

Fitting and Setup Guide

This guide applies to Dante Release 2 (from firmware 3.6.4).

This release adds dual redundancy and supports bridging of other control networks over Dante. Please refer to the notes regarding differences with previous firmware 3.4.15.



Part number **M-DANTE-A**

M-DANTE is one of several plug-in card options available from Allen & Heath that may be fitted to iLive, GLD and ME Series products.

Dante™ is a high performance, multi-channel, AVB ready industry standard digital media transport system developed by Australian company **Audinate** that runs over standard IP networks and can distribute signals between iLive, computers and 3rd party Dante™ enabled equipment. Its main benefits are:

- 64 channel bi-directional audio plus control over CAT5
- Uses standard off-the-shelf computer networking equipment
- Easy to add, name, remove and rearrange devices
- Secondary port for redundant connection option
- Control port can bridge other control network over Dante
- Very low latency
- Direct connection to computer for multitrack recording
- Dante Virtual Soundcard (DVS) software
- Dante Controller software for setting up the network

Note The Allen & Heath **M-DANTE** card provides an interface to the Dante network. The Dante 'Brooklyn II' hardware used and the software required to set it up and record to computer is provided and supported by **Audinate**. For further information or help on using Dante please refer to the documentation and support at Audinate: www.audinate.com

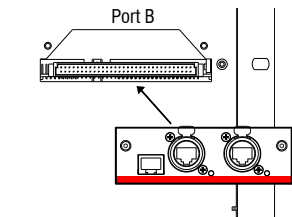
M-DANTE is supplied with **one Dante Virtual Soundcard licence** to enable a single computer. More can be purchased from Audinate if required. The token below is needed to obtain your licence Id. Please read the instructions provided within this guide.

Dante Virtual Soundcard Licence ID token:



Fitting the M-Dante card

First switch the system off. Remove the 2 screws securing the blank panel over the port slot. Slide the card into the slot and press it firmly into the mating connector. Secure the card using the 2 screws.



iLive Fixed format

iDR-16, iDR-32, iDR-48 or iDR-64 MixRack
xDR-16 Expander

Dante in Port B - System linking, expansion, recording and audio networking.

iLive Modular

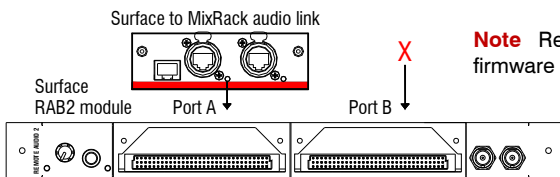
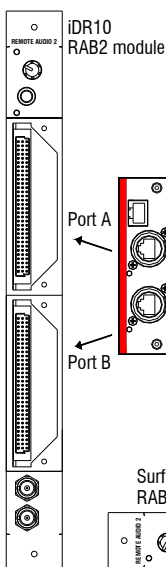
iDR10 or iDR0 MixRack

Dante in Port A – Surface to MixRack link.

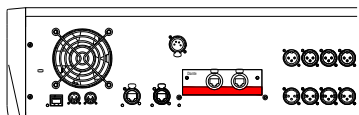
Dante in Port B – System linking, expansion, recording and audio networking.

The option card fits into a slot on the Remote Audio 2 (RAB2) module. Systems fitted with the older Remote Audio module can be upgraded by replacing it with the new RAB2 module available from Allen & Heath.

Note The **M-DANTE** card cannot be used in Surface Port B. The only option currently supported in Surface Port B is the **M-MMO** (Mini Multi Out) card.

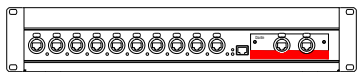


Note Requires iLive firmware V1.71 or higher.



GLD console

Rear panel I/O Port - System linking, expansion, recording and audio networking.



MEU personal mixing hub

Interface the ME system with a Dante network to receive its 40 input sources.

Dante Virtual Soundcard (DVS) is a software application that turns your PC or Mac into a Dante enabled device allowing up to 64 channels of bi-directional audio for recording, processing and playback when connected to a standard computer Gigabit Ethernet port, either direct from the **M-DANTE** card or via an Ethernet switch. No additional hardware is required.

Note For minimum system requirements and support information please visit the Support section at Audinate: www.audinate.com

Note Install Dante Virtual Soundcard on the computer you intend to use for recording. Once registered the licence cannot be transferred to another computer.

Note Computer based recording applications use a lot of processing power and memory. For best results we recommend that you do not run other applications on the computer while recording. Refer to Audinate for more information.

Windows The DVS uses Steinberg's ASIO audio interface and can be used with any audio application that supports ASIO.

Mac OSX The DVS uses the standard Core Audio interface.

Please read the [Dante Virtual Soundcard User Guide](#) available from Audinate for information on how to install, configure and use the DVS software.

To obtain your DVS Licence ID

- Locate your DVS token on the label on the front of this guide. This is of the format: XXXXX – XXXXX – XXXXX – XXXXX – XXXXX
- Visit www.audinate.com and go to Support / Register Your Product / Redeem DVS Token. You will be asked to log in or register before continuing.
- Enter your token string in the field provided. Once validated a page will be displayed with your Dante Virtual Soundcard Licence ID.
- Follow the links to download the Dante Virtual Soundcard software and User Guide. Choose the version you require – Mac OSX or Windows.
- Download the Dante Controller software and User Guide. Choose the version you require – Mac OSX or Windows.
- Install both applications and activate Dante Virtual Soundcard.

Note The DVS Licence ID is not the same as your token. Your token cannot be used to activate the software.

Dante Controller is a software application provided by Audinate which allows users to configure and route audio across Dante networks. It is available as a free download to registered users, and can be installed on the same computer that is running the Dante Virtual Soundcard.

Using Dante Controller you can view and configure all Dante enabled audio devices and their Dante audio channels.

Note To install Dante Controller on a PC you will need to download 'Bonjour' for Windows. A link is provided in the installer package.

Note You must have Dante Controller installed on a PC or Mac on your Dante network to control and route audio. Once your network is configured and audio set up you can remove the PC or Mac if required.

Please read Audinate's [Dante Controller User Guide](#) for system requirements and information on how to install, configure and use the Dante Controller software. Refer to Audinate for further information.

Check the Dante card firmware version

This guide refers to Dante second release firmware (from version 3.6.4). This is loaded into Allen & Heath Dante cards manufactured from April 2013 onwards.

Note We recommend that older cards are updated to take advantage of the new features and improvements.

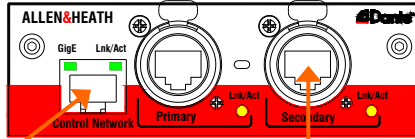
To check the firmware version:

- Power up the console with Dante card fitted.
- Plug a CAT5 cable from the Dante card **Primary port** to the Network port of your computer. Make sure its Lan port is enabled.
- Start **Dante Controller** and open the Device Status tab. Your Allen & Heath Dante card should be listed as a device. Check that the Product Version indicates '3.6.4' or higher.
- Visit the Allen & Heath web site Dante product page and open the Firmware tab to check the latest version of Dante firmware available.

To update the Dante card firmware

- Download the **firmware file** from the Allen & Heath web site Dante product page Firmware tab.
- Follow the link on the page to the Audinate web site to download the **Dante Firmware Update Manager** application for Windows® or Mac.
- Follow the link to the Audinate web site to download and read the Dante Firmware Update Manager **User Guide** for instructions on how to update the card firmware.

Release 1 – Firmware version 3.4.15



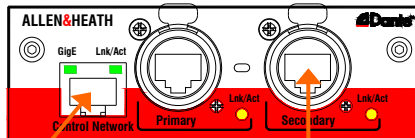
Control Network

Did not support bridging of the console network over Dante, for example to run iLive Editor and Dante Controller on the same computer. Although intended for control only, audio was available at this port.

Secondary Port

Did not support dual redundant link connection. The Primary and Secondary ports together with the Control port could provide a three port Dante switch for connecting up to three devices.

Release 2 – Firmware version 3.6.4



Control Network Port

Now supports bridging of the console network over Dante, for example to run iLive Editor and Dante Controller on the same computer. Audio is not available at this port.

Secondary Port

Now supports dual redundant link connection.

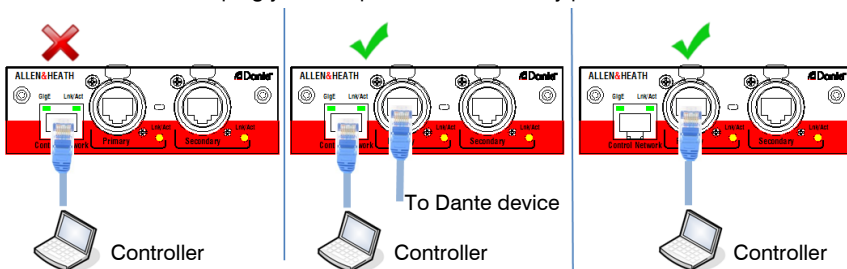
The card provides a choice of two modes:

- Redundant Mode (default)
- Switched Mode (Two port switch)

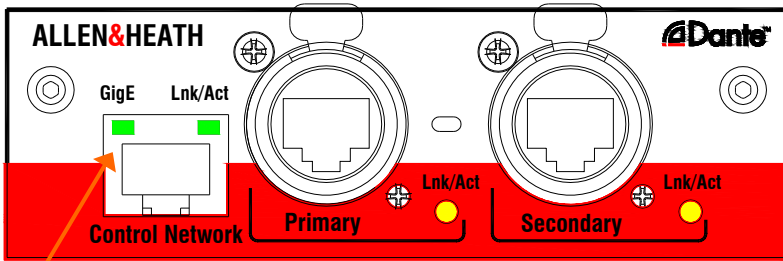
Note If you are upgrading from version 3.4.15 your module will change into Redundant Mode. This can be changed back to Switched mode using Dante Controller if you wish.

Note The Control Port does not output audio as it did in Release 1.

Note There is a known issue in version 3.6.4 that the Control Network port will not work unless a Dante device is plugged into the Primary port. If you wish to configure your Dante card without connecting it to another Dante device plug your computer into the Primary port instead.



Connections and indicators Firmware version 3.6.4



Link status One LED indicates network activity. The other indicates that a Gigabit Ethernet link has been established.

Primary Port Gigabit Ethernet, locking EtherCon RJ45 connector. The **main port**. Connect to the Primary port on another Dante equipped device to link the devices directly. Connect to a Gigabit switch to connect multiple Dante enabled devices. Connect to the Ethernet port on a PC or Mac to allow audio recording or playback via the Dante Virtual Soundcard.

Link status Flashes to indicate network activity.

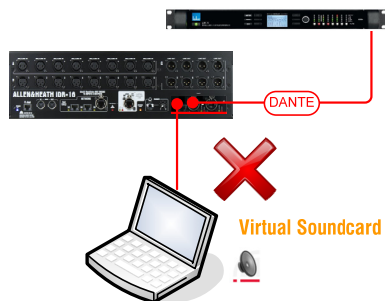
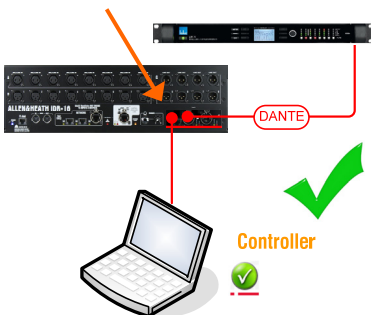
Control Network Gigabit Ethernet, RJ45 connector. Can be used to connect a computer running Dante Controller for setting up the network (as long as a Dante device is already connected to the Primary Port).

Can also be used to **bridge another network** over Dante. For example, plug into an iLive Network socket to bridge its network over Dante and allow Editor control from the same laptop running Dante Controller.

This port is intended for control. Use with Dante Controller. Use the Primary or Secondary port for working with Dante Virtual Soundcard and audio.

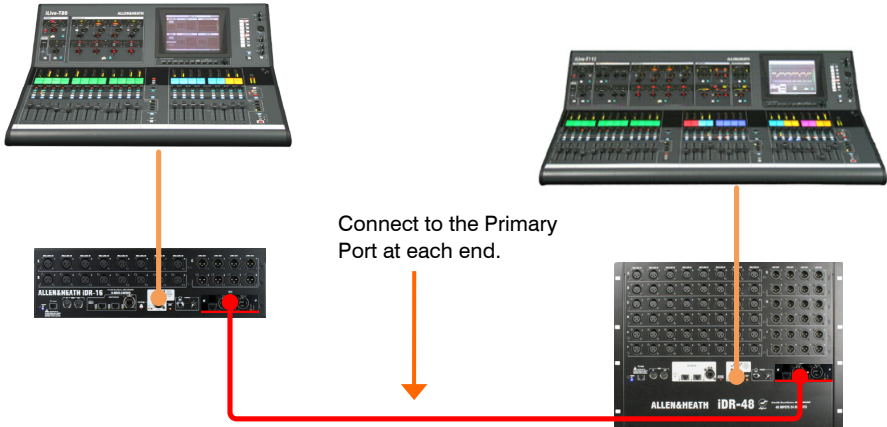
Secondary Port Gigabit Ethernet, locking EtherCon RJ45 connector. Can be used for redundancy to allow a backup cable connection when the card is in **Redundant Mode**.

The Primary and Secondary ports become a two port switch for connecting up to 2 devices when the card is in **Switched Mode**.



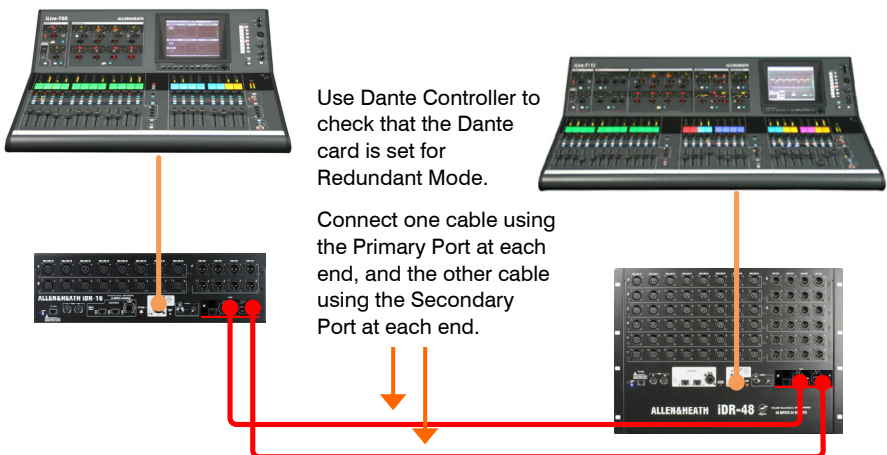
Linking consoles – Single CAT5 cable

Consoles can be linked for FOH/Monitor operation to share one set of mic preamps and to transport signals between them. Dante allows up to 64 channels of audio in each direction connected using a CAT5 cable up to 100m (330') long. This example shows two iLive systems linked.



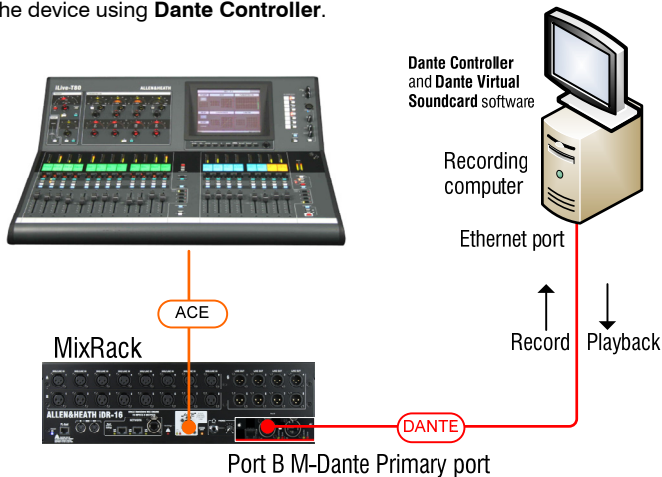
Linking consoles – Two CAT5 cables

This example shows two iLive systems linked using two CAT5 cables, one as a **redundant backup**. If one cable becomes damaged or unplugged the other automatically takes over without any interruption to the audio.



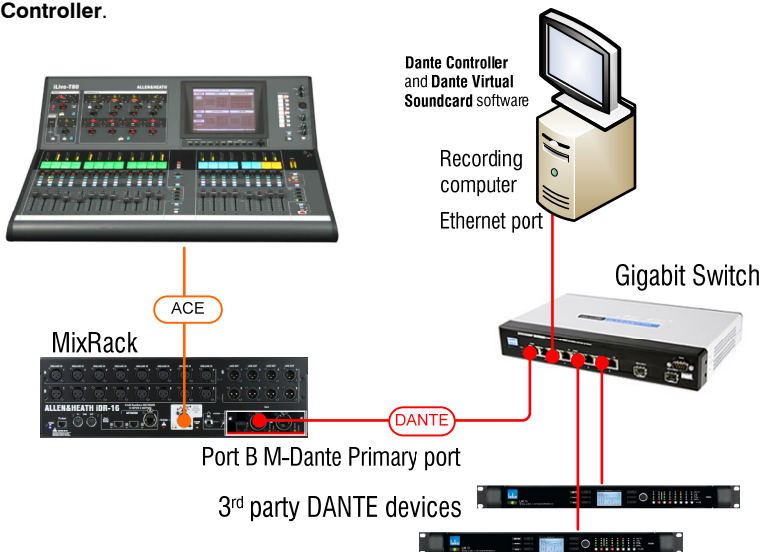
Connecting to a single device

This example shows connection to a PC or Mac for multitrack recording. Use the M-Dante Primary port. Route signals to the device using the iLive **OUTPUTS** screen **Port B** tab. Route signals from the Dante channels to the device using **Dante Controller**.



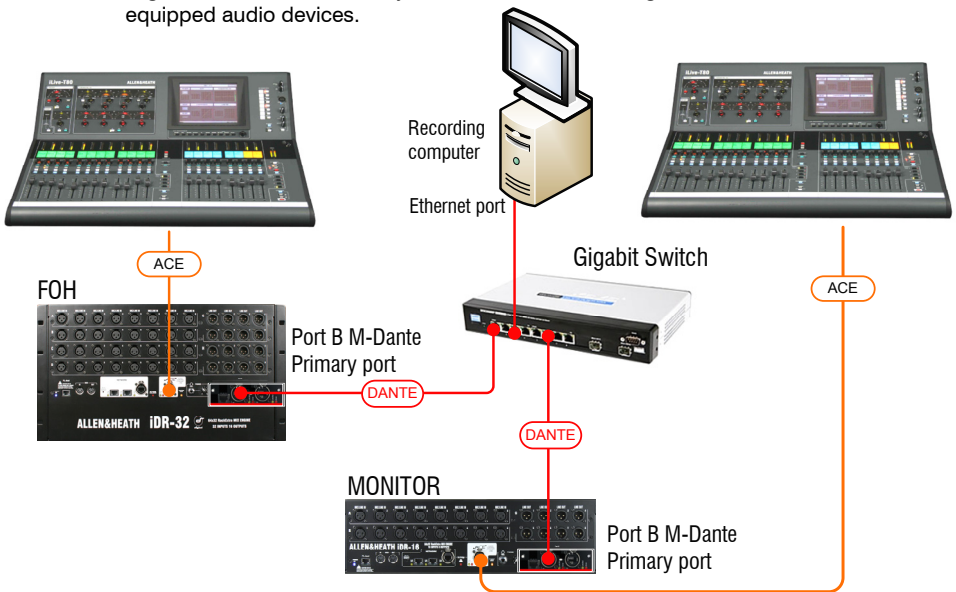
Using a switch to connect multiple devices

This example shows connection to a PC or Mac for multitrack recording as well as two other Dante equipped devices such as signal processors or amplifiers. Route signals to Port B using the iLive **OUTPUTS** screen **Port B** tab. Route signals around the Dante network using **Dante Controller**.



FOH/Monitor linking through a switch

This example shows two iLive systems using Dante as a digital mic splitter to share the Mic Preamps for FOH and Monitor mixing. The Gigabit switch is needed if you want to add recording and other Dante equipped audio devices.



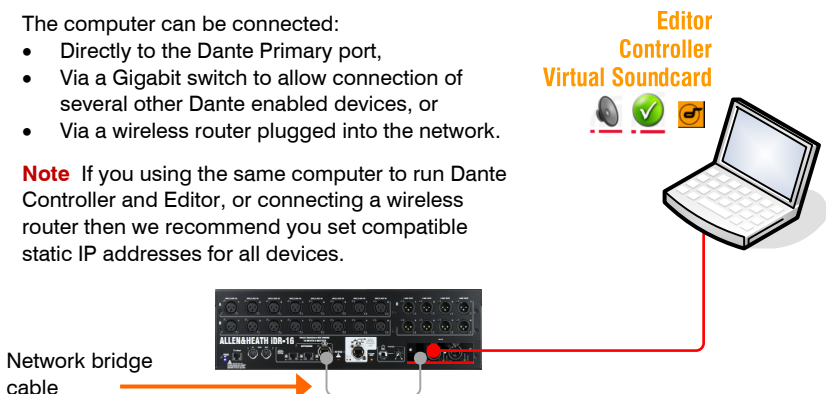
Bridging the console network over Dante

This example shows an iLive MixRack with one of its Network ports connected to the Dante Control Network port so that the console Editor software can be run on the same computer as Dante Controller.

The computer can be connected:

- Directly to the Dante Primary port,
- Via a Gigabit switch to allow connection of several other Dante enabled devices, or
- Via a wireless router plugged into the network.

Note If you using the same computer to run Dante Controller and Editor, or connecting a wireless router then we recommend you set compatible static IP addresses for all devices.



Setting up the network

Your iLive M-DANTE cards, PC or Mac running Dante Controller and Dante Virtual Soundcard software, and any other Dante enabled audio devices you want to access need to be connected over an Ethernet network using CAT5 cables.

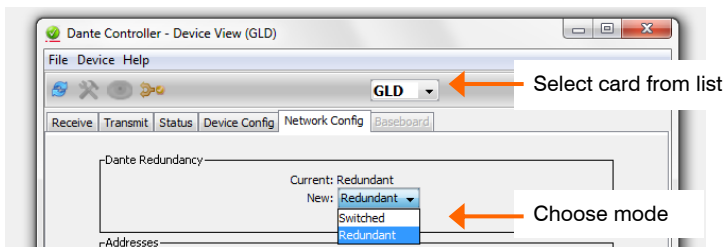
Choosing network components and recording computer

The iLive M-DANTE card handles 64x64 channels of high quality 24bit/48kHz audio together with control traffic over a single link. For full routing capability and glitch-free, reliable operation it is important to use network switches, components and recording computers that support Gigabit Ethernet and are of a high specification. Refer to the [Audinate](#) web site for more information on system requirements.

Network switch Dante can connect to multiple devices via a star topology using a switch. Use a good quality multicast capable Gigabit switch which supports Diffserv (DSCP) Quality of Service (QoS) with strict priority and 4 queues. Refer to Audinate for more information on this.

Cables Use CAT5e or CAT6 cable up to 100m (330'). For longer distances use an optical fibre interface. Allen & Heath can supply an 80m drum of touring grade Neutrik Etherflex cable (AH7000).

Dante card operating mode With the system connected and powered up, open the 'Device View' in Dante Controller and select your Dante card. Open the 'Network Config' tab and choose the Dante Redundancy mode:



Note Check that you are running the latest version of Audinate's Dante Controller software. Early versions did not include the mode function.

Redundant (default) - Use the Secondary Port to connect a second cable between devices as a backup should one become damaged or fail.

Switched - Use the Secondary Port as a network switch to connect a second Dante Device.

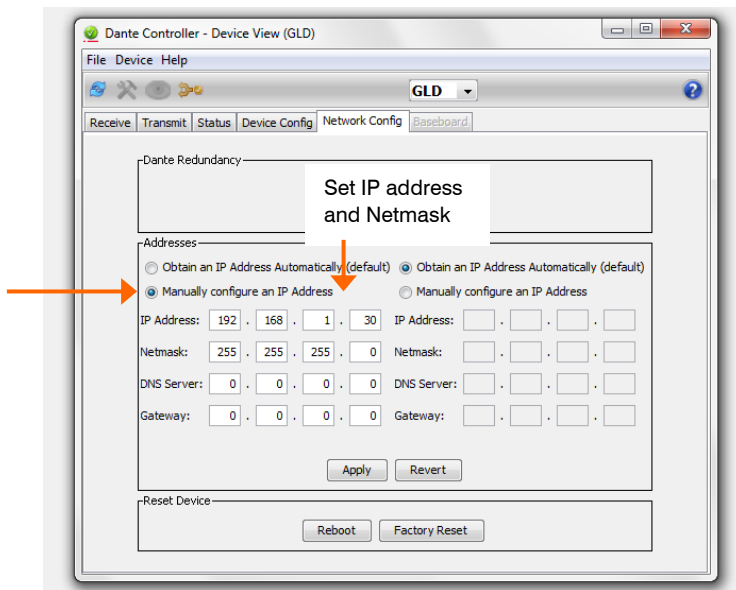
Note Previous Dante card firmware version 3.6.4 operated in Switched mode as Redundant mode was not available. If you were using the Secondary Port to connect to another Dante device then remember to change the card mode to 'Switched' after updating the firmware.

IP addressing As with any TCP/IP Ethernet network, each Dante device including the iLive M-DANTE cards needs a unique IP address either allocated automatically or set up manually. For most applications the Dante cards and devices can be left set as default (obtain address automatically). Dante makes this easy by using Audinate's Zero Configuration Networking auto addressing protocol.

When bridging another network over Dante, for example to run iLive Editor on the same computer as Dante Controller, you need to ensure that all devices including Dante, iLive and the computer have unique but compatible IP addresses.

You could manually set static IP addresses in the '192.168.1.nnn' range with Subnet Mask 255.255.255.0. If you have a wireless router (access point) on your iLive network, we would recommend giving the primary Dante port a static IP address outside of your routers DHCP range. For example Primary Port address 192.168.1.30 with the router DHCP range set to 192.168.1.100 to 200. This prevents your Dante card changing address by picking up the routers DHCP.

Set the Dante card IP address in the 'Device View' in Dante Controller:



Routing and clocking signals

iLive Route signals to the 64 Dante channels on Port B using the iLive **OUTPUTS** screen **Port B** tab. Route signals around the Dante network using Dante Controller. Return signals from the Dante network to the iLive channels using the **PREAMP** screen Source menu. To route a range of channels use the Remote (Port B) option in the **MIXRACK / Mixer Pref / Quick Input Source Setup** screen. Remember to set the Audio Clock Source to **Internal** on the first MixRack, and to **Remote Port B** on all other MixRacks on the network.

GLD Route signals to the 64 Dante channels on the I/O Port using the GLD **I/O** screen **I/O Port Out** tab. Route signals around the Dante network using Dante Controller. Return signals from the Dante network to the GLD channels using the **PREAMP** screen Source menu. To route a range of channels use the **I/O Port In** tab. Remember to set the Audio Clock Source to **Internal** on the first GLD, and to **Slave Option Card** on other GLD consoles on the network.

Dante cards Use Dante Controller to tick '**Preferred master**' and '**Slave to external wordclock**' for the Master MixRack/console card only.

For more on setting up and using the Dante network please refer to Audinate's user guides that come with **Dante Controller** and **Dante Virtual Soundcard** available from www.audinate.com.

For further information on Dante software, application and recommended networking components refer to **Audinate**:
www.audinate.com



This product complies with the European Electromagnetic Compatibility directive 2004/108/EC.

NOTE: Any changes or modifications to the equipment not approved by Allen & Heath could void the compliance of the equipment. Whilst we believe the information in these instructions to be reliable we do not assume responsibility for inaccuracies. We also reserve the right to make changes in the interest of further product development.

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