



**GlenSound**

# **DARK8MAI**

**DANTE™ NETWORK AUDIO  
8 INPUT MIC/LINE LEVEL ANALOGUE  
INTERFACE**

## **PRODUCT DETAILS**



# 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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## **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.



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 DARK8MAI

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Description

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## **OVERVIEW**

The GlenSound DARK8MAI is an analogue to digital converter designed to connect mic/ line level analogue audio circuits to a Dante™ / AES67 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 DARK8MAI 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](http://www.audinate.com)

Being designed for live on-air broadcast applications the GlenSound DARK8MAI has been designed with multiple redundancy capabilities. It has 2 PoE power sources and it also has fully redundant network connections for both Copper & Fibre circuits.

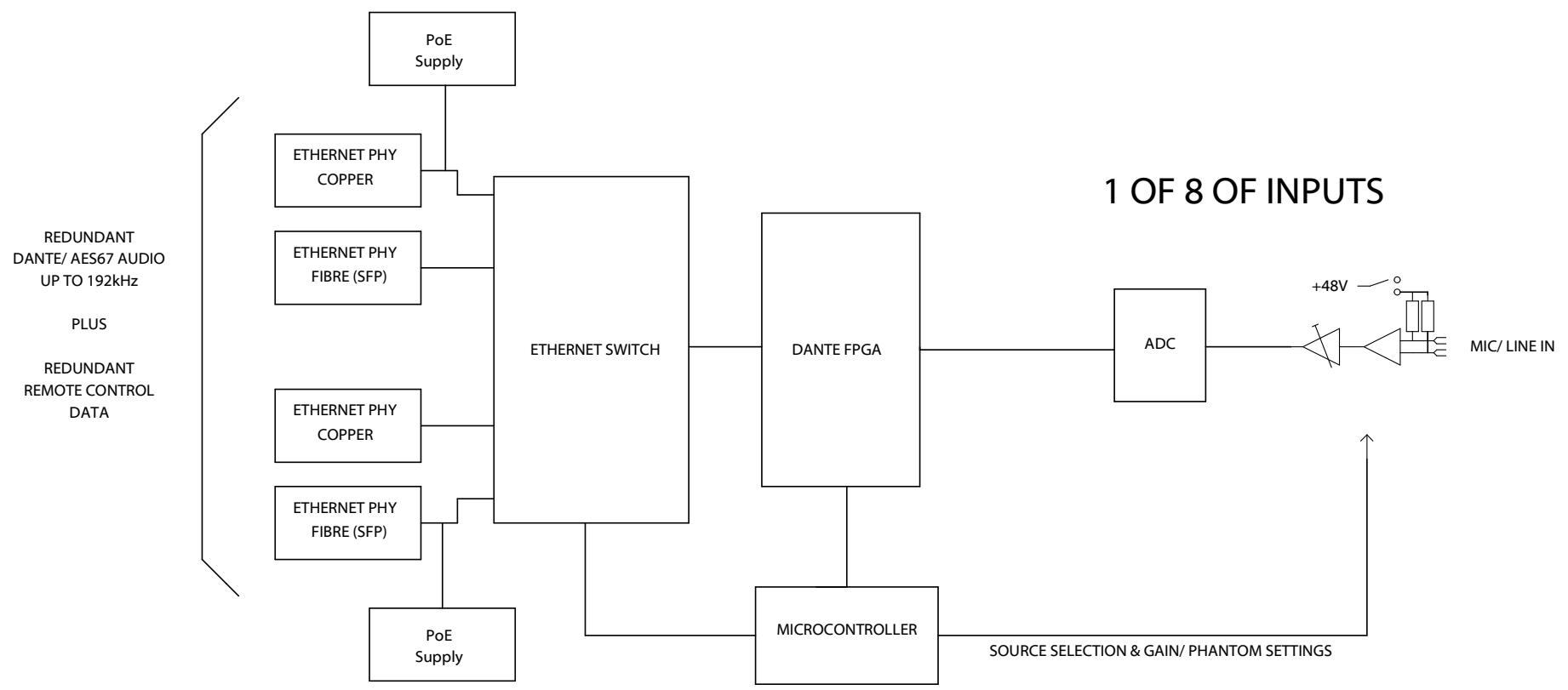
The DARK8MAI provides 8 balanced analogue audio inputs to the Dante network and features low noise remote control microphone amplifiers.

A Windows10 application (that can be downloaded from the download tab of the Dark8MAI product information page on our web site) allows remote control of the gain settings of the microphone amplifiers and also provides level indication of each channel.

### **NOTE:**

The DARK8MAI is also known as GS-WLSR45. It was originally designed for Westminster and as such was designated a typical GlenSound Westminster part number. Being a very useful product it was then made available for general release and re-named to become part of the Dark series of our products. The two products are identical. Software updates can be found on our website under the Dark8MAI product information page.,

**SIMPLIFIED BLOCK DIAGRAM**



## CONNECTIONS

### **SFP NETWORK SLOTS**

Fit SFP fibre network interfaces here (not supplied with unit)

### **DC INPUT**

Only needed if no PoE available

### **COPPER NETWORK INTERFACES**

RJ45 sockets for connecting to your network. When connected to PoE switches or mid-span supplies will power the unit.



### **AUDIO INPUTS**

Analogue Mic/ Line audio inputs to the network



## **CONNECTING THE DARK8MAI TO A DANTE™ NETWORK**

The DARK8MAI is a network audio device utilising 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](http://www.audinate.com)

### **Getting Dante Controller**

If you are connecting the DARK8MAI 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](http://www.audinate.com)

### **Connecting DARK8MAIs To The Network**

DarkMAIs 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 front. Once connected to the network it will be possible to see the DARK8MAI from within the Dante controller and route its' audio circuits.

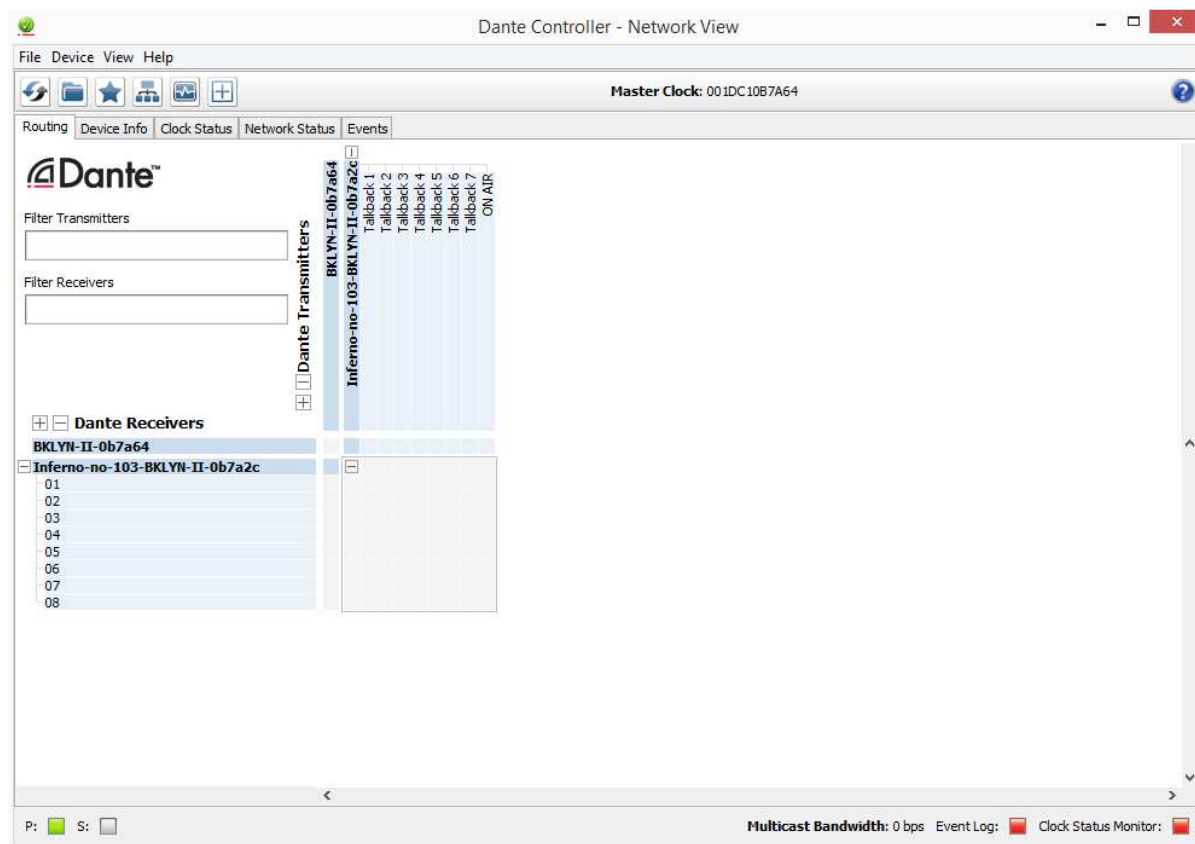
### **Audio Over IP Network**

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](http://www.audinate.com)

## Running Dante Controller

At the time of writing this manual the Dante Controller looks as per the screenshot below:



The DARK8MAI 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:

'DARK8MAI-no-103--ob7a2c'

Where 'DARK8MAI-no-103' refers to the Glen sound product i.e. DARK8MAI and its serial no (in this case 103) and '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.

# **WINDOWS 10 REMOTE CONTROL APPLICATION**

## **1. General**

The Windows 10 remote control App needs to be installed on a suitable control PC (Please make sure your PC has the latest version of Windows 10 installed prior to installing the app).

## **2. App Requirements**

The Windows 10 PC must be running version 1703 or later of Windows. GlenSound Controller (GlenController) enables remote control of key functions for the PARDISO and our DARK1616M and DARK8MAI units, and configuration of single or multiple units connected to the network. It is PC software that runs on Window 10 machines.

- 1) Check whether you have a 32 bit or 64 bit installation of Windows.

### **To Check if you have a 32 or 64 bit installation do the following**

- A) Run File Explorer.
- B) Select 'This PC' from the left hand column.
- C) Right click and select 'properties'.
- D) 'System type' will show a 32 bit or 64 bit system installed.
- E) Download the GlenController software for your operating system onto your local machine. Note: If your Paradiso was delivered with a soft manual on a USB stick, then a copy of the Glencontroller software will be on the USB stick.

## **Downloading**

The GlenController application may be downloaded. It is a zipped file containing a Windows certificate, and the app. At the time of supplying this manual the file locations are as below, but please check the 'App Latest Version' tab on the Dark8MAI's web page <http://www.glen sound.co.uk/product-details/dark8mai/> to find details of the latest version

If you have a 32 bit version of Windows 10 then download this file:

[http://www.glen sound.co.uk/Software/Dante/GlenController\\_2.5.2.0.zip](http://www.glen sound.co.uk/Software/Dante/GlenController_2.5.2.0.zip)

Please note these addresses are locations of the files and not web pages, if you put the above address in your browser it should automatically download the file. You may see 'page not found' but all that you actually need is for the the file to be downloaded.

## **Installation**

Make sure the GlenController download files are in a folder on your local machine and unzip the files to a know location.

Installation of GlenController is a two stage process as all Windows 10 applications must have a digital certificate. If this is the first time you have installed Glensound applications, then you must first load the Glensound App Certificate. This will allow you to install GlenController and any further Glensound Windows 10 applications.


### **Stage 1 – Check/ Enable Windows ‘Sideload Apps’**

The App uses a Windows 10 feature called Sideload Apps (as do many other Apps), this feature is probably already enabled on your machine but we suggest that you check/ enable it prior to trying to load the App.

- 1) Open **Settings** and select **Update & Security**
- 2) Select **For developers** and make sure that **Sideload apps** is selected
- 3) If you are turning on Sideload apps for the first time Windows will pop up a warnings screen, make sure that you are happy to proceed and click **Yes**

### **Stage 2 – Installing The Certificate**

All Windows 10 apps must have a valid certificate. If you have previously installed a Glensound App on your PC then you will already have the certificate installed and can proceed straight to satge 3.

- 1) Locate and double click the file  **Install Glensound Certificate.cmd** from the downloaded files.

### **Stage 3 – Install The App**

- 1) Locate and double click the file ‘GlenController\_x.x.xxx\_x??.appx from the downloaded files.  
(Whereby the x.x.xxx will be the version number and the ?? will be either 64 or 86 depending upon whether you are installing the 64(64) or 32(86) bit version of the App.

## **Uninstalling GlensoundController**

Find the app in the ‘All apps’ list then right-click and select ‘Uninstall’.

## **GLENSOUNDCONTROLLER App**

The DARK8MAI has a remote control utility called GlensoundController. This app allows the DARK8MAI to be set up and controlled remotely, things such as mic gain, phantom power, filtering and metering can all be controlled/ seen via the app.

The below guide is meant as an indication of the facilities available on the app, but being software developments are likely to be constantly evolving.

### **Runng The App**

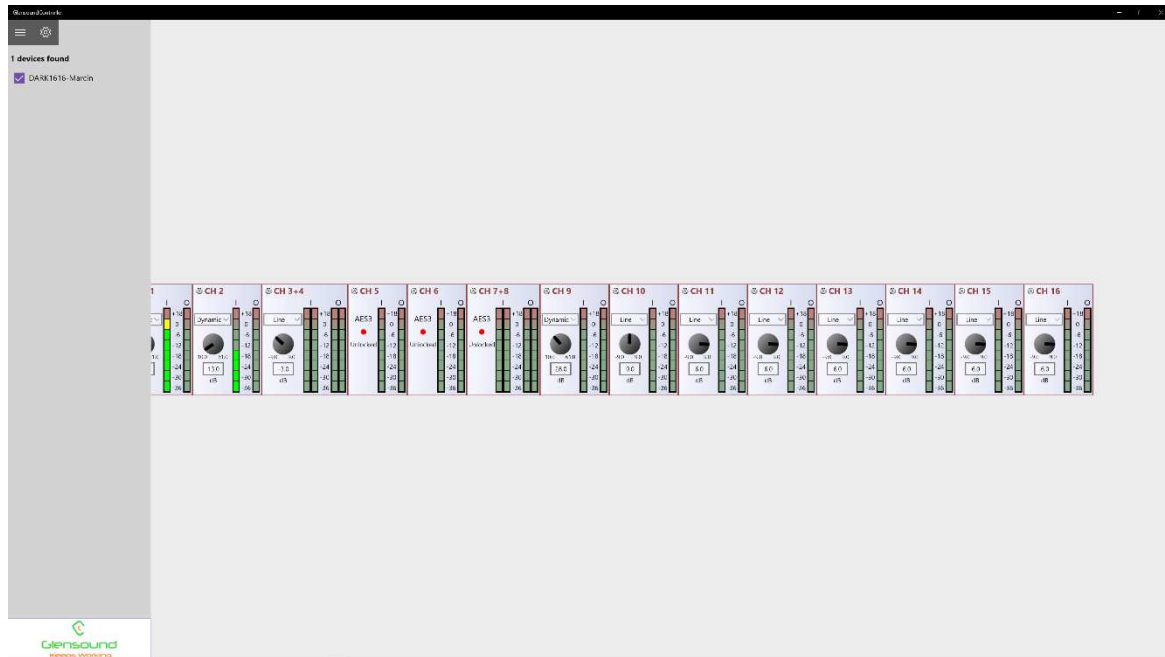
To run GlensoundController, click the Windows icon in the bottom left corner of the screen, and find it in the 'All apps' list and double click.

### **Starting The App**

When the app first starts it looks for compatible devices across your network, and it will show a list of any available units that it can connect to on the left hand side of the screen.

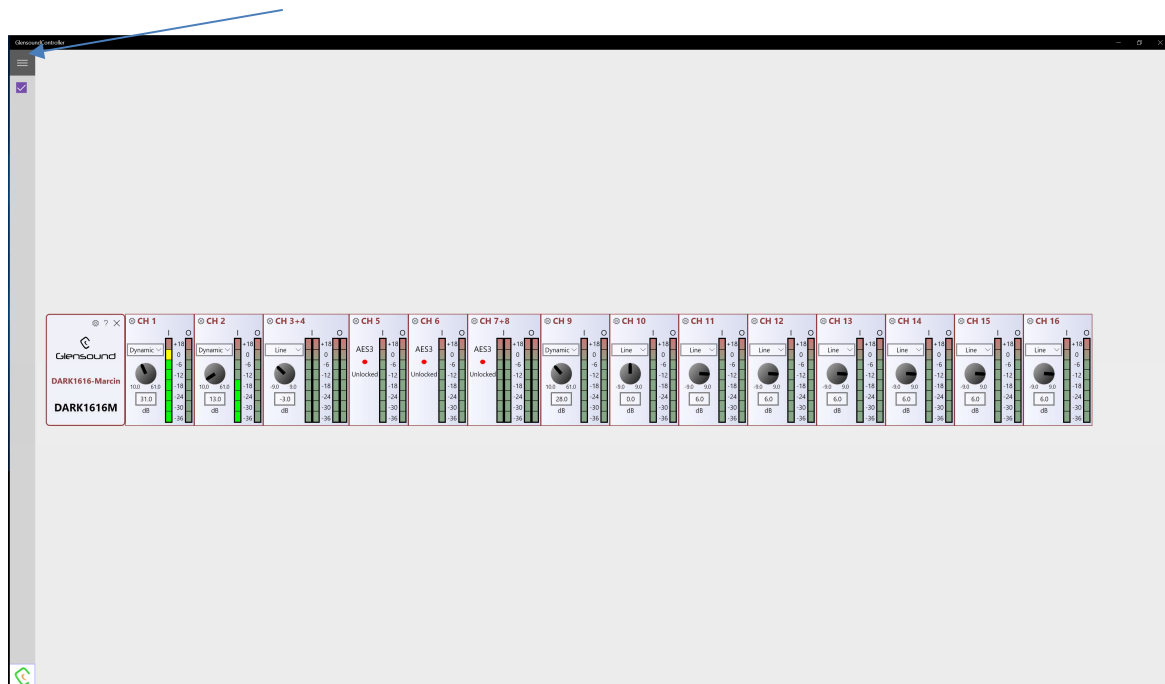


Tick the box against the name of the device that you want to control and it will appear in the main screen area:

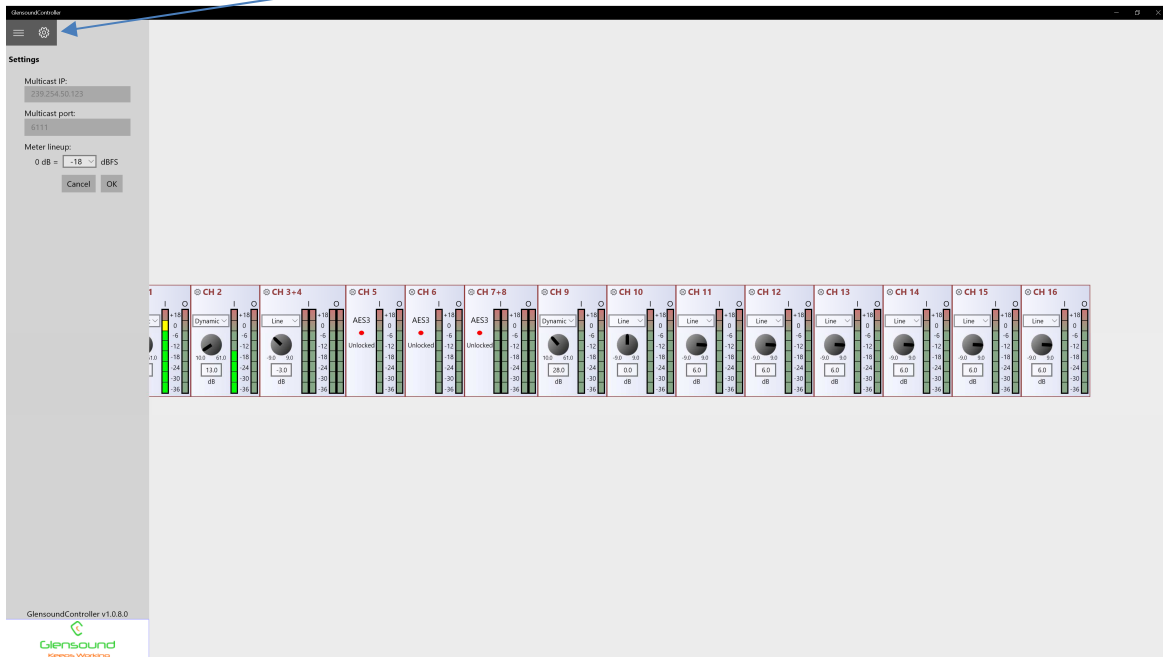


## App Controls

Pressing this button toggles the side bar in and out:

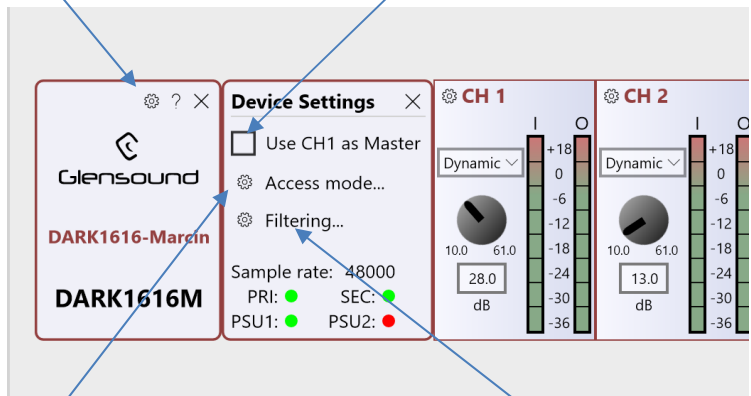


Pressing the settings button, shows app version details, multicast ip address & port and meter setup information.



Pressing the settings button opens up device settings

'Use CH1 as Master' if this tick box is selected the all channels settings follow CH 1



Access mode setup allows sole or shared control of the Dark1616M by different PCs running the App and the control can also be password protected

Filtering setup allows access to the filtering controls for the ADCs (analogue to digital convertors), changing these settings only alters the analogue inputs

## Channel Controls

Pressing this button toggles the side bar in and out:

The screenshot shows the control interface for the DARK1616M. It includes a main panel with channel meters (CH 1, CH 2, CH 3+4, CH 5) and a settings panel. Callout boxes provide the following information:

- Settings Button:** Pressing the settings button opens a stereo pair of channels settings.
- Meters:** The 'I' meter shows the level of the channels input, which can be adjusted using the gain control. The 'O' meter shows the output level of the source received from the Dante network.
- Mono/Stereo Switch:** The mono/ stereo switch selects if a pair of inputs should be treated as a stereo pair.
- Gain Control:** Adjusting the gain 'knob' controls the gain applied to the channels input in 3dB steps. The box below shows the actual gain currently being applied.
- Input Selection:** Use this drop down box to select the input type.
- Mode Selection:** The 'Auto', 'Analogue', 'Digital' selection assigns which input is selected. In 'Auto' mode Digital takes priority if a valid AES3 locked signal is received.



## **UPDATING FIRMWARE**

The DARK8MAI is a network audio device utilizing the reliable and versatile Dante. It may be necessary to install the latest version of DARK8MAI Firmware for the Paradiso App to work or for other general updates.

The firmware is the code that runs internally in the DARK8MAI and provides the structure for the Microcontroller. The firmware can be updated without the need to return the unit to Glensound.

### **1. Finding Out Current Installed Version**

There is currently unfortunately no way of displaying what version of firmware is installed in the DARK8MAI.

We suggest making a note of the date that the firmware was last updated to compare to the release date of our firmware versions.

### **2. Finding Out What The Latest Available Version Is**

Go to the Dark8MAI's web page at <http://www.glen-sound.co.uk/product-details/dark8mai/> 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. How to Update the Firmware**

- 1) Get the new firmware from Glensound's web site.  
Using your browser download the .dfu from the following location: (Note the following locations were correct at the time of writing this manual but will change as the firmware is updated please see above).

[http://www.glen-sound.co.uk/Software/Dante/SR45\\_1.2.0.dfu](http://www.glen-sound.co.uk/Software/Dante/SR45_1.2.0.dfu)

Note: The above address is just a file location. There is no web page associated with it, so you may see 'page not found' but your browser should still download the file.

Make sure you know where your browser has downloaded and saved the file to as you'll need it in a minute.

- 2) Install on a pc a program called Dfuse. This is a program that is supplied by ST Microelectronics who are the manufacturer of the intelligent microprocessor that we use in the DARK8MAI. Just googling Dfuse should provide the link to ST Microelectronics Dfuse download page. The programme to download is 'DFUSE DEMO'. Follow the download instructions to download and install Dfuse on your PC.

- 3) Make sure you know where the latest version of the DARK8MAI's firmware is located on your pc (this is a .dfu file). This is a file that you downloaded in step 1.
- 4) Connect the USB 1 port on the front of the DARK8MAI that you want to update to a USB port on your PC.
- 5) Press and hold the 'IDENTIFY' button. While pressing the 'IDENTIFY' button press and release the recessed 'RESET' button (you'll need a pencil or pointed object to push the recessed reset button. Do not press too hard, it only moves a small amount).
- 6) If this is the first time you have connected the DARK8MAI to the PC then windows will load drivers for it.
- 7) Open the Dfuse software and in the top drop down list select the device shown (there should only be one device available called something like '*STM device in DFU Mode*').
- 8) Under the 'Upgrade or Verify Action' box at the bottom right area of the Dfuse software use the 'choose' button to locate the downloaded .dfu file.
- 9) Tick the 'Verify after download' box
- 10) Use the 'update' button (next to the choose button) in the Dfuse software to start the update.
- 11) Wait for the update to be completed.
- 12) Press the recessed 'RESET' button on the front panel (or turn the DARK8MAI on/off)....the new firmware will now be loaded.

## **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 DARK8MAI. 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 DARK8MAI.

### **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 Dark8MAI's web page at <http://www.glen sound.co.uk/product-details/dark8mai/> 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>

The actual firmware to install using the above tool can currently be downloaded from:

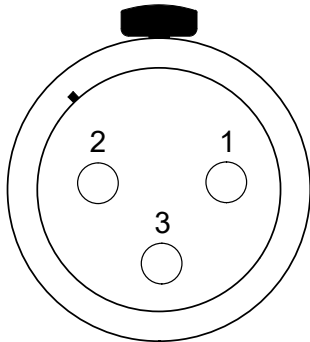
[http://www.glen sound.co.uk/Software/Dante/SR45\\_1.2.0.0.dnt](http://www.glen sound.co.uk/Software/Dante/SR45_1.2.0.0.dnt)

When downloading the above file please make sure that you know where your computer has saved it.

Please note we strongly advise that when you do the update that only your PC and the SR45 that you want to update are on the network to save accidentally updating the wrong Dante device.

## WIRING INFORMATION

### XLR & JACK Wiring



XLR SOCKET (FEMALE)

#### **STANDARD XLR AUDIO PINOUTS:**

**1: Ground/ Earth**

**2: INPHASE/ POSITIVE/ MIC +**

**3: MATE/ NEGATIVE/ MIC -**

**External DC power input:** 2.5mm Barrel, Centre +Ve, 9 to 15 Volts, 1 Amp