

MDIO-Dante Module

Operation Manual

Table of Contents

General Information 4

Introduction 7

- Scope 7
- Terminology 7
- MDIO Modules 8

Quick Start Guide 9

Reference 13

Setting up a Dante Network 13

- Dante Basics 13
- Network Connections 13
- Dante Controller 14
- Synchronisation 16
- Sample Rates 17
- Dante PCIe card 18
- Renaming Channels and Devices 18
- Some Dante Routing Examples 22
- Redundant Mode 23
- Switched Mode 24
- Multi-cast 25
- AES67 25

Switching to MDIO-Dante Mode 25

The Prism Sound Control Panel 25

Appendix 1 - Front Panel LEDs 29

Appendix 2 - Installing the MDIO-PTHDX module 31

General Information

MDIO-Dante Module Reference Revision History

Rev	Date	Author	Comments
1.00	30th July 2019	S.G. Penn	Initial release
1.01	2nd January 2020	S.G. Penn	Corrections & clarifications

Support Contacts

Audio Squadron Limited
Unit 1A Grovemere House
Lancaster Way Business Park
Ely
Cambridgeshire
CB6 3NW

Email: tech.support@prismsound.com
Web: www.prismsound.com

Telephone: +44 1353 648888

WARNING!



TO PREVENT FIRE OR SHOCK HAZARD DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

Fitting the MDIO-Dante module to a suitable Prism Sound Interface requires the lid to be removed. There are dangerous voltages inside and installation must be referred to qualified personnel. Anyone fitting the MDIO-Dante module must ensure that the mains is disconnected from the unit before removing the cover, and is not re-connected until the cover is refitted.

Statements of conformity

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against interference in a residential area. This device generates and uses radio frequency energy and, if not installed and used in accordance with the instructions, may cause interference to radio or TV reception. If this unit does cause interference to radio or TV reception, please try to correct the interference by one or more of the following measures:
a) Reorient or relocate the receiving antenna.
b) Increase the separation between the equipment and the receiving antenna.
c) Plug the equipment into an outlet on a different circuit from the receiver.
d) If necessary, consult your dealer or an experienced radio or TV technician.
CAUTION: Changes or modifications to this equipment not expressly approved by the manufacturer could void the user's authority to operate this equipment.

©2019 - 2020 Audio Squadron Limited

THIS DIGITAL APPARATUS MEETS ALL CLASS B LIMITS FOR RADIO NOISE EMISSIONS AS LAID DOWN IN THE RADIO INTERFERENCE REGULATIONS OF THE CANADIAN DEPARTMENT OF COMMUNICATIONS.
CET APPAREIL NUMÉRIQUE RESPECTE TOUTES LES EXIGIENCES APPLICABLES AUX APPAREILS NUMÉRIQUES DE CLASSE B SUR LE BROUILLAGE RADIOELECTRIQUE EDICTE PAR LE MINISTERE DES COMMUNICATIONS DU CANADA.

Audio Squadron Ltd. hereby declares that this equipment conforms to the following standards:
EN55103-1, environment category E4
EN55103-2, environment category E4

NOTE: The use of this equipment and its host interface unit with non-shielded interface cabling is not recommended by the manufacturer and may result in non-compliance with one or more of the above directives. All coaxial connections should be made using a properly screened 75R cable with the screen connected to the outer of the connector at both ends. All analogue XLR and jack connections should use screened cable with the screen connected to pin 1 of the XLR connector, or the jack outer, at both ends.

Trademark Acknowledgements

Microsoft and Windows are trademarks of Microsoft Corporation.
Apple, Macintosh, Core Audio and OS X are trademarks of Apple Computer, Inc.
Dante is a trademark of Audinate Pty Ltd.
All trademarks acknowledged

© 2019 - 2020 Audio Squadron Limited. All rights Reserved.
This manual may not be reproduced in whole or part, in any medium, without the written permission of Audio Squadron Limited.
In accordance with our policy of continual development, features and specifications are subject to change without notice.

©2019 - 2020 Audio Squadron Limited

Introduction

The Prism Sound MDIO-Dante module is an option for Prism Sound interfaces that have the 'MDIO' option slot. This module allows for connection of Atlas or Titan units to an 'Audio-over-IP' Dante network, allowing users of computers on the Dante network to enjoy the excellent sound quality of the Prism Sound Atlas and Titan A/D and D/A converters, and their equally well regarded on-board microphone pre-amplifiers.
This module makes all analogue inputs and outputs, headphone outputs and AES/SPDIF inputs and outputs available to the Dante network. Note that ADAT I/Os are not enabled in Dante mode.



A Control Panel app for Windows and Mac is provided to allow control of the unit(s) from a computer connected to the Dante network or via the existing USB connection as appropriate.
Multiple Titan and/or Atlas units may be connected to the Dante network to provide large channel counts of perfectly synchronised audio.

Scope

This document aims to help a user to start working with a Dante-equipped Prism Sound interface but does not aim to explain the full details of the Dante technology. Dante setup can be very simple, however, depending on how you aim to use the Atlas in your Dante network, you may require further information and training about the features of Dante and how to operate its software. The designers of Dante – Audinate – have a website www.audinate.com which has lots of training videos and technical resources.

Terminology

At the time of writing, the MDIO-Dante module can be used with either a **Prism Sound Atlas** or **Prism Sound Titan** interface unit. For the sake of simplicity, this document will refer to '**Prism Sound Atlas**' or just **'Atlas'** as

©2019 - 2020 Audio Squadron Limited

meaning any unit that can be fitted with an MDIO-PTHDX module, unless there are particular differences (in which case any differences between models will be noted).

MDIO Modules

Other MDIO module options exist for connection to different interfaces – i.e. currently as of January 2020, the MDIO-PTHDX module can be fitted for direct connection to an Avid | Pro Tools system utilising either a Pro Tools | HDX PCIe card, a Pro Tools | HD Native PCIe card or a Pro Tools | HD Native Thunderbolt interface using a DigiLink cable.

There is a single MDIO module slot. If your Atlas already has the MDIO-PTHDX fitted, it will have to be removed before fitting the MDIO-Dante. There are details of how to fit the MDIO cards in Appendix 2.

©2019 - 2020 Audio Squadron Limited

Quick Start Guide

1. Your Atlas may have come from the factory with the Dante module already fitted, in which case, you should remove the power for the unit and move straight to step 2.

   Alternatively you may be fitting the MDIO-Dante to an existing unit.

   If this is an existing unit, it's **VERY** important that **BEFORE** you fit the MDIO-Dante module you should update the unit in preparation.
   Both software **and firmware** updates are required (a firmware update is a special process, and involves more than just running an installer) and it must be done in the *correct order* – software first, firmware second. If the software is not updated first, it will not be possible to update the firmware.

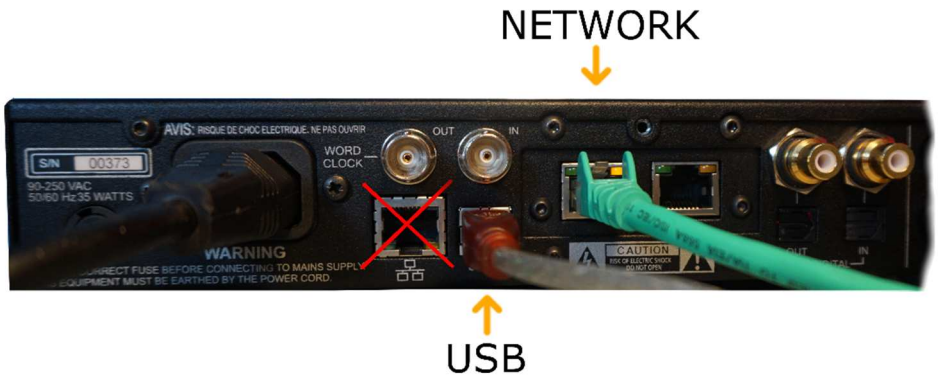
   a) Update the computer software (Driver and Control Panel) to the latest version – this is available from our website Download pages.
   http://www.prismsound.com/music_recording/products_subs/titan/titan_downloads.php
   or http://www.prismsound.com/music_recording/products_subs/atlas/atlas_downloads.php

   b) Connect your Atlas to the computer via USB (if you have several units, you must connect them and update them ***one unit at a time***).

   c) Update the firmware in your Atlas or Titan. Instructions here..
   http://resources.prismsound.com/rp/USBAudio_FirmwareLoading_A4.pdf
   (note that a firmware update resets all settings, so you may wish to save them and reload them afterwards. If you use the Volume control, the firmware update will switch it off, so take care that it's set up again before playing any audio).

   d) Power down the unit. Only now should you follow the instructions for fitting the MDIO module in **Appendix 2** below.

2. The Prism Sound Atlas unit(s) must be connected to a network, using a Gigabit Ethernet switch and CAT5e or CAT6 cables.



   Any computers that you plan to use with the Atlas(es) must be connected to the same physical network, and it will be useful to have the Prism Sound control panel software installed to at least one computer. It's possible to install and run the software from a number of computers which may be convenient.

©2019 - 2020 Audio Squadron Limited

Note that Dante will not work over a wireless network – all devices, including computers, must be connected physically via CAT5e or CAT6 cables.

The MDIO-Dante module has 2 x RJ45 network connections. For the purposes of this 'quick start' you should connect to only one of them – the 'Primary' connector is labelled PRI and is the closest to the mains inlet. Redundant mode uses the Secondary connector (SEC) and is described later in this document and can be enabled at a later stage.

Note also that there is another RJ45 connector on the back of the Atlas and Titan underneath the 'Word Clock Out' BNC connector. Do NOT attach a network cable to this – this port is disabled.

3. Download and install the Dante Controller software. https://audinate.com/products/software/dante-controller. This software will be necessary to make connections on the Dante network.
   The computer that Dante Controller is running on must be connected to the Dante network.

4. In order to use the Atlas(es) with a DAW software application, you will need a 'Soundcard Interface' for the DAW software to use.
   This may be the 'Dante Virtual Soundcard' software https://audinate.com/products/software/dante-virtual-soundcard
   which adds drivers for WDM and ASIO or Core Audio to the computer and allows you to use a standard network port to connect the computer to the Dante network.

   Or else it may be a PCIe Dante Interface card https://www.audinate.com/products/manufacturer-products/dante-pcie-card (or a PCIe Dante card in a Thunderbolt enclosure) which is manufactured by several companies.

   In general, the PCIe card will give you larger channel counts and better latency and reliability than the software-only Dante Virtual Soundcard.

5. You may wish to make the connections to your audio inputs and outputs now.

6. Connect power to the Atlas unit(s).

7. Set each of them to MDIO-Dante mode by pressing and holding their Volume knob for four seconds.
   The Host LED on the front panel changes to red.

8. Now open Dante Controller on one of the computers on the Dante network.
   You should see the Atlas unit(s) and any other Dante devices (including DVS and/or the Dante PCIe card) that are attached to the network. Dante Controller will take a few seconds to recognise the Atlas – don't be too impatient.

9. You can now configure the routings on the network. There are some video tutorials describing how to use Dante Controller on their website….
   https://www.audinate.com/products/software/dante-controller
   and user manuals here…
   https://www.audinate.com/resources/technical-documentation
   .. and some Hints, Tips and example setups follow in this manual.

©2019 - 2020 Audio Squadron Limited

10. In Dante Controller's Routing grid, make connections between the Atlas and your Dante Sound card.

11. When starting your DAW software, select the driver for the Dante soundcard. (i.e. DVS or the Dante PCIe card). Now, whatever you play through the driver's 'TX' outputs will be played to whichever Atlas Output/RX channel you have routed it to using the Dante Controller grid. Similarly, audio appearing on the Atlas' Inputs/TX channels will appear at the driver's RX channel when you've routed it.

©2019 - 2020 Audio Squadron Limited

©2019 - 2020 Audio Squadron Limited

Reference

Setting up a Dante Network

Dante Basics

It's not so likely that you'd have got this far without a basic understanding of what Dante is. In very simple terms, it's a means of replacing audio cables with standard network cables, with the ability to connect devices together using off-the-shelf network switches. This potentially makes cabling simpler, connections can be configured using software and allows for cables of much longer distances. Because Dante is a network, it's possible to make any audio signal that's attached to this network available at any other location on the network.

There is a simple Dante overview on the Audinate website ….

https://www.audinate.com/solutions/dante-overview

and a great many other resources and i.e. tutorials ….

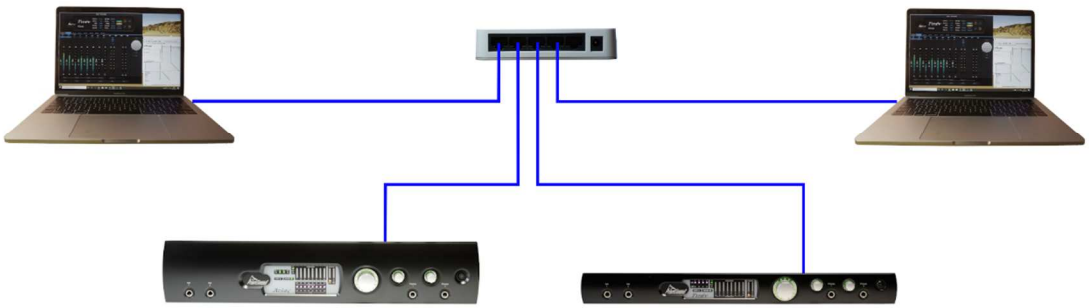
https://www.audinate.com/resources/training-and-tutorials

on other parts of their website which can help you decide the best way to set up a Dante network. This document offers some simple information to help you to get started with Dante on the Prism Sound Atlas and Titan units but it will help to have some other knowledge of how to work with Dante.

There are many options for customising and securing the network, but by default, IP addresses are set to be obtained automatically. Therefore we suggest the first thing to do to start to setup the network is to make the connections – physical, and then 'virtual'.

Network Connections

Every Device on the Dante Network – Audio Devices, Computers, PCIe cards etc. - must be connected by CAT5e or CAT6 cables. Two units could be connected directly, but if you're connecting more than two devices, it gives most flexibility to connect everything via a standard Gigabit network switch.



For a very simple setup with 1 computer and a few Atlas units, it's possible to make connections without using an Ethernet switch by 'daisy-chaining' units – see 'Switched Mode' below.

©2019 - 2020 Audio Squadron Limited

In order to control devices and to set up routings on the Dante network, you will need a computer attached to the network via its network port, and for it to be running the Dante Controller software….

Dante Controller

Dante Controller is a free software application for PC and Mac which allows you to configure the Dante network, to view and control the various settings of the devices on the Dante network and to make routings between individual units.

The first thing you will be presented with when starting Dante Controller is its 'Routing' tab which displays the inputs and outputs of every device on your Dante network. By clicking in the appropriate box in this grid, you can connect a path from one device to another.

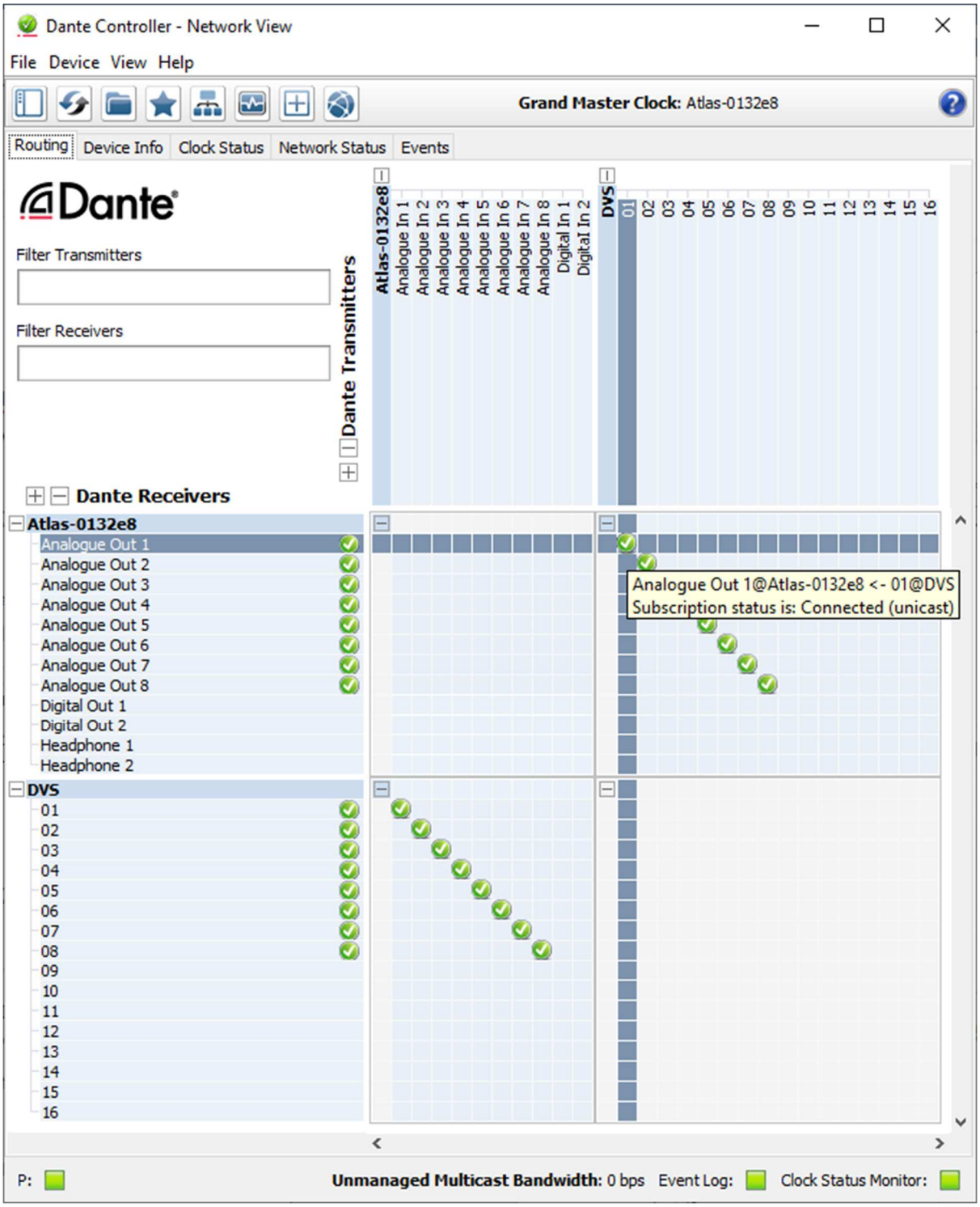
Having connected any Atlases and Titans you have to the network, they should automatically appear in both the Transmitter and Receiver axes of the grid.

You will also require one or more Dante utilities that can connect audio playback/recording software running on your computer (i.e. your DAW, or iTunes, Windows Media Player etc.etc.) into the Dante network. In this example I have installed the Dante Virtual Soundcard software (DVS), which acts as an ASIO or Core Audio driver for the DAW software.

By using the TX and/or RX channels of the DVS driver as the Outputs/Inputs of your DAW you can play and record to or from audio outputs and inputs that are connected via the Dante Controller routing grid to DVS ports.

Use the + and – buttons to open/close areas of the grid to see the devices you are concentrating on.

©2019 - 2020 Audio Squadron Limited



Transmitters and Receivers

'Transmitters' (TX) are listed along the top; 'Receivers' (RX) down the left-hand side, and these names describe the devices' relationship to the Dante Network.

So, for instance one of Atlas's *Audio Input*s is a *Transmitter* – the audio received from a Line input or mic pre is being *transmitted* to the Dante network.

An *Audio Output* is a *Receiver* - it *receives* audio from the network.

An output from your DAW software is connected into the network via, say, the Dante Virtual Soundcard which is a Transmitter (transmitting to the Dante network). That DVS Transmitter must be routed to a Receiver to

©2019 - 2020 Audio Squadron Limited

allow you to hear the audio. Likewise to record into your DAW, you will need to route an Atlas Transmitter to the DVS Receiver, and then assign that particular channel for recording in your DAW software.
Clicking in the cross-point between a Transmitter (a.k.a. TX) and a Receiver (RX) creates the routing – the software thinks about it for a moment and then if the routing is successful, the cell shows a green 'tick' icon. Dante calls a routing a '*subscription*'.
(If the routing is *not* successful – see below – 'Synchronisation').
The picture in the example above shows a very simple setup with just two Dante devices :-

- Atlas (named ATLAS-0132e8)
- A computer running Dante Virtual Soundcard (named DVS).

The cursor (where the darker blue lines meet) is over the routing between
DVS TX 01 - i.e. channel 1 output of the DVS driver/ your DAW software and
Atlas' RX Analogue Out 1 – i.e. Atlas' Analogue Output number 1.
You can see that I've also routed DVS's TX 02 to 08 to Atlas RX Analogue Out 2 to 8, and so in your DAW, outputs 1-8 are connected through to Atlas's Analogue outputs 1-8.
And in the lower left quadrant of the grid, I've also set up routings for Atlas' Analogue Inputs to map them to the DVS' RX1-8 and hence to the audio inputs of your DAW.
It's worth noting that Dante receivers and transmitters have an 'address', like an email address, to help you work out where they belong. In the yellow pop-up box in the picture above, the analogue output of the Atlas is referred to as **Analogue Out 1@ATLAS-0132e8,** and the DVS output is **01@DVS.**
These names can be customised – see the **'Renaming Channels and Devices'** section below.
However… before you can start designing some routings, you must check that the devices you wish to route between are synchronised.

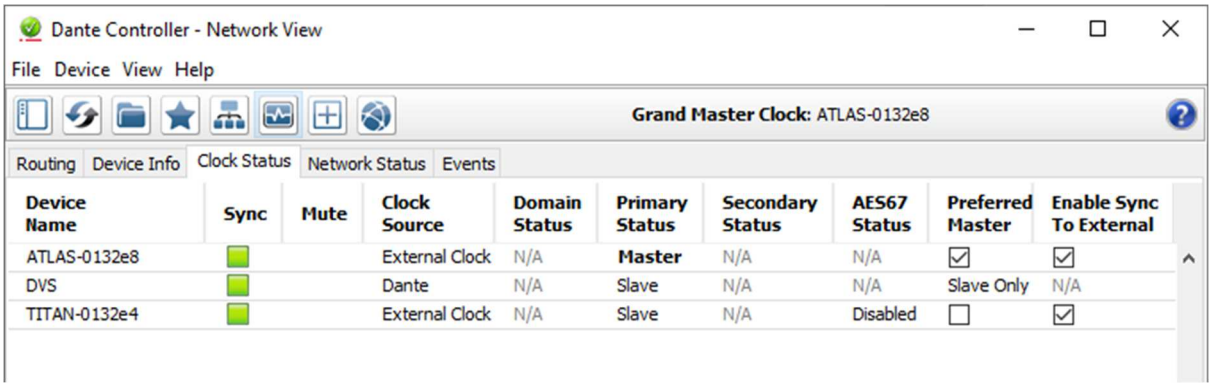
Synchronisation

Multiple sample rates can exist in a Dante network, however there is no sample rate conversion, and so you can only make **connections** between devices that are at the **same sample rate.**
In addition, the devices on the Dante network must be synchronised. This can be automatic – it's possible to synchronise the audio to the Dante network's clock, but in the case of Atlas, we have retained the ability to synchronise the audio to external sync sources, such as Word Clock or digital input.
In addition to options for Local Sync and Sync to Word Clock/DI, the Dante version of the Atlas Control Panel has a Sync Source option for 'PTP', which stands for 'Precision Time Protocol' and when selected means that Atlas will take its sync from the Dante network clock.
From the Dante network's perspective, an Atlas on Local clock, is actually *externally* sync'd (external to the network sync).
The Dante network has methods for automatically ensuring devices are in sync. You can elect a 'preferred' Master, which the Dante network will make it the 'Grand Master' for sync if it's present (and if there are no other competing 'preferred' sync masters on the network).
The simplest way to sync the Atlas units on a Dante network is to set them all to 'PTP' using the Sync Source Control on the Atlas Control Panel. You can elect a Preferred Master there if you wish. The Dante network will take care of which device is the master clock.
Alternative Sync regimes…

1. Set one Atlas to Local (in the Atlas Control Panel) and set it to be 'Preferred'. Set all other devices to 'PTP'. The devices on the network will sync to #1 Atlas's clock via the network.
2. Set one Atlas to Local and set it to be 'Preferred'. Set all other devices to Sync Source = Word Clock. Then you must connect from the #1 Atlas's Word clock out, to the next device's word clock in, and chain it on to other devices in the network. (Of course this may not be so easy due to location of the devices).

©2019 - 2020 Audio Squadron Limited

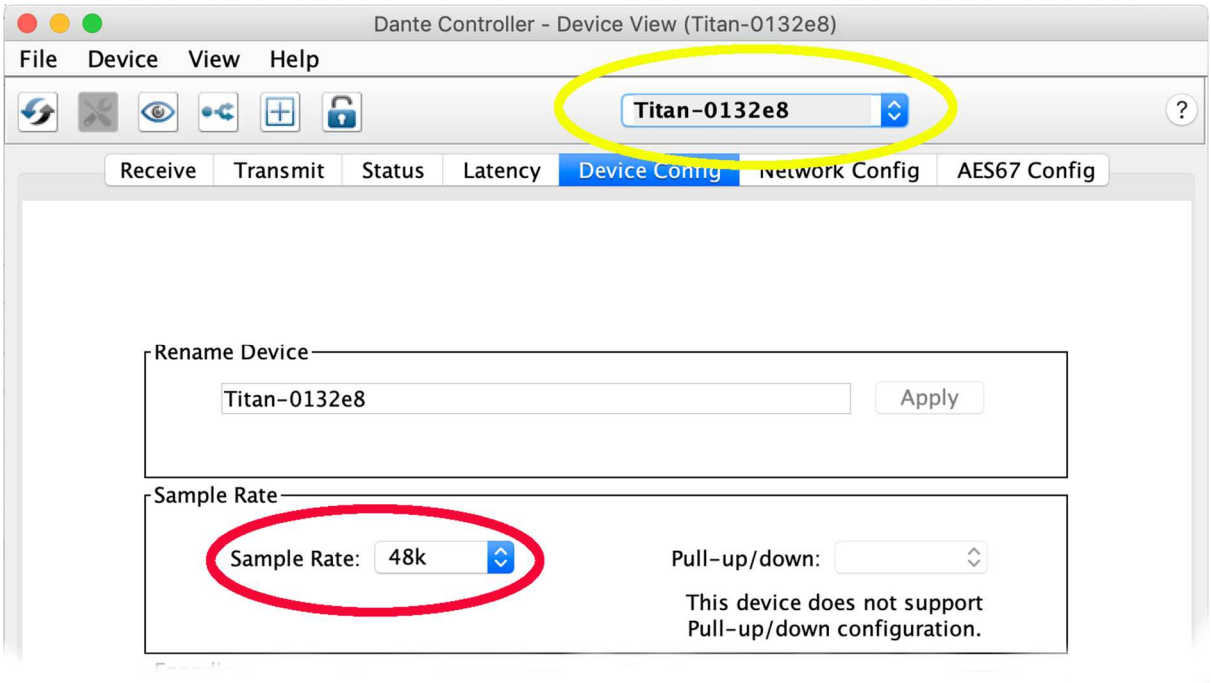
The **Clock Status** tab of the Dante Controller software is useful for giving you a picture of the synchronisation setup.
Below is an example of a fairly simple setup, with an Atlas, a Titan and DVS – a Dante Virtual Soundcard.



In this example the Atlas is on Local, the Titan is locked to Word clock from the Atlas. DVS, being software, always syncs to Dante and can never be a Clock Master. Atlas is the Preferred Master and is 'Grand Master Clock'. Titan and Atlas both show a clock source =External, because it's external to the Dante network.
Tip:- when you're changing settings, make sure to use the Dante Controller's 'refresh' button – the Dante Controller display doesn't automatically update very quickly.

Sample Rates

You will need to check that the Sample rate of all units *and* the DVS or Dante PCIe driver is the same for devices involved in any Dante connections that you want to make.
On Atlas and Titan units you can change the sample rate from the Atlas/Titan Control Panel, or from the Dante Controller's 'Device View'/Device Config tab. You can open a Device View by double clicking in Dante Controller wherever the device's name appears. It's possible to change the Sample Rate of an Atlas (highlighted in red in the picture below) using Dante Controller's Device View window. Note also that Device View has a drop-down selector at the top (highlighted in yellow) which allows you to view different devices' Config settings in turn.



©2019 - 2020 Audio Squadron Limited

Dante PCIe card

The Dante PCIe cards offer much better performance than the Dante Virtual Soundcard in terms of number of tracks, latency and reliability of audio data.

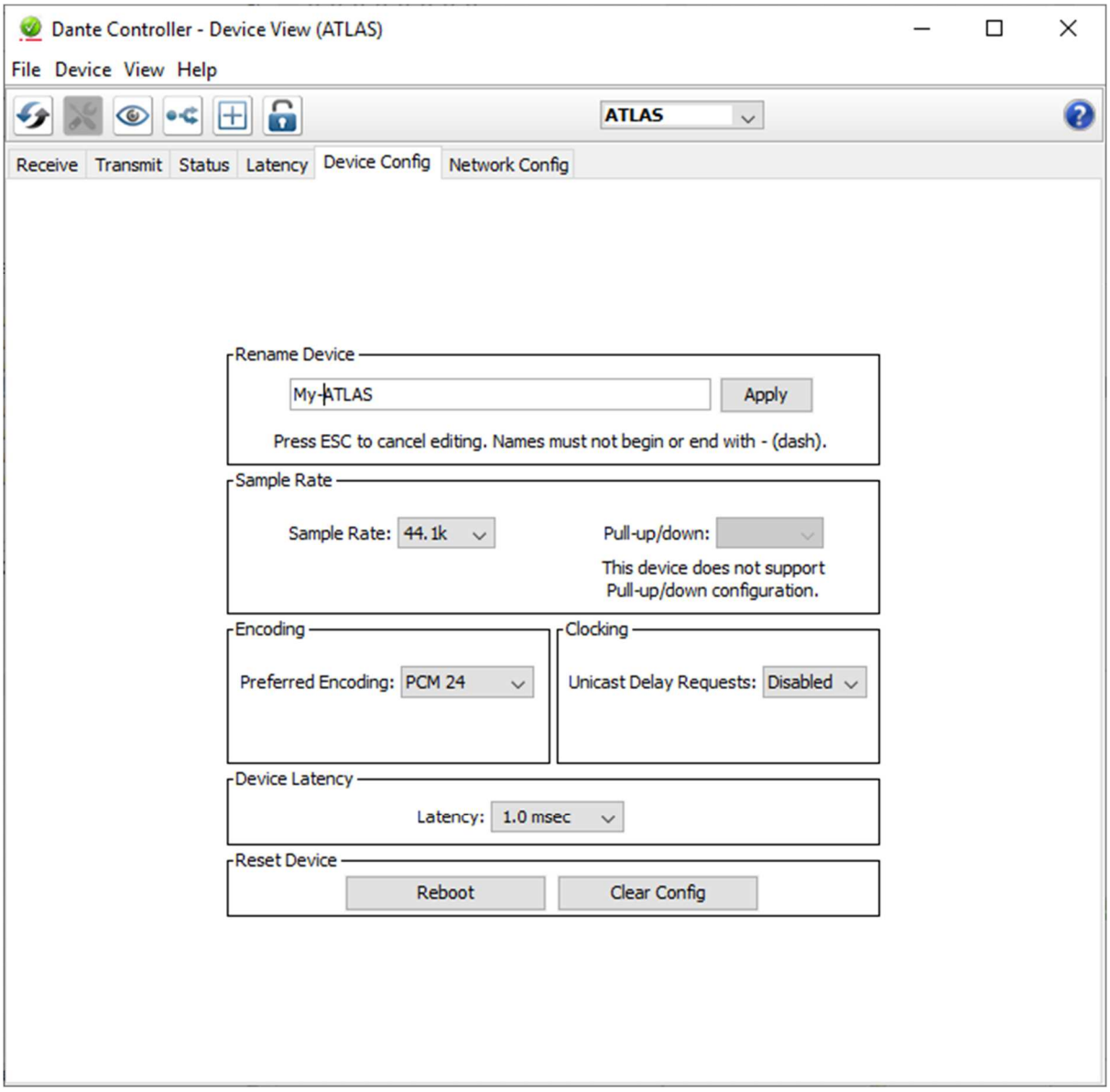


Several manufacturers make a Dante PCIe card – there is a list of currently available models on the Audinate site..
https://www.audinate.com/products/manufacturer-products/dante-pcie-card
Some are available as a 'PCIE-R' model – i.e. with dual RJ45 connectors and offering Redundant Mode, as discussed below.
Note – if a PCIe-R card is set to operate in Redundant Mode don't connect a Primary network to the Secondary RJ45 connector use the 'PRI' primary connector as per the picture above.
For computers that cannot be fitted with PCIe cards, but have a Thunderbolt port, Audinate approve of a number of Thunderbolt Expansion boxes as mentioned in this article
https://audinate.com/about/news-activity/press/dante-pcie-includes-thunderbolt-expansion-support
The Dante PCIe card is seen in Dante Controller as a normal device and will show 128 transmitters and receivers. You will need to install the drivers for Mac or PC, and it will appear as an Core Audio or ASIO device 'Audinate Dante PCie'.
Note that, unlike the Dante Virtual Soundcard, the Dante PCIe card *can* be set as a Clock Master if required.

Renaming Channels and Devices

In Dante Controller if you double-click on a Device's name – for instance in the Transmitter or Receive sides of the Routing tab, or where it appears in Device Info, clock Status tabs etc. – will show the **Device View**.

©2019 - 2020 Audio Squadron Limited

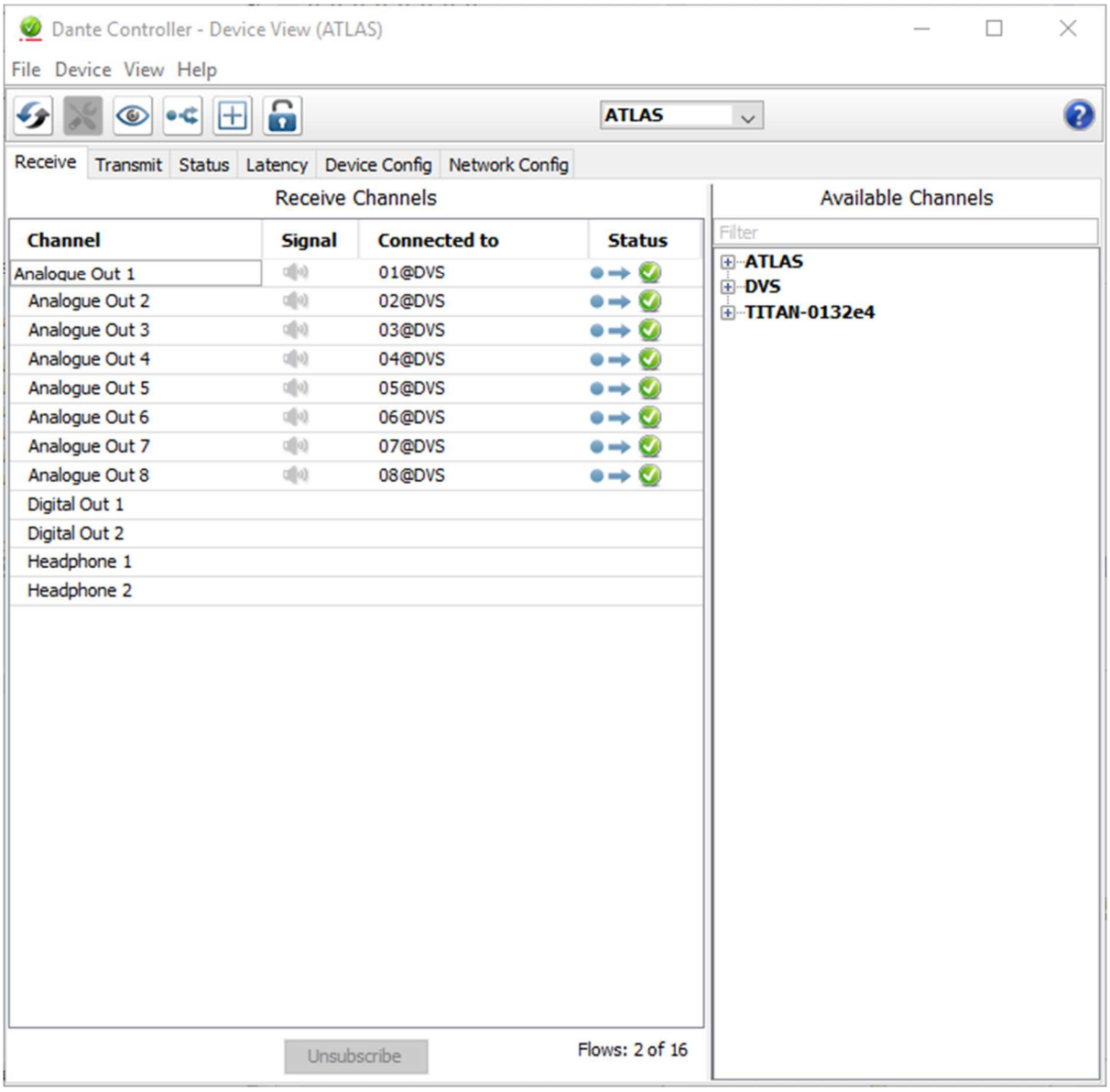


In the Device Config tab it's possible to change the Device's name – click in the box under 'Rename Device' and type.

You will see some warnings that renaming a Device can break routings, so it would be a good idea to settle on some names now, before you spend too much time on complex routings.

In the **Receive** tab, you can click in the C**hannel** column and rename Atlas's outputs.

©2019 - 2020 Audio Squadron Limited

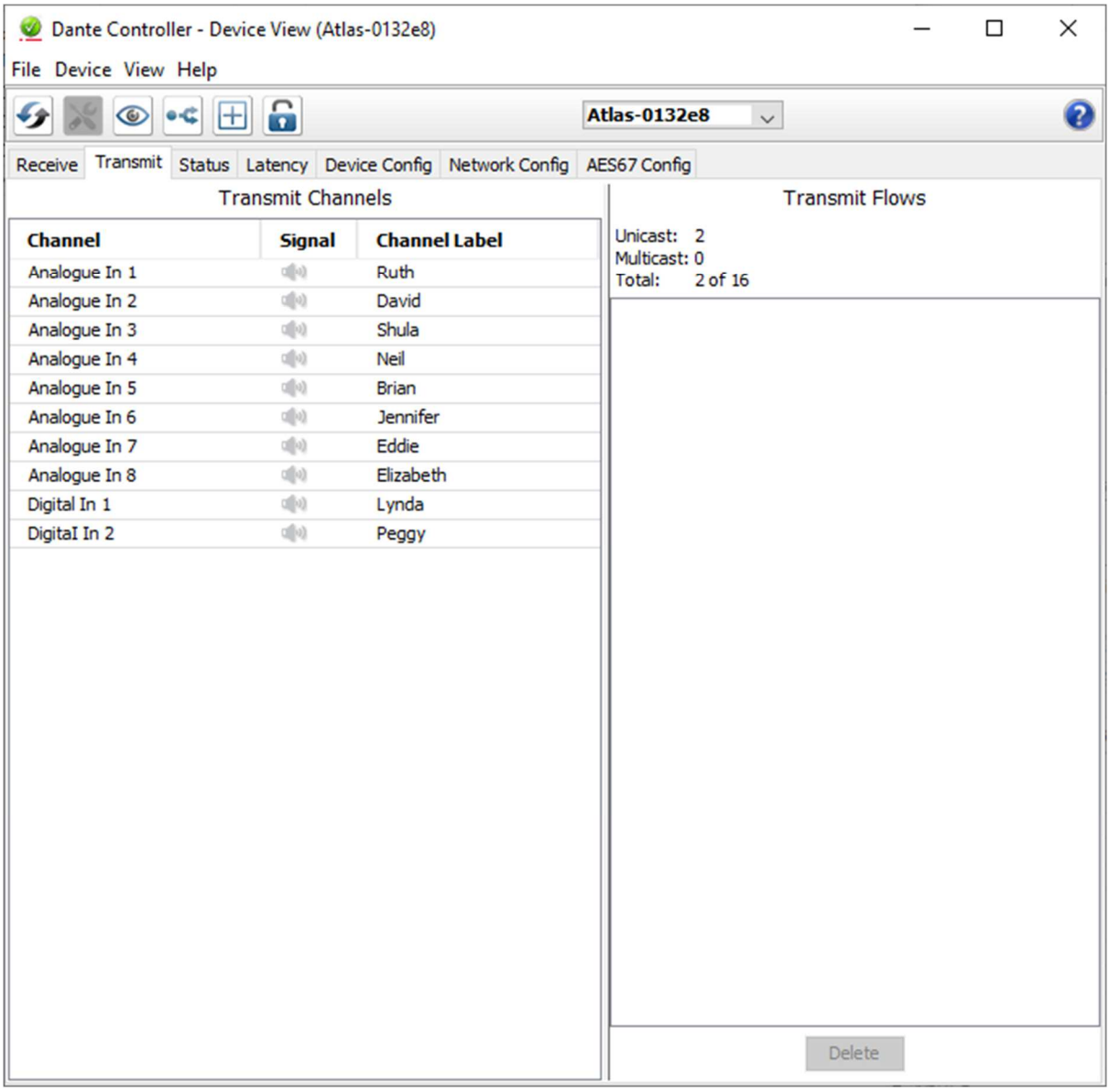


And similarly in the **Transmit** tab, you can rename Atlas's Inputs by clicking and typing into the **Channel Label** column.

And in the **Receive** tab, you can rename a label in the **Channel** column.

The channel labels for a Device must have unique names (in the same way that an email address must be unique – the channel label is part of the address in the Dante system).

©2019 - 2020 Audio Squadron Limited

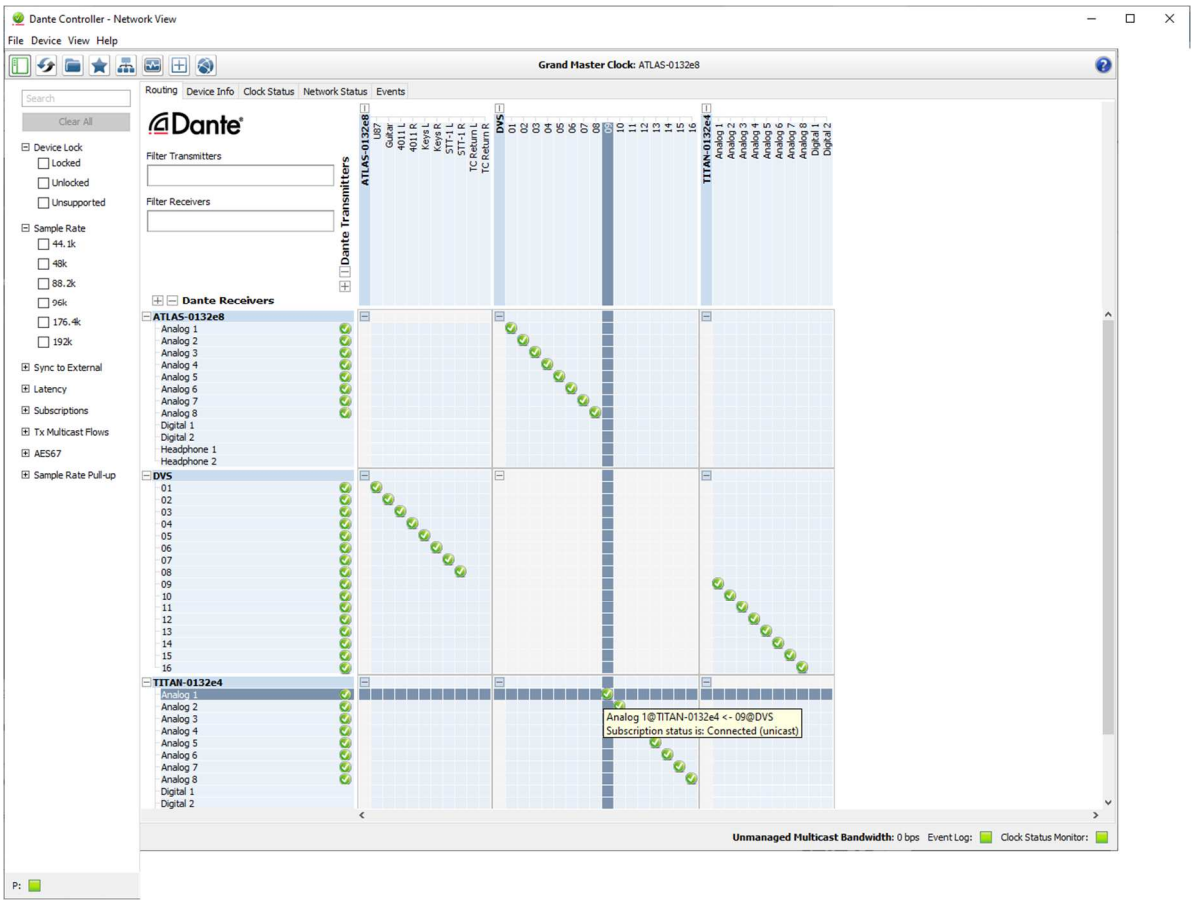


If some of your I/O is permanently connected to other equipment, or for instance is used for microphones for artists or instruments, it could be a big advantage to name the Input or Output channel by the name of what's connected.

©2019 - 2020 Audio Squadron Limited

Some Dante Routing Examples

Example 1 - Two Atlases



Here we have a small expansion on the most basic setup. We have an Atlas and a Titan, routed to Dante Virtual Soundcard so that DVS' inputs and outputs 1-16 are routed from/to The Atlas and Titan analogue Inputs and Outputs. Atlas is channels 1-8 on the DVS, and Titan is 9-16.



Atlas is the 'Grand Master' and is set to Local clock, and a BNC cable connects from Atlas's Word Clock Out to Titans' Word Clock in, and Titan's Sync Source is set to = Word Clock.
This ensures good clocking and best sample synchronisation between the two units.

©2019 - 2020 Audio Squadron Limited

Redundant Mode

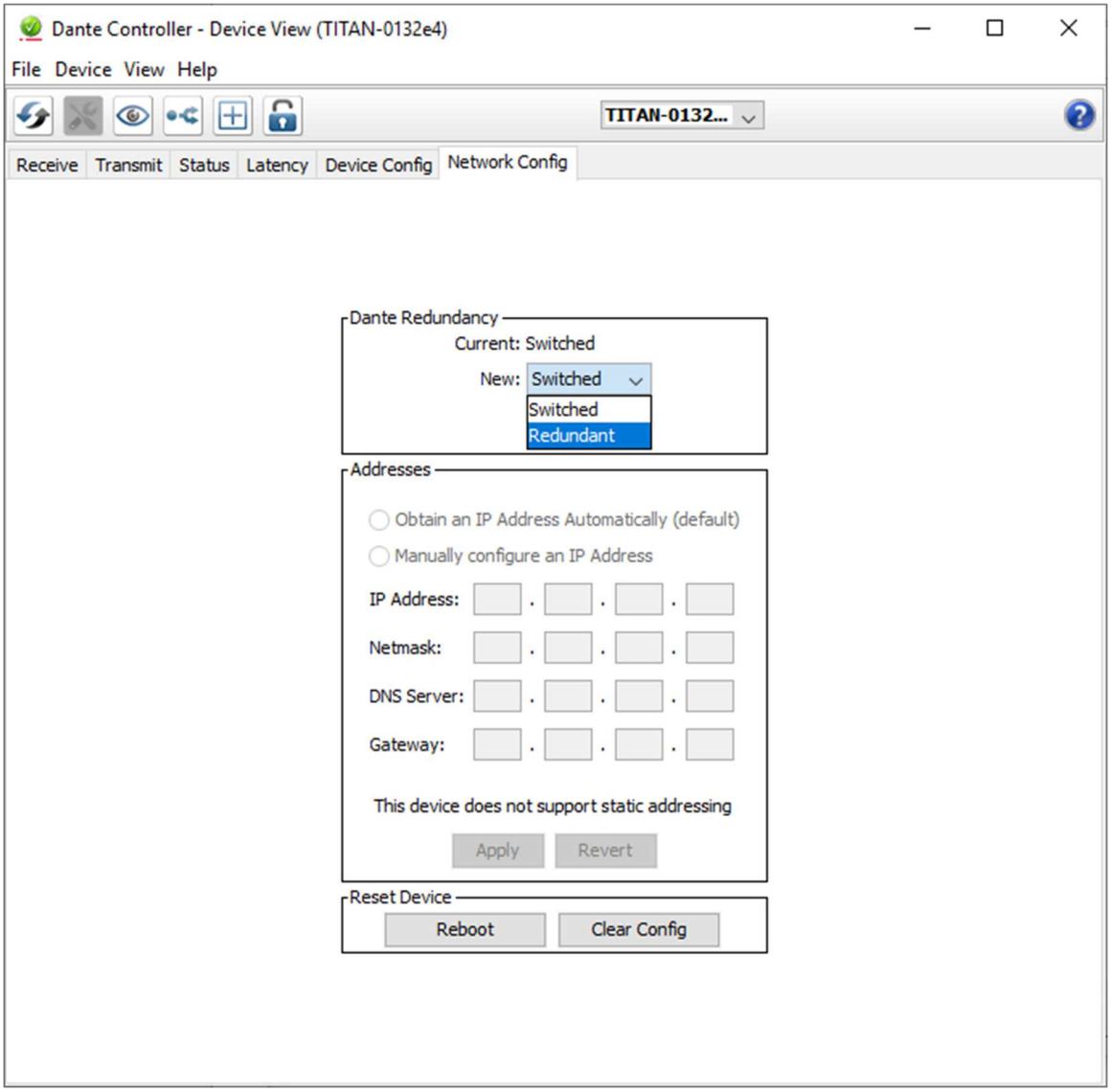
Dante offers the possibility of 'redundant mode' when devices support it. Redundancy allows two network paths so that if one route fails, the other can take over seamlessly. The Prism Sound MDIO-Dante module has two RJ45 network connections for this purpose.

You would expect to connect these to different networks, and different switches (i.e. you would make two entire *networks*).

Redundancy must be enabled, and once your connections are good and the network has configured itself, Redundant mode works automatically.

To enable redundancy, use the Dante Controller software:-

1. Double click on the unit's name to open 'Device View'
2. Click to open the 'Network Config' tab
3. In the 'Dante Redundancy' section, it may be set to 'Switched' by Default. Choose Redundant.

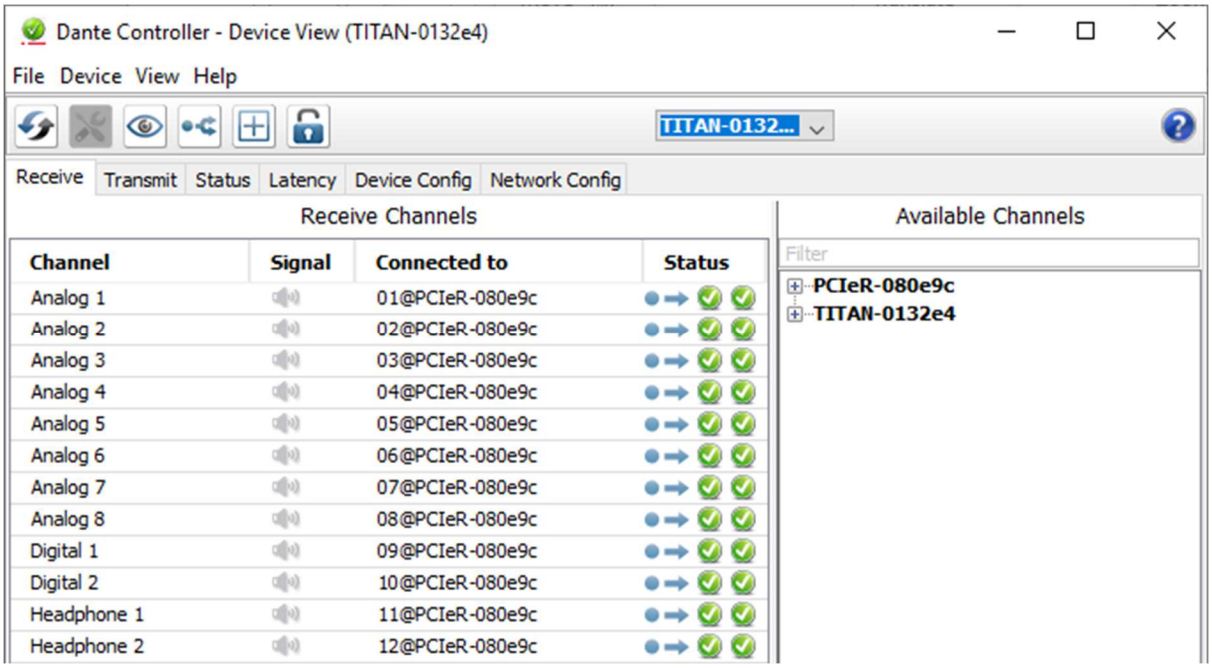


4. You must now press the REBOOT button. This reboots the MDIO-Dante module and the Atlas – wait for a few seconds before the reboot starts.

Having made routing connections between devices, the redundant connections are made automatically (where redundancy is available on both devices in the subscription).

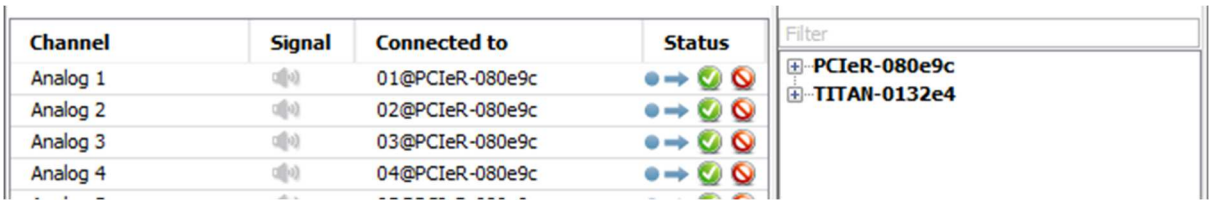
To check that redundancy is enabled, you can view the connections in Device View of the Receive device – i.e.

©2019 - 2020 Audio Squadron Limited



You can see that the Status has TWO green ticks for each connection.

If one of the connections is not made, then a warning 'Stop' icon is displayed..



Switched Mode

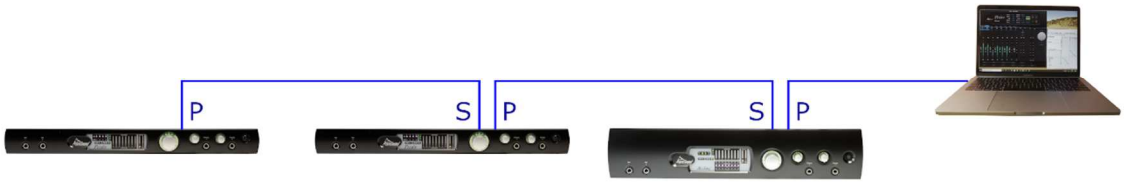
Switched mode is 'non-redundant' mode, and the default mode. In Switched mode, you can connect the network to either of the network ports on the Atlas (in redundant mode the Secondary port won't work as a single network connection (and Dante Controller will shows warnings about this).

Note also that in Switched mode, it's possible to 'daisy-chain' units by using the Secondary ports of the MDIO-Dante module.

For instance multiple Atlas units could be connected to a single computer without using an Ethernet switch by using this method of connection…

1. Connect the Computer's network port to the first Atlas MDIO-Dante module's Primary port (labelled PRI - closest to the mains inlet).
2. Connect the first Atlas' Secondary port (SEC) to the second Atlas' Primary Port.
3. Connect the second Atlas' Secondary Port to the third Atlas' Primary port… and so on.

©2019 - 2020 Audio Squadron Limited



Multi-cast

It's not the purpose of this document to give full information on the possibilities of the Dante network – the Dante documentation and the Audinate website has a lot of training and information resources.
However we feel it's worth mentioning that Dante provides a feature called 'Multi-cast Flows'. A single transmitter can be routed to multiple receivers. For instance, it would be possible to play out of your DAW software to several Outputs (perhaps using different interfaces, and/or speakers or headphones or in different rooms). Another application could be for a microphone to be routed to several recorders at once perhaps for recording in different rooms, or onto different computers.
Multi-cast needs to be set up in Dante Controller, and is described in detail in the Dante Controller documentation.

AES67

The MDIO-Dante module includes support for AES67. This is enabled in the 'AES67 config' tab of Device View in Dante Controller.

Switching to MDIO-Dante Mode

You will need to switch the units to MDIO-Dante mode before Atlas can connect to the Dante network. With the MDIO-Dante module fitted, and the unit powered up, **pressing and holding the front panel volume knob for four seconds** switches mode. The unit's relays will click, the unit will restart, and the significant change on the front panel is that the **Host** LED changes :-
Host= GREEN is the standard USB/UAC2 mode
Host=RED signifies MDIO-Dante mode.
Similarly pressing and holding the volume knob for four seconds will switch it back to UAC2 mode.
The Atlas Control Panel has a **MDIO** button which can switch the unit into and out of MDIO-Dante mode.
MDIO mode and USB mode are mutually exclusive – it's not possible to use USB and Dante simultaneously.

The Prism Sound Control Panel

In the standard USB mode, it's possible to run the Prism Sound Control Panel app in order to control some of the settings and functions of the Atlas or Titan – metering of I/O, routings, mic pre settings, internal mixer levels, the setting of headphones, volume control etc.

The same controls are available when the Atlas is in MDIO-Dante mode. The communication for this control panel is across the Dante network (therefore USB connections are not required at all when Atlas is in MDIO-Dante mode). Any Atlas or Titan unit on the network can be controlled from any computer on the network which is running the Prism Sound Control Panel app.

©2019 - 2020 Audio Squadron Limited



In MDIO-Dante mode there are some extra controls and displays which refer only to Dante mode…

Device State	Shows the status of the Dante module's network connection – whether it's Active or Disabled (or in an Error state)
Port State	Shows the synchronisation state of the Dante module – whether it's a Master or Slave for sync to/from the Dante network.
Dante Clock	This drop down allows you to nominate this device as Preferred Master
Dante Settings	This is to allow setup with Dante Domain Manager. The details are beyond the scope of this manual, but there is a lot more information about DDM on the Audinate site https://audinate.com/products/software/dante-domain-manager
MDIO	The MDIO button allows you to switch into and out of MDIO-Dante mode, and is 'lit' orange when MDIO-Dante mode is enabled. This is the same as pressing and holding the front panel Volume Control knob for 4 seconds.

Otherwise the controls operate as normal as described in the Help files which can be viewed by pressing the question mark button in the Control app (available in either mode). In Dante mode you can use the same

©2019 - 2020 Audio Squadron Limited

features that are available in USB mode – mixers, headphone Bus, volume control etc.etc. However, please note that ADAT inputs and outputs are not available in Dante mode.
When switching between Dante mode and USB mode, it can take a few seconds before the Control Panel switches – maybe as much as ten or fifteen seconds. There are two Control Panels (with potentially different positions and sizes for USB and Dante mode), and when switching from Dante mode to USB mode, there may be a brief period where both are showing. The Dante one will disappear within a few seconds once the network has refreshed. Likewise, when switching from USB to Dante mode, the USB Control panel will disappear immediately, but it takes a few seconds for the Dante panel to show (and a similar amount of time for the Dante to become active and any subscriptions to re-open).
The unit's settings will persist from USB to Dante mode. There is a single set of settings – if you change a setting in USB mode, it will be changed when you switch to Dante mode (and vice versa).

©2019 - 2020 Audio Squadron Limited

©2019 - 2020 Audio Squadron Limited

Appendix 1 - Front Panel LEDs

The front panel of both Prism Sound Atlas and Titan units have LED displays to show some key information. Because Atlas has a bigger case, there's space for a bigger screen and more LEDs.



44.1, 48, X2, X4	Sample Rate and multiplier (i.e. 48 and x2 lit means the current sample rate is 96KHz. *(Atlas only)*
HOST	Host= GREEN is standard USB/UAC2 mode. Host= UNLIT is standard USB/UAC2 mode but no USB is connected. Host=RED signifies MDIO mode.
MASTER	Sync status of the unit. In MDIO-Dante mode this is lit in GREEN to signify that this unit is set to Local. The Master LED will be unlit for other states of Sync Source. Flashing GREEN on any unit signifies a clock error – in Dante mode check that this device is not set to a source that cannot be resolved by the Dante network (i.e. a DI or WC that isn't plugged in)
IP	The meters are set to display activity on *inputs*.
OP	The meters are set to display activity on *outputs*. (The control to toggle IP & OP meters is in Hardware Setup… SPDIF format=Tascam)
ANALOGUE	Eight meters to display activity on analogue inputs (or outputs depending on setting)
DIGITAL	Two meters to display activity on the digital AES/SPDIF or TOS input (or outputs depending on setting)
UNL	When UNL is lit it signifies the digital input is unlocked - not synchronous to the system clock. UNL will be lit when nothing is connected.
SRC	(SRC is not active in MDIO-PTHDX mode)
OVER-KILLER	These light when the Over-killer function is active and limiting (i.e. they won't light up when the function is enabled and no audio is passing).
PRE	These light in PINK when an XLR is connected to an analogue input to show that the Mic Pre-amp is selected on that channel. They light in BLUE when a ¼" jack is connected the front panel Instrument jack. The Pre light is lit in PINK when no connection is made.

©2019 - 2020 Audio Squadron Limited

LINE	These light in GREEN when a TRS jack is connected to an analogue input to show that Line mode is selected on that channel. (The associated PRE LED will be unlit).

©2019 - 2020 Audio Squadron Limited

Appendix 2 - Installing the MDIO-PTHDX module

WARNING!



TO PREVENT FIRE OR SHOCK HAZARD DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

Fitting the MDIO-PTHDX module to a suitable Prism Sound Interface requires the lid to be removed. There are dangerous voltages inside and installation must be referred to qualified personnel. Anyone fitting the MDIO-PTHDX module must ensure that the mains supply is disconnected from the unit before removing the cover, and is not re-connected until the cover is refitted.

BEFORE FITTING the MDIO-Dante module, you MUST install the up to date software AND firmware. This must be done in the correct order – software first, firmware second. If the software is not updated first, it will not be possible to update the firmware.

a) Update the computer software (Driver and Control Panel) to the latest version – this is available from our website Download pages.
http://www.prismsound.com/music_recording/products_subs/titan/titan_downloads.php
or http://www.prismsound.com/music_recording/products_subs/atlas/atlas_downloads.php

b) Connect your Atlas to the computer via USB (if you have several units, you must connect them and update them ***one unit at a time***).

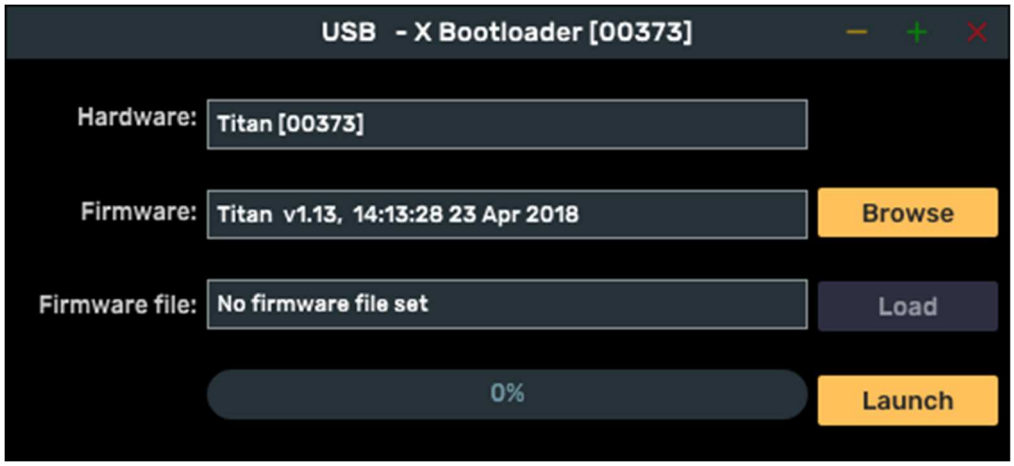
c) Update the firmware in your Atlas or Titan. Full instructions are here..
http://resources.prismsound.com/rp/USBAudio_FirmwareLoading_A4.pdf

In short….

i) A firmware update resets all settings, so you may wish to save them and reload them afterwards. If you use the Volume control, headphone bus, and any special routings, take care that it's set up **before** playing any audio after the update..
ii) Pull the power cable at the rear, leave the USB connected.
iii) Run the Prism Sound Control Panel (it will appear but 'blank').
iv) On the Atlas unit itself, press and hold the Volume knob and the Standby button (front panel right side)
v) Now put the power cable back in. (there will be no lit LEDs on the front panel of the unit – this is normal).

©2019 - 2020 Audio Squadron Limited

vi) The 'X-Bootloader' window will now appear.



vii) Press the 'Browse' button and point to the new firmware file.

viii) Press Load, then watch the progress bar increase until it reaches 100% and the Launch button appears again.

ix) Press Launch and the Atlas unit will restart.

d) Check the current firmware version of the Prism Sound Atlas or Titan unit. If you've correctly installed the firmware in the last step, the MDIO-Dante module requires the Prism Sound Atlas or Titan to have firmware version 1.14 or higher loaded. The firmware version is displayed in the top bar of the Prism Sound Control Panel when it's in USB mode.



DISCONNECT THE POWER CABLE and all other connections from the rear and front of the unit.

Now you are ready to fit the Dante module.

You will need to remove the lid of the unit, and a little dexterity is required in fitting the module. If you are in doubt about fitting an MDIO module to an existing Prism Sound Atlas or Titan unit, we recommend that you speak to your dealer who will be able to arrange to fit it.

You will need some tools – a standard No1 posi-drive cross-head screwdriver, and a 2mm hex head screwdriver (a suitable Allen key is provided with the MDIO kit).

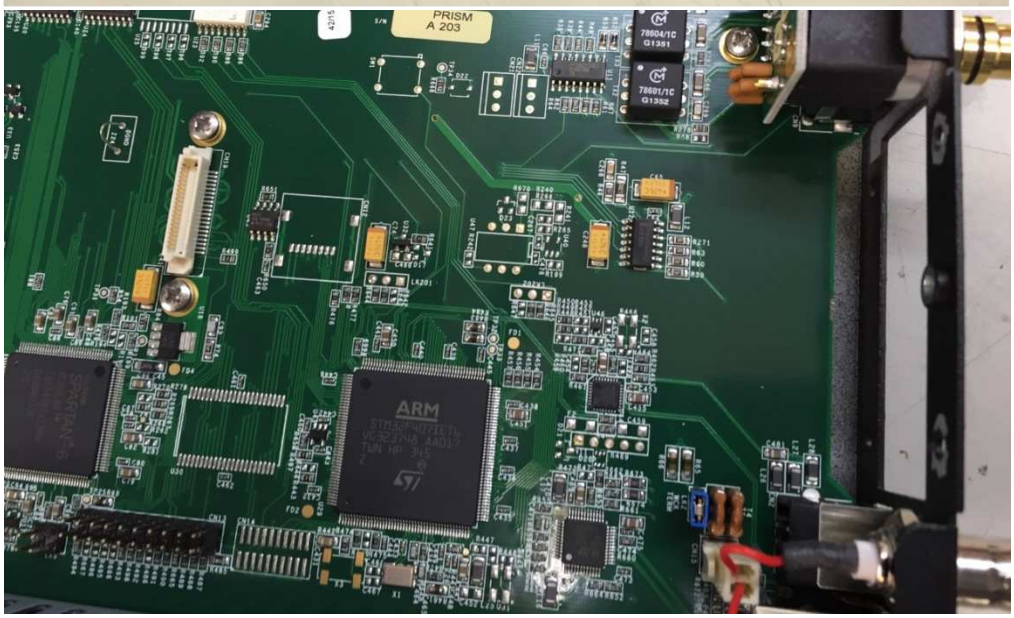
Hardware Installation

1. Remove the lid of the unit. Prism Sound Atlas has six hex-head screws on each side; Titan has five on each side; both units have another three screws along the top front edge and three along the lip of the lid at the rear. Keep those screws safe while you fit the module.

©2019 - 2020 Audio Squadron Limited

2. Also remove the MDIO blanking cover plate which uses another four hex-head screws.

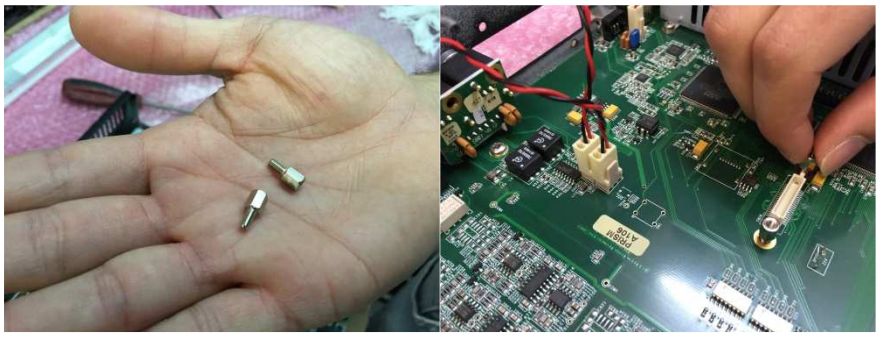




3. Approximately half way back from the MDIO slot there is a white multi-pin connector labelled ‘CN19’, and either side are two cross-head screws. Unscrew the two cross head screws.
(Some units may be supplied with Hex spacers already fitted in place of the cross-head screws; in this case, you can skip step 4).

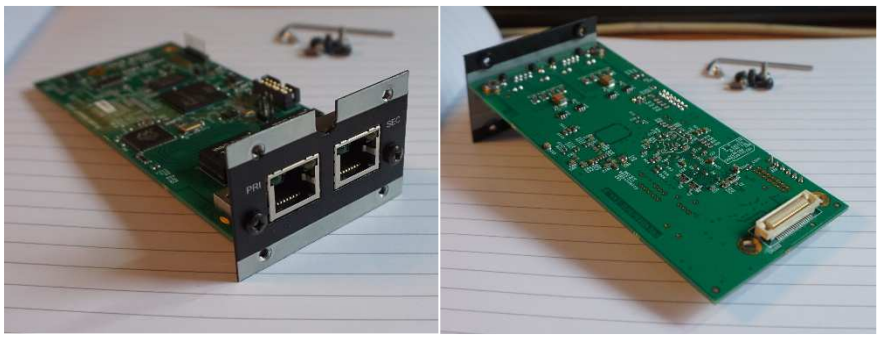
©2019 - 2020 Audio Squadron Limited

4. Two M3 x 6mm threaded Hex spacers are provided.

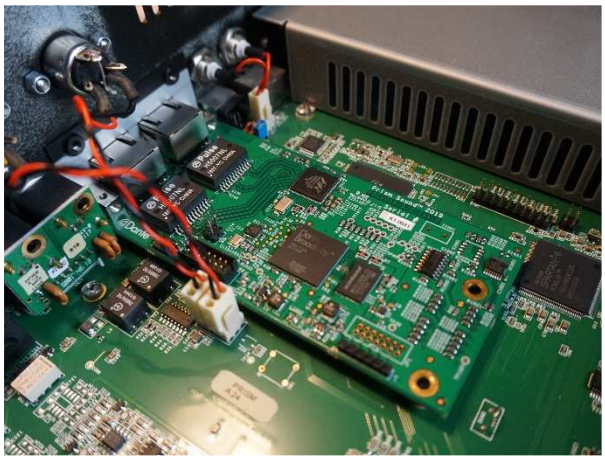


Insert these in place of the cross head screws you have just removed. These can be screwed down finger-tight. If using a tool, such as pliers, or (the correct tool) a 5mm nut-spinner, make sure not to over-tighten these.

5. Taking anti-static precautions, remove the MDIO-Dante module from its anti-static bag.



6. Offer up the MDIO-Dante module to its connector. If this is an Atlas rather than Titan, be careful of the wires connecting the MIDI ports on the rear – you'll need to avoid pulling these as you place the Dante module. Position the face plate end against the rear panel first – it should be flush against the inside of the Prism Sound Atlas/ Titan rear panel. Then lay the Dante PCB so that the screws line up with the screw holes. It should not require much force to mate the connectors – when it's in the correct position the board should gently push down. Don't force anything if it does not seem to fit – adjust the positioning until the connector lines up easily.



7. Once in position, you can screw the two 6mm x M3 screws through the MDIO module into the hex spacers.

©2019 - 2020 Audio Squadron Limited



8. Some new hex head M3 screws are provided to fix the rear plate of the MDIO-PTHDX module to the rear panel of Prism Sound Atlas/Titan. The short pair should be used for the lower pair of holes closest to the bottom of the box.
9. Refit the lid and replace the screws.

Note :- removal of an MDIO module (i.e. in order to fit a different one) is the exact reverse process. It is not recommended to swap MDIO modules on a regular basis – this will reduce the life of the Atlas unit and the MDIO modules.

You can now return to the Quick Start Guide at the top of this manual and proceed to connect the Prism Sound Atlas units to your Dante network.

©2019 - 2020 Audio Squadron Limited