DARK1616

DANTE NETWORK AUDIO
16 INPUT 16 OUTPUT AES3 & LINE LEVEL ANALOGUE INTERFACE

PRODUCT DETAILS

6 BROOKS PLACE, MAIDSTONE, KENT, ME14 1HE. ENGLAND.
Visit our Website at www.glensound.co.uk
TEL: +44 (0) 1622 753662
FAX: +44 (0) 1622 762330

Glensound Electronics Ltd

Thank you for choosing a new Glensound product.

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

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

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

Telephone: +44 (0) 1622 753662

Fax: +44 (0) 1622 762330

EMAIL ADDRESSES

General enquires: office@glensound.co.uk

Technical enquires: techinfo@glensound.co.uk

Sales enquires: sales@glensound.co.uk

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.

CE

This equipment manufactured by Glensound Electronics Ltd of Brooks Place Maidstone Kent ME14 1HE is CE marked and conforms to:

Low Voltage Directive: EN60065

Emissions: EN55103.1

Immunity: EN55103.2

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

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%

GLENSOUND DARK1616

Handbook Contents

Issue 1

Description Page No.

Contents

OVERVIEW

The Glensound DARK1616 is an analogue to digital and digital to analogue converter designed to connect AES3 and line level analogue audio circuits to a Dante audio network.

Dante network audio is a common protocol for distributing high quality linear audio over standard IP networks and it is widely used by many audio equipment manufacturers. The Glensound Dark1616 Dante audio interface will be compatible with any other manufacturers Dante audio interface. Further details of Dante network audio can be found at www.audinate.com

Being designed for live on-air broadcast applications the Glensound Dark1616 has been designed with multiple redundancy capabilities. It has 2 mains power sources and it also has fully redundant network connections for both Copper & Fibre circuits.

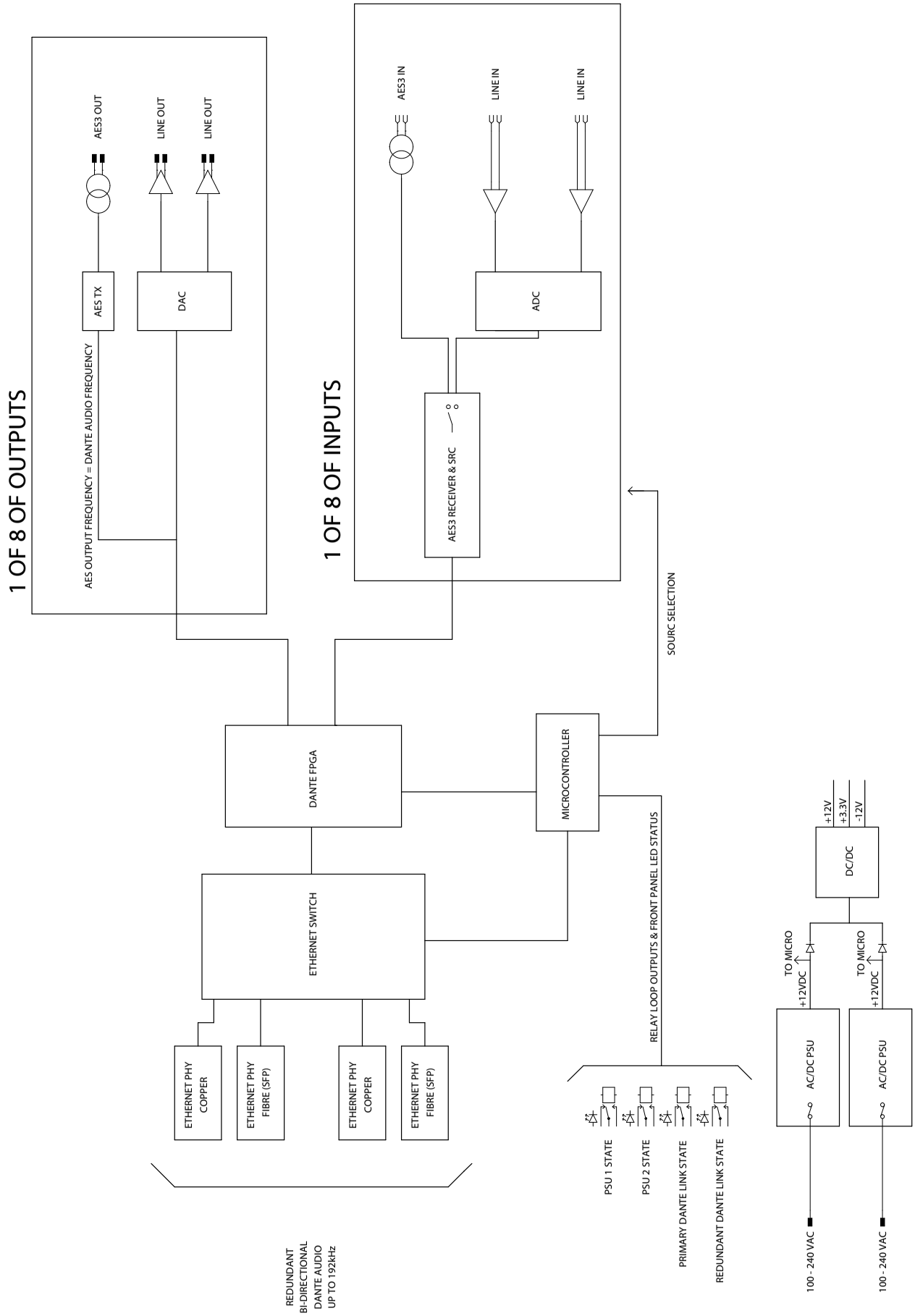
The Dark1616 provides 8 balanced AES3 inputs and 8 balanced AES3 outputs to the Dante network and 16 analogue line level (0dB) inputs to the Dante network and 16 analogue line level (0dB) outputs from the Dante network on rear panel D25 connectors wired to AES59 (also known as the Tascam standard).

The analogue and AES3 outputs are both always used and the same audio signal from the Dante newtork that is presented on one channels AES3 output will appear as an analogue audio signal on the equivalent analogue output.

For each channel only 1 audio input signal can be sent to the Dante network, the AES3 input has priority over the analogue. Therefore if there is both an analogue and AES3 input signal for one channel only the AES3 will be sent to the Dante network.

As per our other Dante equipment 0dBu = -18dBFs

SIMPLIFIED BLOCK DIAGRAM



CONNECTING THE DARK1616 TO A DANTE NETWORK

The Dark1616 is a network audio device 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 inferno 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 Dark1616s To The Network

Dark1616s 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 Dark1616 from within the Dante controller and route its' audio circuits.

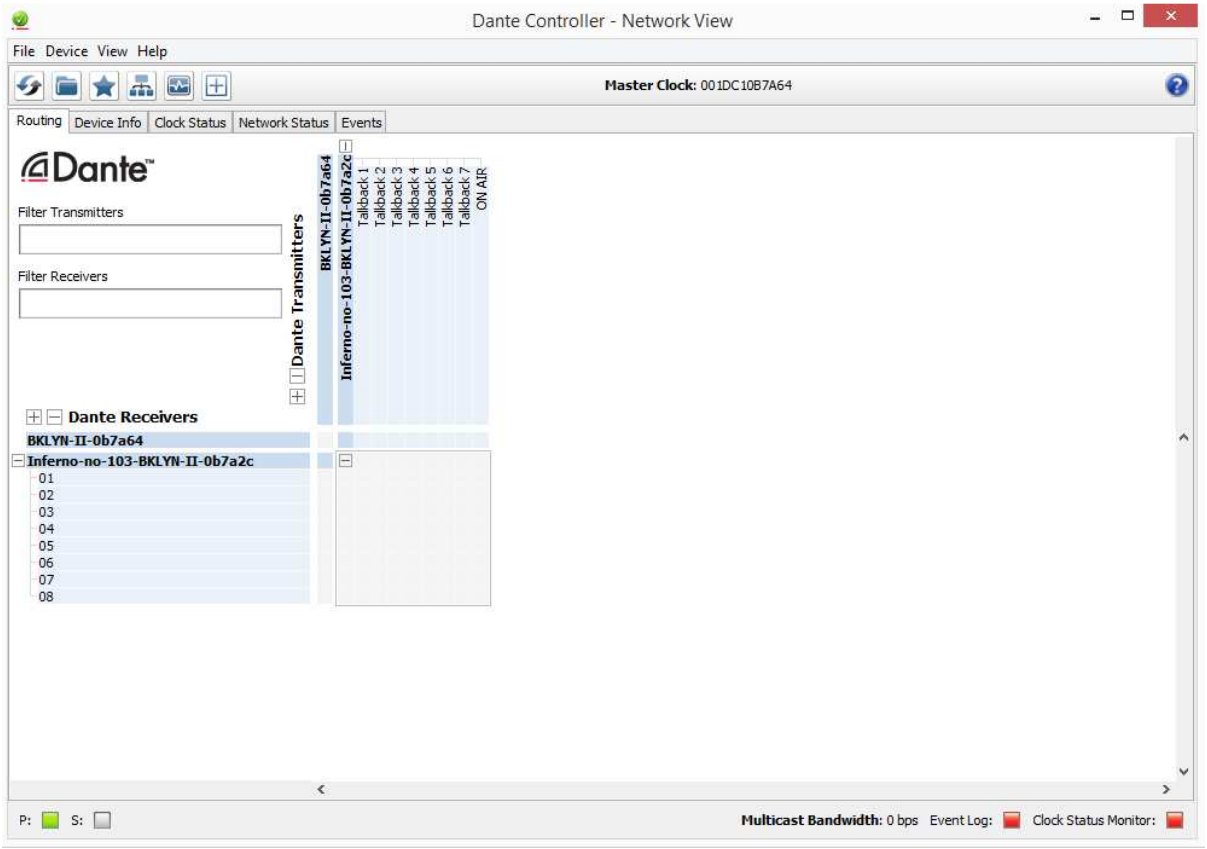
Audio Over IP Network

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 infernos 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:

‘Dark1616-no-103-BKLYN-II-ob7a2c’

Where ‘Dark1616-no-103’ refers to the Glensound product i.e. Dark1616 and its serial no (in this case 103) and ‘BKLYN-II-ob7a2c’ refers to the units Dante Brooklyn II module and its 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.

UPDATING FIRMWARE

1. General

The Dark1616 is a complex digital audio system comprising of a DSP and several Micro Controllers. All these items run software and may need to be occasionally updated.

2. Single File

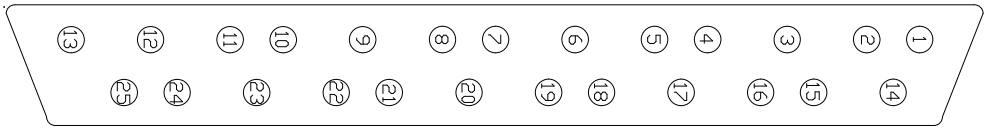
One single update file contains all the updated software for the internal devices.

3. Connect To A PC

Using the front panel USB connector connect your windows PC to the Inferno. Use Windows Explorer to locate the new software file provided by support and follow supports instructions for loading the new software.

WIRING INFORMATION

AUDIO I/O D25 SOCKET PIN OUT



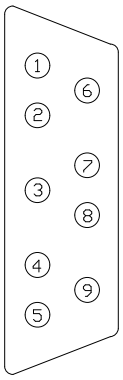
The wiring used for the DARK1616 conforms to AES59 (Also known as the Tascam standard). Pre-made break out cables are available from a number of suppliers.

ANALOGUE AUDIO INPUTS 1 - 8		
Input 1	Pins 24, 12, 25	In Phase, Mate, Ground
Input 2	Pins 10, 23, 11	In Phase, Mate, Ground
Input 3	Pins 21, 9, 22	In Phase, Mate, Ground
Input 4	Pins 7, 20, 8	In Phase, Mate, Ground
Input 5	Pins 18, 6, 19	In Phase, Mate, Ground
Input 6	Pins 4, 17, 5	In Phase, Mate, Ground
Input 7	Pins 15, 3, 16	In Phase, Mate, Ground
Input 8	Pins 1, 14, 2	In Phase, Mate, Ground
ANALOGUE AUDIO INPUTS 9 - 16		
Input 9	Pins 24, 12, 25	In Phase, Mate, Ground
Input 10	Pins 10, 23, 11	In Phase, Mate, Ground
Input 11	Pins 21, 9, 22	In Phase, Mate, Ground
Input 12	Pins 7, 20, 8	In Phase, Mate, Ground
Input 13	Pins 18, 6, 19	In Phase, Mate, Ground
Input 14	Pins 4, 17, 5	In Phase, Mate, Ground
Input 15	Pins 15, 3, 16	In Phase, Mate, Ground
Input 16	Pins 1, 14, 2	In Phase, Mate, Ground
ANALOGUE AUDIO OUTPUTS 1 - 8		
Output 1	Pins 24, 12, 25	In Phase, Mate, Ground
Output 2	Pins 10, 23, 11	In Phase, Mate, Ground
Output 3	Pins 21, 9, 22	In Phase, Mate, Ground
Output 4	Pins 7, 20, 8	In Phase, Mate, Ground
Output 5	Pins 18, 6, 19	In Phase, Mate, Ground
Output 6	Pins 4, 17, 5	In Phase, Mate, Ground
Output 7	Pins 15, 3, 16	In Phase, Mate, Ground
Output 8	Pins 1, 14, 2	In Phase, Mate, Ground
ANALOGUE AUDIO OUTPUTS 9 - 16		
Output 9	Pins 24, 12, 25	In Phase, Mate, Ground
Output 10	Pins 10, 23, 11	In Phase, Mate, Ground
Output 11	Pins 21, 9, 22	In Phase, Mate, Ground
Output 12	Pins 7, 20, 8	In Phase, Mate, Ground
Output 13	Pins 18, 6, 19	In Phase, Mate, Ground
Output 14	Pins 4, 17, 5	In Phase, Mate, Ground
Output 15	Pins 15, 3, 16	In Phase, Mate, Ground
Output 16	Pins 1, 14, 2	In Phase, Mate, Ground
AES3 AUDIO INPUTS/ OUTPUTS 1 - 4		
Input 1/2	Pins 24, 12, 25	In Phase, Mate, Ground
Input 3/4	Pins 10, 23, 11	In Phase, Mate, Ground
Input 5/6	Pins 21, 9, 22	In Phase, Mate, Ground
Input 7/8	Pins 7, 20, 8	In Phase, Mate, Ground
Output 1/2	Pins 18, 6, 19	In Phase, Mate, Ground
Output 3/4	Pins 4, 17, 5	In Phase, Mate, Ground
Output 5/6	Pins 15, 3, 16	In Phase, Mate, Ground
Output 7/8	Pins 1, 14, 2	In Phase, Mate, Ground

AES3 AUDIO INPUTS/ OUTPUTS 5 – 8

Input 9/10	Pins 24, 12, 25	In Phase, Mate, Ground
Input 11/12	Pins 10, 23, 11	In Phase, Mate, Ground
Input 13/14	Pins 21, 9, 22	In Phase, Mate, Ground
Input 15/16	Pins 7, 20, 8	In Phase, Mate, Ground
Output 9/10	Pins 18, 6, 19	In Phase, Mate, Ground
Output 11/12	Pins 4, 17, 5	In Phase, Mate, Ground
Output 13/14	Pins 15, 3, 16	In Phase, Mate, Ground
Output 15/16	Pins 1, 14, 2	In Phase, Mate, Ground

ALARMS D9 SOCKET PIN OUT



ALARMS

PSU1 Failure NC	Pin 1	Closed Contact when PSU1 fails
PSU1 Failure NO	Pin 6	Open Contact when PSU1 fails
PSU2 Failure NC	Pin 2	Closed Contact when PSU2 fails
PSU2 Failure NO	Pin 7	Open Contact when PSU2 fails
LINK Primary Failure NC	Pin 3	Closed Contact when Primary link fails
LINK Primary Failure NO	Pin 8	Open Contact when Primary link fails
LINK Secondary Failure NC	Pin 4	Closed Contact when Secondary link fails
LINK Secondary Failure NO	Pin 9	Open Contact when Secondary link fails
COMMON	Pin 5	Common for above (Internally linked to Ground)