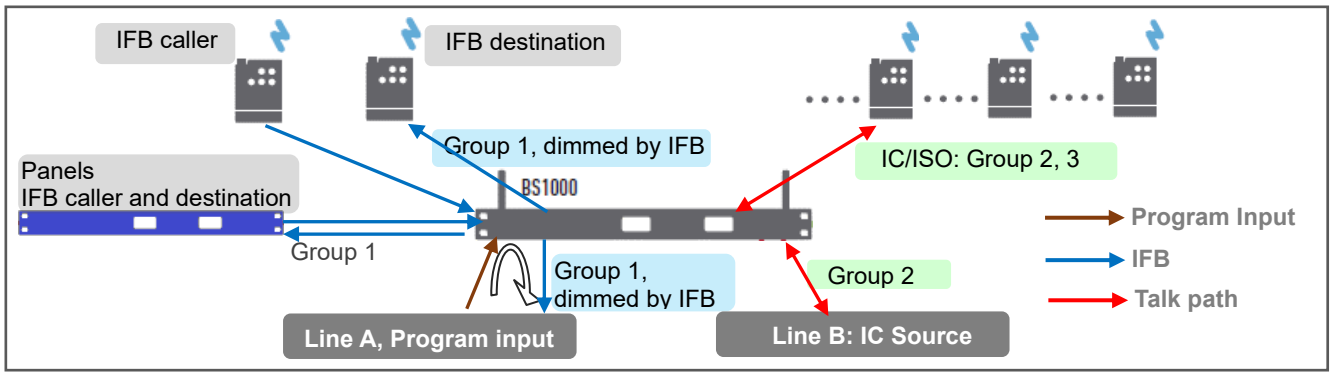
Note: If you set up the IFB feature on the Genie group channel, the dim level or mute function will not work with the settings on the IFB destination Panel, but will work according to the settings on the BS1000.

IFB on the BS1000

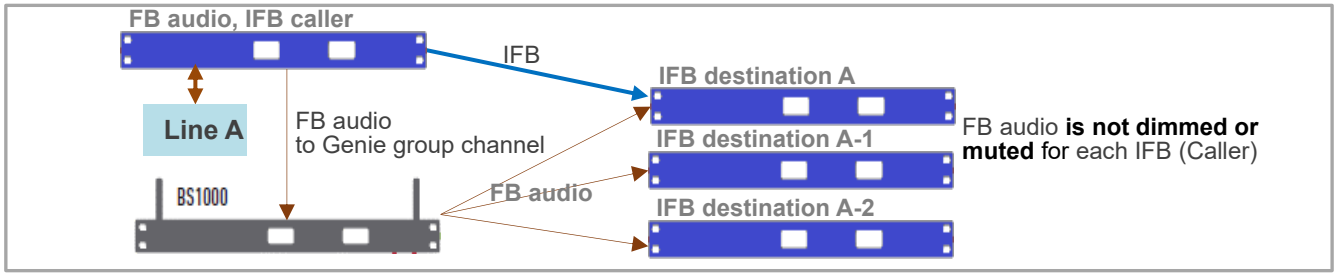


For information for the IFB settings on the BS1000, refer the BS1000 settings in the GCMW User Manual. In the BS1000 settings, if you select the Line Feed and a Genie group channel that applies the IFB, the FB audio (Mute or dimmed) and Genie group channel are mixed and output to the Line.

Examples of the wireless IFB



If FB audio is connected to a Genie group channel, you should not connect the FB audio to a Line on the Panel or Line Router GLR4. In this kind of the connection, the dim level or mute feature for the FB audio does not apply to Genie group channels. You should connect the FB audio to the Line of the BS1000.



◆ Pair (Write) to the Panel:

Only connect each Panel to your PC one at a time, right click on the 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.

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

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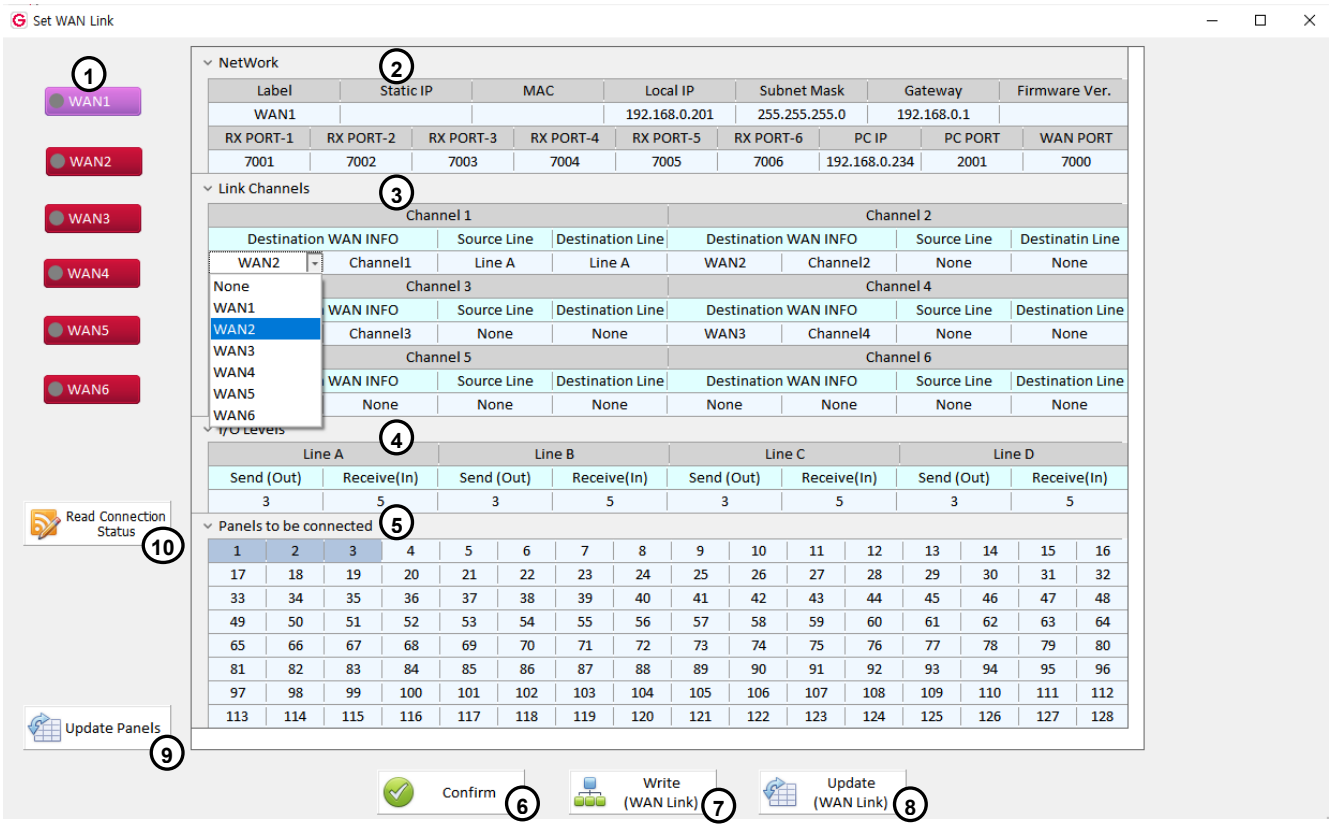
◆ Set the WAN Links:



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. Panels automatically assign unused channels (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. 128 Beltpacks can be connected for each Base Station.
  - 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 Panels that connect to a WAN Link: (5)
Select the 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.

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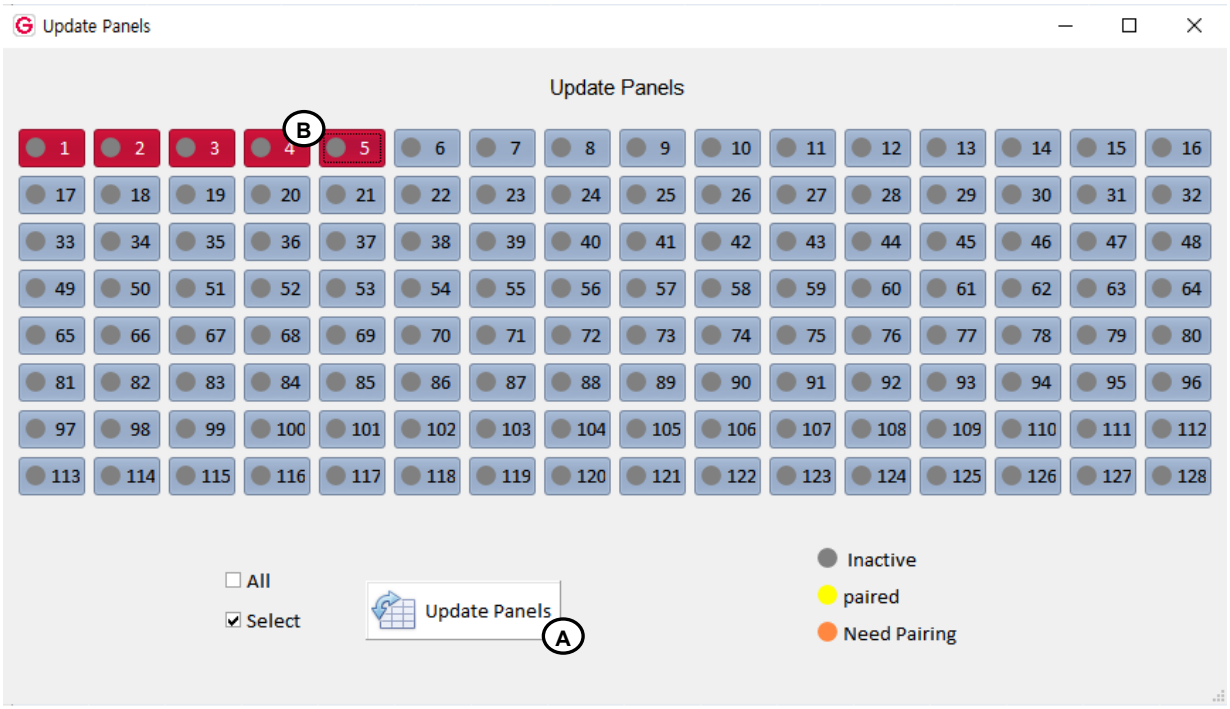
Update settings to the WAN Link (8)
Update the modified settings to the WAN Link.

Update WAN Link settings to the Panels: (9)
When you click the Update Panel icon **(9)**, the screen below appears. Click the Update icon **(A)** to update the WAN Link settings to the Panels. The updated state is displayed in a color-coded circle on each 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 Panels and check it on the Monitor & RF Control screen.

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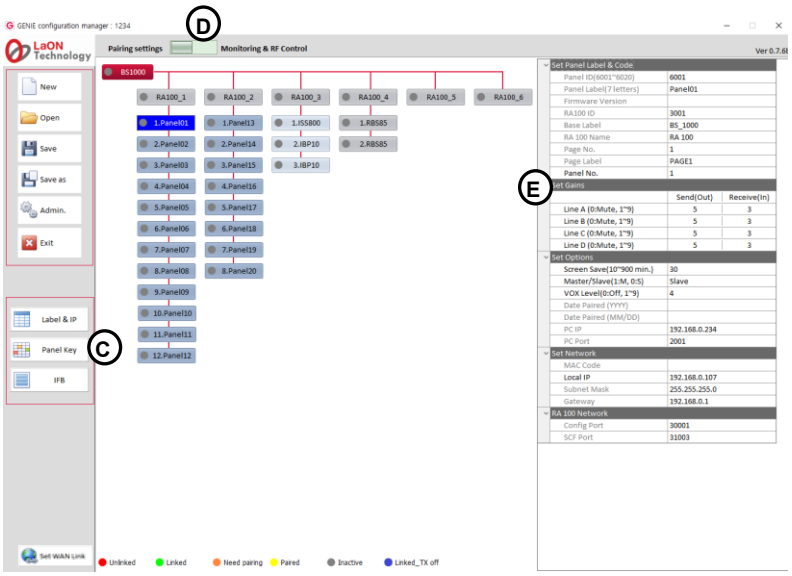
Monitoring & RF Control



Icon at the top of the screen (D)
You can select the required function by selecting the icon left or right.

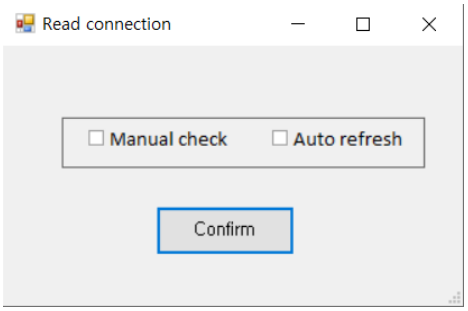
Pairing settings: A screen is displayed for creating devices and editing settings.
Monitor & RF Control: The Monitoring screen is displayed.

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.



The BP and IBP monitoring (C)
Click the BP or IBP monitoring icon at the lower left corner of the screen to gather the current status of the wireless Beltpack or Ethernet Beltpack. Displays the collected information at the right side of the screen.

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Section 8: Specifications

8.1 Genie Rack Panel GRP8

Audio Bandwidth	200 Hz to 7.2 kHz
Audio Dynamic Range	>70dB
S/N	>95dB @ 1Khz
Loudspeaker	3 watts
Headset output	500mW into 32 Ohm
Front Panel Display	Two OLED screens, 128 x 64 Resolutions
Front Panel Button	LED indicated Buttons and Rotary controls
Headset	Dynamic or Electret, 6-pin mini-DIN male, Receptacle
Gooseneck Mic	Dynamic or Electret, XLR-3F
4-Wire(A) and 4-Wire(B)	Two RJ-45, 600Ω balanced, level adjustable
4-Wire(C) and 4-Wire(D)	Input: XLR-3F, Output: XLR-3M, 600Ω balanced, level adjustable
GPIO (D) audio Input/Output	DB25F, 600Ω unbalanced, level adjustable
GPIO Expansion I/O, 12VDC	DB25F, Expansion I/O, 12VDC
PC PROG	25-way D-type female, Updating the Panel firmware
Relay, Opto-isolated	2 Relay outputs and 2 Opto-isolated inputs
PoE Input	PoE RJ-45 Connector, 100Mbps Standard PoE specification
PoE Line1, Line2 (Daisy-chain)	Two PoE RJ-45 Connectors, 100Mbps Standard PoE specification
Power Input	Two 48-56VDC at a max power of 90Watt or PoE from the Network Switch The external PSU provides the 48VDC 2.5A and at its input takes 100-240VAC, 47-63Hz.
Operating Temperature	0°C to 50°C (32°F to 122°F)
Dimensions	16.83W x 8.03L x 1.73H inch (42.75W x 20.4L x 4,4H cm)
Weight	7.72 lb (3500g)

8.2 Genie Expansion Panel GXP12

Front Panel Display	Three OLED screens, 128 x 64 Resolutions
Front Panel Button	LED indicated Buttons and Rotary controls
Expansion I/O, 12VDC	RJ45 Expansion I/O, 12VDC
PC PROG	25-pin D-type female, Updating the Panel firmware
Power Input	100-240VAC, 47-63Hz, 11.4-12.6VDC, 10.8Watts Maximum
Operating Temperature	0°C to 50°C (32°F to 122°F)
Dimensions	16.83W x 8.03L x 1.73H inch (42.75W x 20.4L x 4,4H cm)
Weight	6.17lb (2800g)

8.3 Genie Desktop/Wall Panel GDP4

Audio Bandwidth	200 Hz to 7.2 kHz
Audio Dynamic Range	>70dB
S/N	>95dB @ 1Khz
Loudspeaker	3 watts
Headset output	500mW into 32 Ohm
Front Panel Display	One OLED screens, 128 x 64 Resolutions
Front Panel Button	LED indicated Buttons and Rotary controls
Headset	Dynamic or Electret, 6-pin mini-DIN male, Receptacle
Gooseneck Mic	Dynamic or Electret, XLR-3F
PoE Input	PoE RJ-45 Connector, 100Mbps Standard PoE specification
Operating Temperature	0°C to 50°C (32°F to 122°F)
Dimensions	8.26W x 3.93H x 1.65L inch (21.0W x 10.0H x 4,2L cm)
Weight	2.65 lb (1200g) without Wall Mount Kit (0.44 lb, 200g)

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8.4 Genie Line Router GLR4

4-Wire(A) and 4-Wire(B)	Two RJ-45, 600Ω balanced, level adjustable
4-Wire(C) and 4-Wire(D)	Input: XLR-3F, Output: XLR-3M, 600Ω balanced, level adjustable
GPIO (D) audio Input/Output	DB25F, 600Ω unbalanced, level adjustable
GPIO 12VDC	DB25F, 12VDC
PC PROG	25-pins D-type female, Updating the Panel firmware
PoE Input	PoE (PD) Ethercon RJ-45 connector, 100Mbps Standard PoE specification
LAN1, LAN2	Two Ethercon RJ-45 connectors, 100Mbps Standard specification
Power Input	Two 11.4-12.6VDC or PoE from the Network Switch The external PSU provides the 12VDC 3.33A required and at its input takes 100-240VAC, 47-63Hz.
Operating Temperature	0°C to 50°C (32°F to 122°F)
Dimensions	16.83W x 8.03L x 1.73H inch (42.75W x 20.4L x 4,4H cm)
Weight	7.05 lb (3200g)

8.5 WAN Link

4-Wire(A) and 4-Wire(B)	Two RJ-45, 600Ω balanced, level adjustable
4-Wire(C) and 4-Wire(D)	Input: XLR-3F, Output: XLR-3M, 600Ω balanced, level adjustable
GPIO (D) audio Input/Output	DB25F, 600Ω unbalanced, level adjustable
GPIO 12VDC	DB25F, 12VDC
PC PROG	25-pins D-type female, Updating the Panel firmware
PoE Input	PoE (PD) Ethercon RJ-45 connector, 100Mbps Standard PoE specification
LAN1, LAN2	Two Ethercon RJ-45 connectors, 100Mbps Standard specification
Power Input	Two 11.4-12.6VDC or PoE from the Network Switch The external PSU provides the 12VDC 3.33A required and at its input takes 100-240VAC, 47-63Hz.
Operating Temperature	0°C to 50°C (32°F to 122°F)
Dimensions	16.83W x 8.03L x 1.73H inch (42.75W x 20.4L x 4,4H cm)
Weight	7.05 lb (3200g)

8.6 Headsets, Gooseneck microphones

Headsets

Model		**LSH-S125D**	**LMH-125D**	**LNH-20D**	**LMH-10**	**PTE-850**
Type		Double Headphone	Single Headphone	Neckband, Single Earphone	Lightweight Single Headphone	Single Earphone
Micro phone	**Type**	Dynamic Unidirectional, Noise Cancelling	Dynamic Unidirectional, Noise Cancelling	Dynamic Unidirectional, Noise Cancelling	Dynamic Unidirectional, Noise Cancelling	Electret
	Boom	300-degrees rotation Mute on/off	300-degrees rotation Mute on/off	Adjustable	270-degrees rotation	PTT Mic
	Impedance	560 Ohms±20%	560 Ohms±20%	200 Ohms±20%	200 Ohms±20%	2.2K Ohms
	Sensitivity	-62dB±3dB	-62dB±3dB	-66dB±4dB	-68dB±4dB	-50dB±4dB
	Frequency Response	400Hz~7KHz	400Hz~7KHz	200Hz~12KHz	100Hz~10KHz	20Hz~20Khz
Head Phone	**Impedance**	16 Ohms	32 Ohms	80 Ohms	32 Ohms	32 Ohms
	Max Input	500mW	500mW	300mW	300mW	50mW
	Output SPL	93dB±3.0dB at 1KHz	93dB±3.0dB at 1KHz	112dB±5.0dB at 1KHz	118dB±4.0dB at 1KHz	106dB±4.0dB at 1KHz
	Frequency Response	200Hz~10Khz	200Hz~10Khz	100Hz~3.5Khz	300Hz~4Khz	300~5Khz
Connector		6-pin mini-DIN	6-pin mini-DIN	6-pin mini-DIN	6-pin mini-DIN	6-pin mini-DIN
Cable		1200mm	1200mm	1350mm	1350mm	
Weight				120g	105g	

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Gooseneck microphones

Model	GM8	GM26
Type	Electret	Electret
Polar Pattern	Cardioid	Cardioid
Impedance	200 Ohms	100 Ohms
Sensitivity	-65dB±3dB	-60dB±3dB
Frequency Response	80Hz~18KHz	60Hz~17KHz
Phantom Power	9V~52V	9V~52V
Connector	XLR-3M	XLR-3M
Length	7.58inch (192mm)	17.9 (454mm) ~ 26.2inch (665mm)
Weight	80g	200g

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Section 9: 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 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 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 an intercom Panel that sends audio signal. A Panel to which audio signal is transmitted is called a Destination.

Destination: In this manual, a device such as an intercom Panel to which audio signals are sent. A 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, Panel, Line, or group channel. Labels appear on the 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 (two paths). Line is four- wire balanced.

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

Call signal: A call signal is an electronic signal sent from one Panel to another. A call signal can be audible and/or Vibration. Typically, a call signal is sent to get the attention of a 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 Panel with Ethernet.

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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: Genie Panels are registered to the GCMW over the LAN. This pairing process allows 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.

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