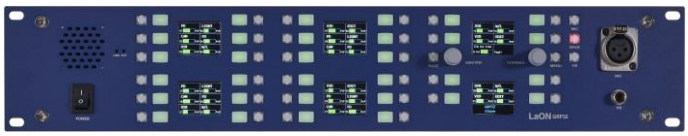
Genie Key Panels

Genie Rack Panel GRP16
Genie Desktop Panel GDP16
Genie Rack Panel GRP32
Genie Rack Panel GRP8-12V
Genie Desktop/Wall Panel GDP4
Genie Line Router GLR4
Genie WAN Link GWL

Converged Intercom System, 5Ghz wireless + IP Key Panels

Genie Key Panels Quick-Start Guide (Version V2230705)

(Revision: GRP16, GDP16, GRP32)



LaON Technology

Contents

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

This revised manual adds a Key Panel GRP16 and GDP16 that provides 16 Keys (32 Keys with Shift) to 128 Channel Version's Key Panel manual. In addition, a GRP32 with 32 Key has also been added. The added Key Panels can be used with Key Panels (GRP8-12V, GDP4) for 128 channels.
Master mode has been added as a its new feature to 128 Channel Version's Genie Line Router GLR4. Master mode provides the ability a new function to use five Genie group channels without the connection of a Base Station (BS1000, BS850). With this feature, the Ethernet Beltpack IBP10 can be connected to a GLR4, and you can configure the wired system with GLR4, Key Panels and IBP10.

WAN Link is a device that connects Key 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.
Key Panel's firmware is divided into 20 and 128 channels, and the version that can be connected to the WAN Link device is as follows. Key Panel and Line Routers with a low firmware version installed will be able to use the 128 Channel and WAN Link functions after the firmware upgrade.

20-channel version that connects to WAN Link
Genie Rack Panel GRP8/GRP8-12V: Version V3431
Genie Desk Panel GDP4: Version V0831
Genie Line Router GLR4: Version V0004

GCMW (Genie Configuration Manager-WAN)
GCMW is a PC software for 20 channel Key Panels that allows you to set the WAN Link.

Note: GCM (Genie Configuration Manager) cannot set the WAN Link

128-channel version that connects to WAN Link
Genie Rack Panel GRP16/GRP32, Desktop Panel GDP16: WAN Link can be connected.
Genie Rack Panel GRP8/GRP8-12V: Version V3501
Genie Desk Panel GDP4: Version V0901
Genie Line Router GLR4: Version V0010

GCMV2 (Genie Configuration Manager-Version 2)
GCMV2 is a PC software for 128 channel Key Panels that allows you to set the WAN Link.

Upgraded functions for 128 channel version
- 128 Key Panel connections
- Use five Genie group channels by connecting only Key Panels to the Line Router without a Base Station
- Connect the Ethernet Beltpack IBP10 to the Line Router and use five Genie group channels in conjunction with Key Panel
- Key Panel 장치에서의 Line audio Routing 기능
- Expanded the number of Group key configurable Destinations (Key Panel, Genie group channel) on the Key Panel from 8 to 20

Genie Key Panel
Genie is an interoperable 5Ghz wireless + IP Key Panel system.
- **'Matrix-free' IP network intercom system**
- **Peer-to-peer communications, Group keys**
- **Interoperability with Genie group channels (Conference mode)**
- **Line connections and Line audio routing**
- **Various configurations of IFBs**

Key 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 Key Panels provide various audio paths such as the peer-to-peer talk/listen paths and group key, interoperation with Genie group channels (Conference mode), Line connections, Line audio routings and IFBs. By the interoperation between Genie and Key Panels, Genie provides an integrated 'matrix-free' IP networking intercom solution that comprises IP intercom, wireless devices and Key Panels.
Genie Key Panel offers a redundant power design powered by Power over Ethernet (PoE) and two PSUs. These PSUs are used as primary power if PoE is not available, or as redundant power with PoE. In addition, two LAN connectors allow for daisy-chain connections. 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 GCMV2 (Genie Configuration Manager-Version 2) supports for an efficient and integrated management of the system by its easy setup of the configurations and various monitoring functions with full visibility.

1.1 Overview

Key Panels

Model	Description	Talk key	4-Wire	Daisy-chain PoE	LAN	PoE In	Relay	Opto Input	Format	Power Redundancy
GRP32	Rack Panel	32	4		2	1	2	2	2RU	(2xPSU)+PoE
GRP16	Rack Panel	16	4		2	1	2	2	1RU	(2xPSU)+PoE
GDP16	Desktop Panel	16	4		2	1	2	2	Desk/Wall	(2xPSU)+PoE
GRP8	Rack (Discontinued)	8	4	2		1	2	2	1RU	(2xPSU)+PoE
GRP8-12V	Rack Panel	8	4		2	1	2	2	1RU	(2xPSU)+PoE
GDP4	Desktop/Wall Panel	4				1			Desk/Wall	PoE
GLR4	Line Router		4		2	1			1RU	(2xPSU)+PoE
GWL	WAN Link		4		2	1			1RU	(2xPSU)+PoE

Talk keys

Description	GRP32	GRP16/GDP16	GRP8-12V	GDP4
Talk keys	32	16	8	4
Shift keys		16	8	X
Pages	4	4	4	X
Talk channels in one Group key	20	20	20	20

Key Panel main features

Set the Talk channels

To communicate with the Destinations, you can set on the Talk key as follows:

- Genie group channels (conferencing mode) of the Genie Base Station (BS1000 or BS850) or Line Router GLR4
- Peer to Peer: Specify one Key Panel out of 128 Key Panels
- Full-duplex communication with four Lines on the Key Panel or Line Router
- Group key: Set up 20 Key Panels or Genie Group channels and Lines (4-Wire) on one Talk key for simultaneous communication
- IFB destinations: IFB functions such as IFB members, IFB (Callers), IFB dim levels, Monitoring, etc.

Features that can be added to Talk channel

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

Four Pages

Each Page consists of up to 32 Talk channels. You can choose from 128 Key Panels, 5 Genie group channels, and Lines (4-Wire) to configure a Talk channel. Using the Page button, you can select and use Page.

Shift channels (16 or 32 Talk channels in one Page)

GRP8-12V: While listening to 16 Talk channels (Main + Shift), tapping the Shift button will change to 8 Shift channels without interruption.

GRP16, GDP16: While listening to 32 Talk channels (Main + Shift), tapping the Shift button will change to 16 Shift channels without interruption.

Line A, B, C, D

Four Line Input / Output ports (4-Wire) are provided to secure seamless connections with intercom systems or external audio devices.

Line Router and Line audio Routing

- The input and output audio of Line Router GLR4 and Key Panel's Lines (A,B,C,D) can be routed to Genie group channels or Key Panels.
- Genie group channels can be used as wireless and wired IFBs by connecting the BS1000 Line to Program audio.

GPIO

Two relays, two opto-isolated inputs and AUX D.

AUX D provides an unbalance audio input and output functions. When the Relay and AUX D are set on the Talk channel, you can connect with the Walkie-talkie.

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.

GCMV2 (Genie Configuration Manager-Version 2) for setting and monitoring

With GCMV2, 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.

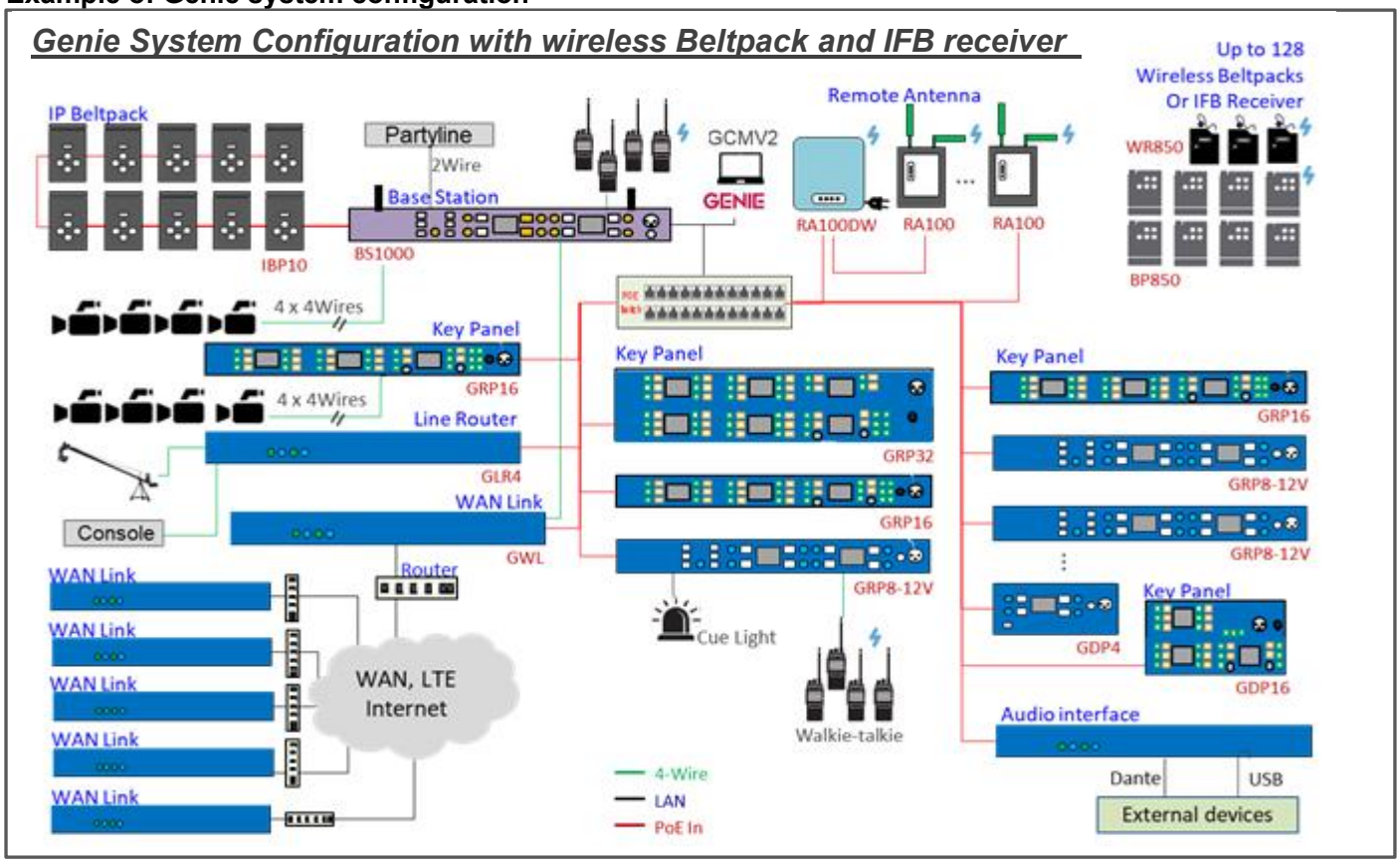
1.2 Key Panel Configurations

Genie + Key Panel

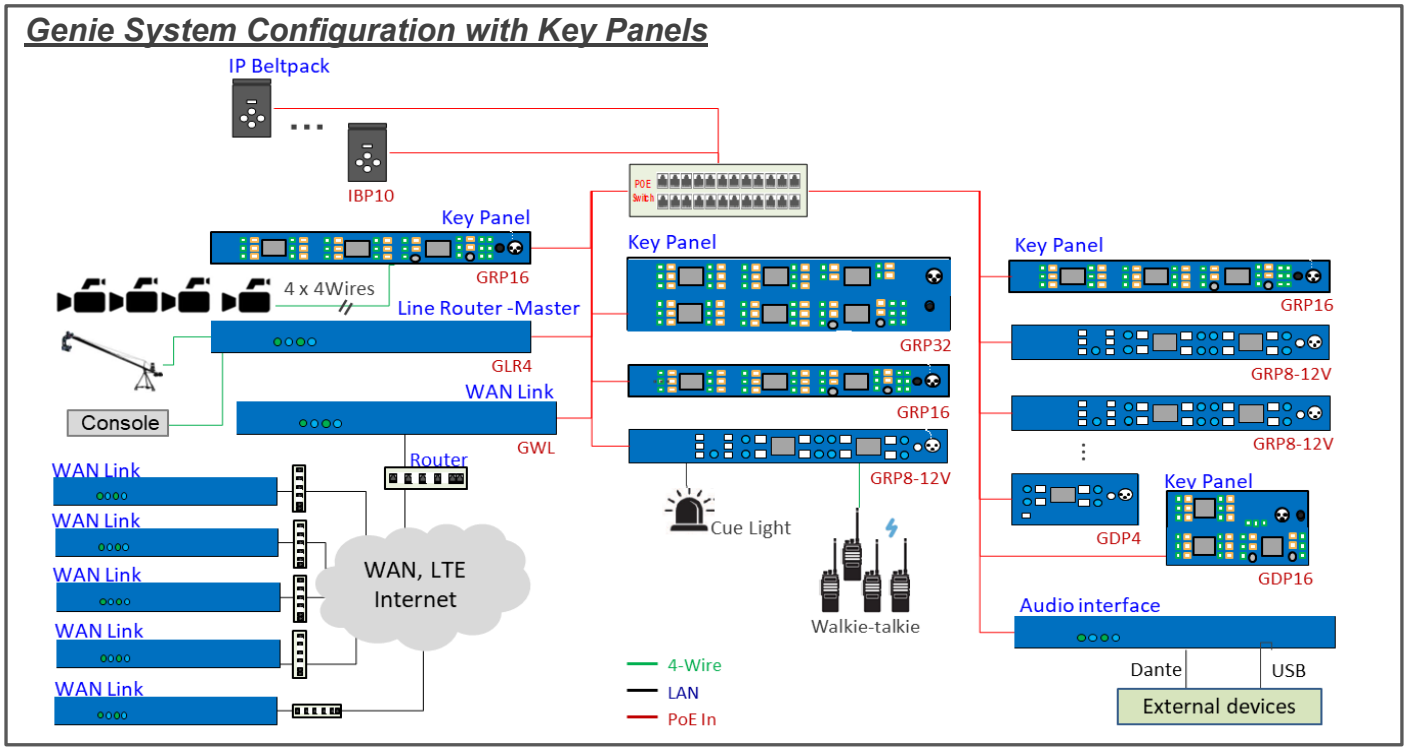
Genie Wireless	Key Panel	Genie + Key Panel
Ethernet Beltpack IBP10, Wireless devices	IP Key Panels and Ethernet Beltpack IBP10	Ethernet Beltpack, Wireless devices IP Key Panels and Ethernet Beltpack IBP10
Eight Talk keys	32, 16, 8 Talk keys	32, 16, 8 Talk keys
Five Genie group channels (Conference mode) per Base Station	Peer to peer, Group keys, Five Genie group channels (Conference mode) per Line Router	Five Genie group channels (Conference mode), Peer to peer, Group keys
Wireless IFB	IFB for Key Panels	Wireless IFB + IFB for Key Panels
4 Lines(4-Wire/2-Wire), Line audio routing to Genie group channels	4 Lines(4-Wire), Line audio routing to the Key Panels and Genie group channels	4 Lines(4-Wire/2-Wire), Line audio routing to the Key Panels and Genie group channels

Example of Genie system configuration

Genie System Configuration with wireless Beltpack and IFB receiver

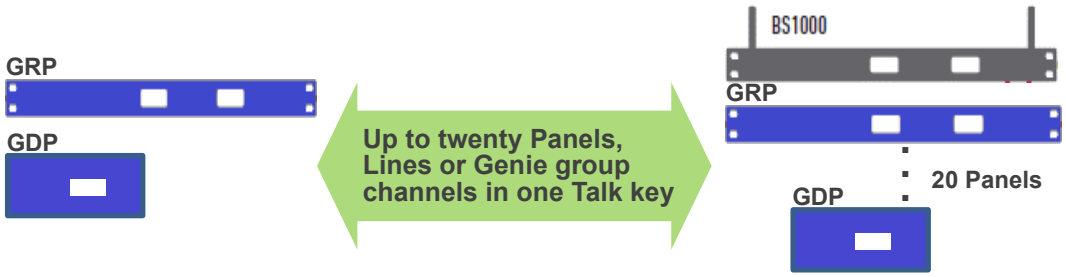


Genie System Configuration with Key Panels

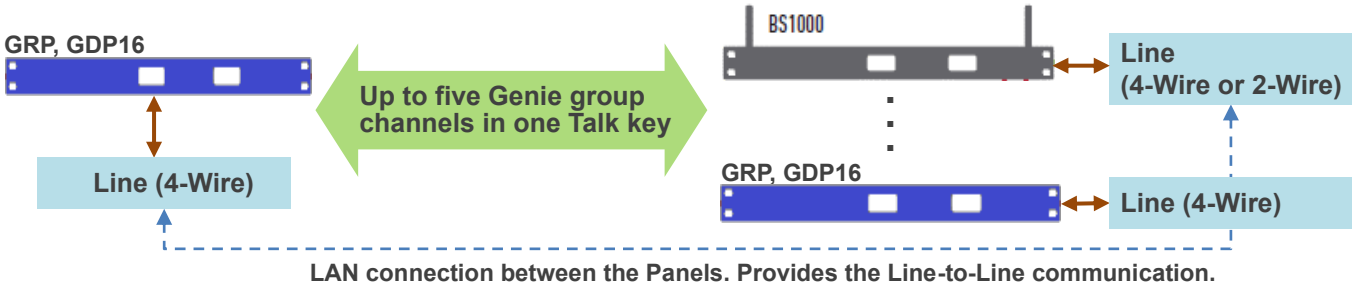


Set Talk keys

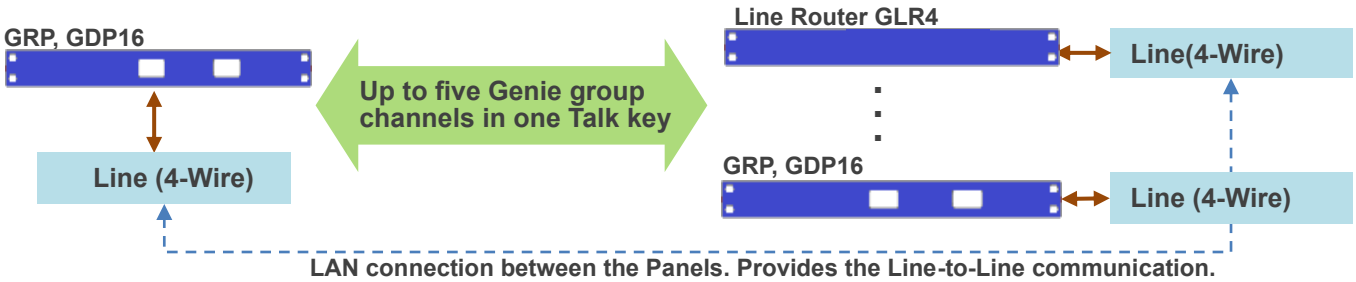
Set Group key on one Talk key



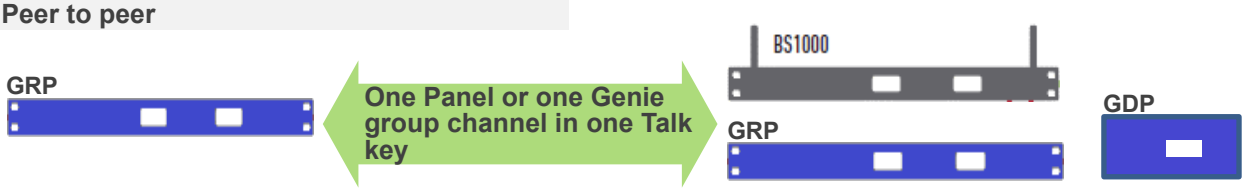
Line Routing to the Genie group channels with Base Station



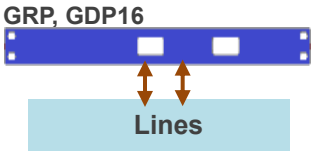
Line Routing to the Genie group channels without Base Station



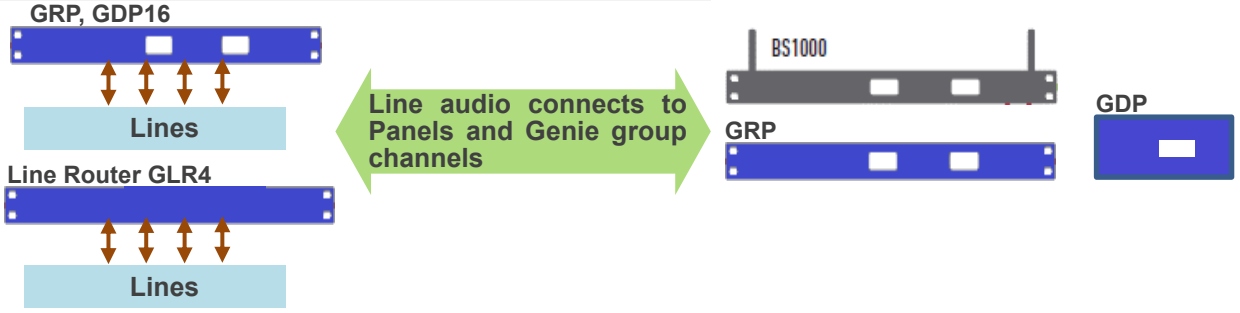
Peer to peer



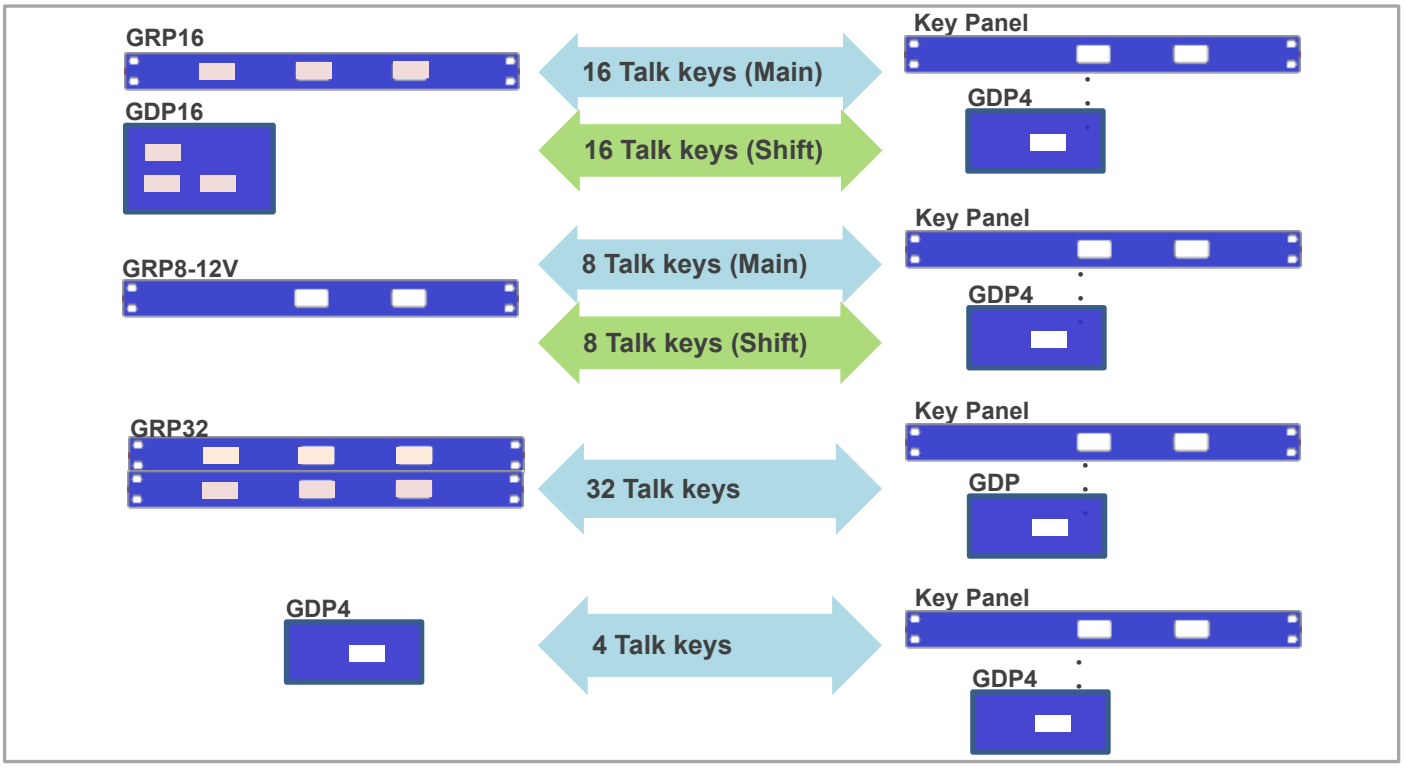
Set Lines to a Talk key



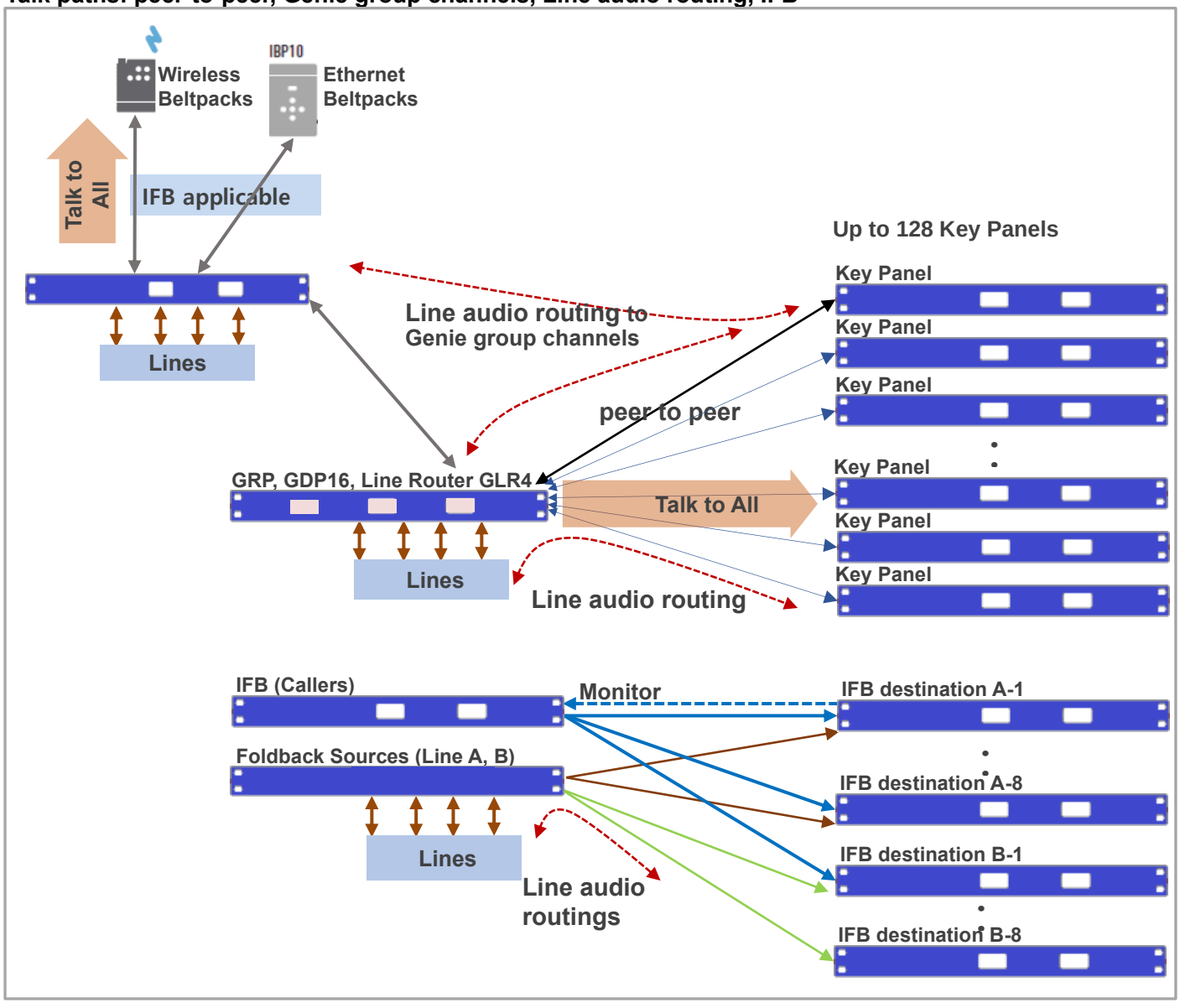
Line routing of the Key Panel or Line Router GLR4



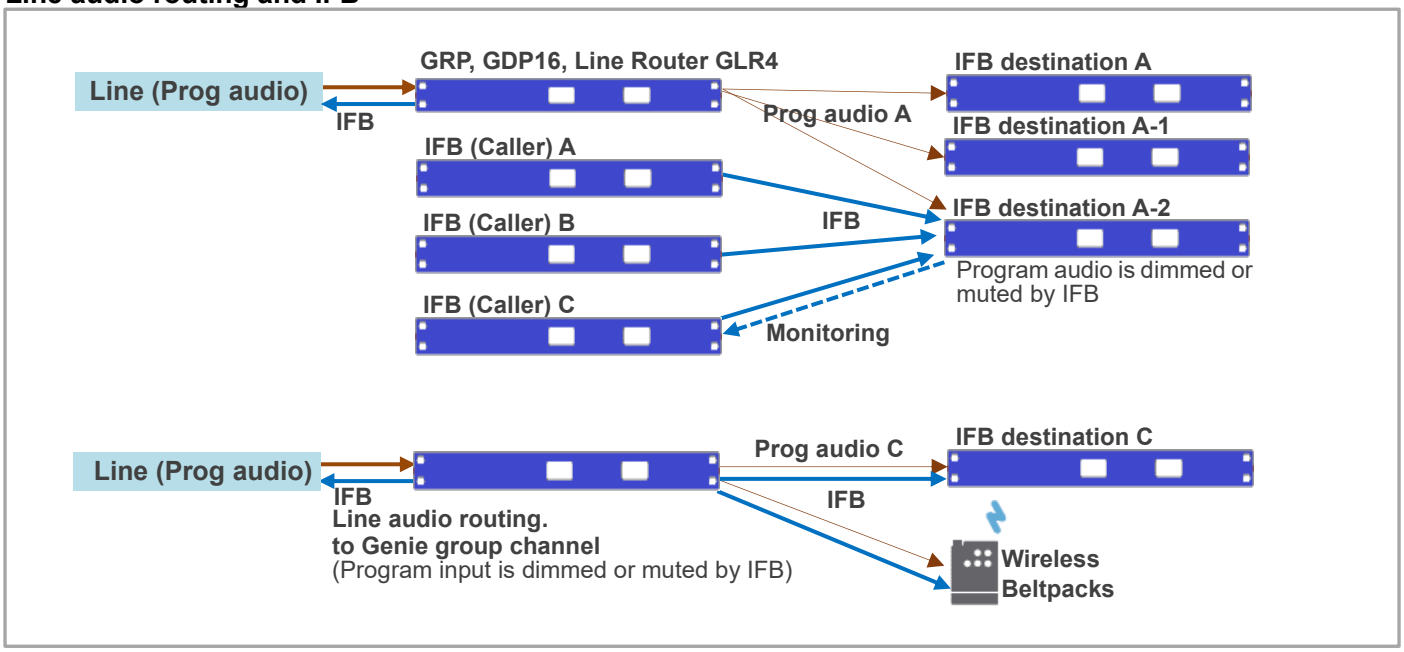
Talk keys on the Key Panel



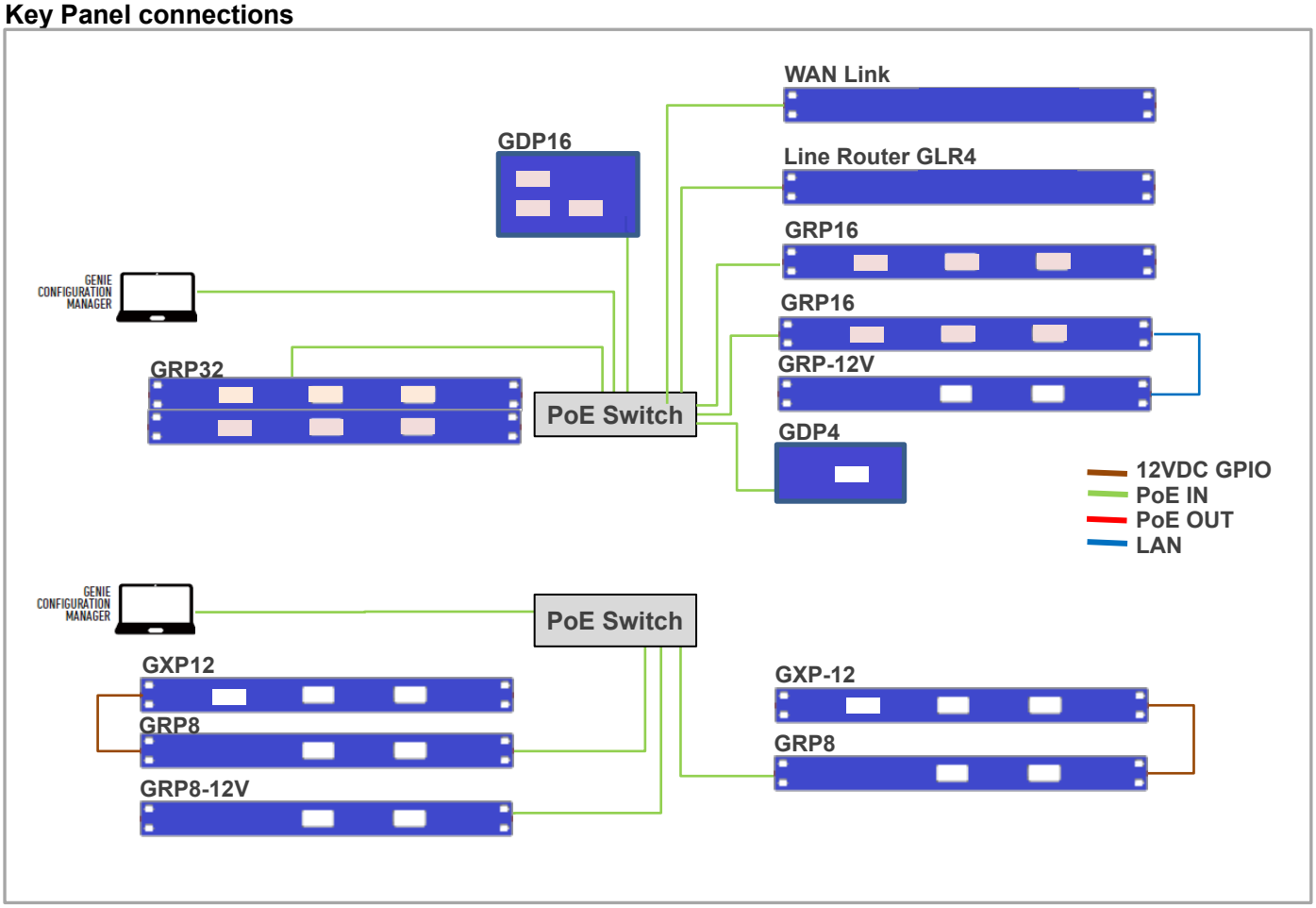
Talk paths: peer-to-peer, Genie group channels, Line audio routing, IFB



Line audio routing and IFB



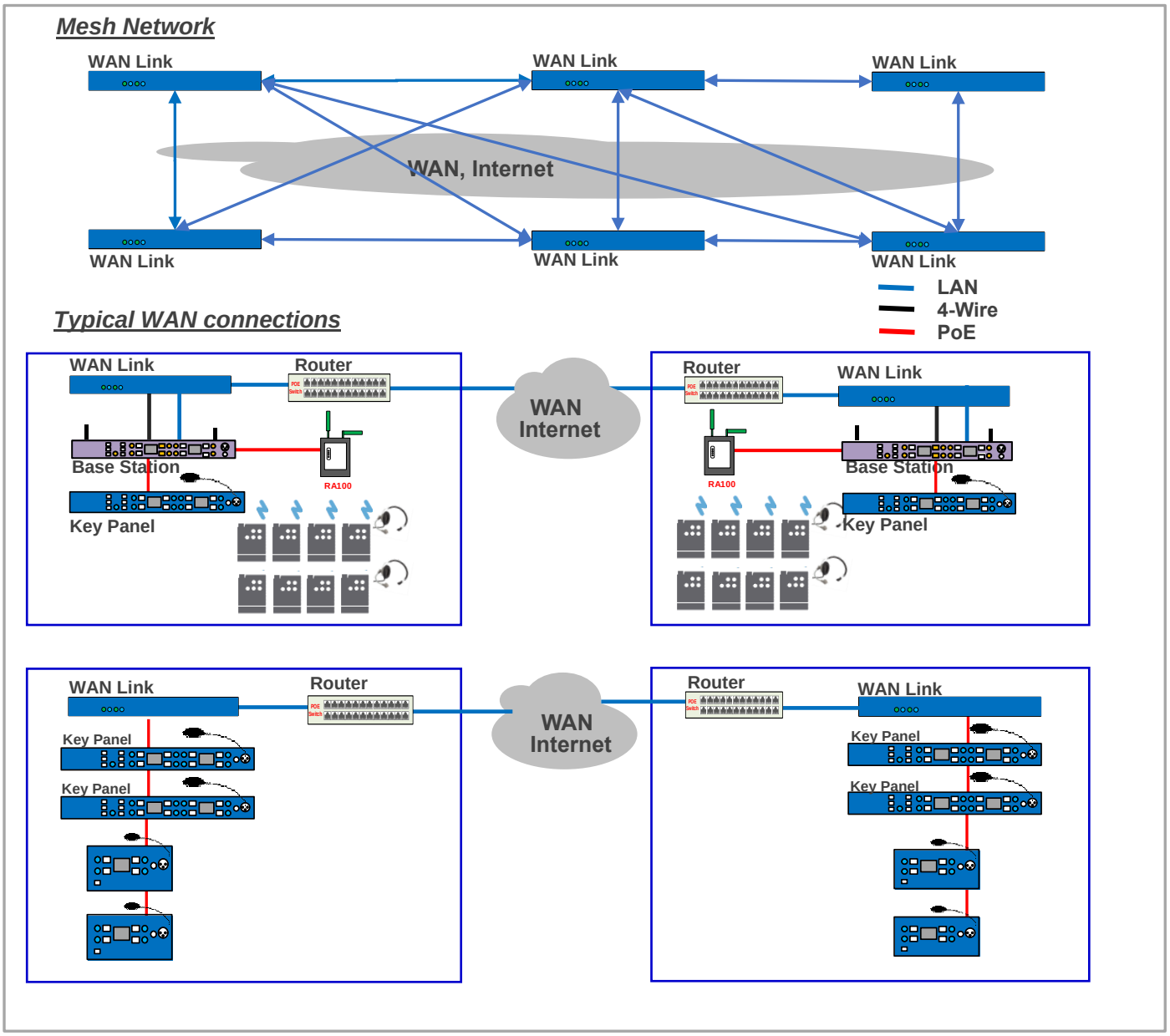
Key Panel connections



WAN connections

You can configure the mesh network between WAN Links. Six WAN Links can be connected to any other WAN Link. Provides Peer-to-Peer communication between the Key Panels connected to WAN Link. Each WAN Link's Line (4-Wire) can be connected to the Base Station for communication between remote wireless Beltpacks.
For more information, see WAN Link User Manual.

Genie Rack Panel GRP16, GDP16: WAN Link can be connected.
Genie Rack Panel GRP8 (Discontinued), GRP8-12V: Version V3431
Genie Desk Panel GDP4: Version V0831
Geniie Line Router GLR4: Version V0004
Versions lower than those described above are available for WAN Link connections after a firmware upgrade.



- 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)
- From up to 128 Key Panels, including remote locations, select the Key Panels that you want to associate with WAN Links.

Section 2: Product overview

2.1 Key Panel equipment

Genie Rack Panel GRP16 equipment

11.4-12.6VDC 3.33A 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 LANs, 2 Power input 12VDC
- Front panel: Power switch, Loudspeaker, Gooseneck Mic, Headset connector (6pin Mini-Din Receptacle), Master Volume with Push to Select, Channel Volume, Mic/SPKR/HS/Shift (Page)/Menu buttons, 16 Talk keys, 16 Select Volume (call) buttons, 3 TFT color displays

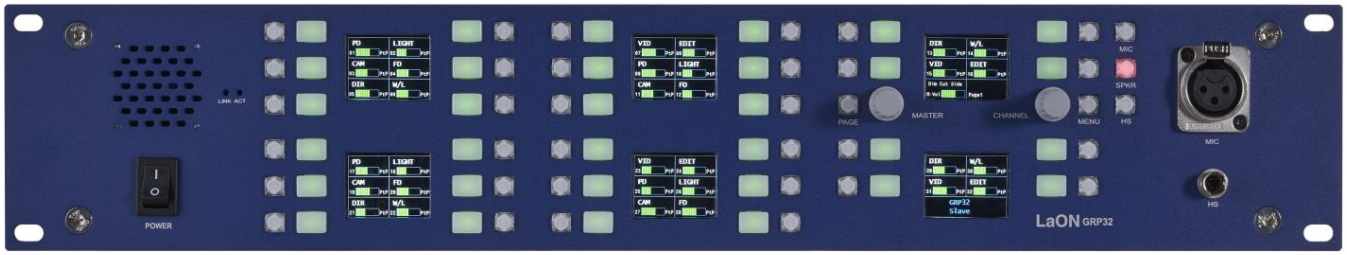
Genie Desktop Panel GDP16 equipment

11.4-12.6VDC 3.33A Power Supply
(One more is available as an option)

Wall Mount Kit (Optional)

- Rear panel: 4 Lines (4-Wire), Two relays and two opto-isolated inputs, Expansion I/O with 12VDC, PC Programming (Firmware), PoE In, Two LANs, 2 Power input 12VDC
- Front panel: Power switch, Loudspeaker, Gooseneck Mic, Headset connector (6pin Mini-Din Receptacle), Master Volume with Push to Select, Channel Volume, Mic/SPKR/HS/Shift (Page)/Menu buttons, 16 Talk keys, 16 Select Volume (call) buttons, 3 TFT color displays

Genie Rack Panel GRP32 equipment



11.4-12.6VDC 3.33A 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 LANs, 2 Power input 12VDC
- Front panel: Power switch, Loudspeaker, Gooseneck Mic, Headset connector (6pin Mini-Din Receptacle), Master Volume with Push to Select, Channel Volume, Mic/SPKR/HS/Shift (Page)/Menu buttons, 32 Talk keys, 32 Select Volume (call) buttons, 6 TFT color displays

Genie Rack Panel GRP8-12V equipment

11.4-12.6VDC 3.33A 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 LANs, 2 Power input 12VDC
- 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 Rack Panel GRP8 (Discontinued) 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 for GRP8

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

Desk or 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, Headset selection 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
(One more is available as an option)

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

WAN Link equipment

11.4-12.6VDC 3.33A Power Supply
(One more is available as an option)

- 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)

LME-880 (Earphone)

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

2.2 Menu maps

Genie Configuration Manager-Version 2 (GCMV2)

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

Genie Rack Panel GRP32, GRP16, GDP16 menu

Normal menu	Main menu	Sub menu 1
Display Key Panel labels.	**Screen 2:** Display Key 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 Key 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:** Set the latch options for 32 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 Key Panel
	Set Expansion	**Reserved**

Genie Rack Panel GRP8-12V menu

Normal menu	Main menu	Sub menu 1
Display Key Panel labels.	**Screen 2:** Display Key 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 Key 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:** Set the latch options for 16 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 Key Panel
	Set Expansion	**Reserved**

Genie Desktop/Wall Panel GDP4 menu

Normal menu	Main menu	Sub menu 1
Display Key Panel labels.	Display Key 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 Key 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 Key Panel

Section 3: Operating the Key Panels

3.1 Connecting the Key Panel GRP8-12V, GRP8 (Discontinued), GDP4

Genie Rack Panel GRP8/GRP8-12V: Front panel

Genie Desktop/Wall Panel GDP4: Front panel

1. **Power switch**
2. **Loudspeaker**
24. **Network status LEDs (Link/Active)**
29. **Headset connector (6pin Mini-Din Receptacle)**
30. **Gooseneck microphone connector (XLR3F)**
32. **Ear for rack mounting**

GRP8 (Discontinued), GRP8-12V rear and GDP4 right panel

Genie Rack Panel GRP8 (Discontinued): rear panel

Genie Rack Panel GRP8-12V: rear panel

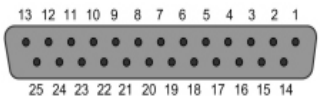
Genie Desktop/Wall Panel GDP4: right panel

Desk mount kit

Wall mount kit

1. **Line A (4-Wire) connector (RJ-45)**
2. **Line B (4-Wire) connector (RJ-45)**
3. **Line C (4-Wire) input connector (XLR-3F)**
4. **Line C (4-Wire) output connector (XLR-3M)**
5. **Line D (4-Wire) input connector (XLR-3F)**
6. **Line D (4-Wire) output connector (XLR-3M)**
7. **PC PROG connector (25-pin female D-type):** For firmware upgrades.

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 between Key Panel GRP8 (Discontinued) and Expansion Panel GXP12. Supplies 12 VDC to the Expansion Panel.

Opto-isolated Inputs

Key Panel provides two optically isolated inputs.

Relays

Key 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.

Talk key can be assigned the relay and opto-isolated input function with other Talk channels. While pressing Call, you can activate Destination Key Panel's Relay, including Key Panels from remote locations connected to WAN Link.

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

AUX D (unbalanced audio)
Pin 12,13,24,25 are unbalanced audio signal pins that are shared with Line D (4-Wire, #5).
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. When connecting a walkie-talkie, use it in conjunction with Relay. Depending on the type of walkie-talkie, additional connections such as resistors are required.

9. **GRP8 (Discontinued): Daisy-chain PoE Line1 connector (Ethercon RJ45, PSE)**
10. **GRP8 (Discontinued): Daisy-chain PoE Line2 connector (Ethercon RJ45, PSE)**
    Provides the daisy-chaining capability of PoE. Uses power from PoE In or PSU and supplies the remaining power to the PoE Line.

11. **100Mbps, PoE input connector (Ethercon RJ45, PD)**
    The Key Panel can automatically select and use any power from the PoE In and two power input sockets. You can use these features to configure power redundancy.
    A Key Panel GRP8 (Discontinued) supplies power to itself and the daisy-chain PoE Line 1 and 2.

    If you are using a network switch, use the **1 Gbps or 100 Mbps and 802.3 at (PoE)** specification.

12. **GRP8 (Discontinued): 48VDC 2.5A Power input connector (4-pin Din)**
13. **GRP8 (Discontinued): 48VDC 2.5A Power input connector for duplex (4-pin Din)**
    The external PSU provides the 48VDC 2.5A required and at its input takes 100-240VAC, 47-63Hz.
    A Key Panel GRP8 supplies power to itself and the daisy-chain Poe Line1 and 2, using power from PoE In or two power input sockets.
    A Key Panel GRP8 can provide up to 75 watts of power for the two Daisy chain PoE Lines. The Key Panel can automatically select and use any power from the PoE In and two PSU inputs. You can use these features to configure power redundancy.

14. **Chassis ground hole**

15. **GRP8-12V: Reserved Expansion Input/output and 12VDC connector (Ethercon RJ45)**
    Connect the Key Panel GRP8-12V to the Expansion Panel and supply 12VDC power to the Expansion Panel. (Reserved)

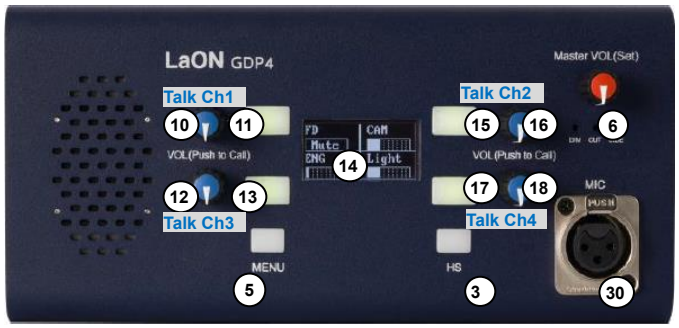
16. **Genie Desktop/Wall Panel GDP4 Headset connector (6pin Mini-Din Receptacle)**
17. **GRP8-12V: LAN1 connectors (Ethercon RJ45)**
18. **GRP8-12V: LAN2 connectors (Ethercon RJ45)**

19. **GRP8-12V: 12VDC 3.33A Power input connector**
20. **GRP8-12V: 12VDC 3.33A Power input connector**
    Power input connectors of the Key Panel GRP8-12V. The external PSU provides the 12VDC 3.335A required and at its input takes 100-240VAC, 47-63Hz.
    The Key Panel can automatically select and use any power from the PoE In and two PSU inputs. You can use these features to configure power redundancy.

3.2 Operating the Key Panel GRP8-12V, GRP8 (Discontinued), GDP4

Front panel controls

Genie Rack Panel GRP8/GRP8-12V: Front panel



Genie Desktop/Wall Panel GDP4: Front panel

3. **Mic on/off button (LED indicator)**
4. **Loudspeaker on/off button (LED indicator)**
5. **Menu/Exit/Lock button (LED indicator)**

6. **Master volume, (Press to select DIM, CUT, Sidetone)**
   With the rotary control, adjust the listen level for the loudspeaker or headphone. When this switch is tapped, it is selected in the order of DIM, CUT, and Off.
   If you press this switch for more than 2 seconds and release it, the Sidetone level menu will appear. Adjust the sidetone level using the rotary control.

7. **Shift button (LED indicator)**
   You can toggle the key labels between the Main and Shift channels by tapping the shift button.
   Shift function within one Page.
   - The GRP8-12V, GRP8's (Discontinued) Main or Shift channel each consist of eight Talk channels.
   - A Page consists of up to 16 Talk channels. Using the Shift button, you can toggle the Talk channels within one Page (Main and Shift).
   - In Main or Shift channel, you can listen to all the channels on a page at the same time. However, the Talk key only works with the currently displayed Talk channels.
   - When you tap the Shift button, the green LED lights up and displays the labels of the Shift channel. When you tap again, the labels on the Main channel are displayed and the green LED is off.

   Note: The latched Talk channel (the channel on which the Talk path was created) remains in the state in which the Talk path was created even if you switch to Shift or Main.

8. **Page button (LED indicator)**
   Each Page can consist of up to 16 programmable Talk channels. For each Page's Talk Channels, you can set up Genie Group Channels, Lines, or Key Panels.
   You can select one of the four Pages.

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 Main and Shift.

10. **12. 16. 18. 19. 21. 26. 28. Talk channel T1~T8 Volume controls, and push to call (or Relay)**
    Adjust the level to Rotary control, and 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 the 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. Call signal is sent while a Call (Rotary control) is pressed, and when released, it stops sending.

Wan Link can transmit Call signals for items shown in blue in the table below.

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

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 for items shown in blue in the table below.

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

Activate the Destination Key Panel's Relay from the Source Key Panel

In the Panel key settings screen of the GCMV2, set the Opto-input and Relay together on the Talk channel of the Destination Key Panel. When you press Call on the Source Key Panel, the Destination Key Panel displays the Call signal, and at the same time the Relay is also triggered while a Call (Rotary control) is pressed.

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

The attributes of the Talk channel

Talk channel can be set to the following attributes:

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

Talk + Listen: When programming a Key Panel, all Talk channels will default to Talk + Listen. This mode ensures that all Talk keys have talk/listen (full-duplex) paths with the associated Key Panels. The listener can simply mute the listen level by turning the rotary switch on the corresponding Talk channel.

Talk only: For each Talk channel, 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 channel if the listener tries to avoid missing an important call.

AL (Auto Listen): Even if the Listen level is muted, if you press the Talk key, the Listen level will be automatically adjusted to the AL level. You can also adjust listen level to enable listen.

IFB source: Press Talk key set to IFB source (Caller) to create a Talk path to the IFB Destination. You can also monitor listening audio on the IFB Destination. The Talk channel's label in the Normal menu is displayed as inverted text, and the Talk key LED is lit amber

Momentary or Latching: 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 channels

To communicate with the Destinations, you can set on the Talk channel as follows:

- Genie group channels (conferencing mode) of the Base Station (BS1000 or BS850) or Line Router GLR4
- Peer to Peer: Specify one Key Panel out of 128 Key Panels
- Full-duplex communication with four Lines on the Key Panel or Line Router
- Group key: Set up 20 Key Panels or Genie Group channels and Lines (4-Wire) on one Talk channel for simultaneous communication
- IFB destinations: IFB functions such as IFB members, IFB (Callers), IFB dim levels, Monitoring, etc.

Features that can be added to Talk channel

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

Genie group channels (conference mode)

You can connect the Key Panels to the Remote Antenna of the Base Station (BS1000, BS850) to use the wireless Genie group channels. For configurations without a Base Station, Key Panels can also be connected to Line Router GLR4 to use Genie group channels (for Wire). One Remote Antenna or Line Router provides 128 Listen paths and 10 simultaneous Talk paths for the Genie group channels.

Up to five Genie group channels can be set on one Talk channel.

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

When the Key Panels (or Line Router GLR4) use Genie group channels, a Remote Antenna provides unrestricted listen paths and ten simultaneous Talk paths (full-duplex, Shared with wireless Beltpacks).

Peer to Peer: One Key Panel can be set on the Talk channel for setting point-to-point communication path.

Group key: Up to twenty Key Panels, Lines or Genie group channels can be set on one Talk channel.

Line (4-Wire): You set the Lines directly to the Talk channel. You can hear audio input from Lines, 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 channel.

IFB: For detailed use examples, see Section 7, Genie Configuration Manager-Version 2, IFB operations.

Relay, Opto-isolated Input: The relay and opto-isolated input functions can be set together in addition to the Talk channel.

FL (Forced Listen): FL can be set on the Talk channel if the listener tries to avoid missing an important call. FL can be set in addition to the Talk channel.

AL (Auto Listen):

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.

Line audio routing on the Line Router GLR4:

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

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

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

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

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

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

The Talk keys themselves act as status indicators.

LED state	Description	Display
Solid red	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' or No indication
	Not paired	'Not paired'
	Not linked	'Unlink'
	Channel is busy (When press the Talk key, LED is not on)	'Channel is busy'

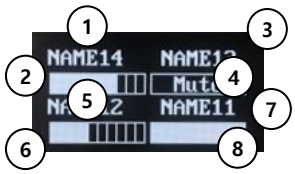
24. Network status LEDs (Link/Active)

31. GDP4: Select Headset button

Only the headset audio is activated when the LED is lit by tapping this 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 and there is no incoming call during a set timeout period. If there is any operation of the key, the display will turn on again.

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 2
4: Listen level of the Talk channel 2
5: Label of the Talk channel 3
6: Listen level of the Talk channel 3
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. When pressed, it sends a call (or Relay) signal to that channel. Each Talk path is created by pressing each Talk key.

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

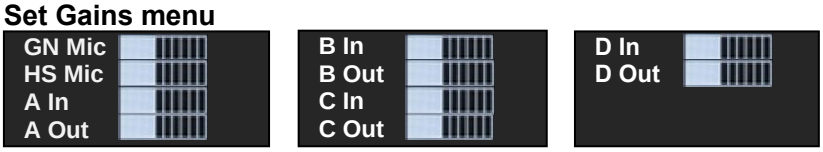
Blinking of Talk Channel Label (Applied from GRP8-12V Version 3806, GDP4 Version 1206)

The label of the Talk channel for which audio was most recently received above the Vox level blinks until another Talk channel receives audio.

Main menu

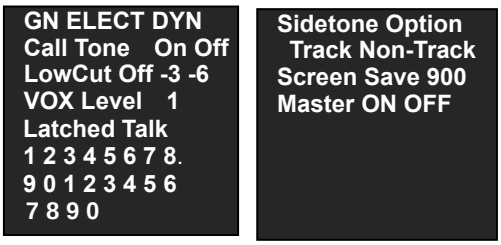
You enter Menu mode by pressing and releasing the Menu button.
The Main menu appears on the first screen, and Key Panel label, Paired date from the GCMV2, Page number currently in use, Linked Base Station label, Master/Slave/Destination (IFB), Model and Firmware version is displayed on the second screen. When the Key Panel is set to Master, 'Master' is displayed, and 'Slave' is displayed when set to Slave. The Key Panel set to the IFB destination displays 'Destination'.

Set Gains menu



GN Mic: Set the gooseneck microphone input level.
HS Mic: Set the headset microphone input level.
A In, B In, C In, D In: Set the Line input levels.
A Out, B Out, C Out, D Out': Set the Line output levels.

Set Panel menu



GN ELECT DYN: In the menu, select Electret (ELECT) or Dynamic (DYN) to set the type of Gooseneck microphone.
Call Tone On Off: When enabled, the user can hear the tone when a call occurs.
LowCut off: In Low Cut menu, you can set the cutoff level of low-frequency audio.

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)

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

Latched Talk: The user can set on the Talk key that the latch is enabled or disabled.
If the latch is disabled (Momentary) the Talk path is only open while the Talk key is pressed. If the latch is enabled, 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.

Expansion Pair menu

Connect the Expansion Panel to the master Panel GRP8 (Discontinued).
Pair the Expansion Panel to the master Key Panel.

3.3 Expansion Panel GXP12 for GRP8 (Discontinued)

Connecting the Expansion Panel GXP12

GXP12: Rear panel

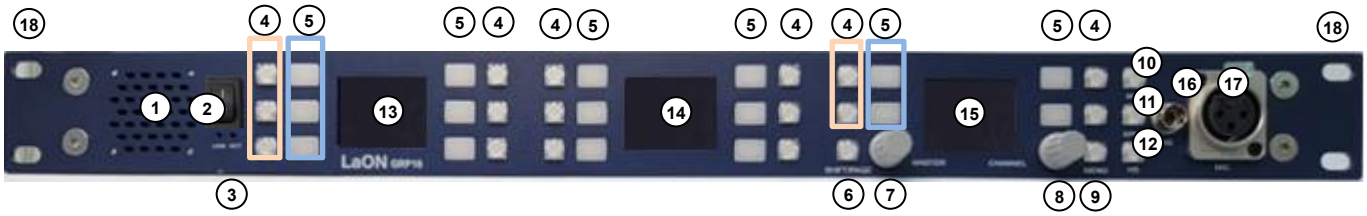
1. **PC PROG connector (25-pin female D-type):** For firmware upgrades.
2. **Daisy-chain Expansion Input/output and 12VDC connector (Ethercon RJ45)**
3. **Daisy-chain Expansion Input/output and 12VDC connector (Ethercon RJ45)**
   Provides Daisy-chain connection function to supply data and power from the Master Key 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.
4. **12VDC 3.33A Power input connector**
   The external PSU provides the 12VDC 3.33A required and at its input takes 100-240VAC, 47-63Hz.
5. **Chassis ground hole**

Operating the Expansion Panel GXP12 for GRP8

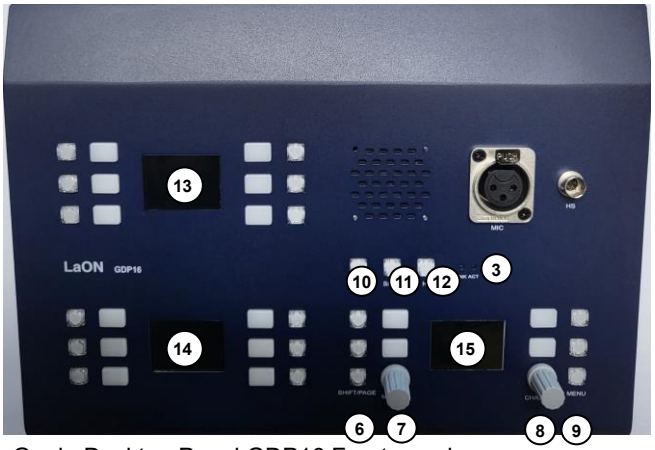
Expansion Panel GXP12: Front panel

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

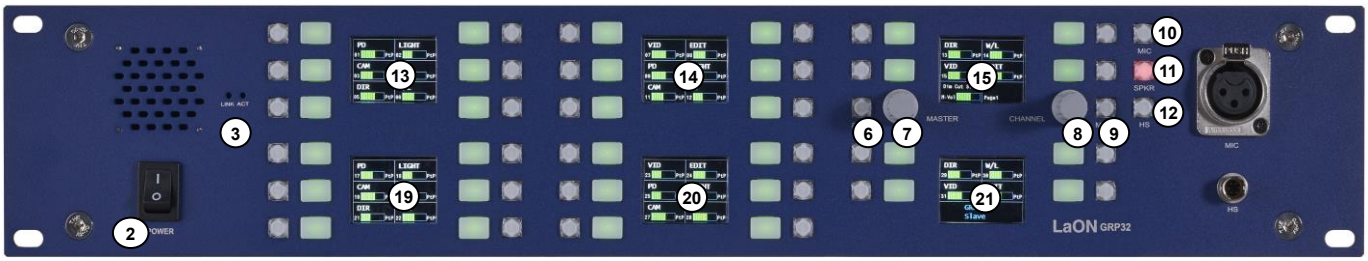
3.4 Connecting the Key Panel GRP16, GDP16, GRP32



Genie Rack Panel GRP16 Front panel



Genie Desktop Panel GDP16 Front panel



Genie Rack Panel GRP32 Front panel

1. **Loudspeaker**
2. **Power switch**
3. **Network status LEDs (Link/Active)**

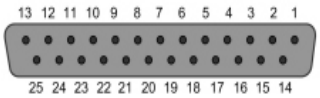
16. **Headset connector (6pin Mini-Din Receptacle)**
17. **Gooseneck microphone connector (XLR3F)**
18. **Ear for rack mounting**

GRP16, GDP16, GRP32 rear panel

Genie Rack Panel GRP16, GRP32 rear panel ports

Genie Rack Panel GDP16: rear panel

1. **Chassis ground hole**
2. **Reserved Expansion Input/output and 12VDC connector (Ethercon RJ45)**
3. **Line A (4-Wire) connector (RJ-45)**
4. **Line B (4-Wire) connector (RJ-45)**
5. **Line C (4-Wire) input connector (XLR-3F)**
6. **Line C (4-Wire) output connector (XLR-3M)**
7. **Line D (4-Wire) input connector (XLR-3F)**
8. **Line D (4-Wire) output connector (XLR-3M)**
9. **PC PROG connector (25-pin female D-type):** For firmware upgrades.
10. **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	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		

Opto-isolated Inputs

Key Panel provides two optically isolated inputs.

Relays

Key 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.

One Talk channel can be assigned the relay and opto-isolated input function with other Talk channels. While pressing Call, you can activate Destination Key Panel's Relay, including Key Panels from remote locations connected to WAN Link.

If you set the opto- isolated input and Relay together on a Talk channel, Relay will also be activated when an Opto-isolated input or Call is detected

AUX D (unbalanced audio)

Pin 12,13,24,25 are unbalanced audio signal pins that are shared with Line D (4-Wire).

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. When connecting a walkie-talkie, use it in conjunction with Relay. Depending on the type of walkie-talkie, additional connections such as resistors are required.

11. LAN1 connectors (Ethercon RJ45)
12. LAN2 connectors (Ethercon RJ45)

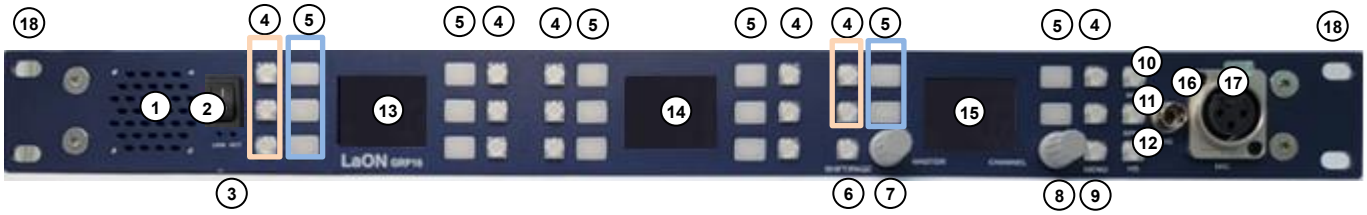
13. 100Mbps, PoE input connector (Ethercon RJ45, PD)
The Key Panel can automatically select and use any power from the PoE In and two power input sockets. You can use these features to configure power redundancy.
If you are using a network switch, use the **1 Gbps or 100 Mbps and 802.3 at (PoE)** specification.

14. 12VDC 3.33A Power input connector
15. 12VDC 3.33A Power input connector
The external PSU provides the 12VDC 3.335A required and at its input takes 100-240VAC, 47-63Hz.
The Key Panel can automatically select and use any power from the PoE In and two PSU inputs. You can use these features to configure power redundancy.

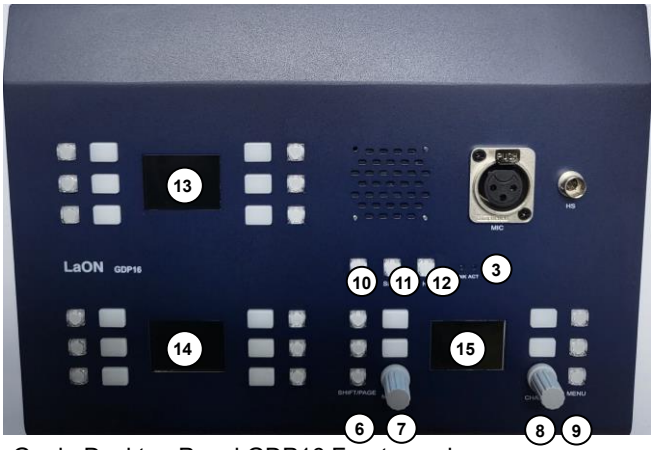
16. Power switch
Press the Power switch to turn on the Key Panel GDP16. Normal menu will appear.

3.5 Operating the Key Panel GRP16, GDP16, GRP32

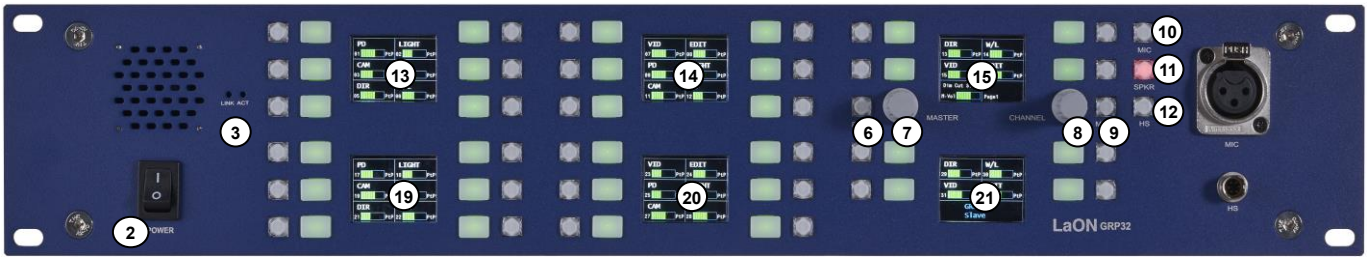
Front panel controls



Genie Rack Panel GRP16 Front panel



Genie Desktop Panel GDP16 Front panel



Genie Rack Panel GRP32 Front panel

4. **Select Channel Volume / Call (LED indicator)**
   To adjust the Talk channel's Listen level, activate Rotary control (Channel Volume, #8). When you tap this button, the LED lights up green and you can adjust the volume with the Rotary control (#8) for that channel.

   Call indicator:
   When the Incoming Call signal is received on the channel, the LED lights up amber. If you have more than 32 Incoming Calls, the previous data is cleared. The latest incoming call channel flashes slowly in amber.
   When the incoming call signal is received, the selection of Channel Volume is cleared.

LED state	Description	Display
Solid Green	Rotary control (#8) allows channel volume adjustment	Normal menu
Solid amber	Either incoming call from the caller or calling	Normal menu
Amber flashing slowly	Latest Incoming call	Normal menu

   Call
   During the press of this button (Momentary), Call or Relay signal is sent to the Talk channel. While pressing, the LED lights up in red. This signal can be transmitted through the WAN Link.

   Call signals: Genie can transmit call signals between devices as follows. Call signal is sent while this Call button is pressed, and when released, it stops sending.

   Wan Link can transmit Call signals for items shown in blue in the table below.

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

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 for items shown in blue in the table below.

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

Activate the Destination Key Panel's Relay from the Source Key Panel

In the Panel key settings screen of the GCMV2, set the Opto-input and Relay together on the Talk channel of the Destination Key Panel. When you press Call on the Source Key Panel, the Destination Key Panel displays the Call signal, and at the same time the Relay is also triggered while a Call (#4) is pressed.

5. Talk keys (LED indicator)

The Talk keys themselves act as status indicators.

LED state	Description	Display
Solid red	A Talk key is latched	Normal menu
Green flashing slowly	Received audio above VOX level	Normal menu
Solid Green	A listen path is open	Normal menu
Amber flashing slowly	IFB channel received audio above VOX level	Normal menu
Solid amber	IFB key is latched	Normal menu
LED is off	Only the relay is set to the Talk key.	Label
	Talk key is not assigned.	No indication
	Not paired	'Not paired'
	Not linked	'Unlink'
	Channel is busy (When press the Talk key, LED is not on)	'Channel is busy'

Note: A Talk channel whose audio is most recently received above the Vox level is labeled in red until another Talk channel receives audio.

The attributes of the Talk channel

Talk channel can be set to the following attributes:

- Talk + Auto Listen
- Talk only
- Forced Listen
- Auto Listen
- IFB source
- Latching or Momentary

Talk + Listen: When programming a Key Panel, all Talk channels will default to Talk + Listen. You can mute the Listen level by rotating the Channel Volume (#8).
Talk only: You can enable or disable listens for each Talk channel. For Talk only, disable the Listen for that Talk channel or mute it using the channel volume (#8).
FL (Forced Listen): FL can be set on the Talk channel if the listener tries to avoid missing an important call.
AL (Auto Listen): When you set AL on a Talk channel, Listen is automatically disabled. When the Talk path is created, the listen level is automatically adjusted to the level displayed in the Listen level bar.
IFB source: Press the Talk key set to IFB source (Caller) to create a Talk path to the IFB Destination. You can also monitor listening audio on the IFB Destination. The Talk channel's label in the Normal menu is displayed as inverted text, and the Talk key LED is lit amber
Momentary or Latching: 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 tapping the Talk key, and taps Talk key again to release the Talk path.

Set the Talk channel

To communicate with the Destinations, you can set on the Talk channel as follows:

- Genie group channels (conferencing mode): Five Genie group channels of the Base Station (BS1000 or BS850) or Line Router GLR4.
- Peer to Peer: Specify one Key Panel out of 128 Key Panels.
- Group key: Set up 20 Key Panels or Genie Group channels and Lines (4-Wire) on one Talk channel for simultaneous communication.
- Line (4-Wire): Full-duplex communication with four Lines on the Key Panel or Line Router.
- IFB: IFB functions such as IFB members, IFB (Caller, Destination), IFB dim levels, Monitoring, etc.
- TTA: Talk to All

Features that can be added to Talk channel

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

Genie group channels (conference mode)

You can connect the Key Panels to the Remote Antenna of the Genie Base Station (BS1000, BS850) to use the wireless Genie group channels. For configurations without a Base Station, Key Panels can also be connected to Line Router GLR4 to use Genie group channels (for Wire). One Remote Antenna or Line Router provides 128 Listen paths and 10 simultaneous Talk paths for the Genie group channels.

Up to five Genie group channels can be set on one Talk channel.

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

When the Key Panels (or Line Router GLR4) use Genie group channels, a Remote Antenna provides unrestricted listen paths and ten simultaneous Talk paths (full-duplex, Shared with wireless Beltpacks).

Peer to Peer: One Key Panel can be set on the Talk channel for setting point-to-point communication path.

Group key: Up to twenty Key Panels, Lines or Genie group channels can be set on one Talk channel.

Line (4-Wire): You set the Lines directly to the Talk channel. You can hear audio input from Lines, 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 channel.

IFB: For detailed use examples, see Section 7, Genie Configuration Manager-Version 2, IFB operations.

TTA (Talk to All): The 16th Talk channel can be used as a function key.

Press the Talk key set to TTA transmits the microphone audio (create the Talk path) to all Talk channels set on the Main and Shift.

Clear the call

If you press the Select Channel Volume /Call button (#4) on 16th Talk Channel set to TTA for more than one second, all incoming call information stored will be cleared, and the amber LED on the Select Channel Volume / Call button representing incoming call on each Talk channel will be turned off. You can perform the same function by pressing the Menu button for more than one second.

Relay, Opto-isolated Input: The relay and opto-isolated input functions can be set together in addition to the Talk channels.

FL (Forced Listen): FL can be set on the Talk channel if the listener tries to avoid missing an important call. FL can be set in addition to the Talk channel.

AL (Auto Listen): When you set AL on a Talk channel, Listen is automatically disabled. When the Talk path is created, the listen level is automatically adjusted to the level displayed in the Listen level bar.

Line audio routing on the Line Router GLR4:

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

Line audio routing on the Key Panel GRP16, GDP16, GRP32:

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

6. Shift / Page button (LED indicator)

You can toggle the key labels between the Main and Shift channels by tapping the shift button.

Shift function within one Page.

- The GRP16, GDP16's Main or Shift channel each consist of sixteen Talk channels.
- A Page consists of up to 32 Talk channels. Using the Shift button, you can toggle the Talk channels within one Page (Main and Shift).
- In Main or Shift, you can listen to all the channels on a page at the same time. However, the Talk key only works with the currently displayed Talk channels.
- When you tap the Shift button, the green LED lights up and displays the labels of the Shift channel. When tapped again, the labels on the Main channel are displayed and the green LED is off.

Note: The latched Talk channel (the channel on which the Talk path was created) remains in the state in which the Talk path was created even if you switch to Shift or Main.

Select Page

If you press the Shift / Page button for more than 2 seconds, the Page selection menu is displayed and the LED lights up in amber.

Each Page can consist of up to 32 programmable Talk channels. For each Page's Talk Channels, you can set up Genie Group Channels, Lines, or Key Panels. You can select one of the four Pages.

7. **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 the rotary control, adjust the listen level.
   When this rotary control is tapped, it is selected in the order of Auto Dim, Auto 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.

   In the menu, it is a Up/down/set function. Turn the rotary control to scroll through, press to select a menu item.

8. **Channel Volume (Push to Listen enable/disable or Line output Volume)**
   Tap the Select Channel Volume/Call (#4) button and it will turn green. Use this rotary control to adjust the volume of that channel.

   If you press this Rotary control for more than 1 second, the Listen from the selected Talk channel will be disabled and the Listen level bar will be grayed out. Press again for more than one second to enable Listen. When Listen is enabled, the listen level bar is displayed in green.

   If you set a Line (4-Wire) on Talk Channel and tap this Rotary control, Line's output level graph is displayed in red.

   In the menu, it is a Left/right/set function. Turn the rotary control to scroll through, press to select a menu item.

9. **Menu/Exit/Clear the calls button (LED indicator)**
   Tap the Menu button to turn the LED on and display the Key Panel menu. Use the rotary control (#7: up/down, #8 left/right) for display to scroll and select menu items. Tap the Menu button again to return to the Normal screen.
   Clear the calls
   Pressing the Menu button for more than 1 second will clear all stored incoming call information, and the amber LED on the Select Channel Volume / Call button (#3), which represents the Incoming Call, will be turned off.
   If 16th Talk channel is set to TTA, you can perform the same function by pressing the Select Channel Volume / Call button on 16th Talk channel for at least one second.

10. **Mic on/off button (LED indicator)**
    Gooseneck or headset microphone audio is activated when the LED is lit by pressing the microphone button.

11. **Loudspeaker on/off button (LED indicator)**
    The loudspeaker audio is activated when the LED is lit by pressing this button.

12. **Select Headset (HS) button (LED indicator)**
    Only the headset audio is activated when the LED is lit by tapping this button.
    Lock the Menu
    Press the HS button for 3 seconds to lock or unlock the menu.

19~21. 17~32nd Talk channels of Key Panel GRP32

Menu controls

Normal menu

First and Second Screens

Third Screen

The labels and listen levels of the 16 Talk channels are displayed on three screens. You can set when the screen automatically turns off. The display will turn off if key is not used and there is no incoming call during a set timeout period. If there is any operation of the key or incoming call, the display will turn on again.
Using the Master or Channel volume switches, adjust the Listen level. While holding down the Call button (#4), send a Call or Relay signal to that channel. Talk paths are created by pressing the Talk key per channel

Describe the Talk channel

1: **Label of the Talk channel**
A Talk channel whose audio is most recently received above the Vox level is labeled in red until another Talk channel receives audio. This feature does not apply to Talk channels with Listen disabled.

2: **Talk Channel Number and Listen Level**
Displays the Talk channel number and Listen level. If the Listen is enabled, the Listen level bar is displayed in green. If the Listen is disabled, the Listen level bar is grayed out.

3: **Talk channel attribute or setting status indication**
Displays the set status of the Talk channel. If multiple features are set up together, the descendants are not displayed according to the following ranking.

FL: Forced Listen, AL: Auto Listen, IFB: IFB source, WAN: WAN channel
OR: Opto-isolated input and Relay, O: Opto-isolated input, R: Relay
TX1~5: Tx group, GK: Group key, PtP: Peer-to-Peer, GRP: Genie group channel
4WA; Line A, 4WB: Line B, 4WC: Line C, 4WD: Line D

Describe the 3rd screen
At the top of the screen, you will see the 13th to 16th Talk channel. The two channel display areas below display the Master volume and various information.

4: **Master Volume:**
When the Master Volume switch (#7) is tapped, it is selected in the order of Auto Dim, Auto Cut, and Off. If you press this switch for more than 2 seconds and release it, the Sidetone level menu will appear. Adjust the sidetone level using the rotary control.

5: **Listen level of the Master Volume**
With the rotary control, adjust the listen level.

6: Function key on the 16th Talk channel
TTA (Talk to All): The 16th Talk channel can be used as a function key.
Press the Talk key set to TTA transmits the microphone audio (create the Talk path) to all Talk channels set on the Main and Shift channel.
Clear the call: If you press the Select Channel Volume /Call button (#4) on 16th Talk Channel set to TTA for more than one second, all incoming call information stored will be cleared, and the amber LED on the Select Channel Volume / Call button representing incoming call on each Talk channel will be turned off. You can perform the same function by pressing the Menu button for more than one second.

7: Displays the selected Shift and Menu lock status
The status of the selected Main or Shift channel is displayed as a yellow reversal.
Main: Using Main channel
Shift: Using Shift channel

When the Menu is Locked, LOCK is displayed.

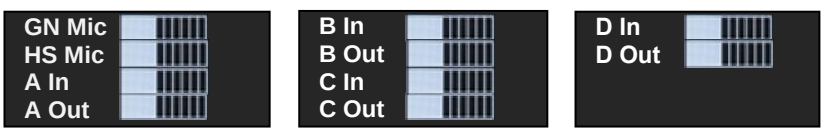
8: Displays the selected Page and Select Channel Volume status
The selected Page is displayed as Page1 through Page4.
If you tap the Select Channel Volume button, the selected Talk channel will be displayed in the form of **Ch10** in yellow reverse format.

Select Channel Volume button to display the selected Talk channel in the form of Ch10 with a yellow reversal.

Main menu

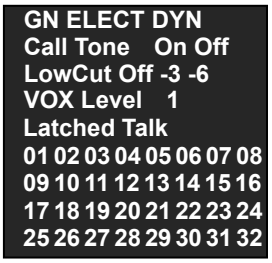
You enter Menu mode by tapping the Menu button.
The Main menu appears on the 3rd screen, and Key Panel label, Paired date from the GCMV2, Page number currently in use, Linked Base Station label, Master/Slave/Destination (IFB), Model and Firmware version is displayed on the second screen. When the Key Panel is set to Master, 'Master' is displayed, and 'Slave' is displayed when set to Slave. The Key Panel set to the IFB destination displays 'Destination'.

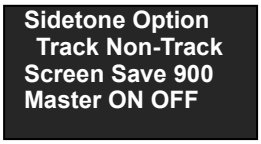
Set Gains menu



GN Mic: Set the gooseneck microphone input level.
HS Mic: Set the headset microphone input level.
A In, B In, C In, D In: Set the Line input levels.
A Out, B Out, C Out, D Out': Set the Line output levels.

Set Panel menu





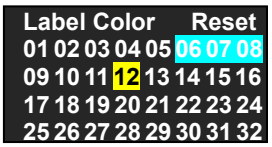
GN ELECT DYN: In the menu, select Electret (ELECT) or Dynamic (DYN) to set the type of Gooseneck microphone. The GM26 and GM8 are Electret microphones.
Call Tone On Off: When enabled, the user can hear the tone when a call occurs.
LowCut off: In Low Cut menu, you can set the cutoff level of low-frequency audio.
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)

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

Latched Talk: The user can set on the Talk key that the latch is enabled or disabled.
If the latch is disabled (Momentary) the Talk path is only open while the Talk key is pressed. If the latch is enabled, 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.

Set Label Color menu



Talk channels can be distinguished flexibly by specifying the background color of Label for each Talk channel. In the menu, if you select the corresponding Talk channel number and change the setting value, 7 background colors are displayed in sequence. To save the selected setting, press the Rotary control or scroll to the next item.
If you select Reset, all set background colors will be initialized.

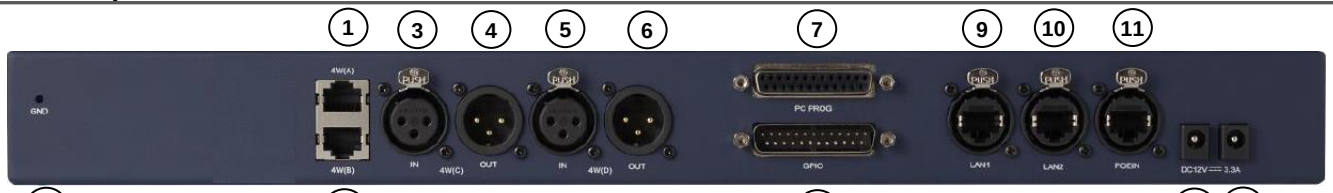
Section 4: Genie Line Router GLR4

4.1 Connecting the Genie Line Router GLR4

Genie Line Router GLR4: front panel

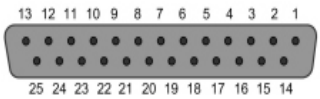
1. **Power switch**
2. **Power LED**
3. **Network status LED (Link/Active)**
4. **Ear for rack mounting**

GLR4 rear panel



Genie Line Router GLR4: rear panel

1. **Line A (4-Wire) connector (RJ-45)**
2. **Line A (4-Wire) connector (RJ-45)**
3. **Line C (4-Wire) input connector (XLR-3F)**
4. **Line C (4-Wire) output connector (XLR-3M)**
5. **Line D (4-Wire) input connector (XLR-3F)**
6. **Line D (4-Wire) output connector (XLR-3M)**
7. **PC PROG connector (25-pin female D-type):** For firmware upgrades.
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	Relay 1 (Open)	18	Relay 1 Common
6	Relay 2 (Open)	19	Relay 2 Common
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).

Relays (Applied from Line Router Version 12. Version can be checked in GCMV2)
When a Talk path is created from the Genie group channel or Key Panel to AUX D (or Line D) on the Line Router, both Relays are also active. This function allows you to operate the walkie-talkie connected to the AUX D of the Line Router from the Key Panel.

9. **LAN connectors (Ethercon RJ45)**
10. **LAN connectors (Ethercon RJ45)**
11. **PoE In connector (Ethercon RJ45, PD)**
    If you are using a network switch, use the **1 Gbps or 100 Mbps and 802.3 at (PoE)** specification.
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.
14. **Chassis ground hole**

4.2 Operating the Genie Line Router GLR4

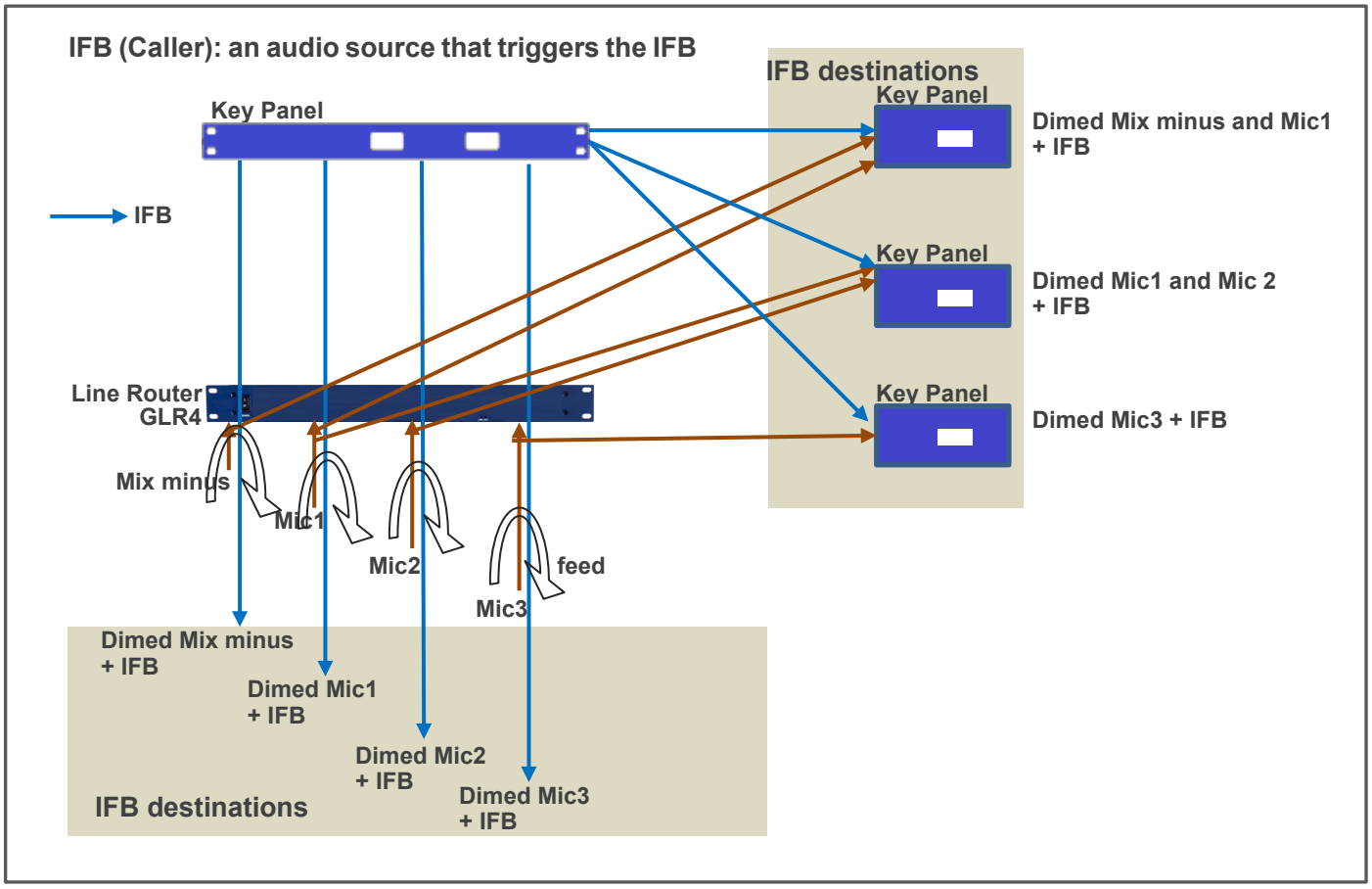
The Line audio routing is the function that provides full-duplex communication by connecting the input and output audio of a Line to specific Key Panels or Genie group channels, without setting up on the Talk channel.

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

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

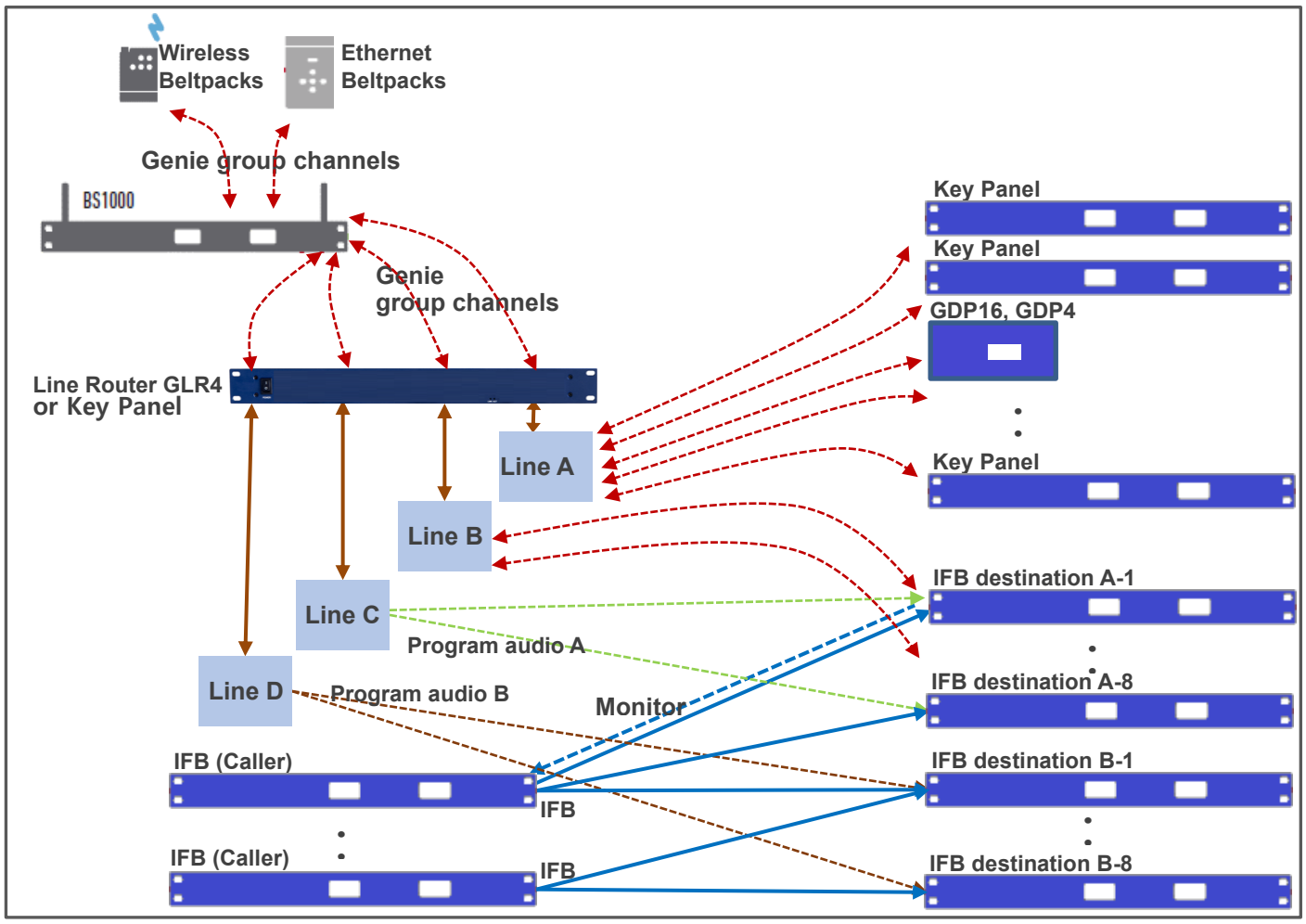
Line audio routing on the Key Panel
On the Key Panel, Line input/output audios can be connected to Genie group channels (and Key Panels) without setting them on the Talk key. You can set up to five Genie group channels and Key Panels on the Line (4-Wire).

IFB configuration with Line Router GLR4



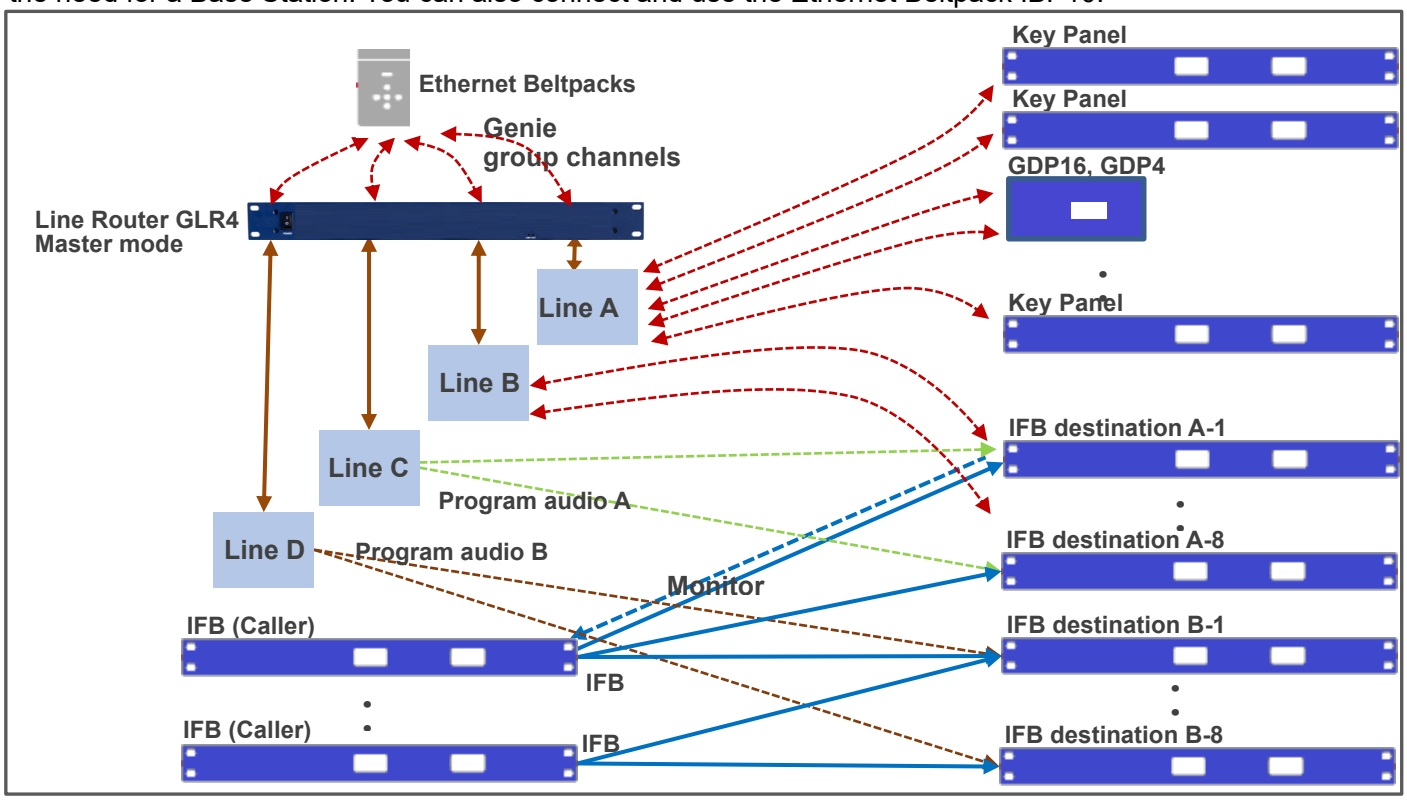
Line Router's audio paths linked to the Base Station

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



Audio paths for the Line Router when configured only with Key Panels

When a Line Router GLR4 is set to Master mode, Genie group channels (conferencing mode) can be used without the need for a Base Station. You can also connect and use the Ethernet Beltpack IBP10.



Section 5: WAN Link GWL

WAN Link is a device that connects Key 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.

5.1 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)**
- **From up to 128 Key Panels, including remote locations, select the Key Panels that you want to associate with WAN Links.**

Using the Genie group channels (Wireless)

- 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 Key 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.

GCMV2 (Genie Configuration Manager-Version 2)

GCMV2 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.

Section 6: GCMV2 (Genie Configuration manager- Version 2)

GCMV2 is an added version of the ability to configure WAN Link on an existing GCM.
This section describes how to use the GCMV2 to configure and pair the Key Panel, Line Router and WAN Links. For configuration of all Genie devices such as the Base Station and Remote Antenna, see GCMV2 User Manual.

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

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

Using the GCMV2, install the Key Panels in the following sequence:
1. Configure and pair the Key Panels or Line Routers.
   Connect the PC to the PoE IN or LAN port on the Key Panel or Line Router. Configure and pair the Key Panels or Line Routers. In case of use in conjunction with a Genie Base Station (use the wireless Genie group channels), configure them with the Remote Antenna.
2. If you are using the WAN Link, configure and pair the WAN Link.
   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 GCMV2, check the status of each installed device, test and modify the settings.

!!! Note: When pairing each device for the first time, only one device should be connected to the LAN port on the PC to perform pairing. When two or more devices are connected and paired, all devices have the same settings, so they do not operate normally. Once paired (Write), you can pair (upgrade) again even when all the devices are connected.
!!! Note: Connect the PC to the PoE IN port on the Key Panel. When connected to the daisy-chain PoE Line, it can be damaged depending on the PC .

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

Loading the GCMV2.

Install the GCMV2 on your PC and run the GCMV2.

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

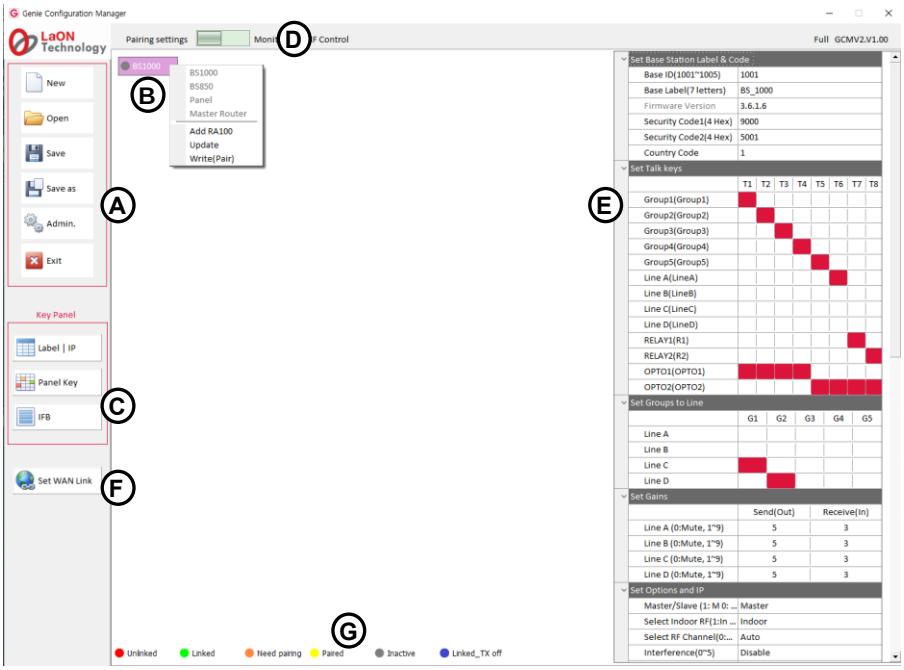
Windows Firewall

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

When you run the GCMV2, the following screen appears. Enter your password. The factory setting is 1234.

Configure the Key Panels

◆ Describe the GCMV2 screen



Management icons (A)

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

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

Save: Save as GCMV2 file name in use.

Save As: Save as a new GCMV2 file name.

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

Exit: Exit the GCMV2.

Genie device icons (B)

The created Genie devices appear in this display area.

Key Panel icons (C)

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

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

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

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

Mode selection icon (D)

You can select the required function by selecting the icon left or right.

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

Monitor & RF Control: The Monitoring screen is displayed.

Setting window (E)

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

Set WAN Link icon (F)

Set the WAN Link.

Icon colors, depending on the status of each device (G)

Appears at the bottom of the screen.

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

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

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

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

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

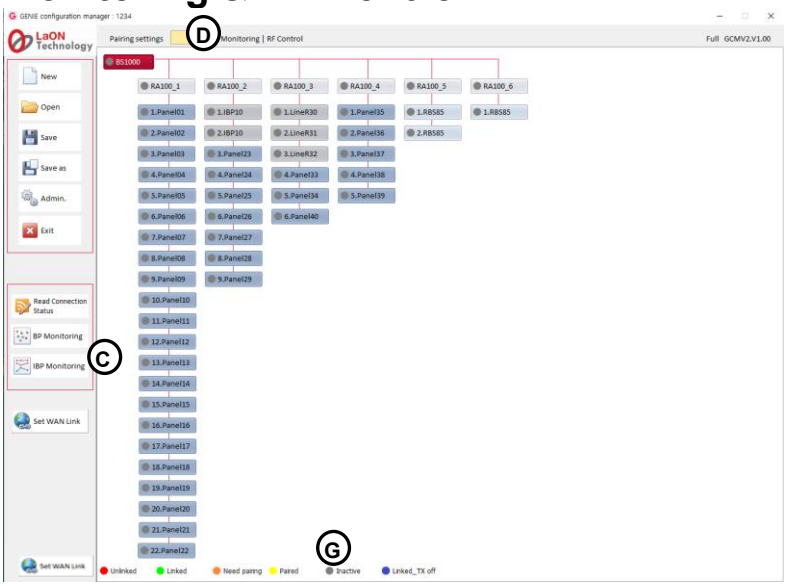
Linked_Tx_off (Blue): Indicates the state in which wireless transmission is off while the device is connected.

Installation procedure:

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

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

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 (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.

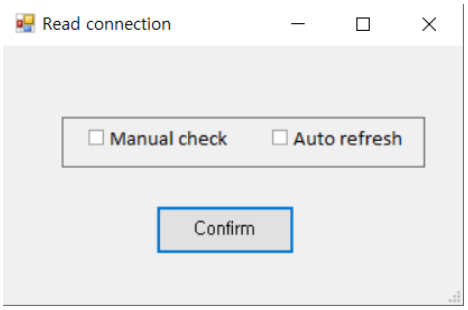
Linked_Tx_off (Blue): Indicates the state in which wireless transmission is off while the device is connected.

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.

Section 7: Specifications

7.1 Genie Rack Panel GRP16

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	Three TFT color screens
Front Panel Button	16 Talk key, LED indicated Buttons and Rotary controls
Headset	Dynamic or Electret, 6-pin mini-DIN male, Receptacle
Gooseneck Mic	Dynamic or Electret, XLR-3F
Line A and Line B (4-Wire)	Two RJ-45, 600Ω balanced, level adjustable
Line C and Line D (4-Wire)	Input: XLR-3F, Output: XLR-3M, 600Ω balanced, level adjustable
GPIO, 12VDC, AUX(D)	DB25M, 2 Relay outputs and 2 Opto-isolated inputs, 12VDC, 600Ω unbalanced, level adjustable
PC PROG	25-pin D-type female, Updating the Key Panel firmware
PoE Input	RJ-45 Connector, 100Mbps Standard PoE specification
LAN	Two RJ-45 Connectors, 100Mbps Standard LAN specification
Power Supply	Consumption: 10 watts Two 11.4-12.6VDC inputs, PoE input The external PSU provides the 12VDC 3.335A 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 8.03D x 1.73H inch (42.75W x 20.4D x 4,4H cm)
Weight	7.27 lb (3300g)

7.2 Genie Desktop Panel GDP16

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	Three TFT color screens
Front Panel Button	16 Talk key, LED indicated Buttons and Rotary controls
Headset	Dynamic or Electret, 6-pin mini-DIN male, Receptacle
Gooseneck Mic	Dynamic or Electret, XLR-3F
Line A and Line B (4-Wire)	Two RJ-45, 600Ω balanced, level adjustable
Line C and Line D (4-Wire)	Input: XLR-3F, Output: XLR-3M, 600Ω balanced, level adjustable
GPIO, 12VDC, AUX(D)	DB25M, 2 Relay outputs and 2 Opto-isolated inputs, 12VDC, 600Ω unbalanced, level adjustable
PC PROG	25-pin D-type female, Updating the Key Panel firmware
PoE Input	RJ-45 Connector, 100Mbps Standard PoE specification
LAN	Two RJ-45 Connectors, 100Mbps Standard LAN specification
Power Supply	Consumption: 10 watts Two 11.4-12.6VDC inputs, PoE input The external PSU provides the 12VDC 3.335A and at its input takes 100-240VAC, 47-63Hz
Operating Temperature	0°C to 50°C (32°F to 122°F)
Dimensions	10W x 6.98D x 3.85H inch (25.4W x 17.7D x 9.8H cm)
Weight	5.07 lb (2300g)

7.3 Genie Rack Panel GRP32

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	Six TFT color screens
Front Panel Button	32 Talk key, LED indicated Buttons and Rotary controls
Headset	Dynamic or Electret, 6-pin mini-DIN male, Receptacle
Gooseneck Mic	Dynamic or Electret, XLR-3F
Line A and Line B (4-Wire)	Two RJ-45, 600Ω balanced, level adjustable
Line C and Line D (4-Wire)	Input: XLR-3F, Output: XLR-3M, 600Ω balanced, level adjustable
GPIO, 12VDC, AUX(D)	DB25M, 2 Relay outputs and 2 Opto-isolated inputs, 12VDC, 600Ω unbalanced, level adjustable
PC PROG	25-pin D-type female, Updating the Key Panel firmware
PoE Input	RJ-45 Connector, 100Mbps Standard PoE specification
LAN	Two RJ-45 Connectors, 100Mbps Standard LAN specification
Power Supply	Consumption: 12watts Two 11.4-12.6VDC inputs, PoE input The external PSU provides the 12VDC 3.335A 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 8.03D x 3.47H inch (42.75W x 20.4D x 8.8H cm)
Weight	9.47 lb (4300g)

7.4 Genie Rack Panel GRP8-12V

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	8 Talk key, LED indicated Buttons and Rotary controls
Headset	Dynamic or Electret, 6-pin mini-DIN male, Receptacle
Gooseneck Mic	Dynamic or Electret, XLR-3F
Line A and Line B (4-Wire)	Two RJ-45, 600Ω balanced, level adjustable
Line C and Line D (4-Wire)	Input: XLR-3F, Output: XLR-3M, 600Ω balanced, level adjustable
GPIO, 12VDC, AUX(D)	DB25M, 2 Relay outputs and 2 Opto-isolated inputs, 12VDC, 600Ω unbalanced, level adjustable
PC PROG	25-pin D-type female, Updating the Key Panel firmware
PoE Input	RJ-45 Connector, 100Mbps Standard PoE specification
LAN	Two RJ-45 Connectors, 100Mbps Standard LAN specification
Power Supply	Consumption: 9 watts Two 11.4-12.6VDC inputs, PoE input The external PSU provides the 12VDC 3.335A 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 8.03D x 1.73H inch (42.75W x 20.4D x 4,4H cm)
Weight	7.27 lb (3300g)

7.5 Genie Expansion Panel GXP12

Front Panel Display	Three OLED screens, 128 x 64 Resolutions
Front Panel Button	12 Talk key, LED indicated Buttons and Rotary controls
Expansion I/O, 12VDC	RJ45 Expansion I/O, 12VDC
PC PROG	25-pin D-type female, Updating the Expansion Panel firmware
Power Supply	One 11.4-12.6VDC input, Power from the Genie Rack Panel The external PSU provides the 12VDC 3.335A 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 8.03D x 1.73H inch (42.75W x 20.4D x 4,4H cm)
Weight	6.17lb (2800g)

7.6 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	4 Talk key, LED indicated Buttons and Rotary controls
Headset	Dynamic or Electret, 6-pin mini-DIN male, Receptacle
Gooseneck Mic	Dynamic or Electret, XLR-3F
PoE Supply	Consumption: 5 watts RJ-45 Connector, 100Mbps Standard PoE specification
Operating Temperature	0°C to 50°C (32°F to 122°F)
Dimensions	8.26W x 3.93D x 2.24H inch (21.0W x 10.0D x 5.7H cm)
Weight	2.75 lb (1250g) without Wall Mount Kit (0.44 lb, 200g)

7.7 Genie Line Router GLR4

Line A and Line B (4-Wire)	Two RJ-45, 600Ω balanced, level adjustable
Line C and Line D (4-Wire)	Input: XLR-3F, Output: XLR-3M, 600Ω balanced, level adjustable
GPIO, 12VDC, AUX (D)	DB25M, 2 Relay outputs and 2 Opto-isolated inputs, 12VDC, 600Ω unbalanced, level adjustable
PC PROG	25-pins D-type female, Updating the Line Router firmware
PoE Input	RJ-45 connector, 100Mbps Standard PoE specification
LAN1, LAN2	Two RJ-45 connectors, 100Mbps Standard LAN specification
Power Supply	Consumption: 8 watts Two 11.4-12.6VDC inputs, PoE input The external PSU provides the 12VDC 3.335A 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 8.03D x 1.73H inch (42.75W x 20.4D x 4,4H cm)
Weight	7.05 lb (3200g)

7.8 WAN Link

Line A and Line B (4-Wire)	Two RJ-45, 600Ω balanced, level adjustable
Line C and Line D (4-Wire)	Input: XLR-3F, Output: XLR-3M, 600Ω balanced, level adjustable
GPIO, 12VDC, AUX (D)	DB25M, 12VDC, 600Ω unbalanced, level adjustable
PC PROG	25-pins D-type female, Updating the WAN Link firmware
PoE Input	RJ-45 connector, 100Mbps Standard PoE specification
LAN1, LAN2	Two RJ-45 connectors, 100Mbps Standard LAN specification
Power Supply	Consumption: 8 watts Two 11.4-12.6VDC inputs, PoE input The external PSU provides the 12VDC 3.335A 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 8.03D x 1.73H inch (42.75W x 20.4D x 4,4H cm)
Weight	7.05 lb (3200g)

7.9 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	300-degrees rotation	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		1300mm	1300mm	1350mm	1350mm	
Weight				120g	105g	

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

Section 8: Glossary

Talk channel: By setting up a Genie group channel (conferencing mode), key panel, or Line (4-Wire), the channel available as a communication channel is called a Talk channel. Each Talk channel is operated by a Talk key, Call, Volume control, etc.

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

Genie Base Station: Genie Base Station BS1000 or BS850

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Thank you.

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