6.3.14 D21m Dante™ Card (VISTA, OnAir, ROUTE 6000*)   5045044
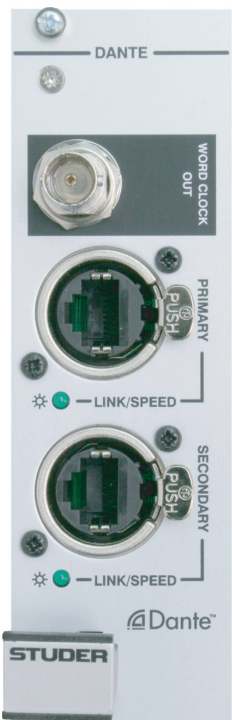
The D21m Dante™ card is a 64 x 64 interface between a Studer console or router and any Dante™ compatible device from HARMAN or other 3rd party manufacturers.The D21m Dante™ card needs a double slot in the D21m frame.

Dante™ provides a digital audio network that uses standard Internet Protocols over both 100 Mbps and 1 Gbps Ethernet. Dante™ uses audio independent, high accuracy network synchronization standards to ensure all Dante™ devices are synchronized at all times. Dante runs on standard computer networking hardware, and does not require dedicated network infrastructure.

* Supported Product family	from SW Version
Vista	V 5.0
OnAir	V 6.1
Route 6000	V2.2.14 Patch 02

For further information on Dante™, please refer to www.audinate.com.

Max. Cat5e cable length	max. 100m recommended
Sampling Rate	only 48 kHz supported
Power consumption	3.5 W
Operating temperature	0-40 °C
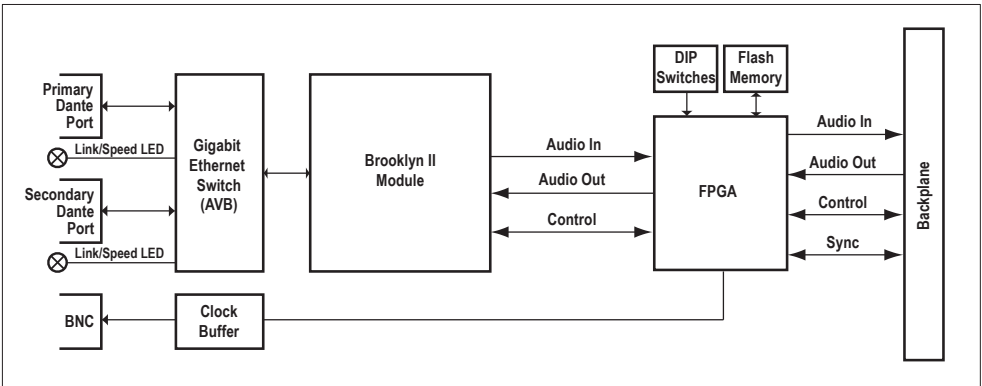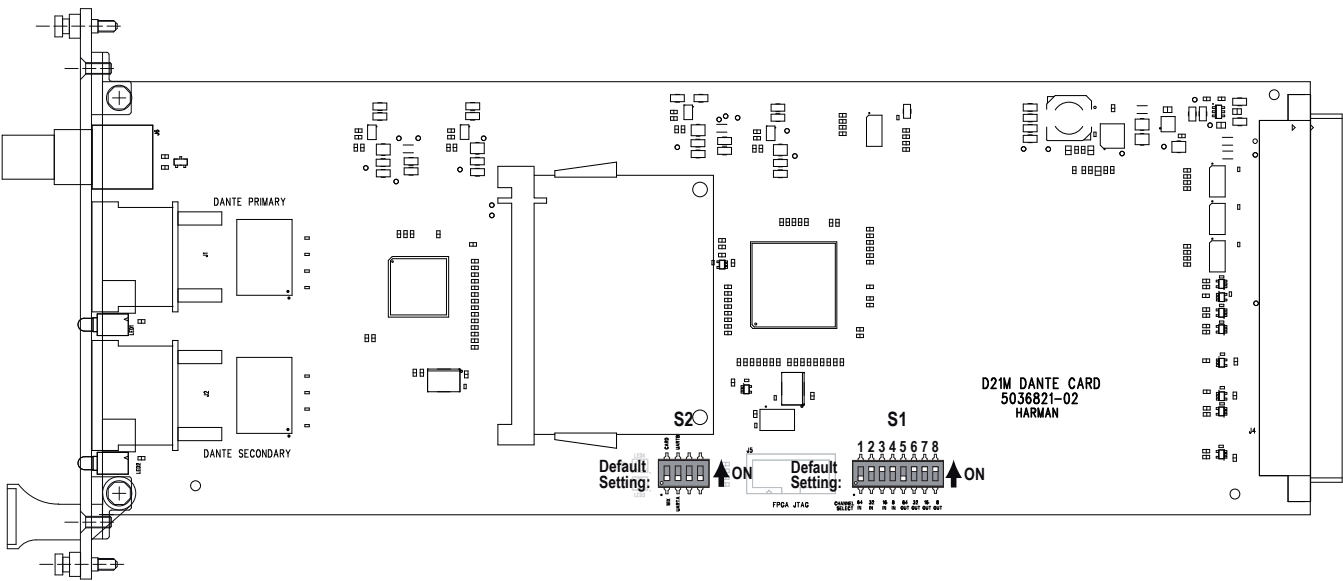
6.3.14.1 Configuring the Dante Card

Connections between the Dante cards are set using a tool, in this case the Dante Controller software from Audinate®. As communication across the Dante network is essentially between named cards and channels, the configuration must be correct to ensure cards talk and listen to the correct/desired channels on the Dante network.

This user guide summarises the process and provides a simple worked example; full setup details and configuration tools are downloadable from the Audinate web site www.audinate.com.

In addition it is necessary to set the clock status of the Dante card both within the network and in relation to the console hardware. This is described below.

6.3.14.2 Channel count setup

The Dante card uses 64 in and 64 out channels by default, but can be restricted to use less input or output channels if required. For example, if only output channels are required on the Dante card, the input channels can be set to 0, to maximise the number of input channels available for other cards.

The DIP switch S1 on the Dante card main PCB is used to set the input and output channel count, in steps of 8chs from 0 to 32 channels. Refer to the diagram on the next page which shows the location of the channel count DIP switch S1 and the factory default setup of 64 in/64 out.

S1 DIP switch for D21m channel count setting:

1	2	3	4	5	6	7	8	Number of Channels
ON	ON	ON	ON	-	-	-	-	0 inputs
ON	ON	ON	OFF	-	-	-	-	8 inputs
ON	ON	OFF	ON	-	-	-	-	16 inputs
ON	ON	OFF	OFF	-	-	-	-	24 inputs
ON	OFF	ON	ON	-	-	-	-	32 inputs
ON	OFF	ON	OFF	-	-	-	-	40 inputs
ON	OFF	OFF	ON	-	-	-	-	48 inputs
ON	OFF	OFF	OFF	-	-	-	-	56 inputs
OFF	ON	ON	ON	-	-	-	-	64 inputs (factory default)

OFF	ON	ON	OFF	-	-	-	-	
:	:	:	:	-	-	-	-	***NOT ALLOWED***
OFF	OFF	OFF	OFF	-	-	-	-	
-	-	-	-	ON	ON	ON	ON	0 outputs
-	-	-	-	ON	ON	ON	OFF	8 outputs
-	-	-	-	ON	ON	OFF	ON	16 outputs
-	-	-	-	ON	ON	OFF	OFF	24 outputs
-	-	-	-	ON	OFF	ON	ON	32 outputs
-	-	-	-	ON	OFF	ON	OFF	40 outputs
-	-	-	-	ON	OFF	OFF	ON	48 outputs
-	-	-	-	ON	OFF	OFF	OFF	56 outputs
-	-	-	-	OFF	ON	ON	ON	64 outputs (factory default)
-	-	-	-	OFF	ON	ON	OFF	
-	-	-	-	:	:	:	:	***NOT ALLOWED***
-	-	-	-	OFF	OFF	OFF	OFF	

6.3.14.3   Sync Setup

The Dante card can act as either a Master clock source for the Dante network, or as a clock slave. If there is only one console on the network, this will generally be set as the clock master for the network, but in cases with more than one console, or where another device acts as the clock master, it will be necessary to set the console's Dante card to be a clock slave. The Dante clock master/slave status is set up using Dante Controller software (see later in this guide), but in addition to the Dante clock setup, the card's clock status within the local system has to be set. This is done using a DIP switch S2 on the Dante card main PCB. Refer to the diagram on the previous page for the location and setting of this switch.

MIX   Select this position to make the Dante module lock to the console's internal Wordclock, only to be used when the Dante card is set as the Preferred Master for the Dante network. This setting is the factory default.

CARD   Select this position to make the console lock to the Dante network clock, to be used when the Dante card is set up as a slave on the network. Note: In this case, a BNC wordclock cable must be connected from the Wordclock Out BNC connector on the Dante card, to the console's Wordclock IN.

S2   DIP switch for Sync and UART setting:

Switch	Setting
1	OFF: Selects Sync to local system (MIX) *(factory default)*
	ON: Selects Sync to Dante card (CARD)
2	OFF: Selects UART A *(factory default)*
	ON: Selects UART B
3	reserved for future use
4	reserved for future use

6.3.14.4   Setting up the Dante card for operation on the network

As mentioned earlier, it is necessary to use a software tool connected externally to the card, in order to route audio from the card to/from another Dante-enabled device.

1. Download and install latest Dante Controller software from www.audinate.com.

2. Connect a Mac/PC to the Dante card, this may be via a switch/router or direct to either the PRIMARY or SECONDARY ports. The LINK indicator on the card will begin to flash indicating an active connection.
   NOTE: A crossover cable is not required as the network ports on the Dante card are auto-MDIX.

3. Start the Dante Controller application, after a few moments a screen similar to the one below will appear:
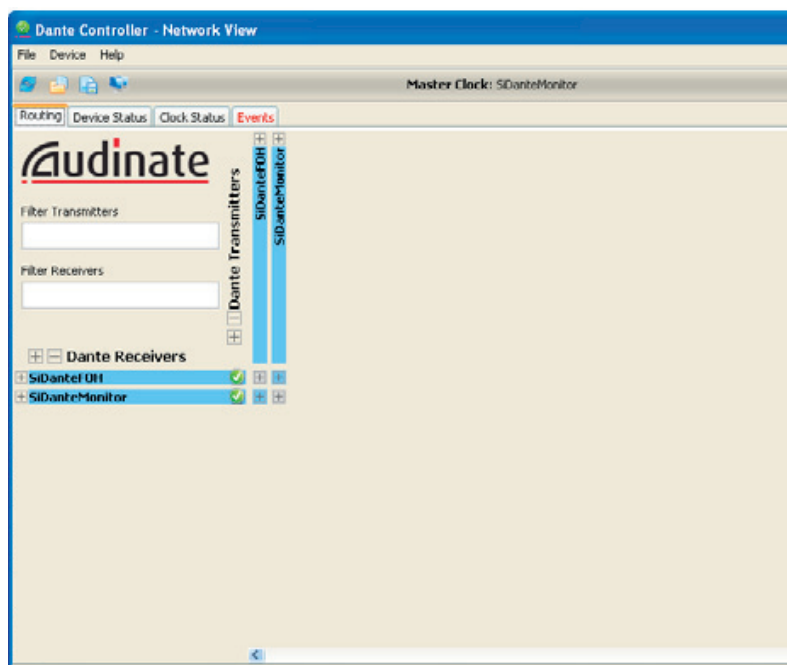
Using Dante   The following sections cover basic setup and use of the D21m Dante cards. For detailed information regarding Dante please refer to information on Audinate's web site www.audinate.com.

Network View   Routing – Matrix view of routing (click on a '+' symbol to expand the matrix view).
NOTE: Although Dante Controller software can work through a firewall some information such as Device Config, Network Config, Dante Controller etc. may not be accessible until the firewall is disabled or a port to Dante is opened.
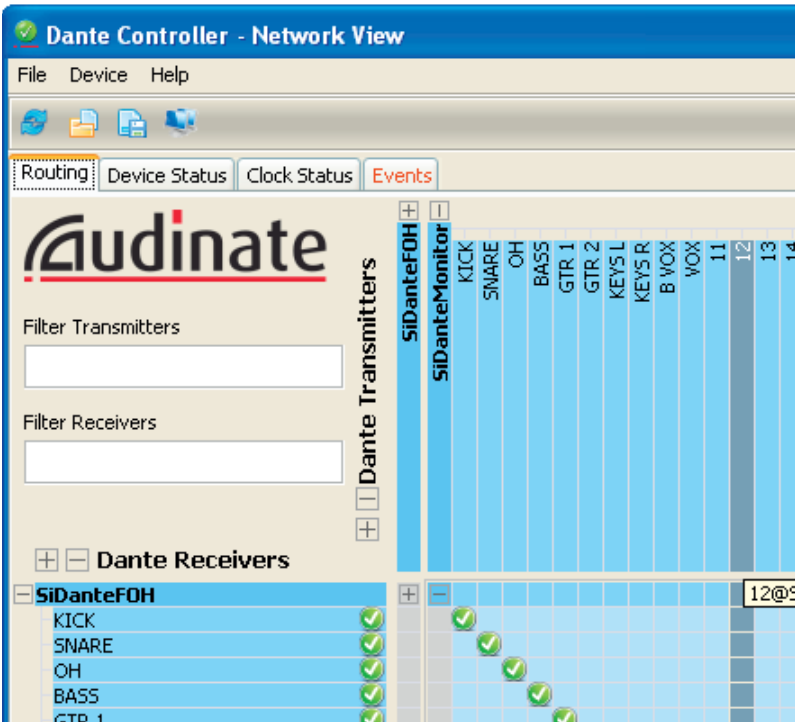
Device Status   Displays information about discovered Dante devices; doubleclick a device name to enable its configuration :
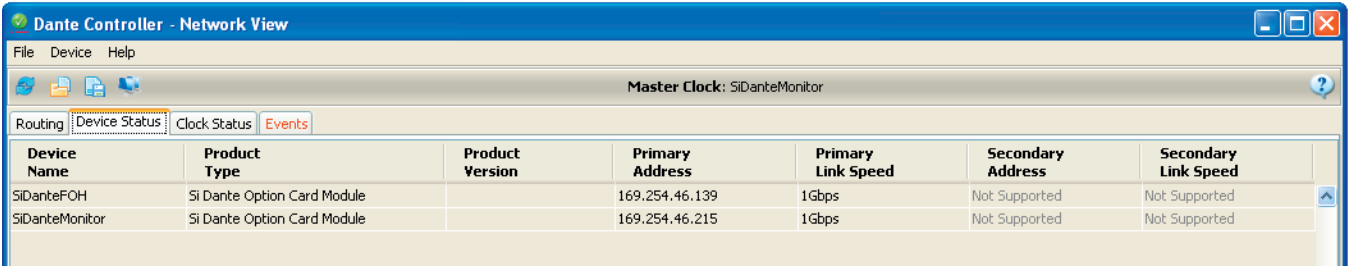
**Clock Status**   View and edit Dante Network clock configuration :
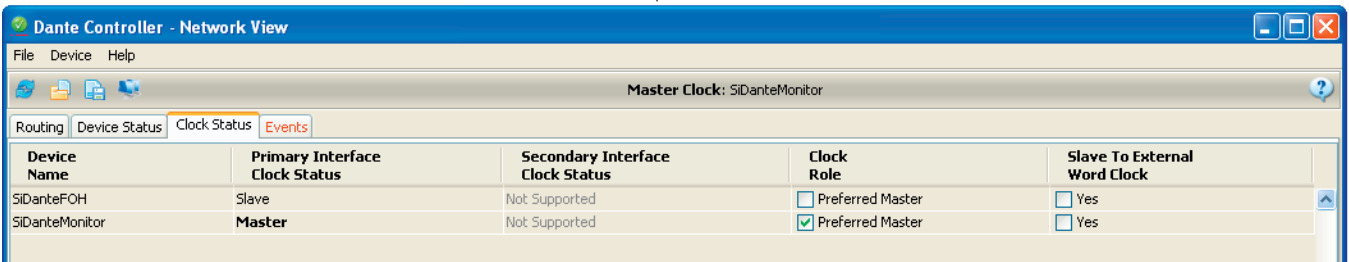
Clock Role   Setting a single '**Preferred Master**' will ensure that device is selected as the clock master, if two or more devices are set for 'Preferred Master' the master will be elected by the Dante system.

Note   Clock Status settings apply to the clocking of the Dante network, attached devices such as consoles must be clocked to/from the Dante network as appropriate or required in any given system.

‘Slave to External Word Clock’: When checked the Dante card will clock from the console internal word clock, if not checked the host device must be clocked to the Dante card or system word clock as appropriate or required in

the given system.

Device View The Device View allows viewing and editing of a selected Dante device.
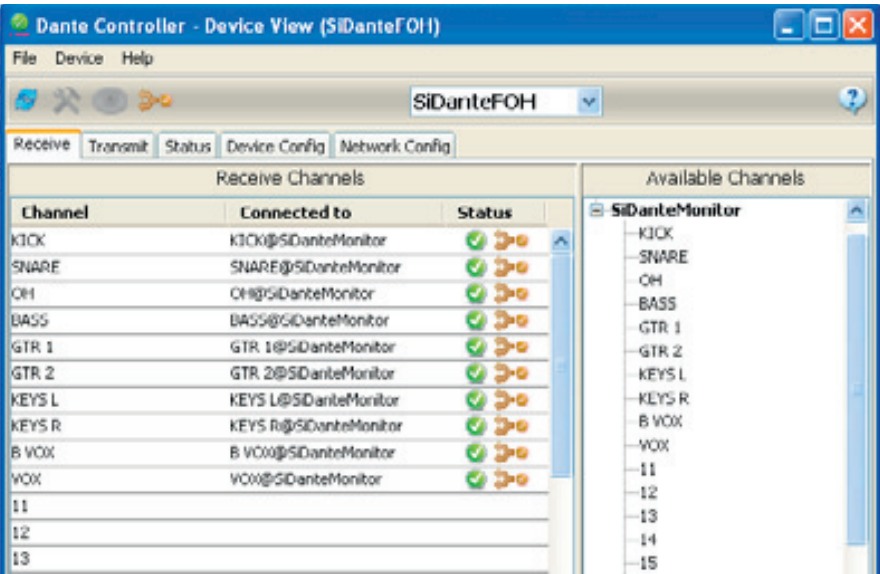

Receive This tab presents information about all channels being received, and channels available to the current device. The tab is arranged into two areas:

Receive Channels: Lists the Rx channels in the left pane of the window. It shows whether or not they are connected and, if connected, the channel they are connected to and the status of that connection.

Available Channels: On the right pane of the window, lists the Tx channels from other devices that are available for subscription by the current device. You may drag and drop **Available Channels** to **Receive Channels**.

Transmit This tab is used to view and edit the transmit configuration of a device :
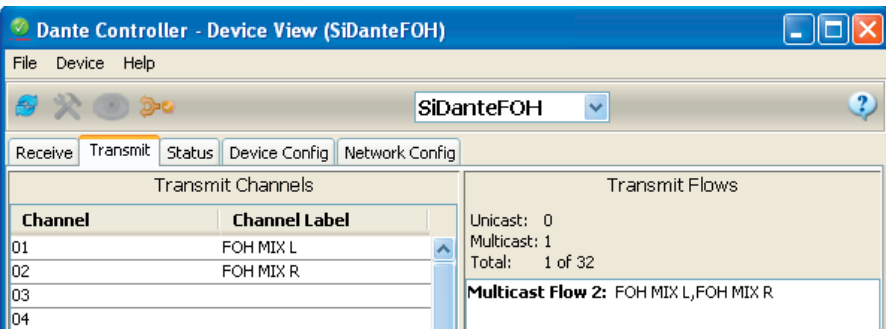

Transmit Channels: The area on the left pane of the tab shows the Tx channels for the device, and any userdefined channel label. It allows the user to create labels for transmit channels. Input to the table is filtered to prevent illegal characters from being used in channel labels. To change a Tx channel label doubleclick on the label and type in a new one. Tx channel labels must be unique on a single device.

Status   The **Status** tab is used to view information about a Dante device, this information may be required for trouble shooting and checking software / firmware is up-to-date.
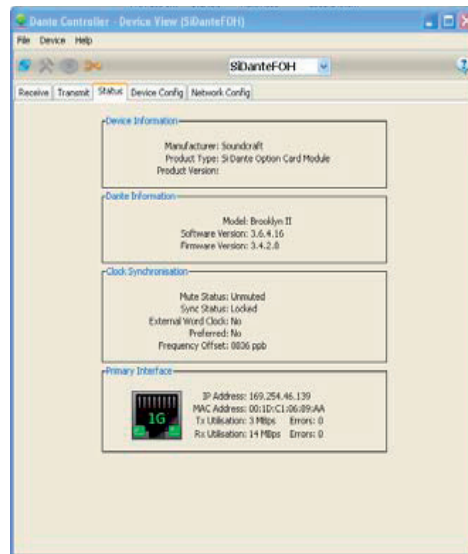
Device Config   This tab on the device view allows viewing and editing of the following device specific parameters :
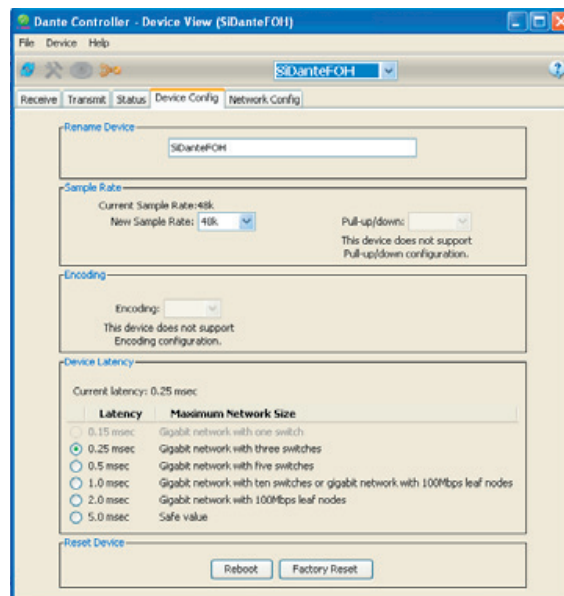
Rename Device: Allows renaming of the Dante device.

**Sample Rate**: 48K – this is fixed and cannot be edited.

Latency: Allows selection of an appropriate latency.

Note   The 0.15 msec setting is unavailable on D21m Dante cards as these include an internal ethernet switch.

Factory Reset: Allows remote reboot of the Dante interface and to reapply factory settings. Following a reboot it is recommended to power-cycle the console. **Factory Reset** wipes the following device configuration settings:

• User-defined device name
• User-defined channel labels
• Clock configuration (clock master / external clock master setting)
• Static IP addresses
• Redundancy configuration
• Sample rate setting (including pull-up/down)
• Latency setting
• Any existing audio routes

Network Config   This tab enables viewing and editing of Dante Redundancy mode.
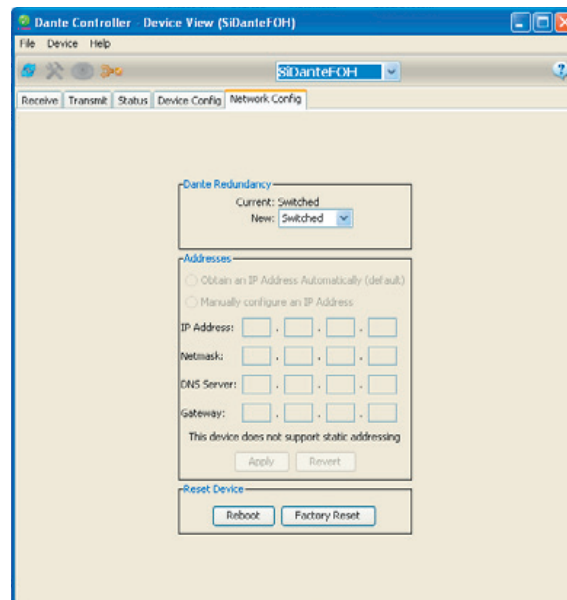
Switched mode : When set to **Switched**, the secondary Ethernet port will behave as a standard switch port, allowing daisy-chaining through the device.

Redundant mode : When set to **Redundant**, the device will duplicate Dante audio traffic to both Ethernet ports, allowing the implementation of a redundant network via the secondary port.

⚠ All devices on a Dante network MUST be set to the same mode (**Switched** or **Redundant**), otherwise the network will not function reliably.

Dante Presets   Although patching to and from the D21m Dante card in the console is stored as part of a snapshot, the configuration and routing of the Dante cards and Dante audio streams is not.

In the event a Dante card is replaced or similar, the 'new' card will require-configuring, this may be done manually or by loading a previously stored preset from the 'File' menu of the Dante Controller software :
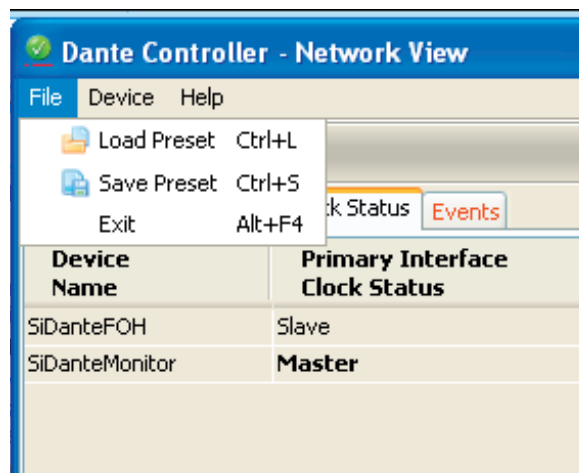
6.3.14.5 Virtual Sound Card

The Audinate Dante™ Virtual Soundcard software allows connection of a PC/Mac to a Dante audio network. This system allows the computer to record from and playback to the Dante network using most common DAW packages. Dante Virtual Soundcard uses the Ethernet port on the computer to communicate with the Dante network; no special hardware is required other than installing Dante Virtual Soundcard software.

One DVS license token is provided FOC with the card, this license can only be installed on one specific computer.