



## **PARADISO** Commentary For Dante/AES67 Audio Networks

### Highlights

Dante Network  
Audio Interface  
+ AES67

Low Noise Mic  
Amp with Referee  
Compressor

Windows 10  
Remote Control  
App

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.
- 32 audio channels on/ off Dante/ AES67 network
- 5 analogue audio inputs and outputs
- 1 AES3 (2 audio 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
- 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

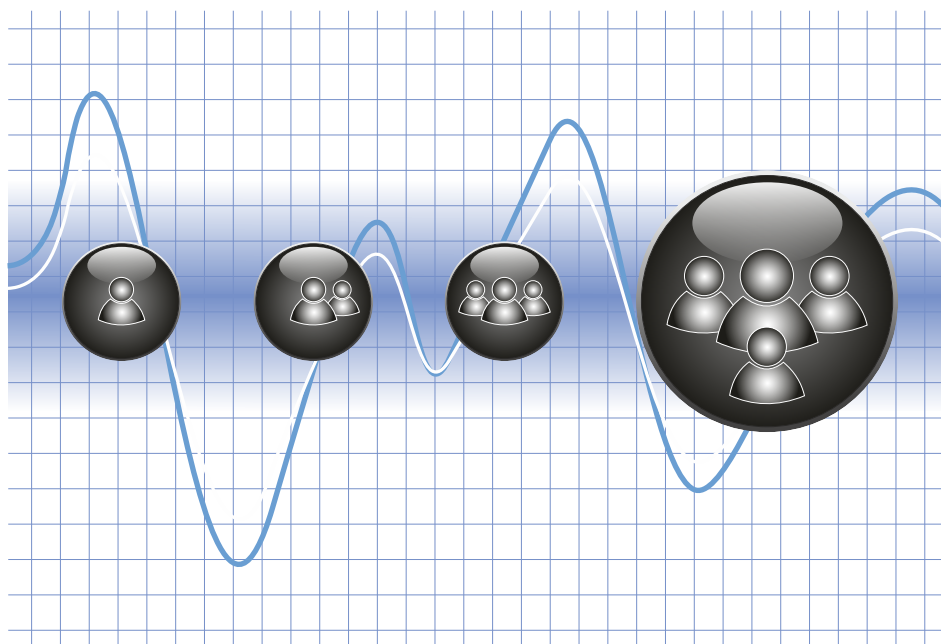
- Audio Inputs**  
 There are 3 balanced audio inputs one for each commentator. Each of these inputs can be selected to accept a Microphone or Line level source. 48V phantom power can be turned on if in microphone mode. A very high quality remote controlled microphone amplifier has been used followed 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

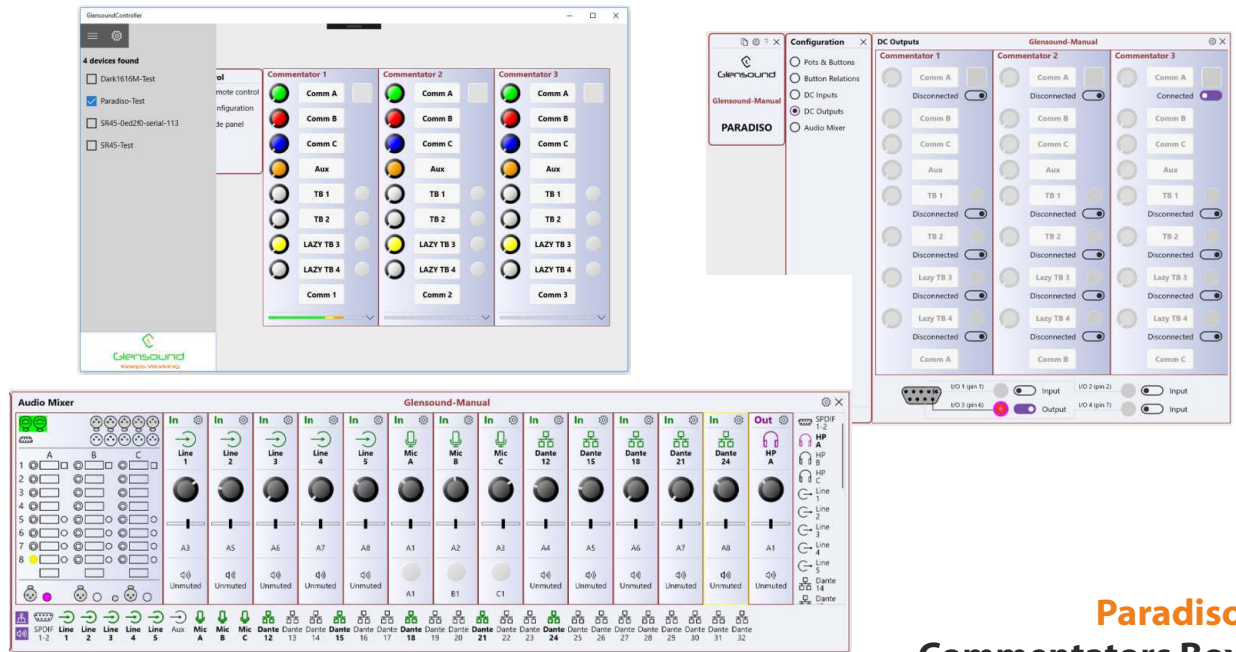
### Rear Panel Features

- 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.



**Paradiso  
Commentators Box**

## Windows 10 Remote Control App

The sophisticated modern 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 and imported/ exported between different Paradisos.

The App provides day to day operation such as turning mics on/off adjusting microphone gains, seeing PPM levels, viewing/ adjusting headphone level controls and changing graffiti on the ePaper displays.

It also provides full facilities to allow complete customisation of the Paradisos features, including but not limited to:

- Switch operation settings (momentary, latching, cough etc)
- Switch interaction (pressing TB switch turns off Mic on etc)
- GPIO setup
- Headphone volume complete attenuation (or not)
- Routing/ mixing audio circuits to the Dante/ AES67 network
- Routing/ mixing audio circuits to the analogue & digital outputs
- Routing/ mixing audio circuits from the Dante/ AES67 network
- Routing/ mixing audio circuits from the analogue & digital inputs



## PARADISO

Designed For Sport News &amp; Events

## Specification

## 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 Response**Mic: > +/-0.25dB 50Hz to 22kHz  
(-2 @ 25Hz)

Line: &gt;= -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**

&lt;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 &amp; 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**

+12dB into 600 Ohms

**Headphone Frequency Response**

&gt;= -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

32 audio channels to/from network

## PHYSICAL

**Size**

256 x 285 x 115mm (WxDxH)

**Weight**

2.75Kg

**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**

4.5Kg

## 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