



PARADISO Commentary For Dante Audio Networks

Highlights

Dante Network
Audio Interface
+ AES67

Low Noise Mic
Amp with Referee
Compressor

3 Commentators

Redundancy On
Network Links &
Power Supplies

Copper & Fibre
Network Interface

Analogue &
AES3 I/O as well as
Dante

Overview

Paradiso is a commentators box for 3 commentators. It can be used by itself to provide the commentary facilities alongside an OB truck for small events or multiple Paradisos can be used at large events that require Worldwide broadcast coverage.

Audio links between the Paradiso and other equipment are by Dante (AES67 compliant) complete with redundant copper & fibre links. Analogue I/O and AES3 I/O are also provided directly from the unit for local connections and/ or another layer of redundancy.

The Paradiso has been designed to be intuitive & easy to use for Commentators' who would rather be talking about the game than working out how the equipment works, and is also built to our exacting rugged & robust standard to make it a reliable piece of broadcast equipment for the busy engineer.



**Paradiso
Commentators Box**

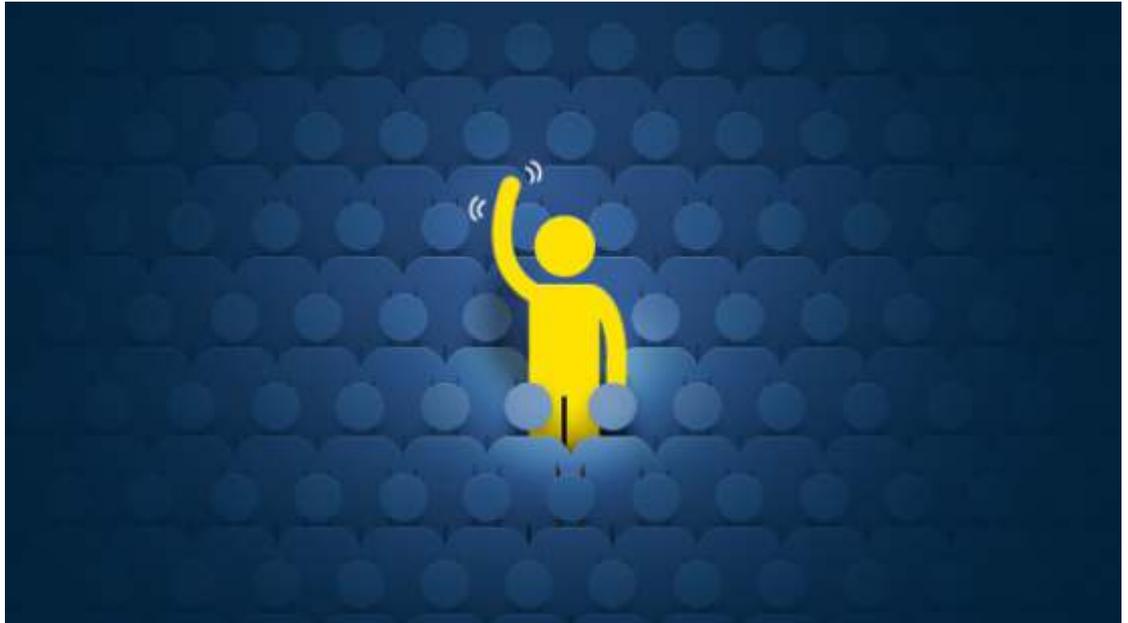
Key Points

Paradiso Commentators' Box

- Dante (AES67 compliant) commentary box for 3 users
- System is scalable with multiple Paradisos as part of a large Dante network
- Can connect to any Dante compatible device.
- 5 analogue inputs and outputs
- 1 AES3 (2 channels) of inputs & outputs
- Ultra low noise mic/line/48v inputs
- Our popular Referee compressor/limiter keeps even the loudest commentator sounding natural.
- 3 Headphone amplifiers each with 8 audio inputs each with their own headphone volume control.
- Each headphone input has panning between left/ right ear.
- Each commentator has 4 talkback circuits
- Multiple power options including PoE, Mains & External DC
- Network connections on Copper (Cat5) and Fibre (Neutrik Opticons)
- Primary & Secondary network connections allowing completely transparent network redundancy.
- Unique ePaper displays for commentators interface.
- Large bright PPM level meter
- Remote control via Windows 10 app for setup and live controls (app released in stages throughout 2017)
- GPIO (General purpose inputs/outputs) interface for interaction with talkback systems or studio red lights.

DANTE Audio Network

- AES67 Compliant
- Multi channel, digital media network technology
- Offers compatibility with hundreds of systems from other manufacturers
- Scalable from a pair up to thousands of channels.
- Fully redundant glitch free audio transport



Paradiso Unique Features



ePaper Displays

For quick easy intuitive visible Indication of individual headphone source names, levels & pan. Viewable in bright sunlight.



Fully Redundant Copper and Fibre Network Connections

If an IP link fails you have no broadcast! Our system provides fully redundant glitch free audio & data transport across any of the 4 network interfaces.



Automatic Adjustment For High or Low Impedance Headphones

Our unique headphone amplifiers automatically provide the correct drive level to high or low impedance headphones.

Instinctive Mic Gain Setting Information

When adjusting a mic's input gain, the ePaper display changes to display the gain being applied in dB and the PPM automatically changes to display just the level of mic input currently being altered.

Multiple Power Sources

For complete failsafe redundancy the Paradiso can be powered from any of the following sources: PoE (2 off), Wide Range Mains or external DC.



Local Analogue & AES3 I/O

For 100% reliability local analogue & AES3 I/O is provided as complimentary audio connectivity to the network audio.

Referee Compressor/ Limiter

Glensound's World renowned Referee compressor limiter system keeps even the loudest commentators sounding great.



**Paradiso
Commentators Box**

Front Panel Features

- 8 off Audio Volume Controls for Each Commentators with Pan**

On the top panel are 24 rotary headphone volume encoders. Internally they are connected to a DSP matrix and the sources can be set depending upon your preference.

Next to each encoder is an ePaper display which provides a visual indication of both the position of the volume control and the current panning position of the source in the commentators headphones.

Turning the encoder adjusts the volume, and simultaneously pressing down and turning the encoder adjusts the pan.
- ePaper Displays**

The ePaper displays provide an indication of headphone volume and pan position. They also display the name of the associated audio source/ destination. The display name can be custom set or taken from the routed source name from within the Dante network. The bottom ePaper display that has no associated switch or encoder can be programmed to display a users name, but this is overridden temporarily when the associated inputs gain control is adjusted and the display shows the gain in dB of the input.
- Peak Programme Meter (PPM)**

The source of the PPM can be customised but is normally the outgoing programme mix. When a front panel gain control is adjusted the PPM automatically shows just the level from that input.
- Robust Mic on and Talkback Buttons**

There are 4 off round bright illuminated talkback buttons and 1 large square illuminated mic on button for each of the 3 commentators. The audio circuits that the outputs of these switches are routed to can be fully configured. The operation of these switches (momentary, latching etc) and the interaction of these switches (i.e. pressing a talkback switches mutes the main mic) can be fully configured by the windows 10 app.



Paradiso Commentators Box

Input Panel Features

- Audio Inputs**

There are 3 balanced audio inputs one for each commentator. Each of these inputs can be selected to accept a Microphone or Line level source. 48V phantom power can be turned on if in microphone mode. A very high quality remote controlled microphone amplifier has been used followed by exception analogue to digital convertor to make the audio quality the best that it can possibly be.
- Gain Control**

The gain control is a rotary encoder with a clear plastic shaft. When the gain control is operated the ePaper display above the control indicates the current amount of gain being applied and the front panel PPM automatically solos the source to allow unambiguous gain settings. The clear plastic shaft has an internal red LED that is illuminated if an input level is close to clipping, thus allowing quick diagnostics of a gain level that has been set too high.
- Intelligent Headphone Output Circuits**

Our unique intelligent headphone output circuits automatically adjust the output level to suit both high and low impedance headphones. Traditional broadcast high impedance headphones require a large output level to produce enough volume in the headphones, whereas low impedance headphones require much less level to produce a proportional output level. This means that whatever headphones you connect to the Paradiso you'll enough audio output for even the loudest of environments. Plus our headphone amplifiers can accept mono as well as stereo headphones.
- Aux In**

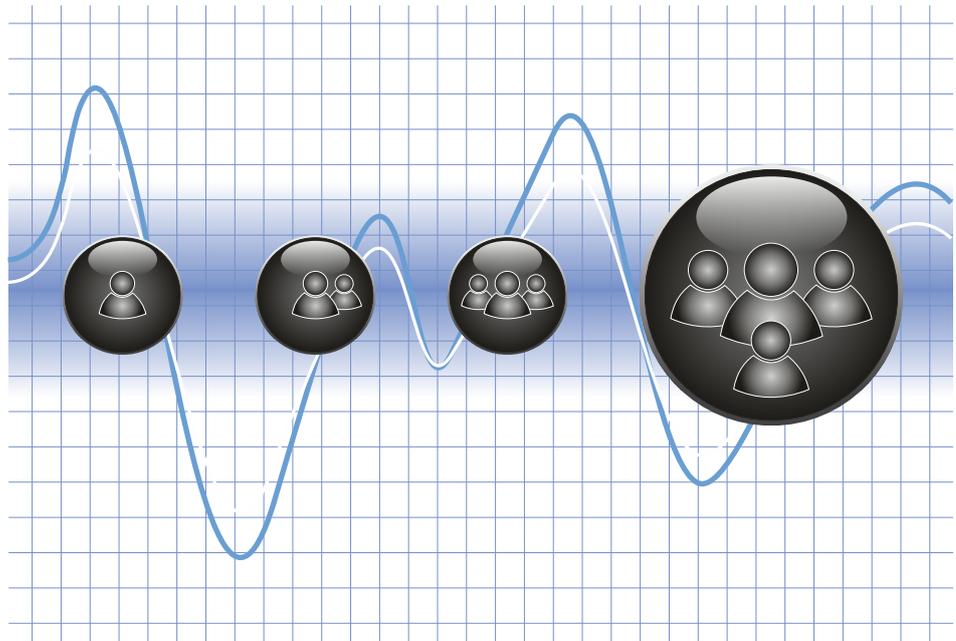
In addition to the three commentators inputs there is a 4th 'Auxiliary' Input. This is provided on a stereo 3.5mm jack socket and is suitable for connection to the outputs of domestic recording devices such as a mobile phone.



Paradiso Commentators Box

Rear Panel Features

- Redundant Powering Options**
 The Pardiso can be powered from any of 4 different sources:
 - 1) Wide range Mains Input (suitable fo Worlwide use)
 - 2) PoE on the Primary CAT5 Network link
 - 3) PoE on the Secondary CAT5 Network link
 - 4) External 12V DC
- Primary & Secondary Fibre Connections**
 Two industry standard Neutrik Opticons are fitted for fibre connectivity to the IP network. These are connected internally to single mode fibre drivers, but multimode can be supplied if required instead. The primary & secondary network circuits allow for glitch free redundancy across both the Fibre & Copper network interfaces.
- Primary & Secondary Copper Network Connections with PoE**
 Two CAT6 connections on Neutrik Ethercons (that accept standard networking cables) are provided to allow copper connections to local network switches to carry the Dante/ AES67 audio. Two connections are fitted to allow redundant circuits to be used if required.
 Both these connectors can accept a PoE power source for providing the power to the Inferno.
- Analogue Inputs & Outputs**
 Five analogue inputs and outputs are provided for backup or local I/O purposes. These circuits are routed internally via the DSP and therefore can be routed to and from any location including Dante circuits required.
- AES & GPIO**
 A D9 socket provides 2 general purpose outputs (GPO) for connection to red lights & TB systems, 2 general purpose inputs (GPI) are also fitted for external triggering. The same D9 socket also has an AES3 input & output circuit for further audio connectivity.



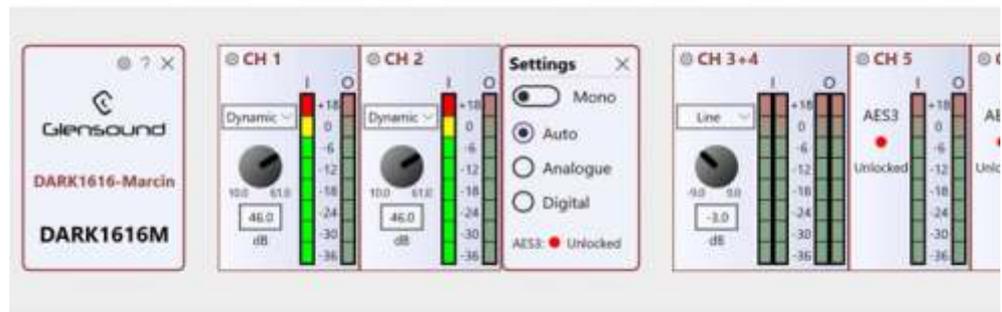
Audio Technology

- Glitch Free Redundant Network Audio**
Our Dante network audio interface provides 100% resilience with its primary & secondary network connections. If one connection is lost the other takes over completely free of any noise, dropped packets or audio glitches.
- Low Noise Microphone Amplifier With Remote Gain**
We spent a long time optimising the performance of the THAT corporation microphone amplifier used in the Paradiso. It features very low noise & distortion circuit that we remote control the gain of in 0.5dB steps, which allows us to provide the remote Windows 10 app gain control as well as the front panel rotary encoders. We also optimised the circuits to allow correct source impedance switching depending on whether the input has been set as a mic or line input.
- Referee Compressor Limiter**
As with all our commentary units the Paradiso features our very popular Referee compressor limiter circuit. This circuit starts to compress the commentator's voice gradually and slowly increases the compression ratio as the input level becomes overly high resulting in a very natural sounding and distortion free audio output capable of taming even the loudest of commentators.
- High Quality Analogue To Digital Converter (ADC)**
Dante/ AES67 network audio is a digital circuit and as such the best analogue microphone amplifier would be wasted if we hadn't paired it up with the best analogue to digital converter. The ADCs job is in theory fairly simple however if you look at our tech spec you'll see that we've made ours work incredibly well.
- Unique Headphone Amplifiers**
The commentator's headphones are a vitally important tool so we take as much care with our headphone amplifiers as with our on air mic amps. Our unique headphone amplifier provides the correct output level regardless of the impedance of the attached headphones, meaning that broadcasters can now pick and choose between low impedance 'cheap' headphones and high impedance traditional broadcast ones.

Dante™



Glensound



Picture is of DARK1616M Windows 10 App and is for reference only

Paradiso Commentators Box

Windows 10 Remote Control App

The sophisticated modern looking Windows 10 App allows full remote control and set up of all the features of the Paradiso.

The App connects to the Paradiso via the same network as the Dante audio circuits and provides a reliable redundant control system via both the primary and secondary network interfaces, meaning that even if one of the 2 networks were to become disconnected the remote control would continue to work.

One App can connect to multiple Paradisos and multiple Apps running on different PCs can connect to a single Paradiso. The App provides the ability to lock out other users from controlling a Paradiso and this facility can be password protected, meaning only authorised personnel can change the settings on a Paradiso.

For users regularly using the units at different events and functions settings can be saved, and assigned names for quick recall.

THE PARADISO REMOTE CONTROL APP IS CURRENTLY UNDER DEVELOPMENT AND WILL BE RELEASED IN STAGES THROUGHOUT OUT 2017

INITIAL UNITS SHIPPED EARLY IN 2017 WILL HAVE A FIXED CONFIGURATION UNTIL THE APP IS RELEASED (see website for details of fixed config)

Controls on the App will include (list in approximate order of release):

- Configuring On Air & Talkback button operation
- End stop allocation on headphone volume controls
- Assigning PPM source
- Routing of audio circuits internally and to/ from Dante network
- ePaper label display settings (Dante ch names or user set)
- Remote control of Mic input gains
- Remote metering
- Control of mic on/off and talkback buttons via the app
- Locking controls
- Viewing & control of headphone volume controls

Dante Controller Route Audio & Configure Devices On A Dante Network

Overview

Dante Controller

Dante Controller is a free software application that enables you to route audio and configure devices on a Dante network. With automatic device discovery, one-click signal routing and user-editable device and channel labels, setting up a Dante network couldn't be easier. See the overview for more detail on Dante audio networking.

Dante Controller is much more than just a configuration and routing matrix. Dante Controller provides essential device status information and powerful real-time network monitoring, including device-level latency and clock stability stats, multicast bandwidth usage, and customized event logging, enabling you to quickly identify and resolve any potential network issues. You can also quickly and easily backup, restore, move, and reuse Dante network configurations using Presets, and edit Dante routing configurations offline.

Dante Controller is available for Windows and Mac OS X.



Features

- View all Dante-enabled audio devices and their channels on the network
- View and edit device clock and network settings
- Route audio between devices, and view the state of existing audio routes
- Rename devices and channels using your own friendly names
- Customize the receive latency (latency before playout)
- Save and reapply audio routing presets
- Edit presets offline, and apply as configurations for new network deployments
- Change sample rates and clock settings
- View multicast bandwidth across the network
- View transmit and receive bandwidth for each device
- View device performance information, including latency stats, clock stability stats and packet errors
- View comprehensive, configurable event logs



DANTE The DANTE Audio Network Overview

Overview

Based on industry standards, Dante is an uncompressed, multi-channel digital media networking technology, with near-zero latency and synchronization. Dante is the preferred audio networking solution that has been adopted by more pro-audio AV manufacturers than any other networking technology. Interoperability is not a dream of the future, but a reality today. Hundreds of Dante-enabled products are available from the world's leading manufacturers, enabling you to mix devices from multiple manufacturers.

Economical and Versatile

One cable does it all. Dante does away with heavy, expensive analog or multicore cabling, replacing it with low-cost, easily-available CAT5e, CAT6, or fiber optic cable for a simple, lightweight, and economical solution. Dante integrates media and control for your entire system over a single, standard IP network.

Dante systems can easily scale from a simple pairing of a console to a computer, to large capacity networks running thousands of audio channels. Because Dante uses logical routes instead of physical point-to-point connections, the network can be expanded and reconfigured at any time with just a few mouse clicks.

Outstanding Quality

Since audio is transmitted digitally, you don't have to worry about the common analogue challenges of interference from other electrical equipment, crosstalk between cables, or signal degradation over long cable runs.

Easy To Install

Setting up Dante networks couldn't be easier. You no longer have to shudder when considering the deployment of an audio network. Even the most complex networks can be set up and configured quickly and easily with Dante, making system integration simple. Dante automatically handles the technical complexities for you.

Signal routing and system configuration with Dante is fast, simple, and incredibly flexible. Dante Controller is a powerful software application that manages devices on the network. Setting up a Dante network is typically just a matter of plugging devices into an Ethernet switch and connecting a computer to the network. All Dante devices are automatically discovered and displayed in Dante Controller, so you can be up and running in seconds. channels; multicast sends an audio stream to multiple devices simultaneously.





DANTE The DANTE Audio Network Overview

Overview (cont...)

Easy to Use

With Dante Controller you can easily edit device names and channel labels, control sample rates, and set device latencies. There is no longer any need to remember device IDs or channel numbers. Instead, a single audio channel is referred to just like an email address: "commentatorA @ studio" or "news_mic @ voboothA". Set it and forget it. Once the network is configured, the computer running Dante Controller can be removed from the network, and reconnected only if changes are required or system monitoring is desired. Signal routing and other system settings are stored safely in the Dante devices themselves, so they are automatically restored if a device is power-cycled.

Network Health and Management

Real-time information about the health of your network is essential for a proper understanding of its performance. There are a rich suite of diagnostic tools within Dante Controller, providing visibility into the network health status through features such as device latency monitoring, active clock health monitoring, packet error reporting, and bandwidth usage statistics.

Glitch-Free Redundancy

Many Dante-enabled devices support 'glitch-free' redundancy, enabling a secondary physical network to be provided, duplicating the audio traffic on the primary network. This automatically prevents any audio loss or interruption in the event of a connectivity problem on the primary network.

Unicast or Multicast

Dante audio channels can be configured as unicast or multicast as appropriate, to make best use of available bandwidth. Unicast provides a direct point-to-point stream for unique channels; multicast sends an audio stream to multiple devices simultaneously.

Fully Integrated with Windows and Mac OS X

With Dante Virtual Soundcard, your computer becomes a Dante audio interface for multitrack recording and media playback, using the computer's existing Ethernet port — no additional hardware is required. Digital Audio Workstations, software-based media players, Skype, iTunes, Pandora, Spotify and other applications are easily integrated into your network via Dante Virtual Soundcard.

PARADISO

Designed For Sport News & Events

Specification (Preliminary tbc)

AUDIO

Mic Input Gain Range

-40dB to +40dB

Dynamic Mic Line Up

30dB

Mic + Phantom Power Line Up

30dB

Line Input Line Up

0dBu (Gain range +/-20+dB)

Mic Input Impedance

2k4

Line Input Impedance

100k

Equivalent Input Noise

127dBu (22-22kHz RMS terminated 300 Ohms)

Maximum Input Level Before Clipping

Dynamic Mic: +10dBu

Mic + 48V PH: +18dBu

Line: +18dBu

Frequency ResponseMic: > +/-0.25dB 50Hz to 22kHz
(-2 @ 25Hz)

Line: >= -0.1dB 22Hz to 22kHz

THD + Noise (Ref +8dBu)

100Hz = 0.023%

1kHz = 0.012%

10kHz = 0.014%

POWER

External Mains PSU

Filtered IEC, 100 to 240VAC (+/-10%)

47 - 63Hz

AC Consumption

<25 Watts

DC Input

2.5mm Barrel, Centre +Ve, 9 - 15 Volts

Power On LED

Bright Blue

INCLUDED ITEMS

Handbook

Physical A4 (download also available)

Mains Cable

UK & EU Only, 2 metre mains plug to IEC

Rj45 Network Cable

2 metre Cat5 Rj45plug /Rj45plug cable

Headphone Impedance

16 to 1000 Ohms

(Auto output level to match impedance)

Maximum Headphone Output

+16.8dB into 600 Ohms

Headphone Frequency Response

>= -0.1dB 22Hz to 22kHz

Headphone Noise

-76.6dB @ lineup (residual noise)

Headphone THD + Noise (ref =8dBu)

0.008% @ 1kHz

Headphone Volume Pot Range

+10dB to Off (+10dB to -30dB configuration option)

Headphone Impedance

200 - 2000 Ohms

Dante/AES67 Network Interface

Sample Frequency: 48kHz

Resolution: 24 Bit

Can be configured for AES67

PHYSICAL

Size

256 x 256 x 100mm (WxDxH)

Weight

2.5Kg

Mechanics

All aluminium construction, anodized and laser etched, powder coated sides

Shipping Carton

Rugged export quality cardboard carton

610 x 420 x 170mm (WxDxH)

Shipping Weight

4.1Kg

OPTIONAL ITEMS

Carrying Case

Long life Polypropylene Carrying Case

Fibre Modules

Multi Mode instead of Single Mode

(No cost option)

External Power Supply

Desktop style switch mode PSU

specification

Dante™

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E & OE