BEATRICE R16

16 Channel Network Audio Intercom

PRODUCT DETAILS

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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:

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IMPORTANT SAFETY INSTRUCTIONS

Read this safety sheet prior to installation or initial use. This generic safety sheet covers multiple product configurations across our range. The full operating & installation manual and model-specific technical specifications are available online at: www.glensound.com

 DANGEROUS VOLTAGE: This symbol is intended to warn that dangerous voltages within the product are present and constitute a risk of electric shock.	 IMPORTANT INSTRUCTIONS: This symbol is intended to highlight that there are important operating, installation, and maintenance instructions in the literature accompanying this unit.
 **THIS UNIT MUST BE EARTHED (Class I Mains Models):** English: This symbol highlights that the equipment must have a valid earth connection with the protective earthing conductor. Danish: *Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord.* Finnish: *Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan.* Norwegian: *Apparatet må tilkoples jordet stikkontakt.* Swedish: *Apparaten skall anslutas till jordat uttag.*	 **CAUTION – SHOCK HAZARD: DISCONNECT ALL POWER SOURCES:** This symbol warns that the product can be energised simultaneously from more than one power source (e.g., dual AC mains supplies, external DC power, and/or PoE). Care must be taken if accessing internal components. Ensure that ALL connected power supplies are fully disconnected.

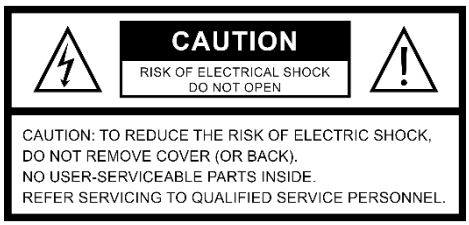
1. Read & Keep Instructions: Read these instructions, keep these instructions, heed all warnings, and follow all instructions.

2. Indoor Use & Moisture: Unless otherwise specified in the model-specific manual, this product is intended for indoor use only. Do not use this apparatus near water, and do not expose this product to rain or moisture.

3. Ambient Temperature: The intended ambient operating temperature of this product is 0°C to 40°C (or 0°C to 50°C where specified in the model-specific technical specifications in the online user manual).

4. Cleaning & Heat Sources: Clean only with a dry cloth. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

5. Cable & Cord Protection: Protect all power cords and network cables from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.





6. Attachments & Lightning: Only use attachments/accessories specified or supplied by the manufacturer. Unplug this apparatus during lightning storms or when unused for long periods of time.

7. Servicing & No User-Serviceable Parts: The product contains no user-serviceable parts and must not be disassembled or modified in any way. Doing so could result in personal injury and/or product failure. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when a 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.

8. Professional Environment: This equipment is not suitable for use in locations where children are likely to be present.

POWER SUPPLY & DISCONNECT INSTRUCTIONS (APPLICABLE BY MODEL CONFIGURATION)

9. Simultaneous / Redundant Power Sources (Mains, DC & PoE): Depending on the model, this product may be powered by a single source or simultaneously by multiple redundant power sources (dual AC mains inlets, an AC mains inlet, an external DC power input, and/or Power over Ethernet [PoE]). Disconnecting a single power lead will NOT isolate the unit if another power source remains connected. To completely de-energize the equipment, unplug ALL connected AC mains cords, DC barrel jack/external DC connectors, and PoE RJ45/etherCON network cables.

10. AC Mains Disconnect Devices (Single or Dual IEC Inlets): Where AC mains inlets are fitted, the mains plug(s) and rear-panel IEC appliance coupler(s) serve as the disconnect device(s). On dual-mains models, both mains' cords must be unplugged to isolate the unit from AC mains power. The socket-outlet(s) used for mains power must be installed near the equipment and be easily accessible.

11. Plug Grounding & Polarization (AC Mains Models): 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 a third grounding prong provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

12. Approved Detachable Earthed Mains Cords (Class I AC Mains Models): Use only approved detachable 3-core earthed mains cords (minimum H05VV-F 3G0.75 mm² with IEC 60320-1 C13 connector) rated for the country of installation: • United Kingdom: Use a BS 1363-1 approved molded plug fitted with a 5 A ASTA-approved BS 1362 fuse. • European Union: Use a CEE 7/7 (Schuko/French) earthed plug. • Denmark: When connecting to wall socket-outlets in Denmark, use an approved 3-pin earthed plug complying with DS 60884-2-D1 (Standard Sheet DK 2-1a) to ensure protective earthing is maintained. • USA/Canada: Use a UL-listed / CSA-certified 3-conductor grounding power cord [minimum 18 AWG, SVT/SJT] with a NEMA 5-15P plug. • All other regions: Use a nationally safety-approved 3-core earthed mains cord rated for the country of installation.

13. Internal Primary Fusing & Neutral Fusing Warning (AC Mains Models – Service Personnel Only): Internal primary fuse(s) are located between the Live terminal of the IEC inlet and the Live input of the power supply and should only be changed by a qualified service

engineer using a correctly rated replacement as specified in the product handbook. WARNING – Neutral Fusing: Because the AC mains plug may be reversible in some electrical distribution systems, the internal primary fuse may be located in the neutral conductor. Always disconnect all AC mains power cords completely from the IEC inlet(s) to de-energize all phase conductors before opening the enclosure or servicing the unit.

14. Power over Ethernet (PoE) Models: Unplugging the RJ45 / etherCON network cable disconnects PoE power from the unit. The Ethernet cable intended to be connected to the unit is for indoor building routing only and must not exit the building structure without appropriate primary surge protection.

15. External DC / USB Power Input Models: Connect only the manufacturer-supplied AC/DC power adaptor (where provided), or a safety-approved external DC or USB power supply complying with BS EN IEC 62368-1 (classified as ES1 and PS2/Limited Power Source [LPS]) that matches the voltage, minimum current rating, and pin polarity marked adjacent to the DC/USB input connector or specified in the product manual. The external power adaptor plug and the DC/USB input connector serve as the DC disconnect devices and must remain readily accessible; unplugging the DC/USB connector disconnects external DC power only and will not isolate the unit if AC mains or PoE remains connected.

INSTALLATION, THERMAL, MECHANICAL & OPTICAL SAFETY (APPLICABLE BY MODEL CONFIGURATION)

16. Ventilation & Sealed Heatsink Enclosures: Do not block any ventilation openings; install in accordance with the manufacturer's instructions. On models where the aluminum enclosure acts as the units heatsink, do not cover the unit or speaker grille with soft furnishings, cloths, or curtains, and allow free airflow around the housing.



17. 19-Inch Equipment Rack Installation (Rack-Mount Models): Rack-mounted models are designed for stationary installation in a standard 19-inch equipment rack. Secure the unit to the front rack rails using all four mounting holes on the integral rack ears with appropriate rack screws (e.g., M6 screws and cage nuts). Ensure that ventilation openings on the chassis are not obstructed by rack walls or cabling.

18. Carts, Stands, Brackets & Tip-Over Hazard: 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.

19. Optical SFP Transceiver Modules (Where fitted): Any optical SFP transceiver modules installed in this product must be certified Class 1 Laser Products in accordance with IEC/EN 60825-1. Do not look directly into open optical ports or fiber-optic cable ends while the equipment is energized.



Disposal (WEEE): the crossed-out wheeled bin symbol means this product must not be disposed of with household waste. Take it to an approved electrical and electronic equipment recycling point, or contact Glensound for advice.
Declaration of conformity: Glensound declares that this product complies with the applicable UK and EU legislation. The full declaration of conformity is available at www.glensound.com.
Manufacturer: Glensound Electronics Ltd, The Design Buildings, 6 Brooks Place, Maidstone, Kent, ME14 1HE, UK · Tel: +44 (0)1622 753662 · Email: sales@glensound.com · www.glensound.com

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.



SAFETY WARNING



This product can produce high sound levels via the headphone output.

Please take caution when operating this product as listening to excessively high peak or sustained levels of volume may permanently damage human hearing.

CE

EU DECLARATION OF CONFORMITY FOR:

GS-BEATRICE R16

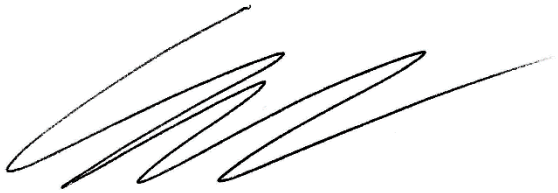
16 Channel Dante® / AES67 desktop intercom

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:

Low Voltage Directive:	EN60065 and EN62368-1:2014
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: 15/08/2019

RoHS DIRECTIVE

EC directive 2002/95/EC restricts the use of the hazardous substances listed below in electrical and electronic equipment.

This product conforms to the above directive and for this 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)

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

WEE/JJ0074UR

GLENSOUND BEATRICE R16

Handbook Contents

Issue 3

Description Page No.

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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 16 channel units are also fully compatible with other manufacturers' equipment using the Dante® protocol. The Beatrice R16 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.

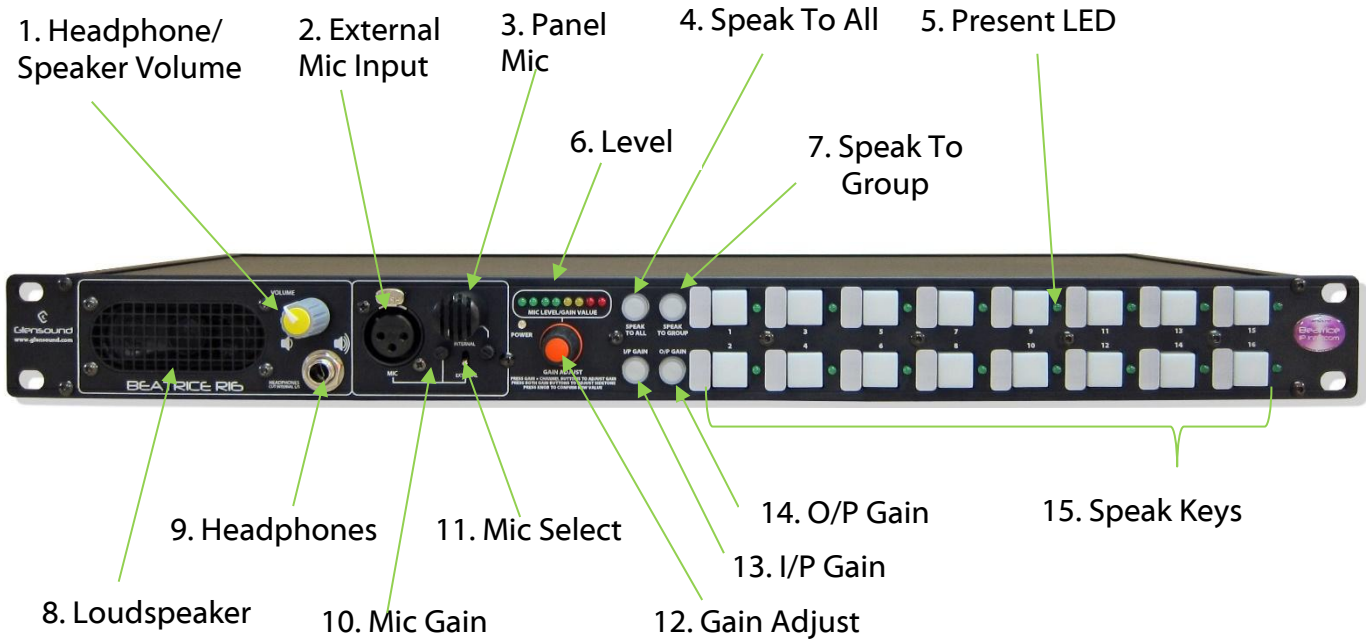
The Beatrice R16 provides 16 intercom circuits on and off the AoIP network. It also has 2 analogue inputs & outputs to the network that can be routed to allow connectivity to traditional 4-wire circuits. Four AoIP IFB circuits are provided to allow versatility of system setup.

A front panel built in microphone and loudspeaker are provided, or alternatively, an external microphone (Gooseneck or headset) can be connected to the front panel XLR and headphones or external loudspeakers can also be used.

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.

R16 FRONT PANEL LAYOUT



1. **Headphone / Speaker Volume**

   This rotary knob adjusts the volume of the internal loudspeaker and front panel headphones.

2. **External Microphone Input**

   This is a balanced microphone input. It can accept dynamic and condenser microphones and phantom power (12v) can be turned on/ off via an internal link.

3. **Panel Microphone**

   The panel microphone is a small electret microphone fitted behind the rugged housing and is suitable for most communications purposes.

4. **Speak to All Button**

   Pressing this this button enables the operator to turn on and talk to all 16 outputs simultaneously.

5. **Present LED Indicators**

   There are 16 present indicators one for each talkback input from the audio network. These are a LED indicator.

   When an incoming audio signal is detected on the associated incoming circuit the present LED will illuminate (threshold -20dB) to show that audio is being received on that channel. The present LED will stay illuminated for 10 seconds after the incoming audio stops.

6. **Level LEDs**

   The level LEDs provide a number of functions.

   A) When the unit is first turned on The 2nd LED from the left will flash. This is a heartbeat signal indicating that internal processor is starting up. When it's started and ready the 2nd LED will stop flashing.
   B) The first LED from the left flashes if no network connection is present.
   C) When adjusting the input or output gain of one of the 16 channels then the LEDs are used to indicate the position of the volume control. With just 1 LED on indicating a very low gain and all LEDs on indicating a very high gain. While in this mode the LEDs will be flashing to indicate that they are showing the gain position and not actual level.
   D) In all other circumstances the meter acts as a PPM to show the level being sent to the network from the selected microphone.

7. **Speak to Group**

   The speak to group key is used to allow the operator to speak to a selection of outputs.

   To make a group press and hold the Speak To Group key.

   To alter the group press and hold the speak to group key and simultaneously press a channel's talk key. Each time you press the channel's talk key the channel will be added/ subtracted from the group.

8. **Loudspeaker**

   A front panel mounted loudspeaker for monitoring the incoming audio circuits. Note the loudspeaker is automatically turned off when a headphone jack is inserted into the headphone socket.

9. **Headphone Jack**

   This standard 6.35mm (1/4") stereo headphone socket accepts headphones from 30 to 1000 Ohms.

10. **Mic Gain**

    This rotary potentiometer adjusts the gain of the selected microphone.

11. **Mic Select**

    This toggle switch selects which of the 2 microphones is to be used as the audio source. If the switch is in the up position then the panel mic is used and if the switch is in the down positon the external microphone input is used.

12. **Gain Adjust**

    This shaft encoder can be continuously rotated left and right and it also has a built in switch which is operated by pushing it.

    It is used in conjunction with the I/P GAIN or O/P GAIN illuminated buttons to adjust the input/ output gain of the associated channel.

    To adjust a channels input or output gain, simultaneously press and hold the input (or output) gain button and also the talkback channel whose gain you want to alter.

    The level LEDs will then flash to indicate that you are adjusting a gain. Use the rotary gain control to set the desired audio level and then press the gain control to apply the setting and exit the gain setup.

13. **I/P Gain**

    Use this switch in combination with a channels' talk key and the Gain Adjust encoder to alter a channels input gain/ level. (see 12. Gain Adjust for more info)

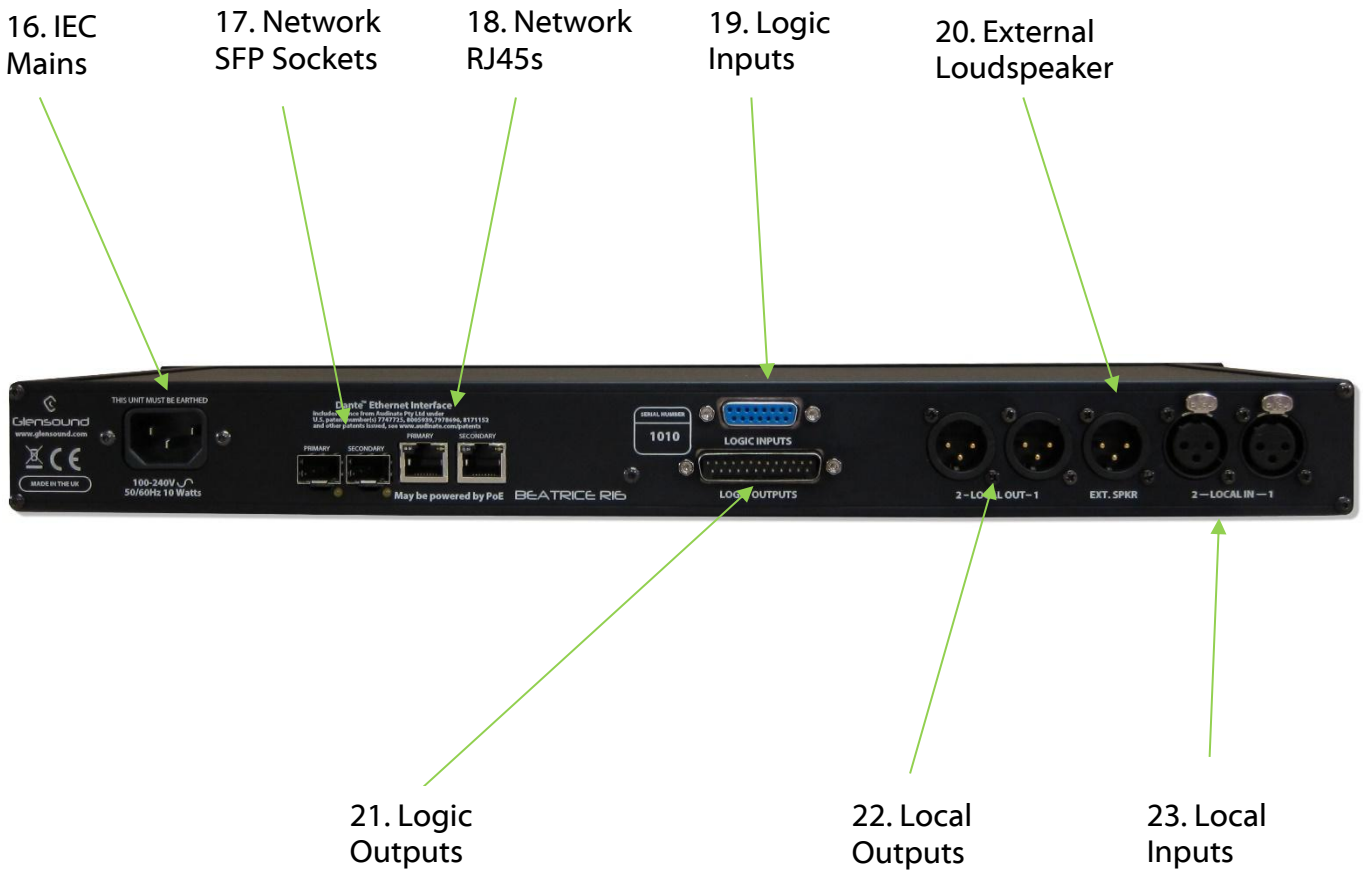
14. **O/P Gain**

    Use this switch in combination with a channels' talk key and the Gain Adjust encoder to alter a channels output gain/ level. (see 12. Gain Adjust for more info)

15. **Speak Key**

    The 16 front panel speak keys allow the operator to talk to the 16 outgoing talkback circuits. These talk keys can be set to work in different modes, see SPEAK KEY CONFIGURATION for further information.

R16 REAR PANEL LAYOUT



16. **IEC Mains**

The standard IEC mains plug accepts external AC voltages of 100 -240 VAC +/- 10%. There is an internal fuse.

17. **Network SFPs**

There are 2 standard network data SFP sockets provided to allow redundant network connectivity if using Dante® network audio protocol. They are both gigabit network connections. They accept standard SFP modules. The status LEDs flash to show when data is being correctly communicated with the attached switch.

If you require SFP modules then please email sales@glensound.co.uk for a quotation.

Network Note (Applies to both 17 & 18)

Factory default is to have the SFP & RJ45 sockets set to work in switched mode. It is possible using Dante® controller to set these network interfaces to work as a redundant circuit instead of the switched mode.

18. **Network RJ45s**

    There are 2 standard network data RJ45 sockets provided to allow redundant network connectivity if using Dante® network audio protocol. They are both gigabit network connections. The status LEDs flash to show when data is being correctly communicated with the attached switch.

    Either of network sockets can be connected to a Power Over Ethernet (PoE) source to power the subrack. This PoE source can be a mid-span source or a network switch with PoE. If a PoE source is present on both circuits then this will act as a redundant power supply.

19. **Logic Inputs**

    This 15 pin 'D' connector socket provides connectivity to external switches or devices for remote control of the talk keys and also provides inputs for cutting the internal or external loudspeakers.

    For further details see 'WIRING' at the rear of this manual.

20. **External Loudspeaker**

    This is a standard balanced analogue audio output for connection to external loudspeaker amplifiers. The output level is adjusted by the front panel Loudspeaker Volume control.

21. **Logic Outputs**

    This 25 pin 'D' connector plug provides outputs connected to solid state relays that are activated when either any one of the speak keys is on (ideal for connecting to external LS dim circuits) or individually when any call received circuit is activated.

    For further details see 'WIRING' at the rear of this manual.

22. **Local Outputs**

    These two line level analogue audio outputs are fed directly from two incoming circuits from the Dante/ AES67 network.

23. **Local Inputs**

    These two line level analogue inputs are routed to two network audio output circuits.

MICROPHONE PHANTOM POWER

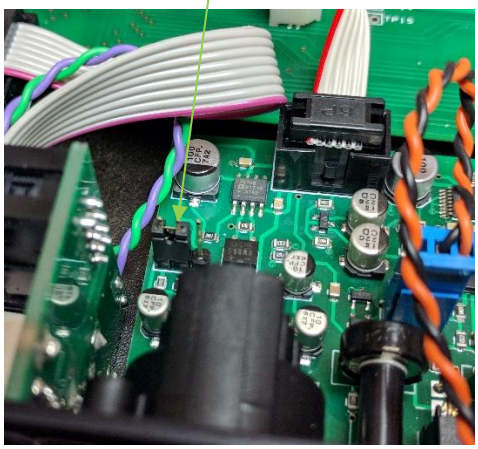
The factory default configuration of the R16 has the front panel microphone input set as +12v phantom power on. It is possible to de activate or activate +12v phantom panel by moving an internal jumper.

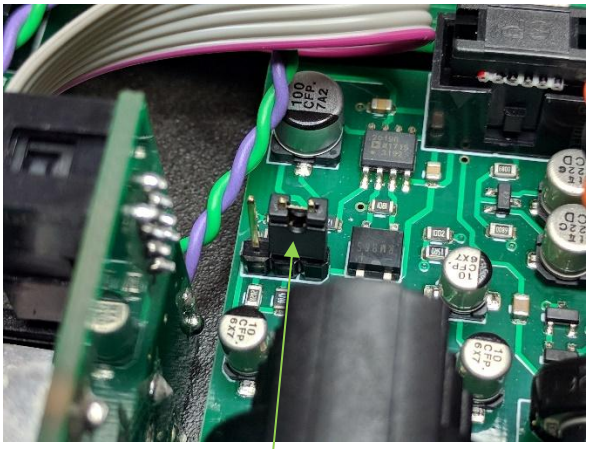
To turn on phantom power the lid of the unit must be removed.

Please make sure the unit is turned off before starting this procedure

To do this remove one of the sides of the unit, which is held in place by 4 screws (2 at the front & 2 at the rear). Then slide the lid out to the open side. You can then access the jumper shown in the 2 pictures below.

Jumper for Phantom Power OFF





Jumper for Phantom Power ON

After turning the phantom power on or off please replace the lid and re-fix the side panel.

LOUDSPEAKER DIM LEVEL

The R16 has a loudspeaker dim circuit that automatically dims (reduces) the volume of the loudspeaker when any talkback key is operated.

During initial test at the factory the DIM amount will have been set to the factory default level. However it is possible to adjust this level should this be required.

To access the LS DIM level configuration menu then first start with the Beatrice R16 turned off.

1) Hold down SPEAK TO ALL and SPEAK TO GROUP
2) While holding down the above two buttons apply power and turn the unit on
3) The two buttons can now be released and they will pulse to indicate that they are in LS DIM programming mode
4) Press the channel 1 speak key
5) The LEVEL LEDs will now indicate the currently set DIM level
6) The DIM LEVEL can be increased or decreased using the GAIN ADJUST control
7) Turning the GAIN ADJUST control anti-clockwise will reduce the amount of DIM that is applied when a speak key is pressed and turning it clockwise will increase the amount of DIM that is applied.
8) To leave the dim configuration menu just press either the SPEAL TO ALL or SPEAK TO GROUP button and the R16 will reset and the DIM level will be saved in non-volatile memory.

SIDETONE

Sidetone, the audio level of the operator's own voice in the headphone output.

Some operators like sidetone as it provides confidence that their voice is being transmitted, while other do not like it as it can be a distraction.

The sidetone level can be adjusted by the operator.

To adjust the sidetone level simultaneously press and hold the I/P Gain and O/P Gain buttons. Once both have been pressed the Level LEDs will flash to indicate that you are adjusting the sidetone level.

Rotate the Gain Adjust encoder for the desired level and then press the Gain Adjust encoder to set this level and leave the Sidetone setup.

SPEAK KEY CONFIGURATION

It is possible to set the operation of individual speak keys to behave in a way that is suitable for your way of working.

To access the speak key configuration menu then first start with the Beatrice R16 turned off.

1) Hold down SPEAK TO GROUP
2) While holding down the above button apply power and turn the unit on
3) The button can now be released and it will pulse to indicate that you are in the speak key programming mode
4) Press the speak key that you wish to change the configuration off (note each speak key must be individually configured).
5) The Level LEDs will indicate the currently selected switch configuration
6) The GAIN ADJUST control alters the switch configuration

There are the three possible options for the selected button:

- The four green LEDs illuminated indicates INTELLIGENT LEVER KEY mode, where brief presses of the SPEAK button toggle the channel but longer ones are Push To Talk (PTT).
- The two yellow LEDs illuminated indicates PTT mode, where the channel will only ever be active whilst the SPEAK key is pressed.
- The two red LEDs illuminated indicates LATCH mode, where the channel will toggle state with each press of the SPEAK key.

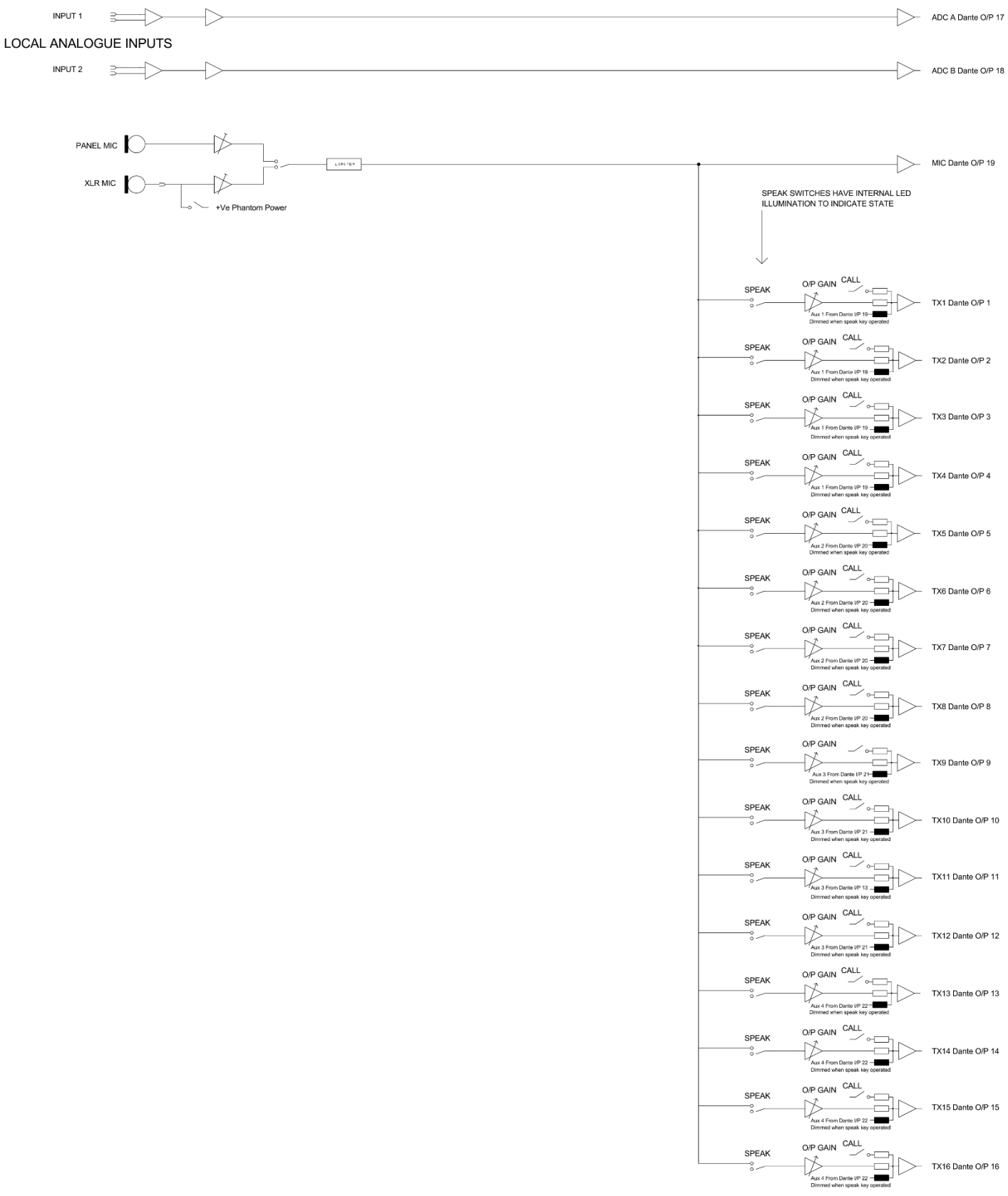
7) Once setting your desired key operations is complete press the SPEAK TO GROUP button. This will exit the configuration mode and all your settings will be saved in non-volatile memory.

NOTE: The behaviour of the SPEAK TO ALL and SPEAK TO GROUP buttons follows that selected for channel 1.

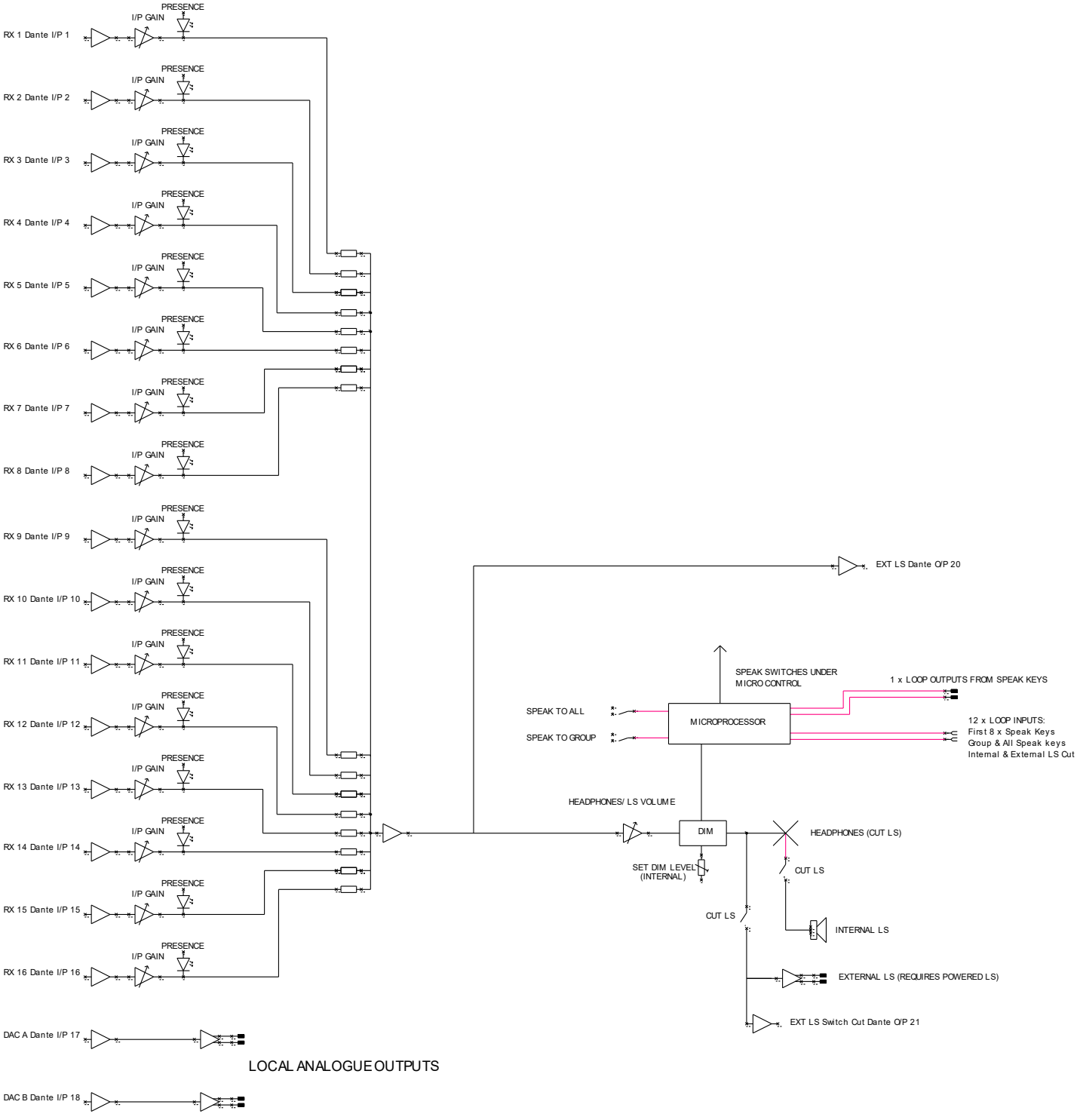
Factory default is intelligent lever key mode on all channels.

AUDIO BLOCK DIAGRAMS (analogue representation of digital circuits)

Audio Circuits TO Dante/ AES67 Network *SEE ALSO FIXED MIXER*



Audio Circuits FROM Dante/ AES67 Network *SEE ALSO FIXED MIXER*



FIXED MIXER

The Beatrice R16 includes multiple fixed ratio mixers with inputs & outputs directly on/ off the Dante/ AES67 network.

In a small simple intercom system there may be requirements for one user to listen to multiple sources on one single talkback channel. The internal fixed mixer within the Beatrice R16 is suitable for setting this up.

Groups are another possible requirement in small intercom systems whereby 2 or 3 operators (such as cameramen) are normally all on one single talkback circuit. The internal fixed mixer also helps with setting these circuits up.

The below table shows how these fixed ratio mixers are configured internally in the DSP. To use one or more of the internal mixers just route the audio to/ from the mixer channels in Dante® controller.

Note that the default name in Dante® Controller of the receivers are 'Mix In X' (whereby X is the channel number)

MIX OUTPUT		**SUM OFF**
Dante Output Channel No:	*Default Name in Dante Controller:*	*Dante Receiver Channel Nos:*
22	"Sum of 23 to 32"	23 to 32
23	"Sum of 23 to 27"	23 to 27
24	"Sum of 28 to 32"	28 to 32
25	"Sum of 23 to 25"	23 to 25
26	"Sum of 26 to 29"	26 to 29
27	"Sum of 30 to 32"	30 to 32
28	"Sum of 23 & 24"	23 and 24
29	"Sum of 25 & 26"	25 and 26
30	"Sum of 27 & 28"	27 and 28
31	"Sum of 29 & 30"	29 and 30
32	"Sum of 31 & 32"	31 and 32

CONNECTING TO 4-WIRE EQUIPMENT

The Beatrice R16 can be interfaced to a maximum of two traditional 4-wire systems.

To do this it is necessary to utilise the local audio inputs & local audio output circuits on the R16 and route these to/ from one of the talkback channels via the audio over IP network.

Example to make Talkback Channel 8 operate as a 4 wire circuit.

A) In Dante® controller route local input 1 (Dante® transmitter no 17) to Dante® receiver no 8 (the audio input to channel 8)

B) In Dante® controller route Talkback 8 output (Dante® transmitter no 8) to Dante® receiver no 17 (local output 1)

IFB/ AUX INPUTS

There are four IFB (Interruptible Feed Back)/ AUX circuits within the Beatrice R16.

These are incoming audio circuits from the Dante®/ AES67 network that are mixed in with the outgoing talkback circuits.

The IFB/AUX circuit can be turned on or off and set to be routed/ mixed with the outgoing talkback, if the associated talkback key is on, then the IFB/ AUX audio level is ducked, to allow the talkback to be clearly heard over it.

Each of the four IFB/AUX circuits are associated with four talkback outputs, these can be seen on the audio block diagram on page 17.

Programming Duck Level

It is possible to adjust the level of the ducking of the IFB/ AUX circuit for each of the 16 output channels.

To access the duck level configuration menu then first start with the Beatrice R16 turned off.

1) Hold down I/P GAIN switch
2) While holding down the above button apply power and turn the unit on
3) The I/P GAIN button can now be released and it will pulse to indicate that it is in the ducking programming mode
4) Press the speak key of the channel whose IFB/AUX duck level you want to adjust.
5) The LEVEL LEDs will now indicate the currently set duck level
6) The duck level can be increased or decreased using the GAIN ADJUST control.
7) Turning the GAIN ADJUST control anti-clockwise will reduce the amount of duck that is applied when a speak key is pressed and turning it clockwise will increase the amount of duck that is applied.
8) The range of duck available is -63dB to 0dB
9) Repeat from step 4 to alter any other speak key's duck level.
10) To leave the duck configuration menu just press the I/P GAIN button and the R16 will reset and the Duck level will be saved in non-volatile memory.

Factory default duck level setting is -20dB.

Enabling Aux Circuits

On units shipped after September 2021 it is possible to enable or disable an IFB/ Aux circuit with its associated talkback output.

To access the IFB/ AUX circuit configuration menu then first start with the Beatrice R16 turned off.

1) Hold down SPEAK TO ALL switch
2) While holding down the above button apply power and turn the unit on
3) The SPEAK TO ALL button can now be released and it will pulse to indicate that it is in the IFB/ AUX programming mode
4) In this mode, the sixteen SPEAK buttons each toggle the IFB/ AUX behaviour of the corresponding channel.
5) If the channel's SPEAK button is illuminated (default) then the channel receives an IFB/ AUX signal from one of the four Dante IFB/ AUX inputs.
6) If channel's SPEAK button is not illuminated then the channel receives no IFB/ AUX signal.
7) Pressing the channel's SPEAK button toggles it between the above two options.
8) To leave the IFB/ AUX configuration menu just press the SPEAK TO ALL switch and the R16 will reset and the IFB/ AUX configuration will be saved in non-volatile memory.

Factory default setting is to have all IFB/ AUX circuits enabled.

CONNECTING THE BEATRICE UNITS 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 To The Network

Beatrices can be connected to the network that you are going to use for your audio distribution simply by plugging in either, and, or any of the 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.

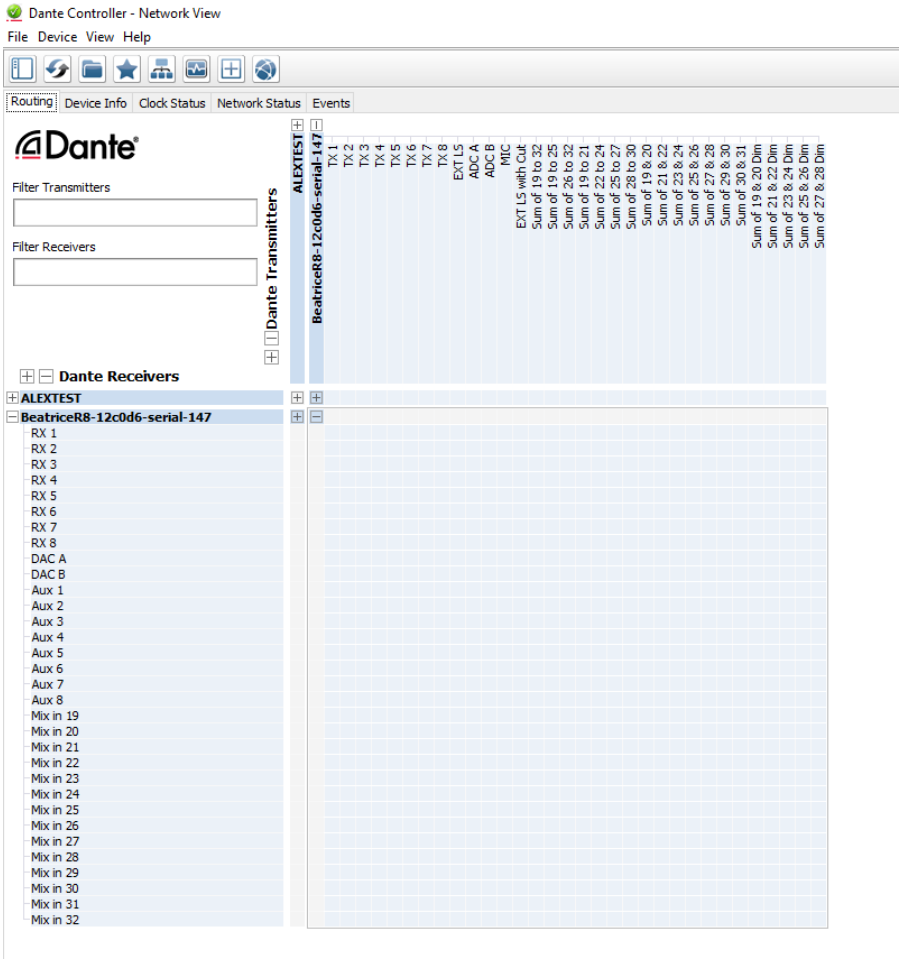
Audio Over IP Network

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 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:

'BeatriceR8-snXXX'

Where 'BeatriceR8' refers to the Glensound product i.e. BeatriceR8.

The '–snXXX' refers to the serial number of the BeatriceD8 which can be found printed on the rear or side of the unit.

Note if you upload a new DNT file or clear the devices config then the name will change to BeatriceD8-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.

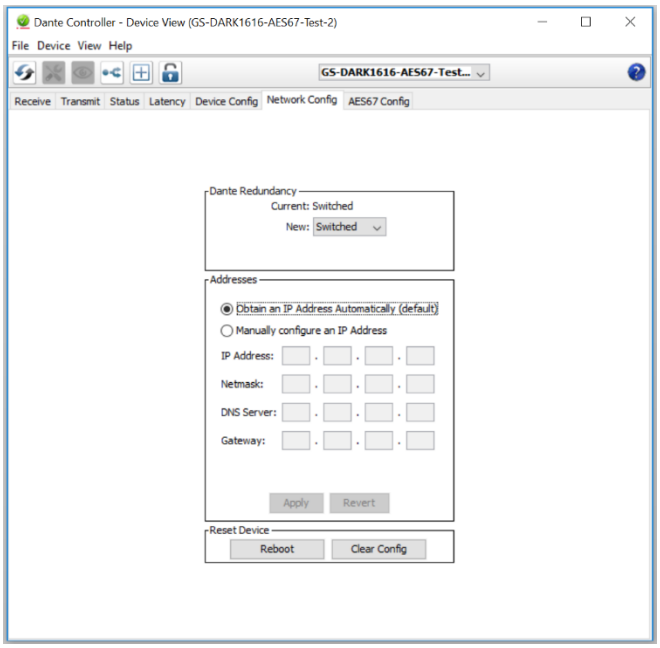
Device Not Showing Up In Dante Controller

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.



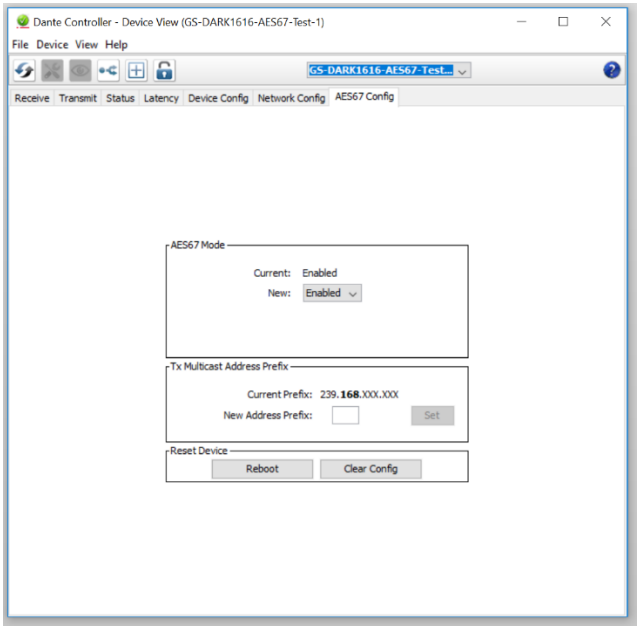
AES67 MODE

The Beatrice uses a module from Audinate called a Brooklyn Module for its network audio interface. Audinate are the company behind Dante® and as such the module's primary network audio protocol is Dante, however Audinate have enabled their module 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.

1. 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 Paradiso to open the Device View window where you will find an AES67 tab to enable AES67 support.

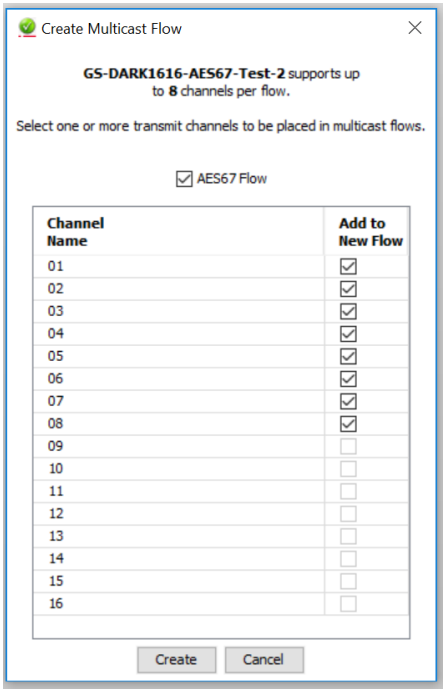


Once the AES67 drop down box has been enabled you'll have to reboot the Beatrice for the change to take effect. After the reboot go back to the AES67 tab and set the multicast prefix address to one that is suitable for your newtork.

2. Sending AES67 Audio

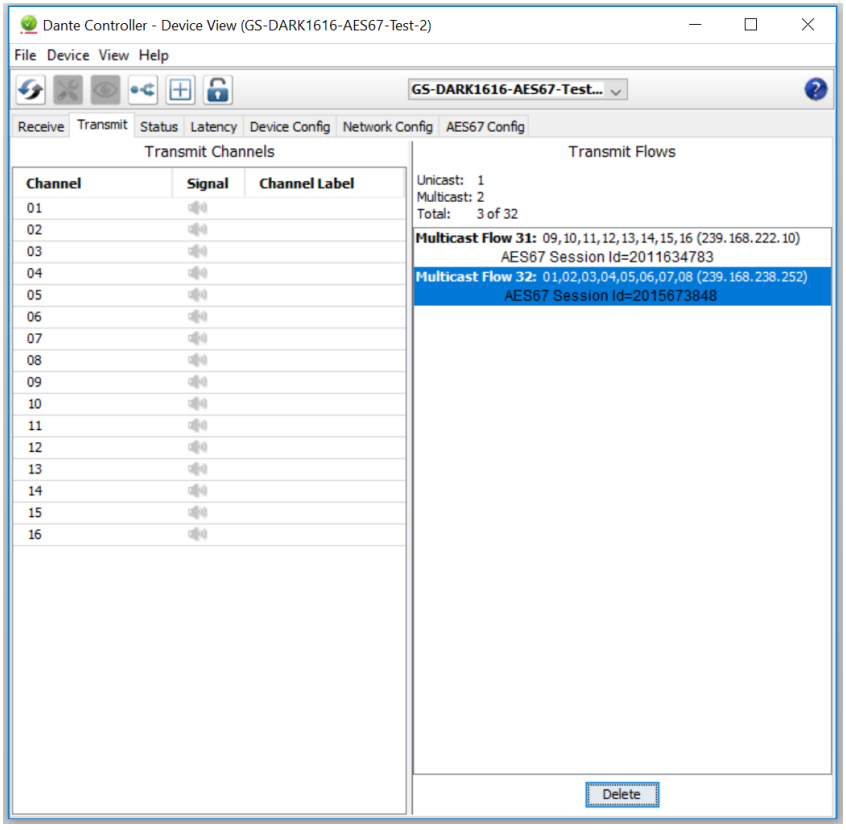
To transmit AES67 audio to the network a multicast flow must first be setup.

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



Tick the AES67 Flow check box, then select up to 8 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.



3. 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.

4. 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 destinatio address range.
- 48kHz sampling rate
- L16 or L24 encoding
- 125usec, 250usec, 333usec, 1 msec packet time
- Up to 8 channels per stream

UPDATING THE BROOKLYN MODULE

The Brooklyn module is a device supplied by Audinate that does most of the processing for the actual Dante/ AES67 network audio streams. There is one Brooklyn module in each Beatrice R8. We supply special code (a .dnt file) that sets up/ initiates the Brooklyn module and makes it work in particular way and we also run extra code on its internal microprocessor to make it work correctly with the Beatrice D8.

1. Finding Out Current Installed Version

Open Dante Controller.
Open Device Info tab.
Double Click in the device that you are working with….a new window will open called 'Device View (name of device'
Open the status tab.
The Firmware Version (of the Brooklyn module) will be found under the 'Device Information' heading.

2. Finding Out What The Latest Available Version Is

Go the Beatrice R16's web page at http://www.glensound.co.uk/product-details/beatrice-r16/ and open the 'Firmware Latest Version' Tab.
This will give both the latest version numbers/ file names and also the location to download the file from.

3. Updating the Brooklyn Module

The firmware that runs on the Brooklyn module 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

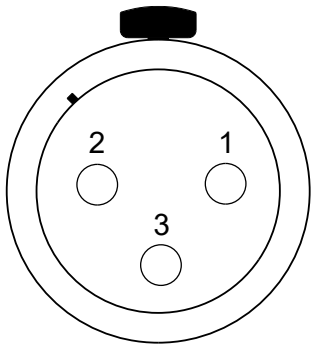
Please note we strongly advise that when you do the update that only your PC and the Beatrice R16 that you want to update are on the network to save accidently updating the wrong Dante device.

NOTE

Once updated the devices name will change to BeatriceD8-xxXxXx whereby the 'X's refer to the MAC address. We recommend changing the name to something more convienient.

WIRING INFORMATION

XLR & JACK Wiring



XLR SOCKET (FEMALE)

STANDARD XLR AUDIO PINOUTS:

1: Ground/ Earth

2: INPHASE/ POSITIVE/ MIC +

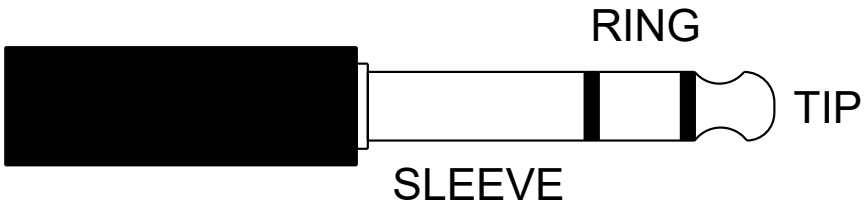
3: MATE/ NEGATIVE/ MIC -

STANDARD HEADPHONE WIRING:

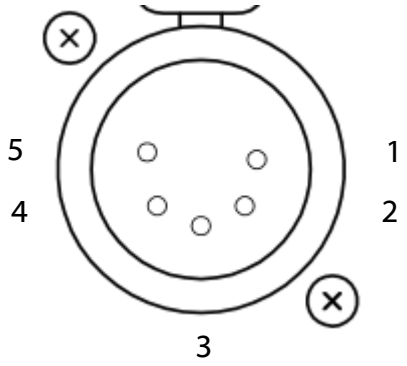
TIP: A/ LEFT Ear

RING: B/ RIGHT Ear

SLEEVE: Common/ Earth



5 & 4 Pin Headset Wiring Options



5 PIN XLR AUDIO PINOUTS:

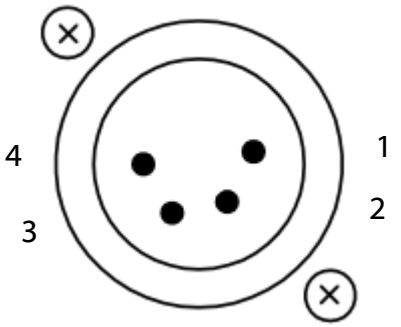
1: MATE/ NEGATIVE/ MIC -

2: INPHASE/ POSITIVE/ MIC +

3: GROUND/ EARTH

4: HEADPHONE LEFT

5: HEADPHONE RIGHT



4 PIN XLR AUDIO PINOUTS:

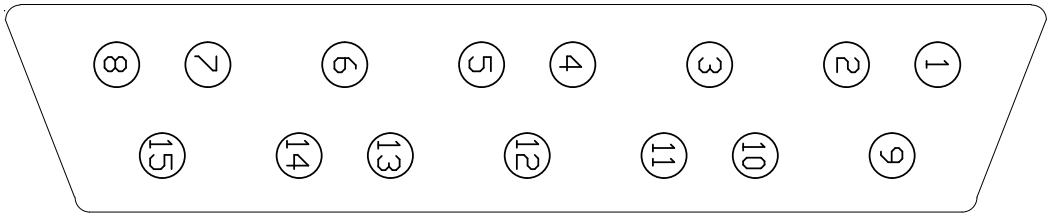
1: MIC GND/ MIC –

2: INPHASE/ POSITIVE/ MIC +

3: HEADPHONE GND

4: POSITIVE/ HEADPHONE +

D15 Socket Loop Input Wiring

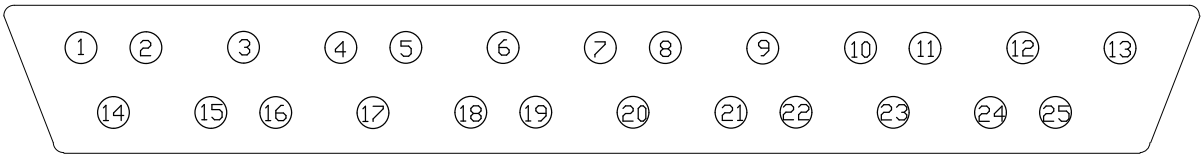


PIN Number	Function
1	Speak 1 Button
2	Speak 2 Button
3	Speak 3 Button
4	Speak 4 Button
5	Speak 5 Button
6	Speak 6 Button
7	Speak 7 Button
8	Speak 8 Button
9	Speak to Group
10	Speak to All
11	Cut Internal LS / HP Out
12	Cut EXT SPKR Out
13 - 14	Not connected
15	Ground/ Earth

The 12 active loop input pins work in Parallel with the front panel switches.

To operate an external loop just connect the input that you want to operate to the Ground/ Earth.

D25 Plug Loop Output Wiring



PIN Numbers	Function
1 & 14	Not Used
2 & 15	Not Used
3 & 16	Not Used
4 & 17	Not Used
5 & 18	Not Used
6 & 19	Not Used
7 & 20	Not Used
8 & 21	Not Used
12 & 25	Speak Key On
13	Ground/ Earth
9, 10, 11, 22, 23 & 24	Not Connected

Loop outputs are connected internally to solid state relays which are wired normally open. Therefore the PIN Numbers in the above table refer to either side of the switched relay output that will become joined together if the associated output is active.

The maximum voltage handling for each relay is 400V.

The maximum current handling for each relay is 100mA.