



BEATRICE

B4+

4 Channel Network Audio Intercom

PRODUCT DETAILS





Glensound Electronics Ltd

Thank you for choosing a new Glensound product.

All rights reserved.

Information contained in this manual is subject to change without notice, if in doubt please contact us for the latest product information.

If you need any help with the product then we can be contacted at:

Glensound Electronics Ltd
The Design Buildings
1 – 6 Brooks Place
Maidstone
Kent
ME14 1HE
United Kingdom

Telephone: +44 (0) 1622 753662

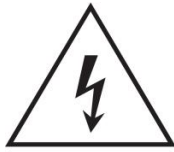
EMAIL ADDRESSES

General enquires: sales@glensound.com

Technical enquires: techinfo@glensound.com

Sales enquires: sales@glensound.com

IMPORTANT SAFETY INSTRUCTIONS

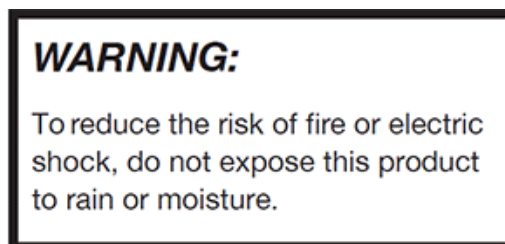
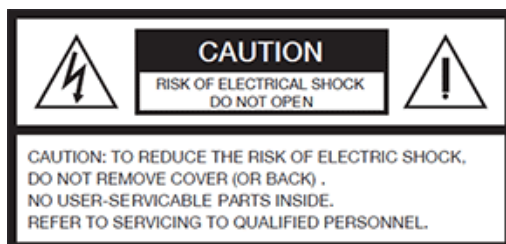


This symbol is intended to warn that dangerous voltages within the product are present and constitute a risk of electric shock.



This symbol is intended to highlight that there are important operating & maintenance instructions in the literature accompanying this unit.

- 1) Read these instructions
- 2) Keep these instructions
- 3) Heed all warnings
- 4) Follow all instructions
- 5) Do not use this apparatus near water
- 6) Clean only with a dry cloth
- 7) Do not block any ventilation openings. Install in accordance with manufacturer's instructions
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat
- 9) 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
- 10) Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles and the point where they exit from the apparatus
- 11) Only use attachments/ accessories specified/ supplied by the manufacturer
- 12) 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
- 13) Unplug this apparatus during lightning storms or when unused for long periods of time
- 14) 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
- 15) Do not attempt to modify this product. Doing so could result in personal injury and/ or product failure



PRODUCT WARRANTY

All equipment is fully tested before dispatch and carefully designed to provide you with trouble free use for many years.

We have a policy of supporting products for as long as possible and guarantee to be able to support your product for a minimum of 10 years.

For a period of one year after the goods have been despatched the Company will guarantee the goods against any defect developing after proper use providing such defects arise solely from faulty materials or workmanship and that the Customer shall return the goods to the Company's works or their local dealer.

All non-wear parts are guaranteed for 2 years after despatch and any defect developing after proper use from faulty materials or workmanship will be repaired under this warranty providing the Customer returns the goods to the Company's works or their local dealer.



EU DECLARATION OF CONFORMITY

GS-BEATRICE B4+

4 Channel Dante/ AES67 intercom

This declaration of conformity is issued under the sole responsibility of the manufacturer.

This equipment is manufactured by Glensound Electronics Ltd of Brooks Place Maidstone Kent ME14 1HE is **CE** marked and conforms to the following Union harmonisation legislation:

Emissions:	BS EN55032:2015
Immunity:	BS EN55035:2017

Signed for and on behalf of Glensound Electronics Ltd.

Gavin Davis, Managing Director
Maidstone, Kent, England

Date: 12/10/2020

RoHS DIRECTIVE

RoHS 2 Directive 2011/65/EU restricts the use of the hazardous substances listed below in electrical and electronic equipment.

This product conforms to the above directive and for these purposes, the maximum concentration values of the restricted substances by weight in homogenous materials are:

Lead	0.1%
Mercury	0.1%
Hexavalent Chromium	0.1%
Polybrominated Biphenyls	0.1%
Polybrominated Diphenyl Ethers	0.1%
Cadmium	0.01%

WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT REGULATIONS 2006 (WEEE)

Glen sound Electronics Ltd is registered for business to business sales of WEEE in the UK our registration number is:

WEE/JJ0074UR

GLENSOUND BEATRICE B4+

HANDBOOK CONTENTS

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OVERVIEW

The BEATRICE range of IP intercoms was designed for broadcast, theatre and professional audio applications.

Our Beatrice intercom system utilises the reliable and proven Dante™ network audio transmission protocol to allow real time distribution of uncompressed audio across standard networks. As such the BEATRICE B4+ is fully compatible with other manufacturers' equipment using the Dante protocol. The Beatrice B4+ is also AES67 compliant.

All units in the system are designed to be very easy to use for the operator and simple to setup for the technician. They includes all the basic functionality required for small intercom systems and none of the overly complex installation requirements normally associated with large systems.

The name Beatrice was chosen for our intercom range as she was the love of Dante Alighieri:

'Dante had fallen in love with another, Beatrice Portinari (known as Bice), whom he first met when he was only nine.' Source Wikipedia.

B4+ FRONT PANEL LAYOUT



1. **Retractable volume knob**

This retractable pot controls the channel specific volume. The pots also have extra functions which are active when the ALT and PAN side buttons are pressed. To access the knob simply push it in and it will click and extend for adjustment. To retract the knob simply push it back into the unit until it clicks back into place.

2. **Speak button volume**

Each of the four channels has a speak button which toggles the microphone on or off for that specific channel. When the channel is active the button illuminates blue. A double press of the speak key will send an outgoing call signal on that channel. The behaviour of this button can be changed in Glensound Controller.

The following button modes are:

Mode	Description (The default behaviour is 'Intelligent')
Intelligent	<i>A brief push of the key will turn the channel on or off. But a press and hold of the key will only turn the output on (or off if already on) while the key is being pressed.</i>
Momentary	<i>The key must be held down to operate.</i>
Latching	<i>A push of the key will turn the channel on, another push will then turn the channel off.</i>
Cough	<i>The channel is always on and only off when the key is pressed and held down.</i>
Always on	<i>The key is always on and cannot be turned off.</i>
Always off	<i>The key is disabled and cannot be turned on.</i>

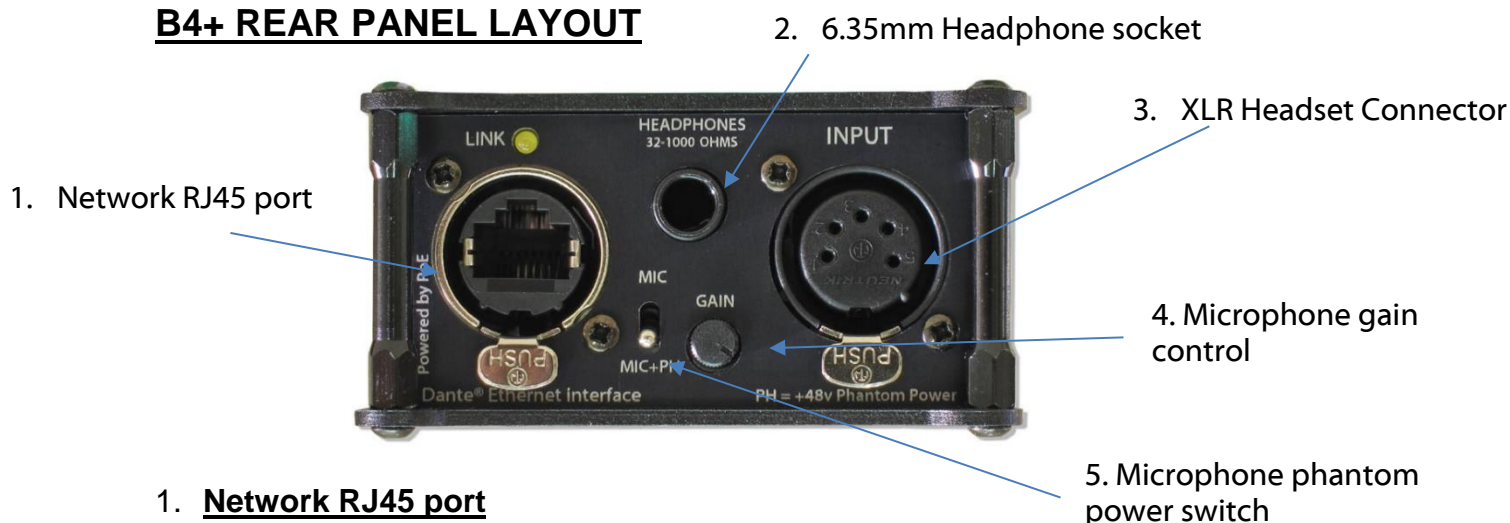
3. **Call LED**

The call led has two functions: fast flashing to indicate incoming call and slow flashing to indicate sending an outgoing call.

4. **Present LED**

This LED will illuminate when there is incoming audio present on a respective channel.

B4+ REAR PANEL LAYOUT



1. **Network RJ45 port**

This is a standard 1Gbps ethernet IP interface that allows connection to a Dante network. The amber LED indicates network activity. The PoE source used to power the device can be a mid-span adapter or a network switch with PoE.

2. **6.35mm headphone socket**

A 6.35mm jack socket is available for a headphone connection, with a recommended impedance range of 32-1000 ohms.

Stereo & mono headphones can be used, or single earpieces.

A sophisticated headphone amplifier design maintains the same output level, regardless of the impedance of the earpiece or headphones used.

3. **XLR Headset connector**

The headset connector carries both microphone in and headphone out audio circuits. The B4+ can be fitted at the factory with a female 5-pin XLR, male 4-pin XLR or standard female 3-pin XLR. See the end of the manual for wiring information.

4. **Microphone gain control**

This small pot allows adjusting the gain of the microphone preamplifier. It can be remotely controlled or locked in Glensound Controller, see the [page 22](#) for more information.

5. **Microphone phantom power switch**

This two-way toggle switch allows turning phantom power (+48V) to the microphone on or off. It can be remotely controlled or locked in Glensound Controller, see [page 22](#) for more information.

B4+ SIDE PANELS LAYOUT



1. DC In connector

A standard DC IN barrel jack connector for 12V 1A DC input. The centre pin is 2.5mm. It is wired centre pin + Volts.

2. ALT button

This button effects the volume pots when held down.

3. PAN button

This button effects the volume pot when held down.

It will also make the B4+ label in Glensound Controller light up in case you need to identify which device you have remote control of.

Whilst holding down the ALT and or PAN buttons, different functionality is available:

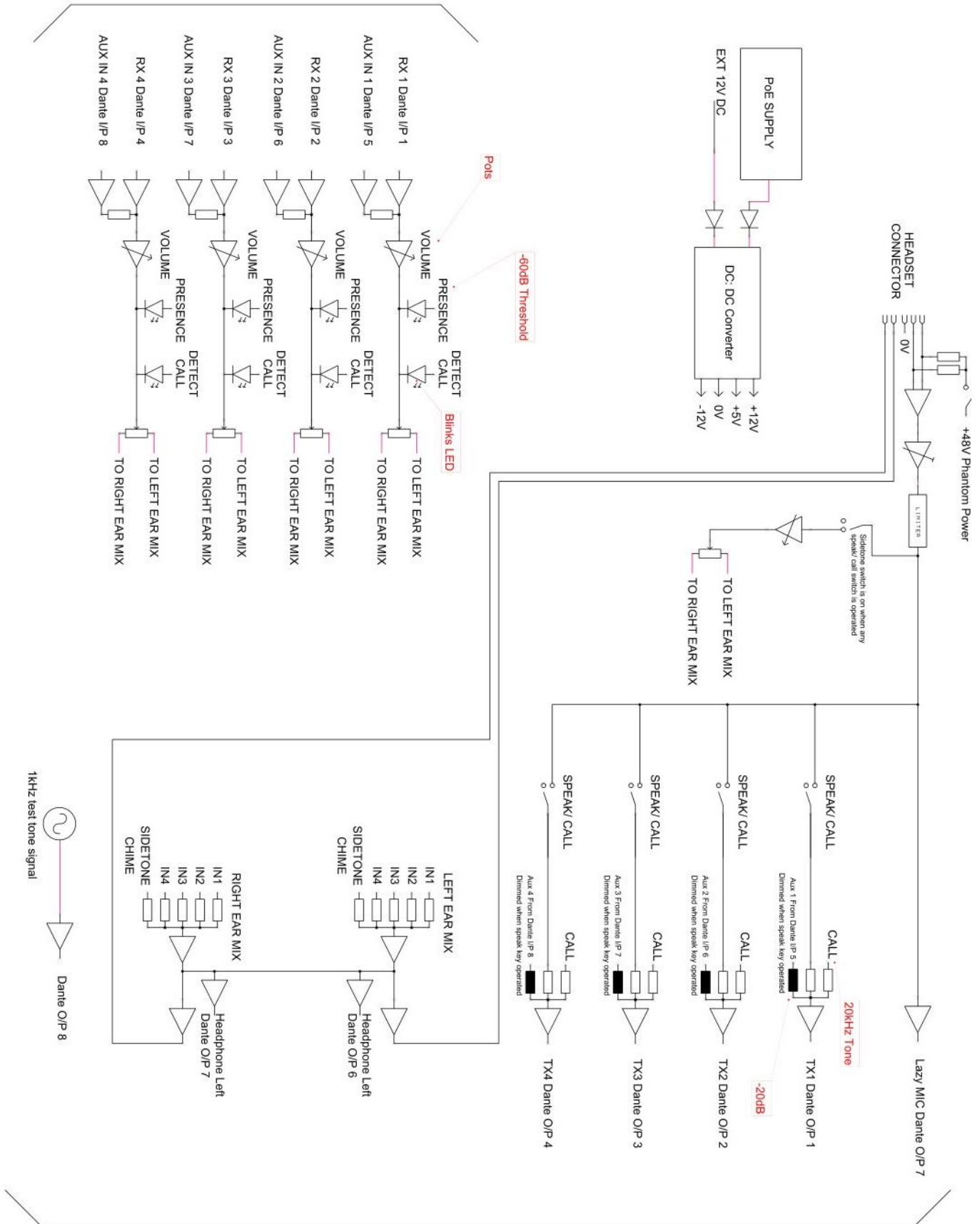
Channel number	Normal function	'PAN' button held down	'ALT' button held down	'ALT + PAN' buttons held down
1	Channel 1 volume	Channel 1 panning	Master headphone volume	Master headphone panning
2	Channel 2 volume	Channel 2 panning	Mic sidetone volume	Mic sidetone panning
3	Channel 3 volume	Channel 3 panning	Call incoming chime volume	Call incoming chime volume
4	Channel 4 volume	Channel 4 panning	None	None

Extra functions:

Alt + Pan + Talk1, held for 5 seconds: resets the GlenController remote password
 Alt + Pan + Talk2, held for 5 seconds: restores factory settings in the unit

AUDIO BLOCK DIAGRAM (analogue representation of digital circuits)

AUDIO FROM DANTE



AUDIO TO DANTE

CALLING FROM OTHER BEATRICE DEVICES

A standard 20kHz sinewave tone is how the Beatrice B4+ listens for call detection. This is standard among all GlenSound Beatrice devices as well as some other intercom manufacturer's products.

When the Beatrice B4+ receives a call, the channel specific LEDs will flash and the device will ring for a few seconds.

To send a call from your Beatrice B4+, simply double press the channel button you wish to call. The yellow call LED will flash to indicate that the device has sent a call signal to that channel.

CONNECTING THE BEATRICE UNIT TO A DANTE NETWORK

The Beatrices are network audio devices utilizing the reliable and versatile Dante audio over IP protocol. Dante is a proprietary system (although very widely used) the originators of which are Audinate.

The information below is only meant as a very basic guide. Full details of the power of Dante network audio and instructions for using it can be found at www.audinate.com

Getting Dante Controller

If you are connecting the Beatrice to a new Dante network the first thing you will need to do is to get the free Dante controller software from Audinate. This can be downloaded by visiting Audinate's web site at www.audinate.com

Connecting Beatrice device to the network

The Beatrice can be connected to the network that you are going to use for your audio distribution simply by plugging in to the RJ45 network connections on the rear. Once connected to the network it will be possible to see the Beatrice from within the Dante controller and route its' audio circuits.

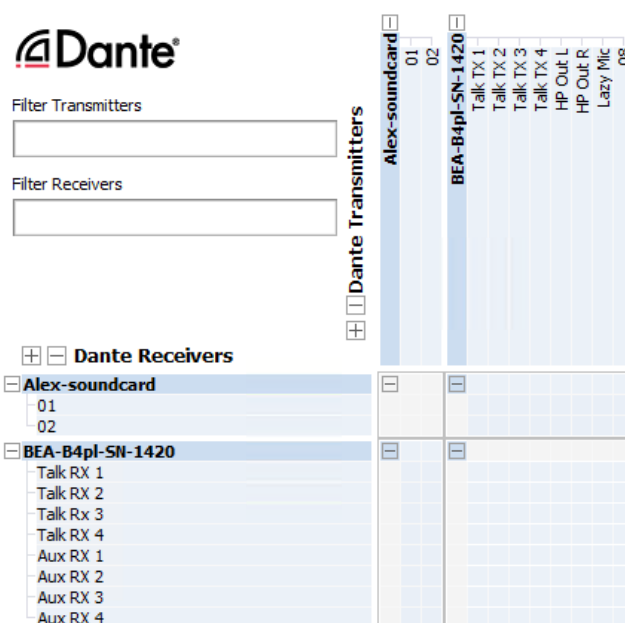
Audio Over IP Network

We strongly recommend that you consider your network topology carefully and would not recommend sharing broadcast audio and general data on the same network.

For more details of audio over IP network structure please visit www.audinate.com

Running Dante Controller

At the time of writing this manual the Dante Controller looks as per the screenshot below:



The Beatrice B4+ will have been named at the factory during test to allow them to be identified by the Dante controller.

The format used for the factory name is:

'BEA-B4pl-SN-XXXX'

Where 'BEA-B4pl' refers to the Glensound product i.e. Beatrice B4+.

The 'SN-XXXX' refers to the serial number of the Beatrice B4+ which can be found printed on the rear or side of the unit.

The unit may be renamed in Dante controller by opening the 'Device view' window and selecting Beatrice B4+ in the drop-down menu. Go to the 'Device Config' tab and change the name with the Rename Device box.

Note if you upload a new DNT file or clear the devices config then the name will change to 'BEA-B4pl-xxXxXx' whereby the 'X's refer to the devices MAC address.

Dante Controller TIP

If you have never run Dante controller before then make sure that on the bottom left of the Dante controllers' screen 'P' or 'S' is next to a green square as this indicates that it is connected to a network. By clicking 'P' or 'S' a pop up box opens to allow you to set what network interface the controller is using.

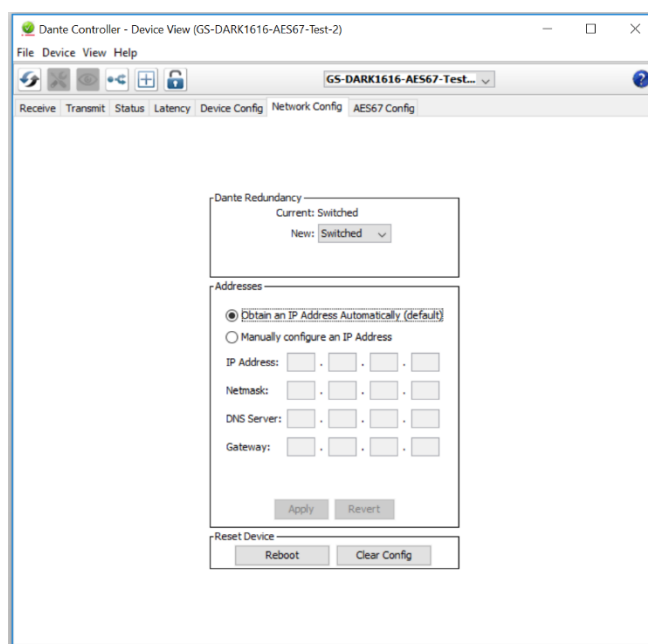
Device not showing up in Dante Controller

If your Dante device does not show up in Dante Controller then the most likely issue is that the device's IP Address is not appropriate for your network.

- A) It maybe that the device is set to obtain an IP address automatically using DHCP (this is the default configuration) and your network is setup for fixed IP addresses only and does not have a DHCP server.
- B) It maybe that the device has had a fixed IP address assigned but that this address is not suitable for your network.

The solution to both scenarios is basically the same.

- 1) You must connect your Dante device directly to the Ethernet port of your computer using an Ethernet cable.
- 2) Make sure that your computer is set to 'Obtain an IP address automatically'
- 3) After a few minutes the Dante device should now appear in Dante Controller.
- 4) Double click the device name to open up device view.
- 5) Open up the 'Network Config' tab
- 6) Either turn on 'Obtain an IP Address Automatically' or correctly configure the 'Manually configure an IP Address' options for your network.
- 7) Click on 'Apply' to confirm the new settings, then disconnect the computer and reconnect the Dante device to your network.



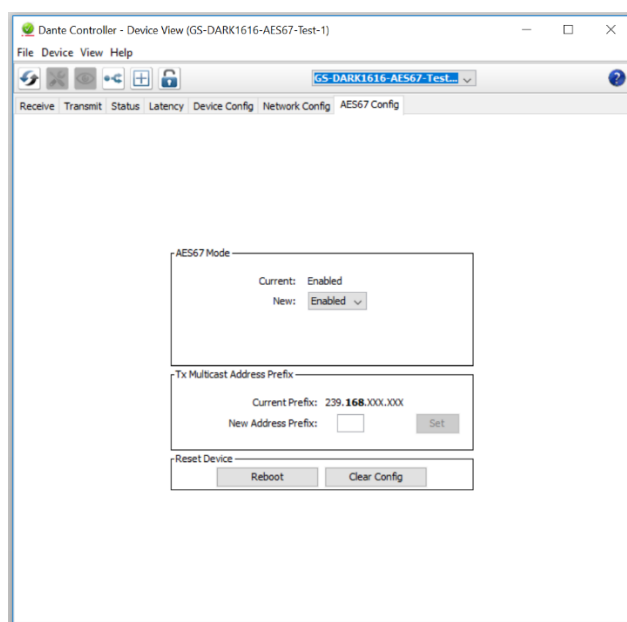
AES67 MODE

The Beatrice uses a chipset from Audinate called the Broadway for its network audio interface. Audinate are the company behind Dante and as such the primary network audio protocol is Dante, however Audinate have enabled their chip to comply with AES67 and therefore the Beatrice can be set to AES67 mode for interaction with other AES67 devices.

Please note however that Glensound are relying on Audinate's AES67 interface and are unfortunately not able to provide full AES67 support for the unit. AES67 support should be sought directly from Audinate.

Turning On AES67 Mode

If you want to use your Beatrice on an AES67 network and it has not been set to AES67 mode then this can be set in Dante controller by double clicking the Beatrice to open the Device View window where you will find an AES67 tab to enable AES67 support.

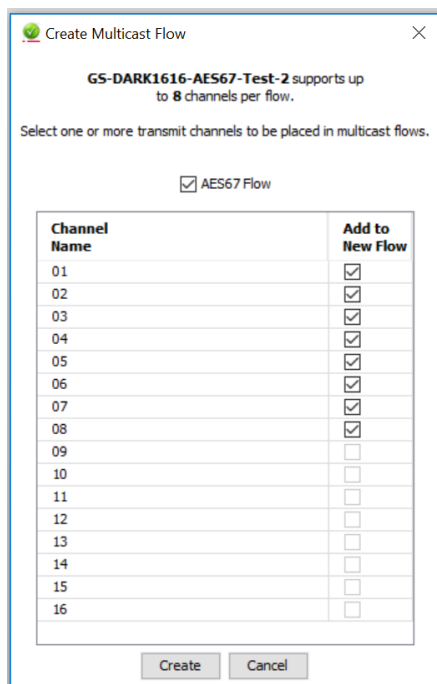


Once the AES67 drop down box has been enabled you'll have to reboot the Beatrice for the change to take effect. After the reboot go back to the AES67 tab and set the multicast prefix address to one that is suitable for your network.

Sending AES67 Audio

To transmit AES67 audio to the network a multicast flow must first be setup.

This is done by selecting the 'Create New Multicast Flow' Icon  in the Device View.

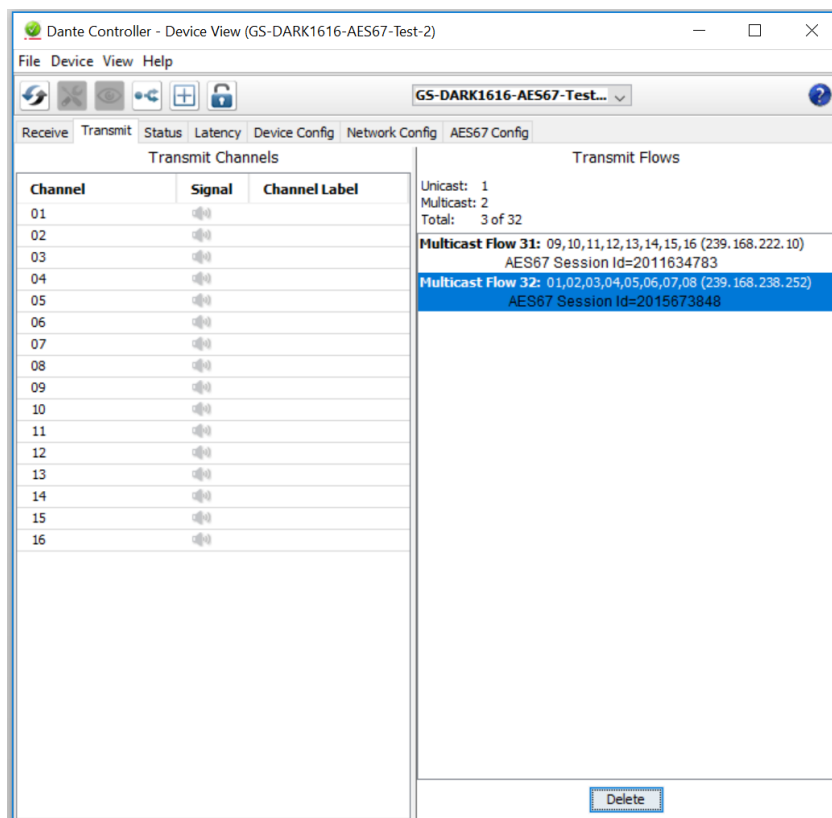


The dialog box is titled "Create Multicast Flow" and contains the following text: "GS-DARK1616-AES67-Test-2 supports up to 8 channels per flow." Below this, it says "Select one or more transmit channels to be placed in multicast flows." There is a checked checkbox labeled "AES67 Flow". A table lists channels 01 through 16, with checkboxes in the "Add to New Flow" column. Channels 01-08 are checked, while 09-16 are not. "Create" and "Cancel" buttons are at the bottom.

Channel Name	Add to New Flow
01	<input checked="" type="checkbox"/>
02	<input checked="" type="checkbox"/>
03	<input checked="" type="checkbox"/>
04	<input checked="" type="checkbox"/>
05	<input checked="" type="checkbox"/>
06	<input checked="" type="checkbox"/>
07	<input checked="" type="checkbox"/>
08	<input checked="" type="checkbox"/>
09	<input type="checkbox"/>
10	<input type="checkbox"/>
11	<input type="checkbox"/>
12	<input type="checkbox"/>
13	<input type="checkbox"/>
14	<input type="checkbox"/>
15	<input type="checkbox"/>
16	<input type="checkbox"/>

Tick the AES67 Flow check box, then select channels to be included in the flow then click 'Create'

Once set the flows can be seen in the transmit tab of the device view.



The screenshot shows the Dante Controller interface. The "Transmit" tab is active, displaying "Transmit Channels" and "Transmit Flows".

Channel	Signal	Channel Label
01		
02		
03		
04		
05		
06		
07		
08		
09		
10		
11		
12		
13		
14		
15		
16		

Transmit Flows summary:

- Unicast: 1
- Multicast: 2
- Total: 3 of 32

Multicast Flow 31: 09,10,11,12,13,14,15,16 (239.168.222.10)
AES67 Session Id=2011634783

Multicast Flow 32: 01,02,03,04,05,06,07,08 (239.168.238.252)
AES67 Session Id=2015673848

Buttons: "Delete"

Receiving AES67 Audio

Once a compatible AES67 stream is detected on the network by Dante Controller the AES67 flows will appear in the Dante Transmitters section in the Routing tab.

AES67 Restrictions

AES67 flows can only be generated with the following constraints:

- Multicast Only
- Non-redundant
- Destination address in range 239.nnn.0.0 to 239.nnn.255.255 (239.nnn/16), port 5004
- 48kHz sampling rate
- 24 bit linear (L24) encoding
- 1 msec packet time
- Up to 8 channels per stream

Received AES67 flows have the following constraints:

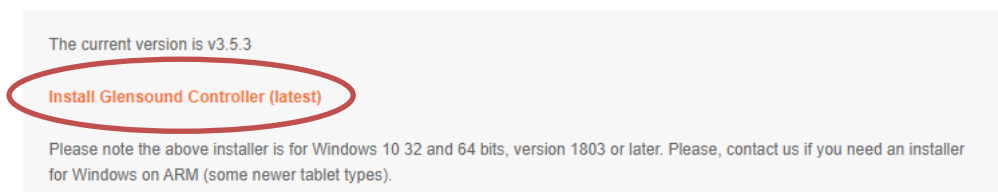
- Multicast Only
- Non-redundant
- Destination address in range 239.nnn.0.0 to 239.nnn.255.255 (239.nnn/16), port 5004. Must match destination address range.
- 48kHz sampling rate
- L16 or L24 encoding
- 125usec, 250usec, 333usec, 1 msec packet time
- Up to 8 channels per stream

GLENSOUND CONTROLLER

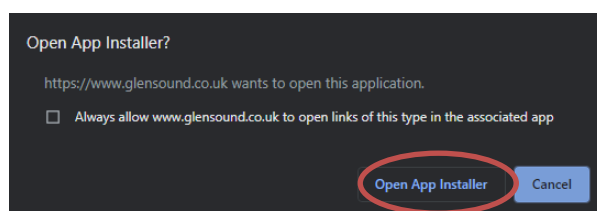
GlenSound Controller is a windows 10 application that allows remote control of some GlenSound products over a network. The Beatrice B4+ has full remote-control functionality and can be operated from a remote location with only a windows PC and access to the network the B4+ is on.

Installing the app

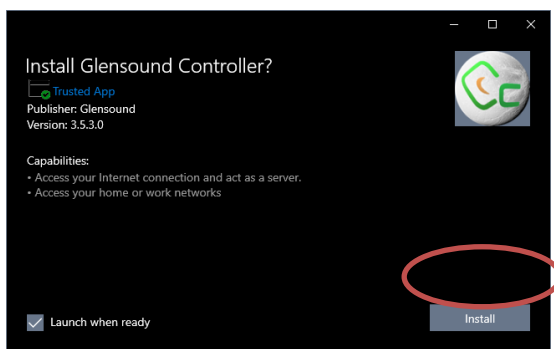
1. To install the latest version of GlenSound Controller go to <https://www.glenSound.co.uk/product-details/glencontroller/> and click on the highlighted orange text “Install GlenSound Controller (latest)”.



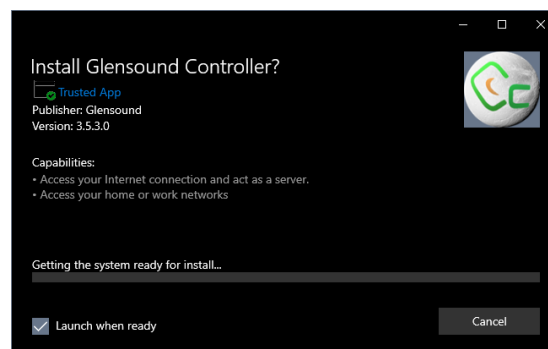
2. Next click “Open App Installer” if prompted.



3. Then simply click “Install”



4. The app will install and open when ready

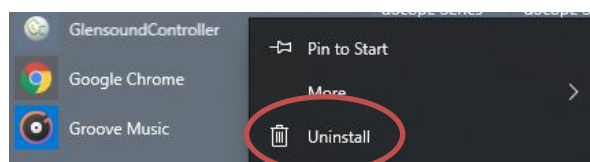


Note:

Some windows 10 machines may be required to enable ‘sideloading’ of programs if it has been disabled by your organization. To enable, go to → **Windows Start** → **Settings** → **Update and Security** → **For developers** → Select ‘**Sideload apps**’.

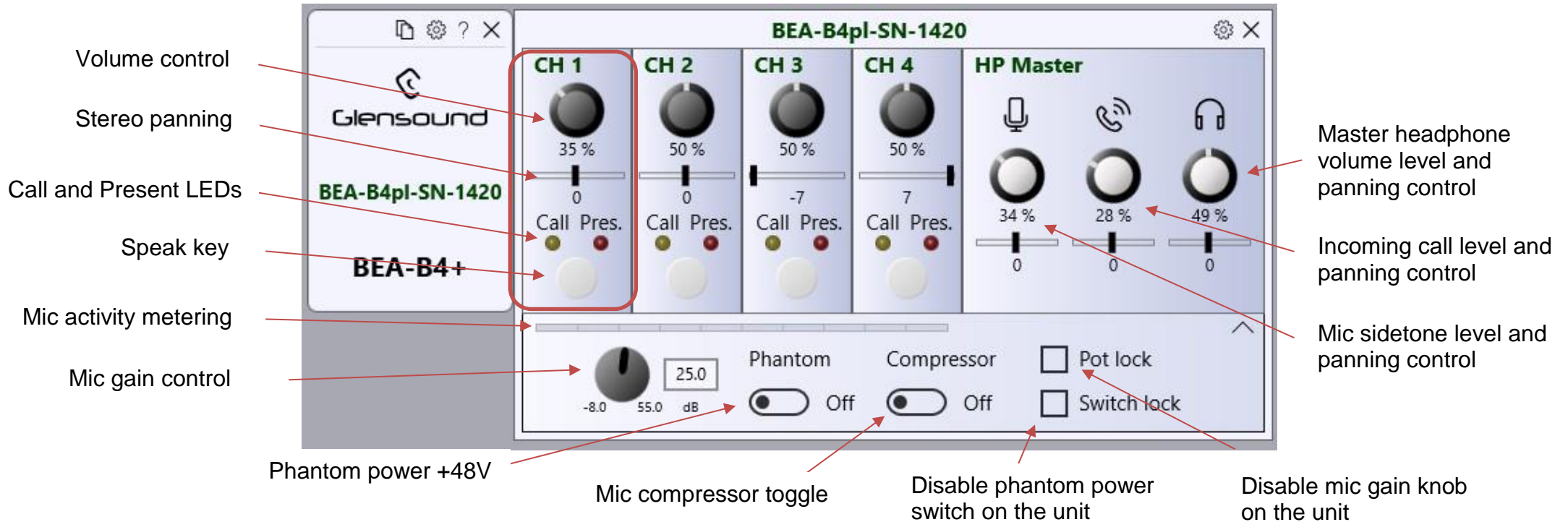
Uninstalling the app

To uninstall GlenSound Controller open the windows 10 start menu and find GlenSound Controller, right click and choose “Uninstall”.



Using the app with the Beatrice B4+

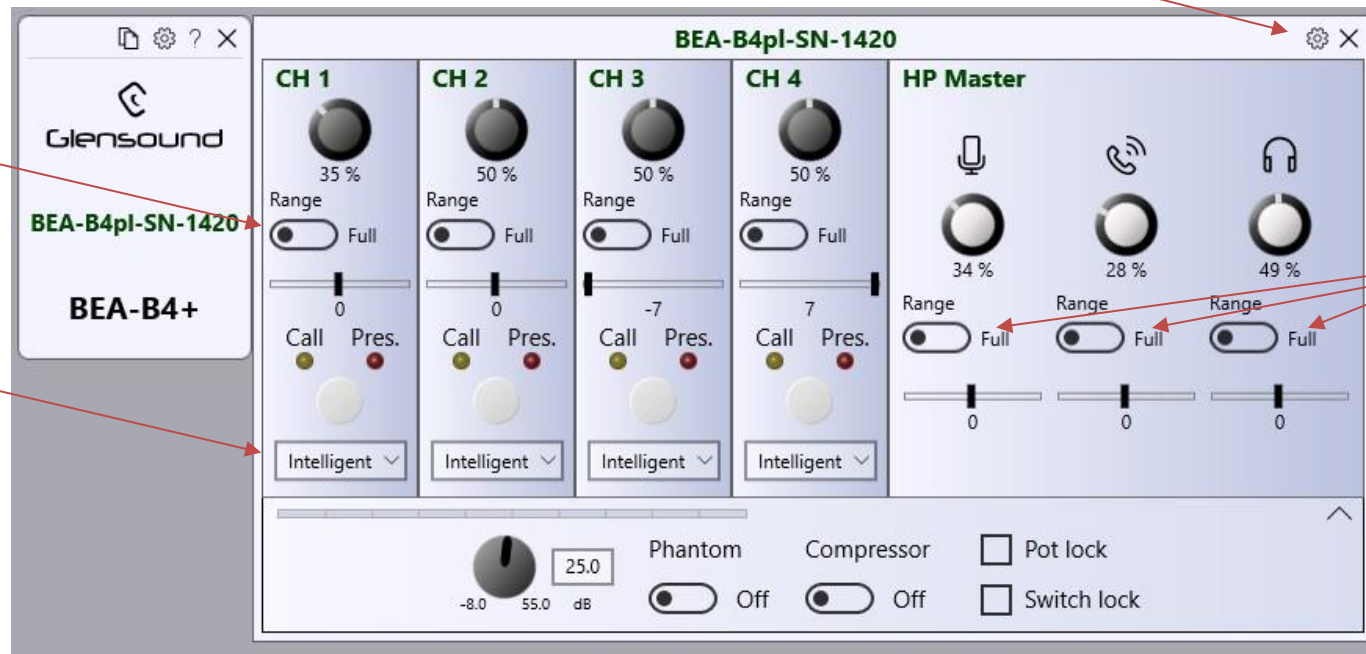
This is the normal device view for the Beatrice B4+ in Glensound Controller and presents quick access to the device controls.



Click the cog icon to open more settings

Pot range toggle – full or limited for making the endstop not be -INF

Speak key functionality – see [page 10](#) for description of different types



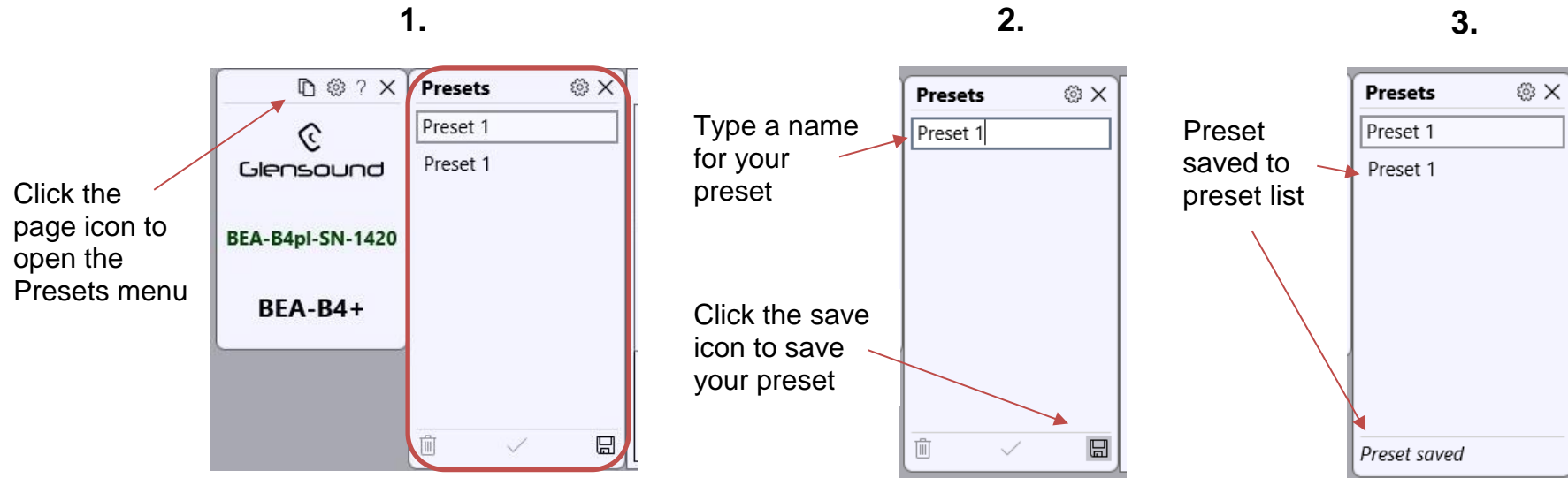
Pot range toggle – full or limited for making the endstop not be -INF

Go to <https://www.glensound.co.uk/product-details/glencontroller/> and check the 'Useful Videos' tab for informative YouTube tutorials on how to use other features of Glensound Controller.

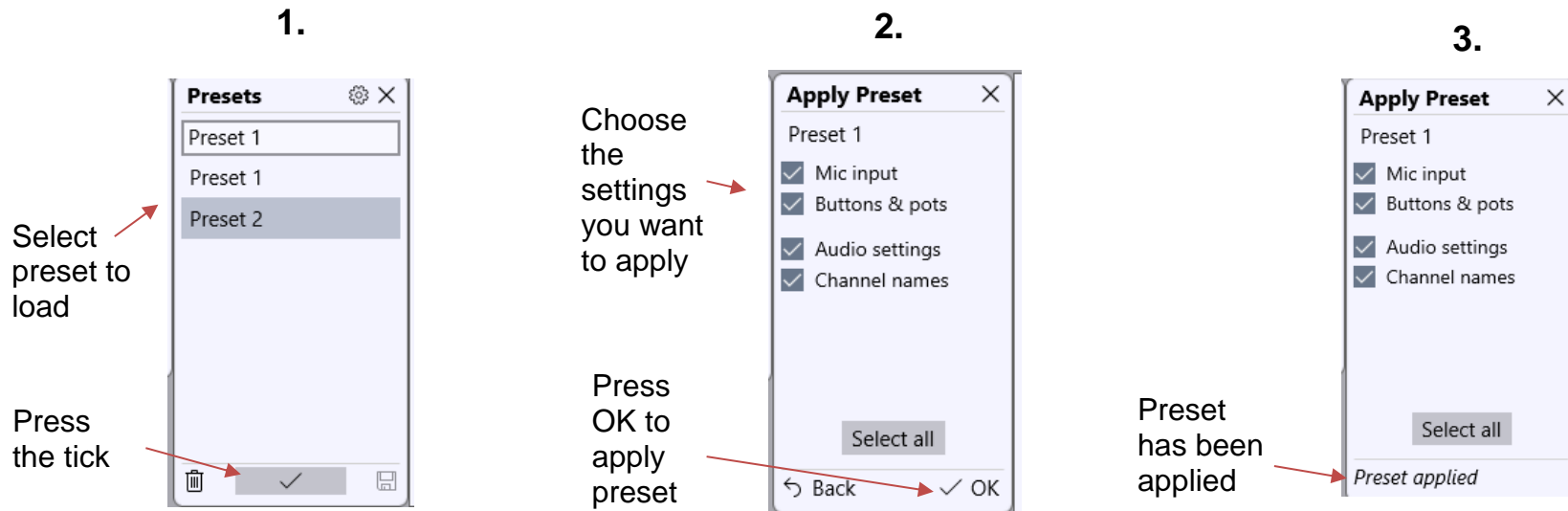
Saving and loading presets

Glensound controller allows saving and loading of 'Presets' which is a saved copy of the configured settings of a B4+.

Saving Preset



Loading Preset



UPDATING FIRMWARE

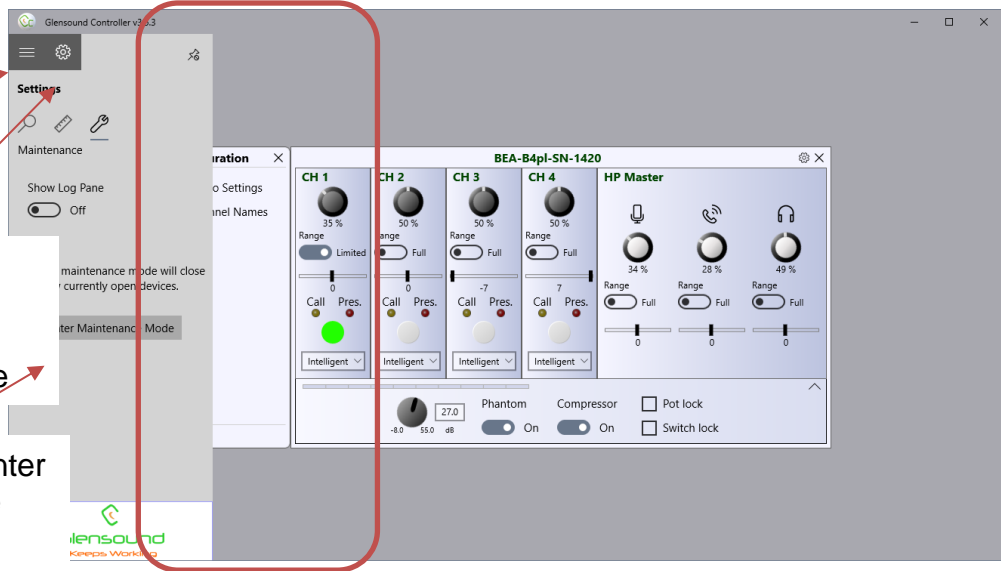
Instructions

1.

A. Click the sidebar icon to access the sidebar

B. Click the cog icon to open the settings page

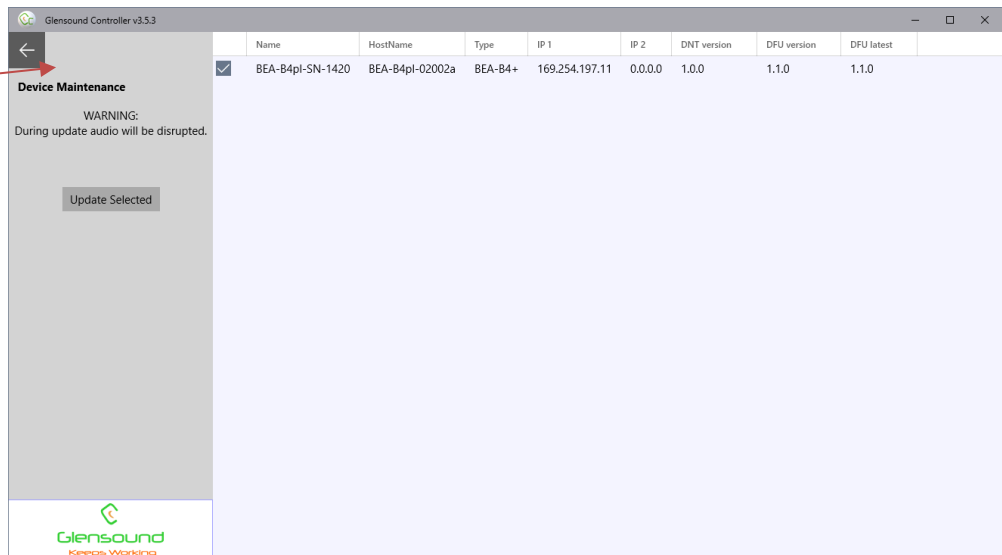
C. Click to enter maintenance mode



2.

A. Select the device you wish to update

B. Click to update your device



Caution! Audio will be interrupted during the device update

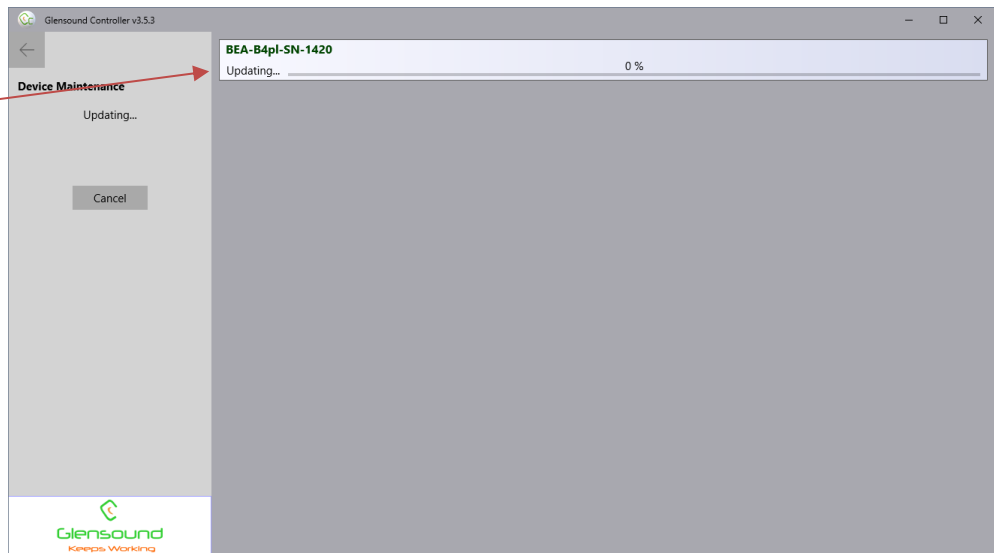
3.

Click start to begin updating



4.

Update progression bar



5.

Update finished, device will now restart automatically



UPDATING THE BROADWAY CHIPSET

The Broadway Chipset is a device supplied by Audinate that does most of the processing for the actual Dante/ AES67 network audio streams. There is one Broadway Chipset in each Beatrice B4+. We supply special code (a .dnt file) that sets up/ initiates the Broadway Chipset and makes it work in particular way that is compatible to the Beatrice.

Finding Out Current Installed Version

Using Dante® controller double click on the Beatrice device name in the routing tab to open the Device View box.

On the Device View box open the Status Tab.

The 'Product Version:' shows the currently installed version of Broadway Chipset dnt code.

Updating the device

The firmware that runs in the Broadway Chipset is updated using Audinate's Firmware updating tool. The updating tool and a user guide can be downloaded from Audinate's website:

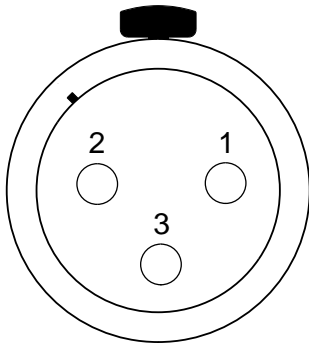
<https://www.audinate.com/products/firmware-update-manager>

NOTE:

Please note we strongly advise that when you do the update that only your PC and the Dante device that you want to update are on the network to save accidentally updating the wrong Dante device.

WIRING INFORMATION

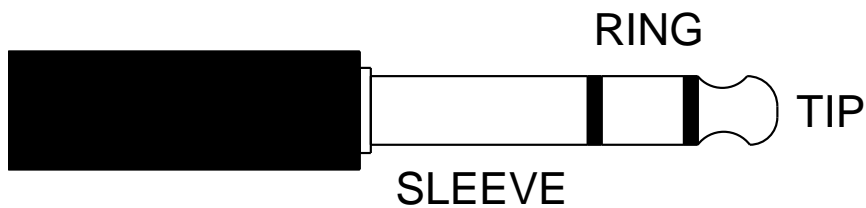
XLR & JACK Wiring



XLR SOCKET (FEMALE)

STANDARD XLR AUDIO PINOUTS:

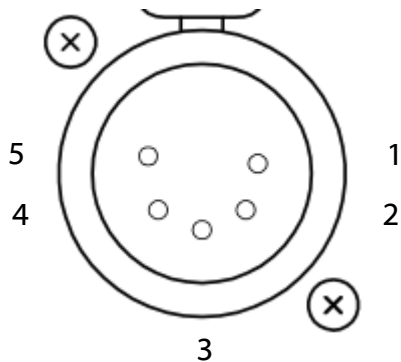
- 1: Ground/ Earth
- 2: INPHASE/ POSITIVE/ MIC +
- 3: MATE/ NEGATIVE/ MIC -



STANDARD HEADPHONE WIRING:

- TIP: A/ LEFT Ear
- RING: B/ RIGHT Ear
- SLEEVE: Common/ Earth

OPTIONAL 5 or 4 PIN XLR WIRING INFORMATION



5 PIN XLR AUDIO PINOUTS:

Female XLR fitted to Beatrice, mates with cable mounted male

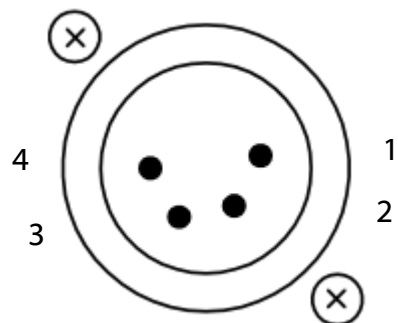
1: MATE/ NEGATIVE/ MIC -

2: INPHASE/ POSITIVE/ MIC +

3: GROUND/ EARTH

4: HEADPHONE LEFT

5: HEADPHONE RIGHT



4 PIN XLR AUDIO PINOUTS:

Male XLR fitted to Beatrice, mates with cable mounted female

1: MIC GND/ MIC -

2: INPHASE/ POSITIVE/ MIC +

3: HEADPHONE GND

4: POSITIVE/ HEADPHONE +