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Intercom & Talkback

Features

- ### 8 Channels Of Intercom
  One single user connected to the unit can listen to and communicate with 8 separate locations on the network. Depending upon how the Dante network has been routed the incoming audio circuits and outgoing circuits can be different locations.

- ### 2 Racks make 16 Channels
  Two Beatrice R8 racks can be joined together by just a pair of digital S/PDIF cables making a fully featured 2RU 16 channel intercom unit, with groups, mics, speakers and other resources shared between the 2 units.

- ### Dante Routing & Partyline
  Audio routing to/ from other devices is setup using Dante controller which allows for point to multipoint routing on outgoing circuits (but only 1 single incoming circuit for each of the 8 channels). Therefore we've included an inbuilt fixed ratio 14 input 19 output mixer matrix with inputs and outputs connected directly to the Dante/ AES67 network, which allows for setting up partyline and complex group circuits.

- ### Onboard Mic & External Mic Input
  A good quality, clear sounding microphone amplifier designed for communication purposes is fitted which also has the benefit of a compressor/ limiter circuit to help keep levels and intelligibility consistent even when the operator gets overly excited. This microphone amp has two microphone sources, either the inbuilt front panel mounted electret capsule which provides good voice intelligibility from normal working distances or a balanced XLR input for connecting external gooseneck microphones. Twelve Volt Phantom power is also available and can be turned on/ off as required via an internal link.

- ### High Output Intelligible Loudspeaker
  What's the point of an intercom unit if the onboard speaker is so cheap that you can't understand what is being said to you? We tried hundreds of different drive units before settling on the one used in the Beatrice R8. We chose it because it had a much cleaner sound and better frequency response for vocals than any other speaker on the market that would fit in a 1RU subrack.

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- ### Mains or PoE Powered

  An inbuilt wide range switch mode mains power supply is fitted for powering the Beatrice R8. It is terminated with a standard IEC plug, making it easy to plug in wherever you are in the World.

  The unit can also be powered via the Ethernet cable by standard PoE (Power over Ethernet) on either of the copper Ethernet ports. The PoE power can be supplied by an external PoE switch or a midspan power injector.

- ### Redundant Twin Copper & Twin Fibre Ethernet Interface

  When ultra reliable communications is needed for the utmost important jobs, glitch free redundant network circuits can be set up using the primary and secondary Dante network ports.

  There are 2 copper Ethernet ports on Neutrik Ethercons and also 2 fibre Ethernet ports presented as SFP slots (SFP modules not included). Redundant networks can be set up across any of these ports. These ports can also be set up as a network switch.
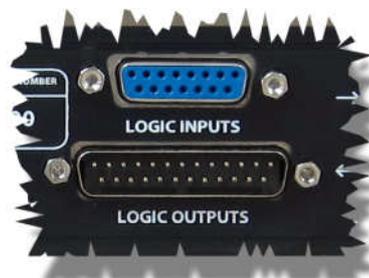
- ### GPIO

  There are nine solid state relay outputs. One of these outputs is triggered when any speak key is on (useful for dimming external loudspeakers or red light controls), the other eight are triggered individually when their associated channel receives a call.

  In total there are 12 loop closure inputs. 10 of these control the talk keys (the 8 channels, talk to group & talk to all) and the other 2 provide internal & external LS cuts.

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Microphone Level Meter
An eight LED front panel multipurpose indicator is used to indicate the outgoing microphone level.

- ### Channel Input and Output Gain Controls
  For maximum flexibility, gain can be applied to incoming audio signals and outgoing signals separately. A row of LEDs indicate the current gain setting when a channel's input or output is being adjusted.

- ### Monitor Selection
  Each channel has an illuminated audio monitor switch. This allows the channels' incoming audio circuit to be routed to the headphones/ loudspeakers. Using these switches makes it easy for an operator to just monitor the desired incoming audio channels.

- ### Call Function
  A simple call function is inbuilt allowing the operator of one unit to call/alert other users that they want to communicate with. A simple double tap of the speak key initiates a calling signal sent to the other party. The audio presence indicator flashes to indicate that you have been called. As well as the flashing LED at the receiving end of the call, an audible 'beep' can be set to alert the user that an incoming call has been placed to them. (Call function can be disabled on a channel by channel basis if required).

- ### Presence Indication
  A front panel illuminated red switch is used to indicate the presence of incoming audio on that channel. When audio is detected on the channel the switches internal red LED is illuminated, the red LED then stays on for a short period after the incoming audio stops to help the operator identify who has been talking to them.

Speaker Output
As well as the front panel internal loudspeaker, a balanced analogue output is provided for connecting to an external powered loudspeaker.

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Programmable Speak Keys
Each speak key can be individually programmed to operate how you would like, be it push to talk, latching or intelligent lever key.

- ### AUX/IFB
  To allow a flexible intercom system to be built around the R8, AUX/ IFB circuits are built in. This means that for each of the 8 talkback outputs there is a specific AUX/ IFB audio input from the Dante/ AES67 network.
  Any audio routed to the channels AUX/ IFB input is mixed together with the channel's outgoing talkback circuit. The incoming AUX/ IFB audio is ducked when the channel's talkback key is operated. The level of ducking is user configured.

- ### IFB Monitoring
  If the R8 is being used as an outside source talkback device then it is possible to set the audio monitoring circuits to monitor the incoming AUX/ IFB circuits and not the 'normal' Dante inputs. This allows an operator to know what they hear is also what the outside source hears.

- ### Monitor Button Setup
  To allow you to operate the R8 in a way that works for you, it is possible to set the loudspeaker/ monitor circuits to either route all the monitoring inputs circuits to the loudspeaker/ monitor when all the monitoring select switches are off, or have the unit not send any audio to the loudspeaker/ monitor when all switches are off.

- ### Variable Loudspeaker Dimming
  The output level of the loudspeaker automatically dims when a speak key is pressed to prevent acoustical feedback. The level of the dim can be programmed by the operator to suit their working environment.

- ### 4-WireConnectivity
  Two traditional analogue 4-wire circuits can be connected to two of the R8's intercom channels by utilising the versatile analogue inputs and outputs.

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- **Local Input and Output Circuits**

  For increased versatility, there are 2 local balanced analogue audio inputs and 2 local balanced analogue outputs.

  The inputs have input gain controls and presence detectors on them (just like an intercom's channel input) and are routed directly to two output channels on the Dante / AES67 network.

  The outputs are fed directly from two input channels from the Dante / AES67 network.

- **Mixer Matrix For Partyline**

  For setting up more complex groups and partyline circuits that could not be achieved via Dante controller or your AES67 router, an inbuilt fixed ratio mixer is supplied. It has 14 audio inputs direct from the network and 19 mix outputs to the network. Five of the mixers have inbuilt automatic audio ducking circuits.

MIX OUTPUT		SUM OFF	NOTES
Dante Output Channel No:	Default Name in Dante Controller:	Dante Receiver Channel Nos:	
14	"Sum of 19 to 32"	19 to 32	
15	"Sum of 19 to 25"	19 to 25	
16	"Sum of 26 to 32"	26 to 32	
17	"Sum of 19 to 21"	19 to 21	
18	"Sum of 22 to 24"	22 to 24	
19	"Sum of 25 to 27"	25 to 27	
20	"Sum of 28 to 30"	28 to 30	
21	"Sum of 19 & 20"	19 and 20	
22	"Sum of 21 & 22"	21 and 22	
23	"Sum of 23 & 24"	23 and 24	
24	"Sum of 25 & 26"	25 and 26	
25	"Sum of 27 & 28"	27 and 28	
26	"Sum of 29 & 30"	29 and 30	
27	"Sum of 31 & 32"	31 and 32	
28	"Sum of 19 & 20 Dim"	19 and 20	Note Mix in 19 dimmed when signal present on Mix in 20
29	"Sum of 21 & 22 Dim"	21 and 22	Note Mix in 21 dimmed when signal present on Mix in 22
30	"Sum of 23 & 24 Dim"	23 and 24	Note Mix in 23 dimmed when signal present on Mix in 24
31	"Sum of 25 & 26 Dim"	25 and 26	Note Mix in 25 dimmed when signal present on Mix in 26
32	"Sum of 27 & 28 Dim"	27 and 28	Note Mix in 27 dimmed when signal present on Mix in 28

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Simplified Block Diagram
The audio block diagram below shows an analogue representation of the digital audio routes within the Beatrice R8 excluding the fixed ratio mixer.

Block Diagram

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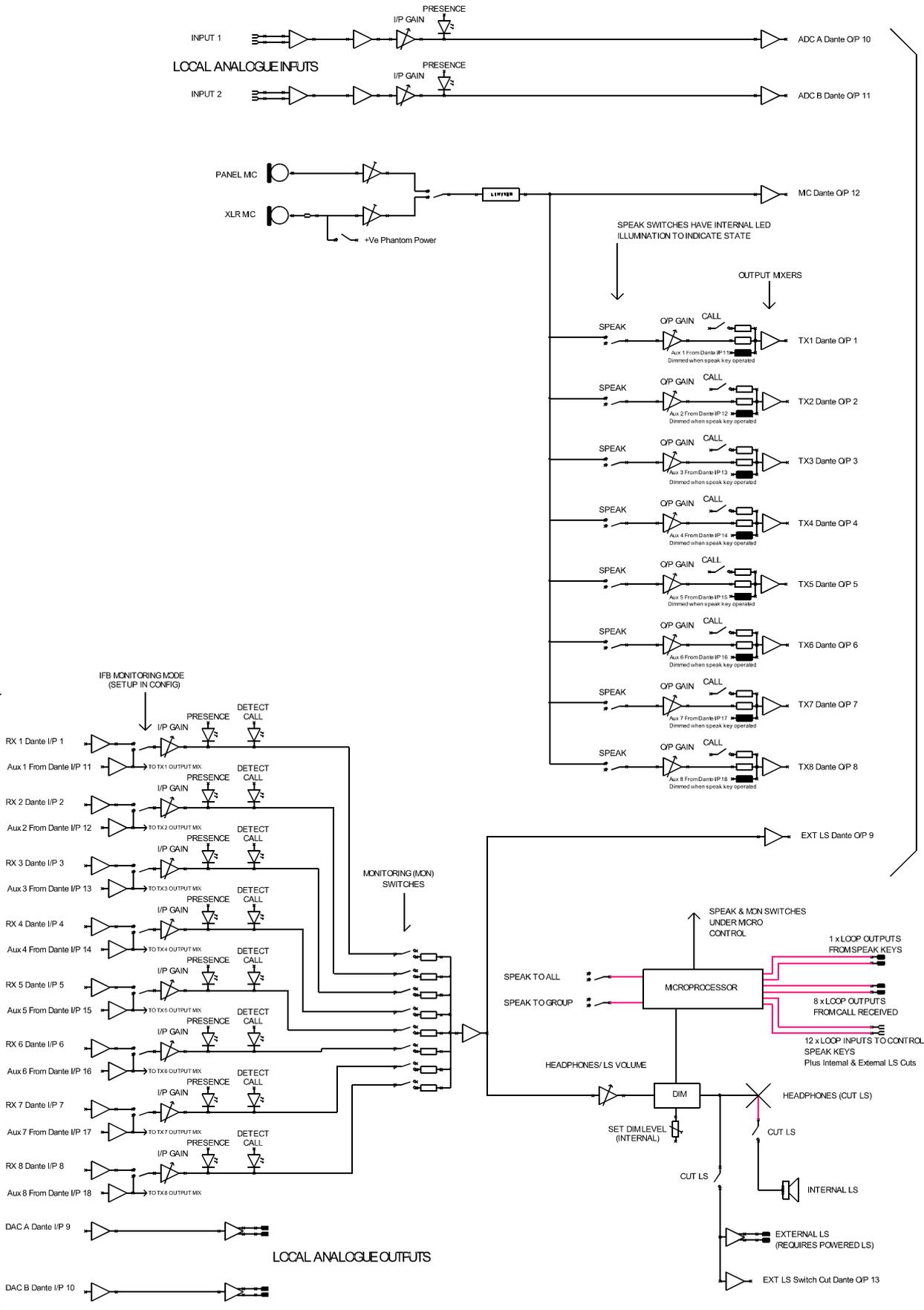
Specification

NETWORK/ Dante®

Physical Interface
2 off RJ45
2 off SFP slots

Audio Sample Frequency
48k

Transfer Rate
1000 Mbps

Dante® Chipset
Brooklyn II
Note: suitable for acting as master clock for a network incorporating many Ultimo chipsets

AES67 Compliant
AES67 compliant

PHYSICAL

Mechanics
All aluminium with laser etched panels and light textured black powder coated lid & base

Size
19" wide, 1RU high, 164mm deep

Weight
1.6Kg 3.5lb

Shipping Weight
3Kg

Shipping Size
62 x 42 x 12 cms

Shipping Carton
Rugged export quality cardboard

ENVIRONMENTAL

Operating Temperature
0 to +50 °C (32 to 122°F)

Storage Temperature
-20 to +70 °C (-4° to 158°F)

Relative Humidity
0 to 95% non-condensing

INCLUDED ITEMS

Handbook
By download

RJ45 Network Cable
2 metre Cat5 RJ45plug /RJ45plug cable

Mains Cable
2 metre IEC (UK & Europe Only)

AUDIO

Mic Gain Range
61 to 21dB

Phantom Power
12 Volts (set via internal link)

Equivalent Input Noise
-126dB (20-20Khz RMS A Weighted 150 Ohms)

Headphone Impedance
32 - 1000 Ohms

Max Headphone Output Level
+14dB into 600 Ohms

Headphone Connector
6.35mm (1/4") TRS socket

Band Pass Filter
50Hz to 15kHz

GPIO

GPO
Solid State Relays. Wired N'O and N'C

GPI
Logic level pull down to ground to operate

POWER

Mains Voltage
100 - 240 VAC +/-10%

Mains Frequency
50 to 60 Hz

Power over Ethernet (PoE)
May be powered by PoE on either Copper Port
Complies to: IEEE 802.3af-2003
Classification Class 0

Consumption
<15 Watts

Redundancy
Mains & Both PoE supplies are all dioded together for glitch free redundancy

Power On LED
Bright Blue

MIC/ HEADSET OPTION

Standard (Part no: Beatrice R8)
Front Panel 3 pin XLR socket Mic Input

Optional 5 Pin (Part no: Beatrice R8-X5)
Front Panel 5 pin XLR socket Headset Connector

Optional 4 Pin (Part no: Beatrice R8-X4)
Front Panel 4 pin XLR plug Headset Connector

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.

We hope that you will also fall in love with Beatrice.

E & OE