



GENESYS

Digital Converter System

**MADI
AES/EBU
FireWire***

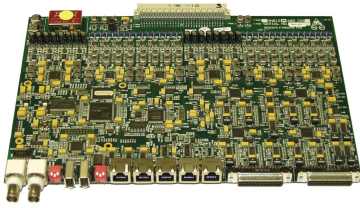
**User Manual
Issue 2**

Software Version 3.4 Build 31 or later

| | |
|--------------------------------------------------------------------|-----------|
| Digital Converter System..... | 4 |
| Introduction..... | 4 |
| Installation and Configuration..... | 6 |
| Installation Summary..... | 6 |
| Parts list..... | 6 |
| Operating Level..... | 6 |
| Channel Master..... | 7 |
| Overview..... | 7 |
| Connectors & switches..... | 8 |
| 25-way D-type connectors..... | 8 |
| AES RX DLINE / AES TX..... | 8 |
| AES RX DMON / AES SYNC IN/OUT..... | 8 |
| Channel Slave Audio Link..... | 8 |
| Serial In / Out..... | 9 |
| 2 x FireWire*..... | 9 |
| Wordclock In..... | 9 |
| Wordclock Out..... | 9 |
| Board States..... | 9 |
| Board ID..... | 9 |
| WCLCK 75Ω Termination..... | 10 |
| Channel Slave..... | 11 |
| Overview..... | 11 |
| AES RX DLINE / AES TX..... | 11 |
| AES RX DMON..... | 12 |
| Channel Slave Audio Link..... | 12 |
| Monitor Section..... | 13 |
| Overview..... | 13 |
| AES TX 8T / AES RX DEXT..... | 14 |
| AES TX AUX, 2T L/R, MIX L/R, AES SYNC IN/OUT..... | 14 |
| 2T jack wiring..... | 14 |
| Switchblock..... | 15 |
| Genesys Digital Option USB-Serial Driver..... | 16 |
| Master / Monitor Board Jumper Settings..... | 18 |
| Installation of boards..... | 20 |
| Master or Slave boards..... | 20 |
| Monitor card..... | 21 |
| Typical cabling connections on a 64 fader console..... | 22 |
| Typical MADi cabling connections on a 64 fader console..... | 26 |
| FireWire* DAW Driver..... | 29 |
| Installing the DAW FireWire* driver on a PC..... | 29 |
| Installing the DAW FireWire* driver on a MAC..... | 31 |
| Software Operation..... | 32 |
| Board Mapping..... | 32 |
| MADI Board to DAW MADI Port Connections Matrix..... | 32 |
| Software Operation - Channel Section..... | 34 |
| Configurator Screen..... | 34 |
| Select Digital Converter System..... | 34 |
| System Status..... | 34 |
| No FireWire* Detected or No FireWire* Cable Connected..... | 35 |
| Maximum Channels Available in FireWire* and MADI..... | 35 |
| Sample Frequency..... | 36 |
| Sync Source..... | 36 |
| FireWire* Channel Count..... | 36 |
| MADI Channel Count..... | 36 |

| | |
|--------------------------------------------------------------------------------|-----------|
| AES Receivers Sample Rate Converters..... | 37 |
| To DAW via FireWire* - FireWire* selected as the Digital Converter System..... | 37 |
| To DAW via MADI - MADI selected as the Digital Converter System..... | 38 |
| Channels DLINE Input..... | 38 |
| Channels DMON Input..... | 39 |
| AES Transmitters..... | 40 |
| Software Operation - Monitor Section..... | 42 |
| | 42 |
| To DAW via FireWire* - FireWire* selected as the Digital Converter System..... | 42 |
| To DAW via MADI - MADI selected as the Digital Converter System..... | 42 |
| Into Monitor section D-EXT Input..... | 43 |
| To AES Transmitters..... | 44 |
| AES Receivers Sample Rate Converters..... | 44 |
| Genesys Path Names sent to the DAW via FireWire*..... | 45 |
| Configuring a third-party MADI interface..... | 46 |
| Windows 7 1394/FireWire* Drivers..... | 47 |
| Using the Legacy Driver..... | 47 |
| Reverting to the Standard Windows FireWire* Driver..... | 48 |
| Recommended OHCI Chipsets (FireWire*)..... | 49 |
| PC..... | 49 |
| MAC..... | 49 |

Introduction



The Digital Converter System is available for Genesys and Genesys Black consoles. It comprises boards that are fitted to each console 8-fader section, and provides A/D converters on the Direct Outputs and D/A on the Digital Line and Digital Monitor inputs (DLINE/DMON). A Monitor section board is also available which enables the Aux Sends, 8T Buses, and both stereo mix buses (Mix LR and 2T) to be transmitted digitally and a 5.1 surround digital External input (D.EXT) to be received directly into the monitoring system.

Optional MADi mezzanine boards are available with either optical or coaxial (BNC) connections. These boards mount as mezzanine boards to the existing FireWire* boards.

Each 8-fader section can be configured differently, so for example one section can accept AES inputs, one a mixture of FireWire*/MADI and AES, one just FireWire*/MADI etc. Settings are configured on the FireWire*/MADI settings screen under the Settings screen in the Genesys software.

Each channels card has the following functions:

- The Direct Outputs can be sent to the DAW either via FireWire*, MADI or the AES Transmitters.
- A DAW to Digital Line and Digital Monitor converter via FireWire* or MADI
- A FireWire* or MADI to AES and AES to FireWire* or MADI converter.
- A DAW to Digital line and Digital Monitor converter via AES receivers.

The AD/DA system hardware can be synced to either AES Sync, Embedded AES Sync, Wordclock or set to sync to its own internal clock. Sample rates supported are 44.1/48/88.2/96kHz.

Sample rate converters (SRC) can be enabled on all AES Receiver inputs, with a word length of 24 bits.

A single FireWire* cable connects the Genesys to your DAW. For MADI the system can be daisy-chained in customisable configurations to suit the application needs.

The AES Receivers & Transmitters D-type digital audio connections adhere to the Tascam AES wiring convention, so can be purchased off-the-shelf.

A real-time FireWire* and MADI fuel gauge tells how much of the FireWire* bandwidth and MADI channel count remains as you assign paths to the FireWire* or MADI busses

All cards can be user-installed and require no commissioning.

In **Recording** mode, the cards convert the console Outputs into digital and sends them to the DAW via FireWire* or MADI.

In **Mix** mode, the cards convert the digital mix signals into analogue and outputs them via DLINE and DMON.

A mixture of both can also be set.

**** FireWire is now a 'legacy' interface and is provided 'as-is' without ongoing support. Mac OS X versions up to 10.10 (Yosemite) and Windows 7,8,10 are recommended.***

FireWire* channel count:

| Max Number of FireWire* Channels, as determined by Sample Rate | |
|----------------------------------------------------------------|------------------------------------------|
| Sample Rate kHz | Maximum number of channels / Bit-rate ** |
| 44.1 / 48 | 96 / LO bit-rate |
| 88.2 / 96 | 48 / MID bit-rate |

*** Using the **FW643 OHCI** chipset on the target DAW.*

MADI channel count:

| Max Number of MADI Channels, as determined by Sample Rate | |
|-----------------------------------------------------------|---------------------------------------|
| Sample Rate kHz | Maximum number of channels / Bit-rate |
| 44.1 / 48 | 64 in + 64 out / LO bit-rate |
| 88.2 / 96 | 32 in + 32 out / MID bit-rate |

Three FireWire*/MADI audio configurations can be saved, one for each for the **Lo** and **Mid** Sample rate settings.

This section tells you how to install and configure the AD/DA cards, where the cards were purchased separately and at a different time from the console, and customers therefore need to install these cards themselves. If this is the case, please start on page 9 and work through the section in the order it is written.

For consoles where the cards were delivered at the same time and were already fitted into the console chassis, please start from the section on **Cabling** on page 22

For full operational instructions only, please turn to page 34.

Installation Summary

1. Set the dip-switches on the card(s) (page 9)
2. Install FireWire* driver on Genesys (page 16)
3. Set the Wordclock jumpers on the card(s) (page 18)
4. Install cards into console frame (page 20)
5. Fit all card cabling (page 22)
6. Install FireWire* driver on your DAW (page 29)
7. Set board mapping (page 32)
8. Connect audio cables to cards (D-Subs and/or FireWire*)
9. Set Configuration screen to match audio cabling (page 34)

Parts list

Cables / accessories included (length):

- 3 x **Channel Audio/CAT5 Link** cables per set of Master / Slave cards (50cm each)
- 1 x **RS485** converting cable per system (90cm)
- 1 x **FireWire*** cable per system (90cm)
- 1 x **CAT5** cable per system (1m)
-
- 1 x custom spanner per system, for BNC and 25-way D-Sub fittings.
- 1 x CD containing manuals, necessary drivers etc
- 1 x **FireWire* 400** to **FireWire* 800** converting cable (newer computers only have a **FireWire* 800** port)

MADI:

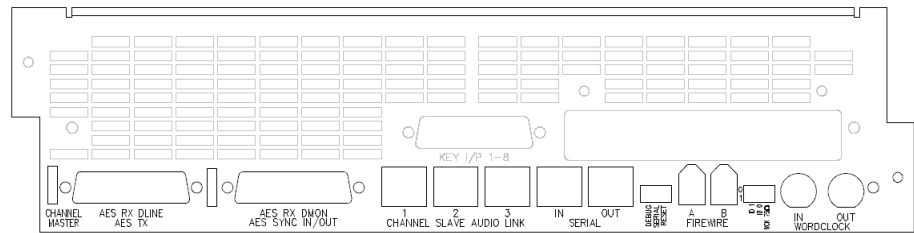
- 1m or 2m MADI coax or optical cables. The number of cables supplied will be on the size of the desk and the number of cards installed.

Operating Level

The AD/DA cards are set to give 0dBFS when the analogue signal is at +26dBu. This level is factory-set and can be specified at the time of order. Changing this level will require service by the factory.

If the analogue signal is greater than this, clipping will occur on the digital busses.

Overview



The Channel Master AD/DA board provides:

- 8 balanced analogue Inputs (the Channel Direct Outputs)
- 16 balanced analogue Outputs (the Channels **DLN** & **DMON** inputs)
- 8 AES Outputs grouped in stereo pairs (on 25-way D-sub) carrying Channel Direct Outputs signals.
- 16 AES Inputs grouped in stereo pairs (on 25-way D-sub) carrying **DLN** and **DMON** inputs.
- These inputs have sample rate converters that convert any input sample rate frequency to the sample rate selected on the Genesys. Provision to bypass these SRCs is provided on a pair-of-channels basis (**DLINE** 1+2, 3+4 etc).
- 2 x FireWire* sockets for daisy-chaining purposes.
- Sync: **Wordclock In** and **Wordclock Out** (both on BNC connectors); **AES Sync In** and **AES Sync Out** (on a 25-way D-sub connector); **AES CH Sync** (derived from the first AES Receiver pair).
- Two serial connectors for providing communications from the Genesys computer

The Master card is connected to its associated Slave card by three CAT5 connectors, called The Channel Slave Audio Link.

In terms of system sync, one board is set to be the Sync **Master**, and all the other boards are set to be Sync **Slaves**.

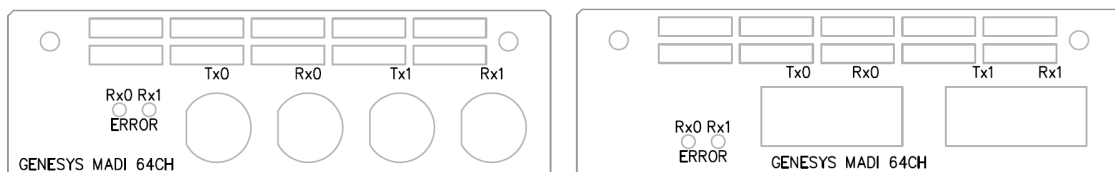
The Sync Master can take its sync to be from:

- Wordclock In
- AES Sync In
- AES CH Sync
- The Genesys internal clock

Sync Supported sample rates are:

- 44.1 kHz
- 48 kHz
- 88.2 kHz
- 96 kHz

The channel MADI card is only connected to the channel master board. The board provides either a 2-port (2-connectors per port) coax connection (left) or a 2-port optical connection (right).



25-way D-type connectors

There are two 25-way D-type connectors on both the Master and Slave FireWire* cards.

These connectors use standard Tascam AES wiring protocol.

On a Master AD/DA card, from left to right, these D-type connectors are labelled as follows:

1. AES RX DLINE / AES TX
2. AES RX DMON / AES Sync In/Out

Each 25-way connector carries (up to) 8 pairs signals, and these are as follows:

AES RX DLINE / AES TX

| Connector number | Signal name (system name) | Pin | | |
|------------------|----------------------------------|--------|----|-----|
| | | Shield | Hi | Low |
| 1 | AES RX 1 (DLINE 1 & 2) | 25 | 24 | 12 |
| 2 | AES RX 2 (DLINE 3 & 4) | 11 | 10 | 23 |
| 3 | AES RX 3 (DLINE 5 & 6) | 22 | 21 | 9 |
| 4 | AES RX 4 (DLINE 7 & 8) | 8 | 7 | 20 |
| 5 | AES TX 1 (Direct Output 1 & 2) | 19 | 18 | 6 |
| 6 | AES TX 2 (Direct Output 3 & 4) | 5 | 4 | 17 |
| 7 | AES TX 3 (Direct Output 5 & 6) | 16 | 15 | 3 |
| 8 | AES TX 4 (Direct Output 7 & 8) | 2 | 1 | 14 |

AES RX DMON / AES SYNC IN/OUT

| Connector number | Signal name | Pin | | |
|------------------|-----------------------|--------|----|-----|
| | | Shield | Hi | Low |
| 1 | AES RX 1 (DMON 1 & 2) | 25 | 24 | 12 |
| 2 | AES RX 2 (DMON 3 & 4) | 11 | 10 | 23 |
| 3 | AES RX 3 (DMON 5 & 6) | 22 | 21 | 9 |
| 4 | AES RX 4 (DMON 7 & 8) | 8 | 7 | 20 |
| 5 | - | - | - | - |
| 6 | - | - | - | - |
| 7 | AES Sync Out * | 16 | 15 | 3 |
| 8 | AES Sync In * | 2 | 1 | 14 |

* These are **AES Sync I/O** connections only, not audio paths.

Channel Slave Audio Link

These should only ever be connected to the corresponding port of the same name on the associated Slave card, **1** to **1**, **2** to **2** and **3** to **3**.

Please see section on Cabling starting on page 22.

Serial In / Out

Provided for daisy-chained communications from the Genesys computer and through all the Master (and Monitor) cards.

2 x FireWire*

Two FireWire* ports, labelled **A** and **B**, are provided for daisy-chaining the FireWire*.

Wordclock In

A BNC connector is provided for receiving Wordclock sync if this card is selected to act as the Master sync input for the entire AD/DA system.

Only one instance of the sync source has to be provided to the console, and the FireWire* software window specifies where the sync needs to be connected to.

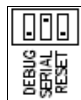
Wordclock Out

If Wordclock has been selected as the sync source then this sync signal will also be output on the **Wordclock Out** BNC.

It is useful for when the console is running as the sync master (set to work with Internal sync) and other pieces of equipment need to sync to the console.

Switchblock 1

Board States



Contains 3 switches and should be set as shown left:

Debug: For AMS Neve use only.

In normal operation, this switch should be in the **down** position.

Serial: Enables the communications to be daisy-chained, and must be set to the **up** position.

Reset: For AMS Neve use only.

In normal operation, this switch should be in the **down** position.

Switchblock 2

Board ID



These 2 switches should only be set once the card has been installed in the console:

- 0 = switch in the Up position
- 1 = switch in the Down position

The first & second switches set the card's ID and tells the card where in the system it is.

| Master Card | ID 1 switch | ID 0 switch |
|-------------|-------------|-------------|
| 1 | 0 | 0 |
| 2 | 0 | 1 |
| 3 | 1 | 0 |
| 4 | 1 | 1 |

These IDs are used by the Board Mapping software window to determine which physical positions the Master cards occupy.

| | | | | | | | | |
|----------------------------|---------------|--------------------------|----------------|--------------------|--------------------------|----------------|--------------------------|----------------|
| 1-8 Master 1 ID: 0 0 | 9-16 Slave | 17-24 Master 2 0 1 | 25-32 Slave | Monitor section | 33-40 Master 3 1 0 | 41-48 Slave | 49-56 Master 4 1 1 | 57-64 Slave |
|----------------------------|---------------|--------------------------|----------------|--------------------|--------------------------|----------------|--------------------------|----------------|

It is only the Master card that needs to have its position within the console set.

In the diagram above, each numbered Master card is shown with its Slave in position on a 64-fader console, along with the ID switch settings for each Master card.

Please note, this is a typical configuration and customers may decide to put Master cards in different positions.

The Monitor Section card does not require ID switches to be set.

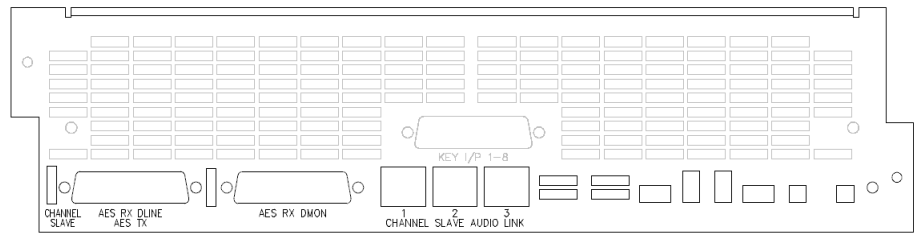
Once you have set these ID switches, please see the section on **Board Mapping** on page 32.

WCLK 75Ω Termination

Set this switch to the **up** position if you have Wordclock sync coming into this card.

This will terminate the Wordclock input signal.

Overview



The Slave AD/DA board provides:

- 8 balanced analogue Inputs (the Channel Direct Outputs)
- 16 balanced analogue Outputs (the Channels **DLN** & **DMON** inputs)
- 8 AES Outputs grouped in stereo pairs (on 25-way D-sub) carrying Channel Direct Outputs signals.
- 16 AES Inputs grouped in stereo pairs (on 25-way D-sub) carrying **DLN** and **DMON** inputs.
- These inputs have sample rate converters that convert any input sample rate frequency to the sample rate selected on the Genesys. Provision to bypass these SRCs is provided on a pair-of-channels basis (**DLINE** 1+2, **DLINE** 3+4 etc).

The Slave card is connected to its associated Master card by three CAT5 connectors, called the Channel Slave Link.

Connectors & Switches

The AD/DA Slave cards only have two 25-way D-type connectors and three serial ports, and therefore do not have:

- Wordclock In / Out BNC connectors
- FireWire* ports
- Switch blocks

The AD/DA Slave cards 25-way D-type connectors carry the same audio signals as the Master FireWire* cards, with the exception of the AES Sync In / Out signals not being present as either an input or an output (this is because a Slave card takes its sync from its associated Master card).

AES RX DLINE / AES TX

| Connector number | Signal name (system name) | Pin | | |
|------------------|-------------------------------|--------|----|-----|
| | | Shield | Hi | Low |
| 1 | AES RX 1 (DLINE 1+2) | 25 | 24 | 12 |
| 2 | AES RX 2 (DLINE 3+4) | 11 | 10 | 23 |
| 3 | AES RX 3 (DLINE 5+6) | 22 | 21 | 9 |
| 4 | AES RX 4 (DLINE 7+8) | 8 | 7 | 20 |
| 5 | AES TX 1 (Direct Output 1+2) | 19 | 18 | 6 |
| 6 | AES TX 2 (Direct Output 3+4) | 5 | 4 | 17 |
| 7 | AES TX 3 (Direct Output 5+6) | 16 | 15 | 3 |
| 8 | AES TX 4 (Direct Output 7+8) | 2 | 1 | 14 |

AES RX DMON

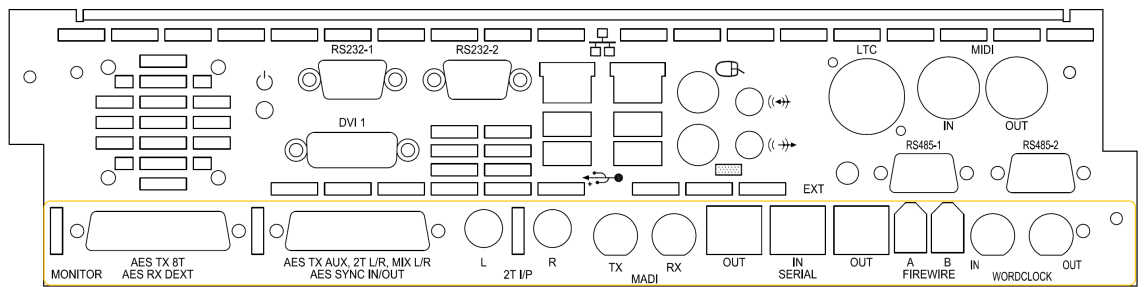
| Connector number | Signal name | Pin | | |
|------------------|---------------------|--------|----|-----|
| | | Shield | Hi | Low |
| 1 | AES RX 1 (DMON 1+2) | 25 | 24 | 12 |
| 2 | AES RX 2 (DMON 3+4) | 11 | 10 | 23 |
| 3 | AES RX 3 (DMON 5+6) | 22 | 21 | 9 |
| 4 | AES RX 4 (DMON 7+8) | 8 | 7 | 20 |
| 5 | - | - | - | - |
| 6 | - | - | - | - |
| 7 | - | - | - | - |
| 8 | - | - | - | - |

Channel Slave Audio Link

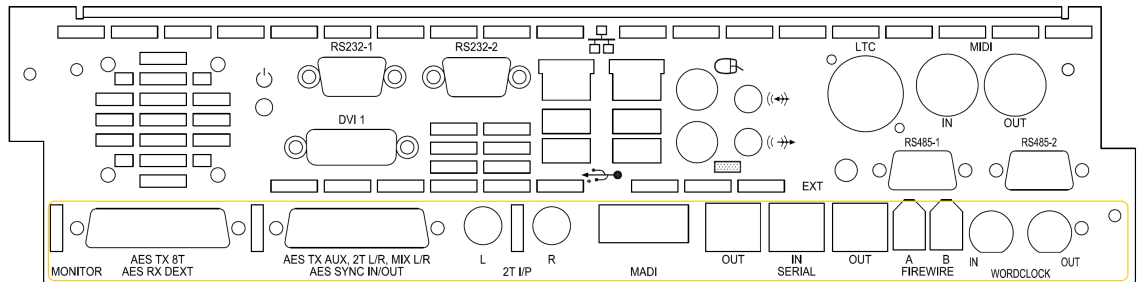
These should only ever be connected to the corresponding port of the same name on the associated Master card, **1** to **1**, **2** to **2** and **3** to **3**.

Please see section on Cabling starting on page 22.

Overview



FireWire*/AES option including MADI option featuring coax connector



FireWire*/AES option including MADI option featuring optical connector

This card provides:

- The **8T** Outputs sent digitally in stereo pairs
- A **5.1 Digital externals** Input to the monitoring system
- All **Aux** Sends sent digitally (in pairs for mono auxes)
- **2T** mix input *
- **MIX L/R** sent digitally
- **AES Sync** Input and Output
- 1 x **Serial In** and 2 x **Serial Out** connectors for daisy-chaining communication purposes.
- 2 x **FireWire*** ports for daisy-chaining purposes
- **Wordclock In / Out** BNC connectors

If this card is set to be the sync master, it can take its sync from either:

- Wordclock In
- AES Sync In
- The **DEXT L/R** input (as embedded sync)
- Use internal clock

Supported sample rates are:

- 44.1 kHz
- 48 kHz
- 88.2 kHz
- 96 kHz

The audio word length is 24 bits wide.

* The **2T Mix** input can be used as a spare stereo analogue input to the console.

However, it can carry the **2T Output** path if you connect the **2T Input** jack sockets to the **2T Output** lines on the adjacent 25-way D-sub connector.

The Monitor MADI card provides either a 1-port optical connection or a 1-port (2-connector) coax connection.

AES TX 8T / AES RX DEXT

This connector outputs all of the 8Ts digitally, plus accepts a digital 5.1 Surround External input into the Monitoring system.

Each connector handles two paths as a stereo pair.

| Connector number | Signal name | Pin | | |
|------------------|----------------------------|--------|----|-----|
| | | Shield | Hi | Low |
| 1 | 5.1 External L & R input | 25 | 24 | 12 |
| 2 | 5.1 External C & Sub input | 11 | 10 | 23 |
| 3 | 5.1 External Ls & Rs input | 22 | 21 | 9 |
| 4 | - | - | - | - |
| 5 | 8T 1 & 2 Output | 19 | 18 | 6 |
| 6 | 8T 3 & 4 Output | 5 | 4 | 17 |
| 7 | 8T 5 & 6 Output | 16 | 15 | 3 |
| 8 | 8T 7 & 8 Output | 2 | 1 | 14 |

AES TX AUX, 2T L/R, MIX L/R, AES SYNC IN/OUT

This connector digitally outputs the Auxes, 2T Mix and Main mix, plus providing AES Sync In and Out connections.

| Connector number | Signal name | Pin | | |
|------------------|-----------------------|--------|----|-----|
| | | Shield | Hi | Low |
| 1 | Aux 1 & 2 Output | 25 | 24 | 12 |
| 2 | Aux 3 & 4 Output | 11 | 10 | 23 |
| 3 | Aux 5 L & R Output | 22 | 21 | 9 |
| 4 | Aux 6 L & R Output | 8 | 7 | 20 |
| 5 | Main Mix L & R Output | 19 | 18 | 6 |
| 6 | 2T L & R Output | 5 | 4 | 17 |
| 7 | AES Sync OUT * | 16 | 15 | 3 |
| 8 | AES Sync IN * | 2 | 1 | 14 |

* These are **AES Sync I/O** connections only, not audio paths.

2T jack wiring

Both the 2T L and R jack sockets have the same wiring.

| | |
|---------------|--------|
| Tip | Hot |
| Ring | Cold |
| Sleeve | Ground |

Switchblock

Contains 4 switches, the first three of which should be set as shown left:



Debug:

For AMS Neve use only.

In normal operation, this switch should be in the **down** position.

Serial:

Enables the communications to be daisy-chained, and must be set to the **up** position.

Reset:

For AMS Neve use only.

In normal operation, this switch should be in the **down** position.

WCK 75Ω:

Set this switch to the **up** position if you have Wordclock sync coming into this card. This will terminate the Wordclock input signal. If not, always set to the down position.

Note:

If you have purchased the cards at the same time as the console, this driver will already be installed, in which case please skip this section.

Installing the driver manually should not be required if you have Genesys software Version 3.3 Build 7 or above. The following **Auto-Install Digital Option USB-Serial Driver** sub-section should be all that is needed. If after several attempts the driver fails to install then it can be manually downloaded and installed by following the instructions in sub-section **Manual Digital Option USB-Serial Driver Installation**.

Auto-Install Digital Option USB-Serial Driver

YOU ONLY NEED TO DO THIS THE FIRST TIME YOU INSTALL THE DIGITAL CARDS IN THE GENESYS CONSOLE.

- ▶ From the Genesys Software main screen.
- ▶ Go to **Settings / FireWire* Setup** and clicking **USB Options**

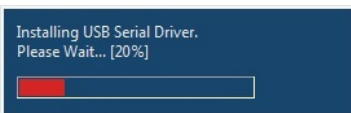
Note:

Ensure you disconnect all USB serial cables from Genesys before doing this.

Always follow the on-screen instructions.



- ▶ Click 'Auto Install' in the pop-up window.
- ▶ Another window will appear. Follow the on-screen instructions to Auto Install USB driver.



As the installation process begins, a progress bar will appear (left).

If an error message appears stating that installation has failed, please repeat these steps again to Auto Install.

- ▶ Once USB Driver installation is complete, reconnect the Digital Option USB serial cable ONLY.
- ▶ Click OK.
- ▶ Follow the on-screen instructions until another progression bar appears showing the progress of the connection.
- ▶ Once the connection has been established, you can reconnect all other USB cables.

Manual Digital Option USB-Serial Driver Installation

- ▶ Before installing the digital option serial driver, please unplug all serial USB devices from the Genesys computer (apart from mouse and keyboard).

All the drivers listed below are available on the CD supplied with the AD/DA cards.

The digital option serial driver is a third-party driver, also available from here:

http://www.ams-neve.info/genesys/drivers/USBFireWire/USB_FireWire*_Drivers.zip

This zip file contains a single driver which should be installed, depending on the Operating System running on your Genesys - either **Windows 7** or **Vista**.

► Once the file has been downloaded, it's contents should be unzipped and extracted to the Genesys Desktop and installed from there.

There are also two documents that contain installation instructions and further information on both drivers

These are also on the supplied CD, or available as a download from here:

- **Windows 7:**

http://www.ams-neve.info/genesys/manuals/Drivers_Installation_Guide_for_Windows7.pdf

- **Vista:**

http://www.ams-neve.info/genesys/manuals/Drivers_Installation_Guide_for_VISTA.pdf

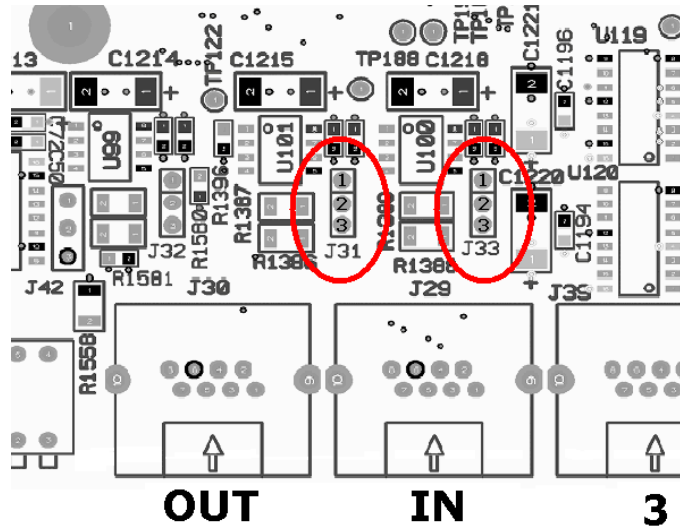
► Please download the document relevant to your system and follow the installation instructions.

► Only once this driver has been installed, should the USB to CAT5 converter cable be plugged into the Genesys computer.

Failure to set these jumpers will result in the system not locking to the selected sync source correctly.

The right-most and left-most of the Master boards in the console must have jumpers set to ensure the comms is terminated correctly (or the Monitor board if this is right-most or left-most).

The diagram below shows where the two sets of jumpers are on the Master card (just above the **OUT** and **IN** serial connectors) and the numerical labelling on the pins themselves.



J31 and J33 are the jumpers to be set, and the following applies regardless of how many Master and Slave cards there are in the console, or whatever configuration they are in.

- The most left hand Master (or Monitor) card in the console should have both sets of jumpers over pins 1 & 2.
- The most right hand Master (or Monitor) card in the console should have both sets of jumpers over pins 1 & 2.

All other Master cards (or Monitor) should have their jumpers placed over pins 2 & 3.

If the Monitor card is at either far left or far right on the console (rather than a Master card), then it is the Monitor board that needs to have the jumpers set on pins 1 & 2, instead of a Master card.

Slave cards do not have these jumpers fitted.

The following diagrams show consoles of different sizes and different configurations, with the Master and Monitor cards in different locations.

| | | | | | | | | |
|-----------------|-----------------|-------------------------------|------------------|---------------------|-------------------------------|------------------|-------------------|------------------|
| 1 – 8 Master | 9 – 16 Slave | 17 – 24 Master X | 25 – 32 Slave | Monitor X | 33 – 40 Master X | 41 – 48 Slave | 49 – 56 Master | 57 – 64 Slave |
|-----------------|-----------------|-------------------------------|------------------|---------------------|-------------------------------|------------------|-------------------|------------------|

| | | | | |
|---------|-----------------------------|-----------------|-------------------|------------------|
| Monitor | 1 – 8 Master X | 9 – 16 Slave | 17 – 24 Master | 25 – 32 Slave |
|---------|-----------------------------|-----------------|-------------------|------------------|

| | | | | | | |
|-----------------|-----------------|---------------------|-------------------------------|------------------|-------------------|------------------|
| 1 – 8 Master | 9 – 16 Slave | Monitor X | 17 – 24 Master X | 25 – 32 Slave | 33 – 40 Master | 41 – 48 Slave |
|-----------------|-----------------|---------------------|-------------------------------|------------------|-------------------|------------------|

Cards that need jumpers on pins **1 & 2** are shaded grey
Cards that need jumpers on pins **2 & 3** are marked with an **X**

Note:

On a 16-fader console that does not have a **Monitor** AD/DA card, the single **Master** card should have its jumpers on pins 1 & 2.

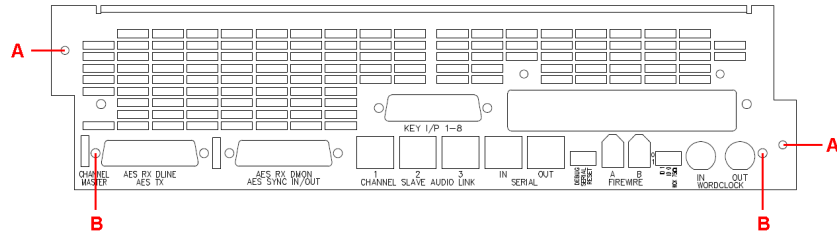
Master or Slave boards

The installation for the Master and Slave boards is identical:

! Ensure the power is removed from the console, observing the correct Shutdown procedure.

! Unscrew the two outer screws that hold the faceplate to the console chassis, labelled 'A' below.

Please be aware that if the optional **Dynamics** card is fitted, this card will be attached to the faceplate when it is removed.



► Unscrew the blanking plate that is fitted to the lower half of the plate, removing the two screws labelled 'B' above.

► Insert the AD/DA card into the lowest slot in the available space in the console, (with the components facing down), ensuring that the card's rear-edge connector makes a firm contact with the connector on the console backplane.

► Screw the faceplate back to the console chassis (using the 'A' screws), making sure that all the connectors on the AD/DA card (BNC, FireWire*, D-sub etc) clear the faceplate.

► Screw the four jack-posts either side of the D-sub connectors, plus the two nuts & washers over the BNC connectors into place. There is a small double-ended spanner included with the kit of parts for this purpose.

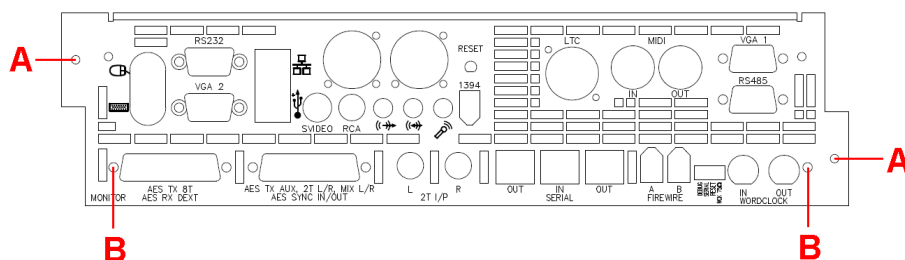
On consoles with a different Channels faceplate (manufactured before May 2010), you will also be sent a new faceplate with the AD/DA card.

If applicable, this should have the Dynamics cassette fitted to it before the AD/DA card is fitted in the console.

Monitor card

This card will always come sub-fitted underneath a new computer cassette, so the whole assembly of computer cassette and Monitoring AD/DA card will be fitted as one.

- ▶ Before starting the following, please make sure that all of your data is removed from the computer drive, either by backing it up to a USB device or to a network location.
- ▶ Ensure the power is removed from the console, observing the correct Shutdown procedure.
- ▶ Unplug or unscrew all of the cables that connect to the computer cassette (VGA, mouse, keyboard etc).
- ▶ Unscrew the two outer screws that hold that cassette to the console chassis, labelled 'A' below.



Please be aware that as you have a new computer and drive, you will need to reset solo states, default settings, Trim values, HUI details, Encore preferences etc. These can only be restored by setting them manually.

- ▶ Applying a little pressure, gently pull the cassette out of the console.
- ▶ Slide in the new computer cassette, ensuring that it is seated securely and firmly to the backplane, and screw the cassette back into the chassis.
- ▶ Re-attach all of the computer cables and power up the console.
- ▶ Restore all of your Recall / Automation data (if applicable) to the new hard drive.

The computer cassette you have removed should be returned to AMS Neve Customer Support Department.

On consoles sold after October 2010, the AD/DA card should be fitted as follows:

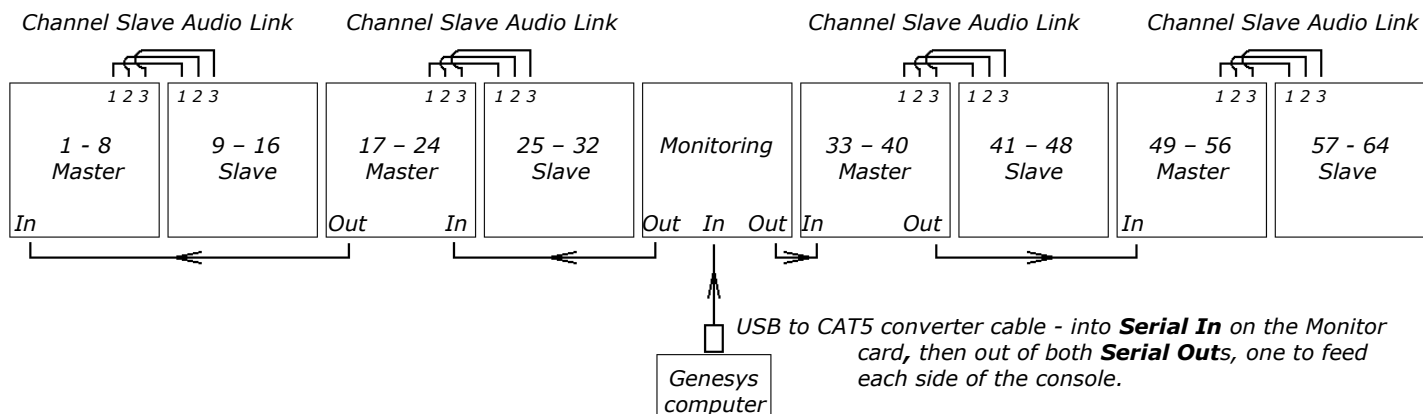
- ▶ Remove the computer from the console as detailed above, and remove the blanking plate fitted to the lower half of the computer cassette, using the two screws labelled 'B' above. These screws and blanking plate are no longer needed.
- ▶ Slide the AD/DA card into the console chassis (component side down), ensuring that the card's rear-edge connector makes a firm contact with the connector in the console backplane.
- ▶ Slide the computer cassette back into the console chassis, making sure that all the connectors on the AD/DA card (BNC, FireWire*, D-sub5 etc) clear the faceplate.
- ▶ Screw the faceplate back to the console chassis, using the two screws labelled 'A'.
- ▶ Screw the four jack-posts either side of the D-sub connectors, plus the two nuts & washers over the BNC connectors into place. There is a small double-ended spanner included with the kit of parts for this purpose.

Typical cabling connections on a 64 fader console

In both of the CAT5 cabling examples outlined below, the **USB to CAT5 (USB-Serial)** converter cable (supplied) should be connected from the Genesys computer and then into the first AD/DA (or Monitor) card.

This cable must only be connected once the Genesys system is fully booted and the Genesys software is running.

CAT5 connections on systems with AD/DA Monitor card



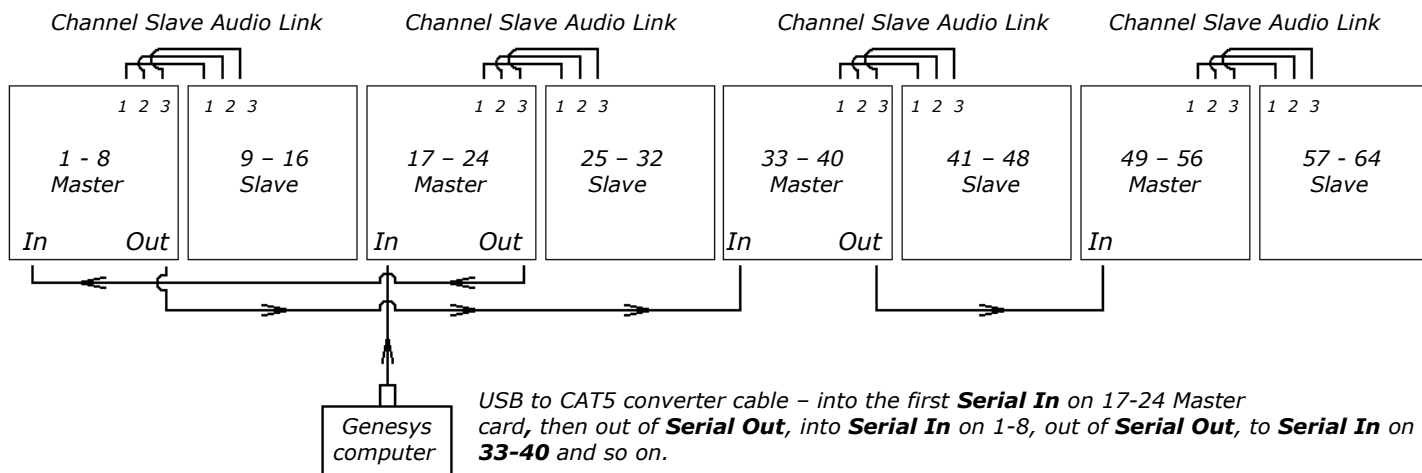
The cards in positions 1-8, 17-24, 33-40 and 49-56 are AD/DA Master cards, each of them connected to their Slave cards by 3 x CAT5 connectors: Serial 1 on the Master connects to Serial 1 on the Slave and so on.

There are two chains of CAT5 connectors (for comms purposes) shown at the bottom of the above diagram that start from the central Monitoring AD/DA card, one for the Left side and one for the Right side of the console.

! From the central Monitoring AD/DA, connect **Out** to **In**, **Out** to **In** etc spreading out from the centre of the console.

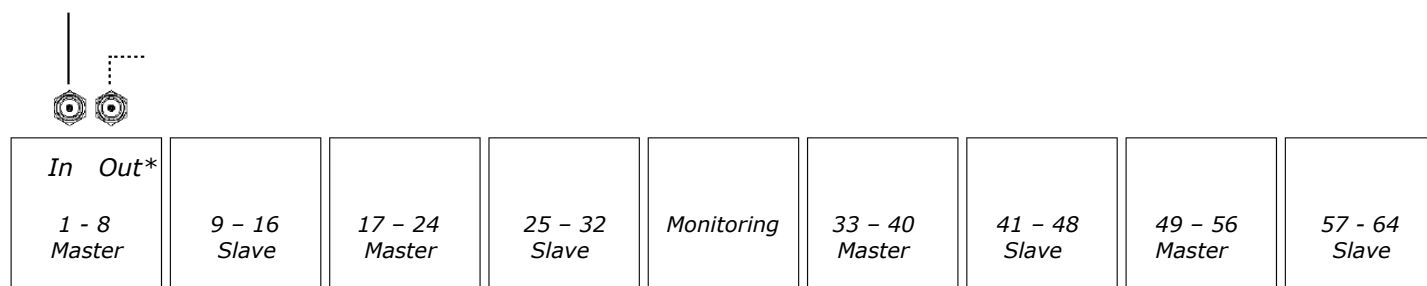
All of these connections are made on the rear of the AD/DA cards themselves.

CAT 5 connections on systems without AD/DA Monitor card



On a system without a Monitor card, the comms goes from the Genesys computers into the 17-24 Master card, then this signal goes to 1-8, 33-40 and finally 49-56.

Wordclock Sync



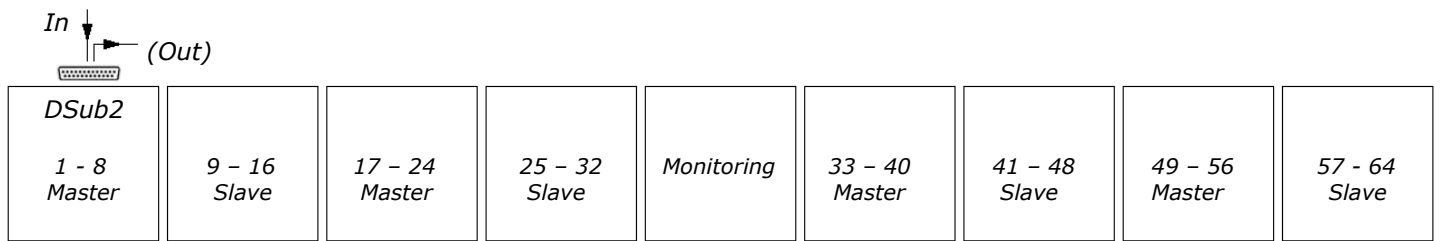
The Wordclock Sync can only be accepted by the left-hand most Master card (or the Monitor card if this is left-most) using the **WCLK IN** BNC connector.

This Wordclock sync is then internally distributed from this single point to all the other cards in the system.

The Wordclock sync is also output (on the adjacent **WCLK OUT** BNC connector) should it be needed to feed other pieces of equipment.

* If the **WCLK OUT** connector is used, it should be terminated by setting the 75Ω switch as shown on page 9.

AES Sync



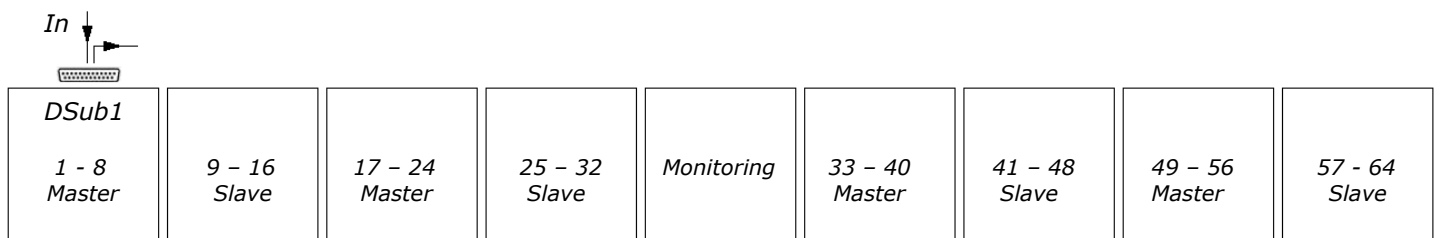
The card receiving the AES Sync is set on the main Configurator screen. Please go to page 34 to see how this is set.

This AES sync is then internally distributed from this single point to all the other cards in the system.

This same AES sync is then output on connector 7 on the same D-Sub connector should it be needed for other pieces of equipment.

Unlike WCLK sync, AES sync does not need terminating if the Output is unused.

AES Ch 1/2 Sync

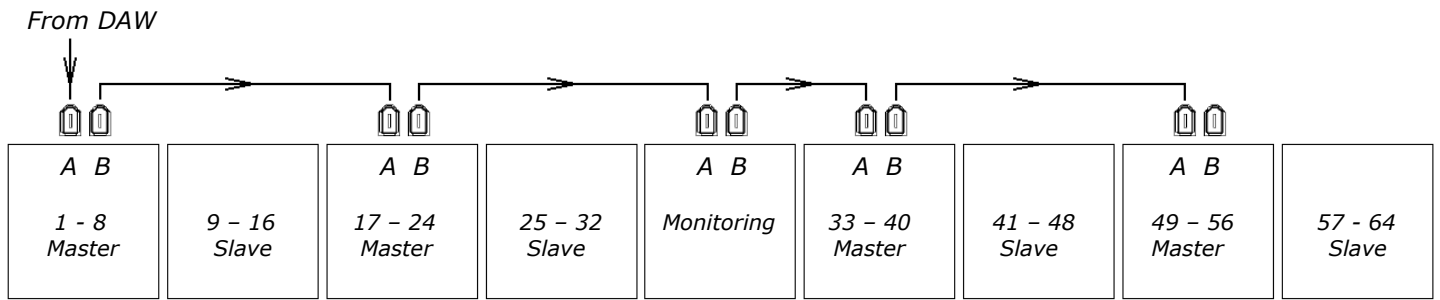


The AES sync can be derived from the AES channels 1 and 2 Line audio input using XLR connector 1.

This has the advantage of not needing an extra cable to supply just the sync.

To set which of the cards receives the **AES Channel 1&2** Sync, please go to the main software Configuration screen on page 34 to see how this is set.

If you wish to take the sync input by the same method by on the Monitor card instead, the AES sync is derived from the **DEXT L&R** input signal.



There are a pair of FireWire* ports on each Master card and Monitor card labelled **A** and **B**.

The FireWire* cable connects from your DAW into the first Master card, then forms a simple 'daisy-chain' through the Monitoring and all the other Master cards in the system.

The FireWire* chain can be started at any point in the console, it does not necessarily have to start with the first AD/DA card as shown above.

Before cabling the FireWire*, please ensure the the Genesys and the DAW are switched off.

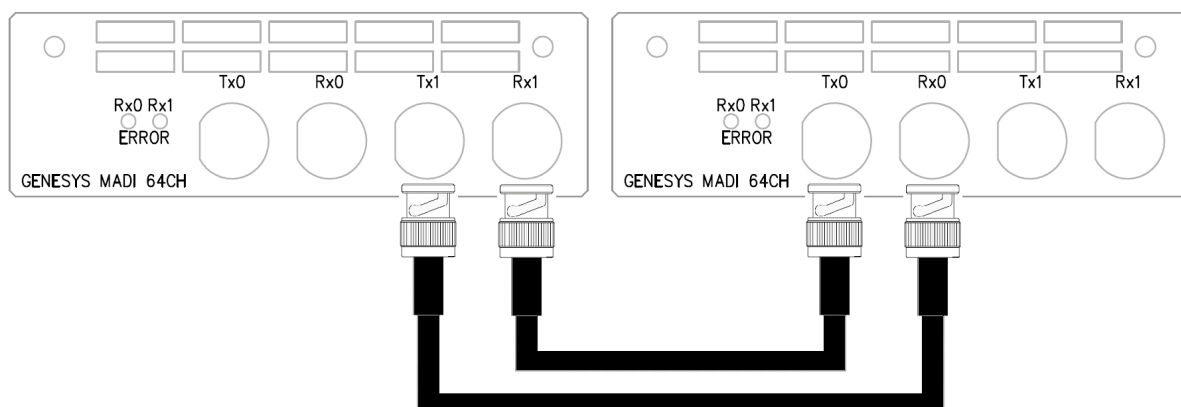
Typical MADl cabling connections on a 64 fader console

The maximum number of MADl ports supported by Genesys is four. These are the ports available (for connecting to the Genesys MADl boards) on your DAW computer or workstation.

Below are illustrative examples of how you can connect a 64 channel Genesys to a DAW workstation with one, two, three or four ports. These examples are based on a console with a complete set of (master and slave) FireWire* boards with their IDs configured in ascending order and MADl boards (fitted to the master FireWire* boards). Also note the channel MADl boards are always fitted to the master FireWire* board. MADl uses a typical daisy-chaining system and this allows connected chains to be split giving you the ability to use the maximum numbers of channels available (64 I/O at 44.1/48k, 32 I/O at 88.2/96k).

The examples below are for both coax and optical connectors. It is important to note that the coax option has 2-ports (same as the optical) but each port has 2 individual RX/TX connectors. On the optical option the cabling is such that these separate connectors on each port are assembled in a single connector package.

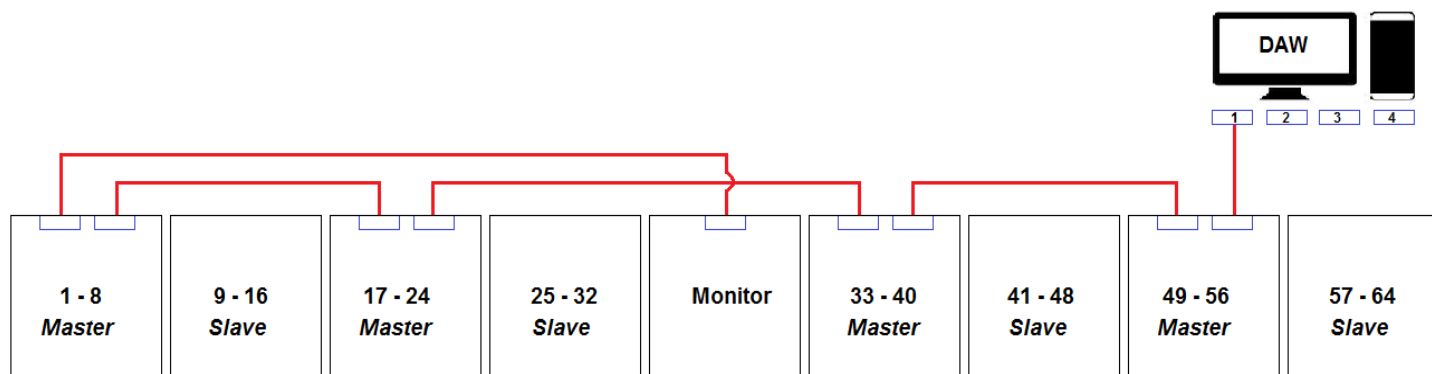
When connecting with coax each adjacent daisy-chained or connected board will be linked with a pair of coax cables and these will be crossed-over between each board, i.e. Tx1 to Rx0 and Rx1 to Tx0 as shown below.



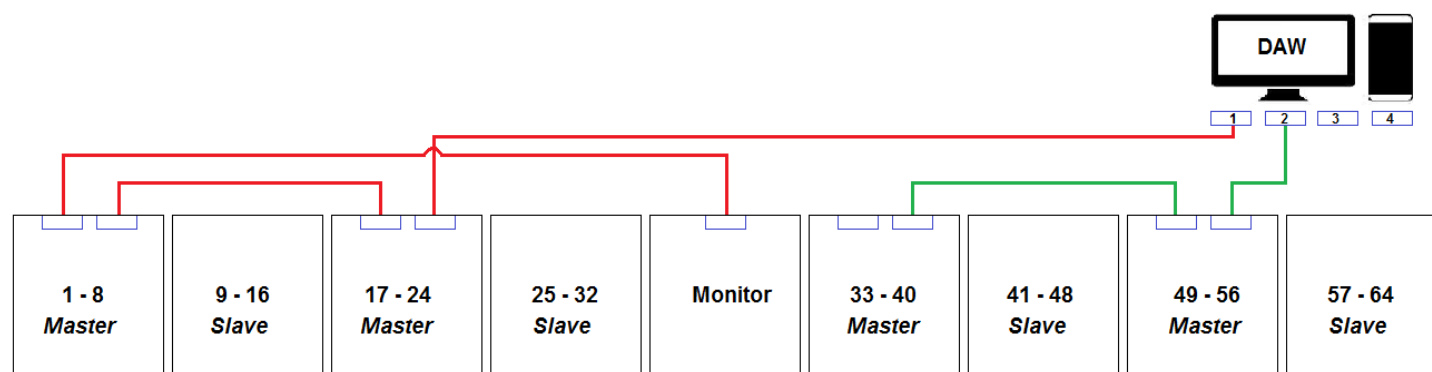
The Monitor MADl board has only one MADl connection. Therefore the monitor board must be the first board in the daisy-chained system. If the monitor board is part of a daisy-chained system then it must also be the furthest board from the DAW. For example, when daisy-chaining boards a typical connection would be Monitor board (always first in the chain) followed by (channel boards) 1-16 to 17-32... to 49-64 to the DAW MADl port. The daisy-chain is connected with the monitor first as mentioned, followed by channel MADl boards going up in ascending order of channel number as detailed above. Channel boards are always daisy-chained or connected in ascending channel number order from lowest to highest regardless of the number of DAW MADl ports used or daisy-chain splits.

The cabling examples below are from a front viewpoint of the console and are based on a standard 64 channel console.

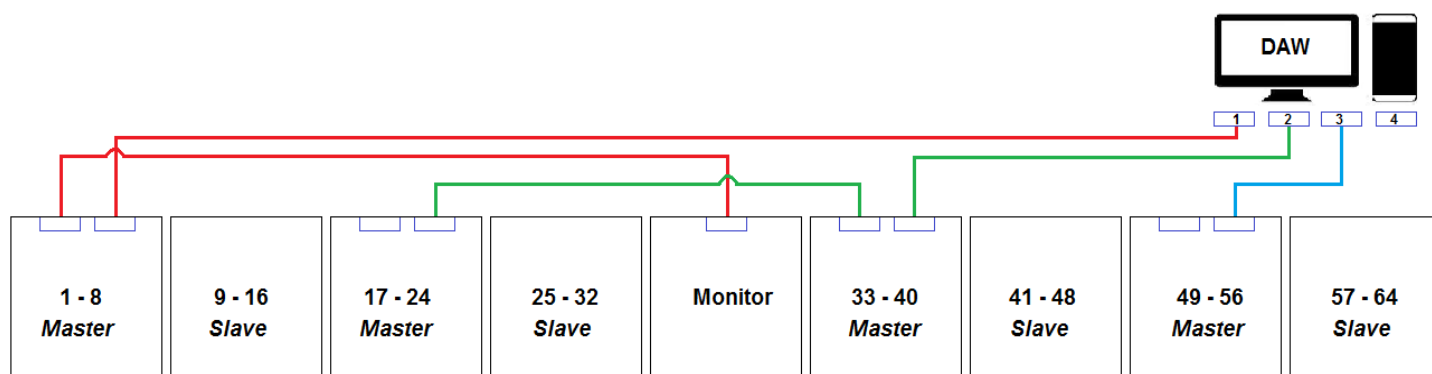
This first example is based on a single DAW workstation MADl port connection. You can clearly see the order of connection with the monitor board furthest away from the DAW and the daisy-chained channel boards daisy-chained in ascending order.



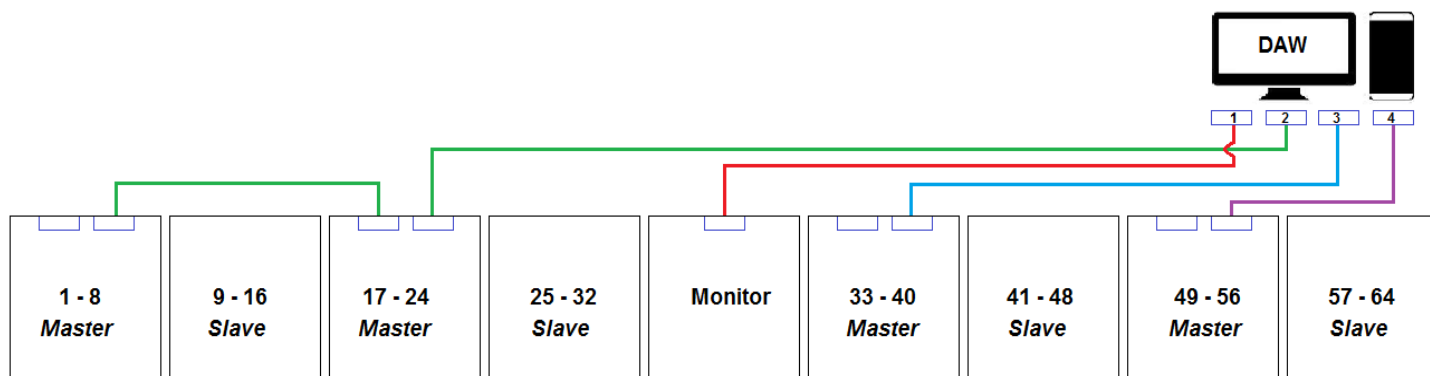
The second example has two daisy-chains and uses two ports of the DAW workstation. The first DAW MAD I port is connected to the monitor, 1-16 and 17-32 channel boards. The second DAW MAD I port is connected to 33-48 and 49-64 MAD I boards.



The third example has three daisy-chains and uses three ports of the DAW workstation. The first DAW MAD I port is connected to the monitor and 1-16 channel board. The second DAW MAD I port is connected to the 17-32 and 33-48 channel boards. The third DAW MAD I port is connected to the 49-64 channel MAD I board only.



This final example has four daisy-chains (the maximum possible) and uses all four ports of the DAW workstation. The first DAW MAD I port is connected to the monitor board only. The second DAW MAD I port is connected to the 1-16 and 17-32 channel boards. The third DAW MAD I port is connected to the 33-48 channel MAD I board only. The fourth DAW MAD I port is connected to the 49-64 channel MAD I board only.



Important:

Along with correctly connecting the MIDI boards, the software configuration must correctly match the daisy-chained system. Please refer to the Software Operation section on page 32 and subsequent sections for more information.

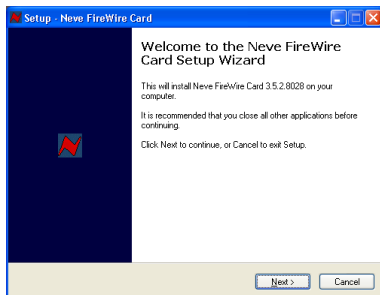
Before you run the **Configuration** software on Genesys and use the FireWire* system, you will need to install a driver on your DAW. There are two drivers available - one for PC and one for Mac.

The drivers can be found on the supplied CD or from the AMS Neve website at www.ams-neve.com. Go to the Genesys product support page and select the appropriate driver for your DAW computer.

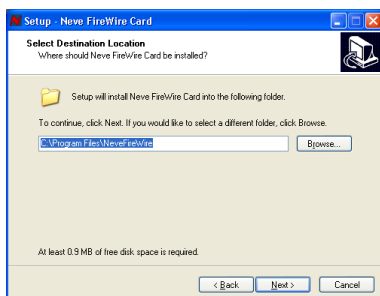
Installing the DAW FireWire* driver on a PC

Drag the **Neve FireWire* Installer** file from the CD onto the Windows Desktop of the DAW computer (or download the driver from the AMS Neve website to the DAW computer desktop), and ensure that there are no other programmes running before beginning the installation.

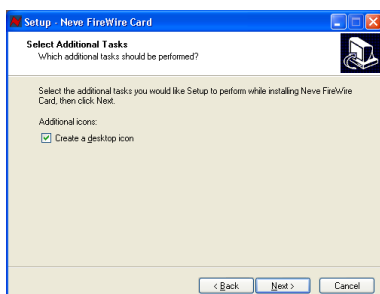
► Double click **Neve FireWire* Installer** to start the install.



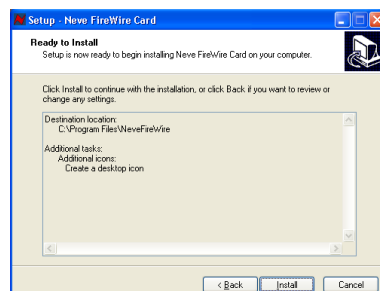
► Click **Next**.



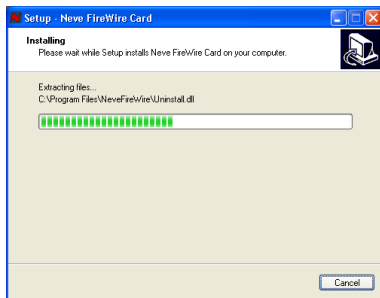
► Click **Next**.



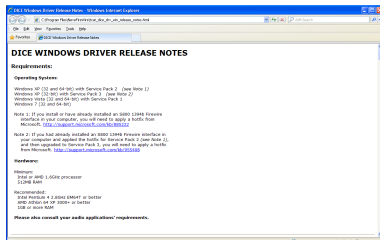
► Click **Next**.



► Click **Install**.



The install will start and the progress displayed.



At this point, if you are connected to the internet, a web page may open taking you to the Dice Windows Driver Release Notes page for further information on the driver.

► Close the browser window.



► Click **Continue Anyway**.



► Click **Yes, Restart The Computer Now**.

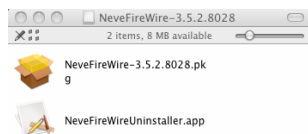
Once the PC has rebooted, the driver will be installed and ready to use.

Installing the DAW FireWire* driver on a MAC

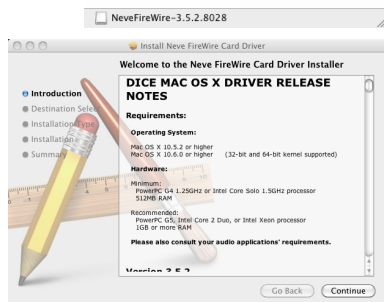
Before starting, drag the **Neve FireWire*.dmg** driver file from the CD onto the Mac Desktop (or download the driver from the AMS Neve website to the DAW computer desktop) so it can be installed from there.



► Double click **Neve FireWire*.dmg** to start the install.



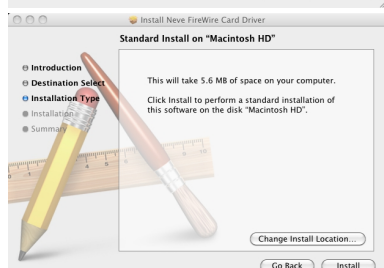
► Double-click **NeveFireWire-3.5.2.8028.pkg**.



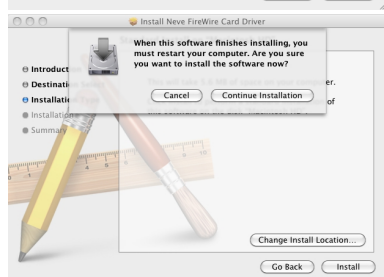
► Click **Continue**.



► Click **Continue**.



► Click **Install**.



(Depending on how your Mac is configured, at this point the Installer may ask you for a password before it can continue the install. If so, enter the password and click **OK**.)

You will be informed that the Mac must reboot once the install has finished.

► Click **Continue Installation**.



The install will start and the progress displayed.

► Once the install has finished, click **Restart** and the Mac will reboot.

Once it has rebooted, the driver will be installed and ready to use.

► When the Genesys console is running, click **Settings** > **FireWire*/MADI** to open the FireWire* setup page.



► Click the **Board Mapping** button to open the mapping screen.

Board Mapping

This procedure only needs to be done when cards are added or removed, or when the console is otherwise reconfigured.

The screen shows the cards that have been detected on boot-up, so for example, on a 64-fader system if 3 Master and 3 Slave cards were detected then only the first three rows on screen will be available for mapping.

Each Master card needs to have its DIP-switches set to unique settings. See page 9 to see how to set the DIP-switch addressing.

Each Master card's associated Slave card must be in the immediate next 8-fader section without any other 8-fader sections in between.

► For each of the Master cards, inform the software in which position it is located by matching the ID dip switches on the card with the physical position on the desk from the pull-down menu.

► Ensure the associated Slave card is in the physical position displayed in the right-hand column.

MADI Board to DAW MADI Port Connections Matrix

If the MADI option is installed in the console then the console MADI ports must be assigned to your DAW computer MADI ports.

► Firstly, select how many MADI ports your DAW is using from the list box. This refers to the number of MADI ports physically available on your DAW computer/workstation.

► The connection matrix will expand and collapse depending on the boards installed and the number of ports you select.

► The MADI connections matrix should match the cabling configuration of your daisy-chained system.

In our examples illustrating MADI cabling on page 26 you can see the we have four different configurations. Below is the MADI port connections matrix/mapping for each of these examples.

This first example is based on a single DAW workstation MADI port connection. You can clearly see the order of connection with the monitor board furthest away from the DAW and the daisy-chained channel boards daisy-chained in ascending order.

Board Mapping

FireWire Card with DIP switches set at:
Id1: 0 Id0: 1

Is located underneath channels:
1-8, 17-24, 33-40, 49-56

Its associated slave board must be underneath channels:
9-16, 25-32, 41-48, 57-64

Channels to MADi Port Connection Matrix:
How many MADi Ports are you using on your DAW? 2

Select which channels are connected to each MADi Port:

| MADi Port | Mon | 1-16 | 17-32 | 33-48 | 49-64 | DAW |
|-----------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|------|
| #1 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | >DAW |
| #2 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | >DAW |
| #3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | DAW |
| #4 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | DAW |

Board Mapping Status:
OK
Board Mapping is Valid

The second example has two daisy-chains and uses two ports of the DAW workstation. The first DAW MADi port is connected to the monitor, 1-16 and 17-32 channel boards. The second DAW MADi port is connected to 33-48 and 49-64 MADi boards.

Board Mapping

FireWire Card with DIP switches set at:
Id1: 0 Id0: 1

Is located underneath channels:
1-8, 17-24, 33-40, 49-56

Its associated slave board must be underneath channels:
9-16, 25-32, 41-48, 57-64

Channels to MADi Port Connection Matrix:
How many MADi Ports are you using on your DAW? 3

Select which channels are connected to each MADi Port:

| MADi Port | Mon | 1-16 | 17-32 | 33-48 | 49-64 | DAW |
|-----------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|------|
| #1 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | >DAW |
| #2 | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | >DAW |
| #3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | >DAW |
| #4 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | DAW |

Board Mapping Status:
OK
Board Mapping is Valid

The third example has three daisy-chains and uses three ports of the DAW workstation. The first DAW MADi port is connected to the monitor and 1-16 channel board. The second DAW MADi port is connected to the 17-32 and 33-48 channel boards. The third DAW MADi port is connected to the 49-64 channel MADi board only.

Board Mapping

FireWire Card with DIP switches set at:
Id1: 0 Id0: 1

Is located underneath channels:
1-8, 17-24, 33-40, 49-56

Its associated slave board must be underneath channels:
9-16, 25-32, 41-48, 57-64

Channels to MADi Port Connection Matrix:
How many MADi Ports are you using on your DAW? 4

Select which channels are connected to each MADi Port:

| MADi Port | Mon | 1-16 | 17-32 | 33-48 | 49-64 | DAW |
|-----------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|------|
| #1 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | >DAW |
| #2 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | >DAW |
| #3 | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | >DAW |
| #4 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | >DAW |

Board Mapping Status:
OK
Board Mapping is Valid

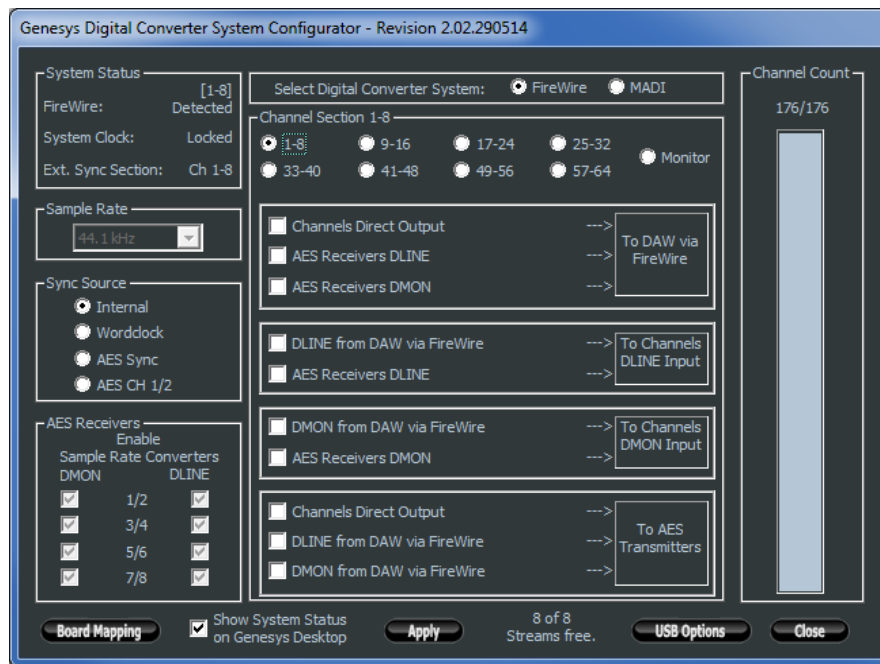
The final example has four daisy-chains (the maximum possible) and uses all four ports of the DAW workstation. The first DAW MADi port is connected to the monitor board only. The second DAW MADi port is connected to the 1-16 and 17-32 channel boards. The third DAW MADi port is connected to the 33-48 channel MADi board only. The fourth DAW MADi port is connected to the 49-64 channel MADi board only.

► Once the mapping has been completed correctly, click **OK** to close.

Note:

The **OK** button will be greyed-out and unavailable until a valid combination of boards has been set.

Configurator Screen



The Configurator allows the routing of the digital audio signals in blocks of 8 channels.

The configuration software also sets the inputs and outputs on the FireWire* Monitor board as well, if fitted.

The screen shown left is accessed in the **Genesys** software by clicking **Settings > FireWire*/MADI**.

The screen shot here, is of a 64-fader console which has all 4 Channel Master boards (and 4 Channel Slaves), the Monitor card fitted and with all the MADI boards installed on all master channels including monitor.

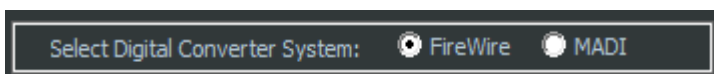
The configuration software auto-detects the number and type of cards in the system, so all selectable options are available.

In a 64 channel console, there is a maximum of 4 Master FireWire* boards and 4 Slave FireWire* boards, plus a FireWire* Monitor card. If the MADI boards are fitted then these are fitted to the channel master FireWire* boards and the monitor board.

Audio routing on a Master (or Slave) board as defined by the configuration software can be either:

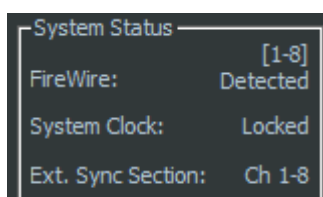
- Analogue signal to FireWire* or MADI (or FireWire* or MADI to analogue signal)
- Analogue signal to AES (or AES to analogue signal)
- A mix of AES and analogue signal to FireWire* or MADI (or FireWire* or MADI to a mixture of AES and analogue signals).
- FireWire* or MADI to AES (or AES to FireWire* or MADI)

Select Digital Converter System



You must choose a digital option before configuring the system. There are two options here to choose from, FireWire* or MADI. The Configurator automatically reconfigures the system and on-screen labels/messages depending on the option selected. Once an option is selected then that is the digital converter system (FireWire* or MADI) which must be used between the console and your DAW workstation/computer.

System Status



The Configurator screen shows the system status for the FireWire* or MADI connections. For FireWire* it displays the cable connected/detected state and for MADI it displays whether the RX ports on the boards are connected. The status also shows the system clock locked/unlocked and the sync selection.

If FireWire* is detected and the option is selected as the converter system

then all of the available FireWire* routing options are available (taking into account the limitations of the FireWire* protocol/channel count).

In MADI mode all MADI routing options are always available.

This section of the screen will display the state of:

- **FireWire* or MADI:** Whether FireWire* has been detected or not. In the case of MADI whether there is an error on the RX ports.
- **System Clock:** Whether it is locked or not
- **Ext Sync Section:** The card where the sync source should be connected to.

Note:

When the FireWire* cable is connected and detected by Genesys, the sample rate is controlled by the DAW – this is regardless of which digital converter system has been selected.

No FireWire* Detected or No FireWire* Cable Connected

This is only applicable if the FireWire* option is selected as the Digital Converter System.

On a system where there is no FireWire* cable detected, all of the FireWire* options will be unavailable for selection, and the following fixed configuration will be put in place:

- AES Receivers DLINE to Channels DLINE Input
- AES Receivers DMON to Channels DMON Input
- Channels Direct Output to AES Transmitters

If any of the FireWire* options are set when the FireWire* cable is removed, their selection will be preserved and remembered for the next time when the FireWire* cable is reinserted.

Maximum Channels Available in FireWire* and MADI

Due to the inherent restrictions of the FireWire* and MADI protocol/system itself, the FireWire* and MADI bandwidth/channel count is limited and the capability of the FireWire* and MADI system depends on the sample rate.

Below is the maximum number of channels the **FireWire*** is able to handle, set by sample frequency.

| Sample Rate kHz | Maximum number of channels / Bit-rate * |
|-----------------|-----------------------------------------|
| 44.1 / 48 | 96 / LO bit-rate |
| 88.2 / 96 | 48 / MID bit-rate |

* Achieved using the **FW643 OHCI** chipset on the target computer.

The maximum number of FireWire* channels is also dependent on the speed of the DAW computer.

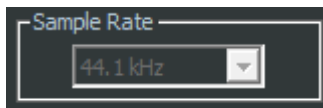
Below is the maximum number of channels the **MADI** is able to handle, set by sample frequency.

| Sample Rate kHz | Maximum number of channels / Bit-rate |
|-----------------|---------------------------------------|
| 44.1 / 48 | 64 in + 64 out / LO bit-rate |
| 88.2 / 96 | 32 in + 32 out / MID bit-rate |

When changing sample rates, the last selection made (for either **Lo** or

Mid sample rates) will be saved. This means it is possible to swap between (for example) 48kHz and 96kHz, and have both sets of settings saved, with each set automatically recalled when the system detects the change in sample rate.

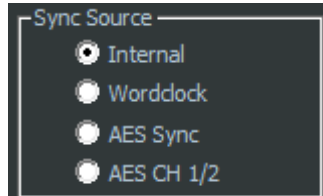
Sample Frequency



► Select the system sample rate from the pull-down menu.

If the digital boards are connected to a DAW via FireWire*, then the sample rate is defined by the DAW and this option will be greyed out and unavailable.

Sync Source

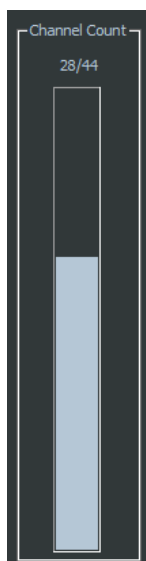


This selects where Genesys takes its timing source from.

- **Internal** - Genesys will use its Internal clock.
- **Word Clock** - Genesys will lock to external Wordclock received at the Wordclock In BNC connector. If selected, this same Wordclock signal will also be re-transmitted on all of the other **Wordclock Out** BNC connectors on the other cards. This means the Genesys AD/DA system can function as a Wordclock distribution amplifier.
- **AES Sync** - the system will lock to a dedicated AES sync signal received at pair 8 of the left-most AES RX DMON/AES SYNC IN/OUT 25-way D-sub. If selected, this same AES sync signal will also be re-transmitted on pair 7 of the same 25-way D-sub. (See pin-out information starting on page 8 for wiring information).
- **AES CH 1/2** - the system will lock to the embedded AES signal contained on audio channels 1 and 2 of the left-most **D-Line** AES receiver.

The **AES Channel Sync** is taken from the first AES pair of inputs on the left-most Master card in the console, so therefore usually taken from Channels 1/2.

If the left-most card in the console is the Monitor card, then **Surround 5.1 DEXT L/R** inputs will be displayed.



FireWire* Channel Count

If the FireWire* option is selected as the digital converter system and the system detects there is a FireWire* cable present and connected to a DAW, then the FireWire* **Channel Count** gauge on the right hand side of the screen will show the total number of audio channels that the FireWire* system is capable of handling at the top of the bar.

This capability is dependent on the sample rate - the higher the sample rate, the fewer channels there are available.

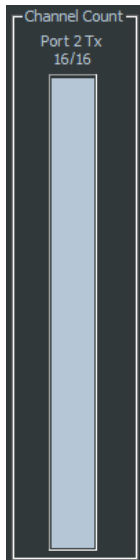
See page 35 for limitations of the FireWire* protocol.

As you select or deselect the routing options on screen, then the gauge will update to reflect these changes and display how many channels are still available at the side of the coloured bar.

If there is no FireWire* connection detected, this gauge will be empty.

MADI Channel Count

If the MADI option is selected as the digital converter system then the MADI **Channel Count** gauge on the right hand side of the screen will



show the total number of audio channels that the MADi system is capable of handling at the top of the bar.

This capability is dependent on the sample rate - the higher the sample rate, the fewer channels there are available.

See page 35 for limitations of the MADi protocol.

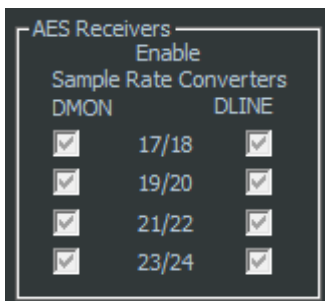
As you select or deselect the routing options on screen, then the gauge will update to reflect these changes and display how many channels are still available at the side of the coloured bar.

The MADi gauge will also show to which DAW MADi port the selected channels are being allocated to.

Note:

In the MADi system the channel count is only for channels being sent/transmitted to the DAW. The received channels are not counted/restricted and can be shared with multiple inputs into the console via the routing options, enabling the same signal to be received into different areas of the console.

AES Receivers Sample Rate Converters



It is possible to convert the sample rate of the AES Receivers incoming audio to the Genesys system sample rate if these do not match.

For example, if an incoming signal is at 44.1kHz and the system sample rate is 48kHz, then if the channel's respective boxes (shown left) are ticked, these signals at 44.1kHz will be automatically converted up to 48kHz.

The **DMON** (channel digital monitor input) and **DLINE** (channel digital line input) input options displayed left will change depending on which 8-fader section is selected at the top of the screen. For example, on fader section 9-16, the options shown will instead be **9/10**, **11/12**, **13/14** & **15/16** etc.

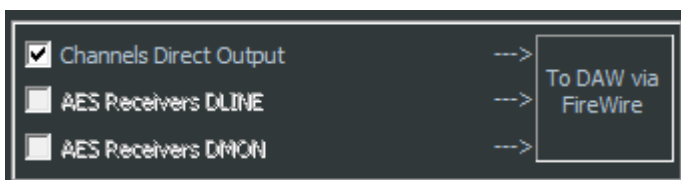
These options are only selectable as pairs.

The **SRC Enable** options are not interlocked and all are selectable.

They are all enabled by default.

► If desired, deselect the options to disable the sample rate converters for each pair of channels.

To DAW via FireWire* - FireWire* selected as the Digital Converter System.



FireWire selected as the Digital Converter System.*

This maps the channel outputs from the Genesys to the DAW via FireWire*.

► There are three options available:

- Channels Direct Output: outputs the eight channel Channel Direct Outputs to the FireWire* bus.
- AES Receivers DLINE: Outputs the AES DLINE Receivers to the FireWire* bus.

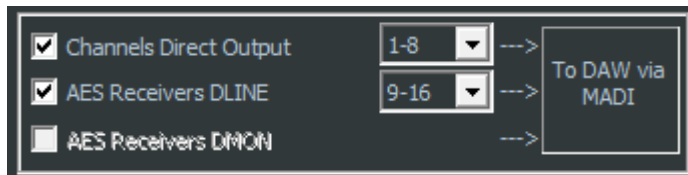
- AES Receivers DMON: Outputs the AES DMON Receivers to the FireWire* bus.

At sample rates of 96kHz or lower (**LO** and **MID** bit-rates), **two** of these three options are available at one time.

If no FireWire* cable has been detected, all of these options will be unavailable.

► Once set, click **Apply** to reconfigure the FireWire* bus with your selection.

To DAW via MADI - MADI selected as the Digital Converter System.



MADI selected as the Digital Converter System.

This covers the channels output from the Genesys to the DAW via MADI.

► There are three options available:

- Channels Direct Output: outputs the eight channel Channel Direct Outputs to the MADI.
- AES Receivers DLINE: Outputs the AES DLINE Receivers to the MADI.
- AES Receivers DMON: Outputs the AES DMON Receivers to the MADI.

Selecting each option will show a list-box to the right of the option. This is the MADI channels you want to use on your DAW for the selected routing option. For example in the screenshot above we want to send (console channels 1-8) Channels Direct Outputs to the DAW via MADI channels 1-8.

The list-box will reflect the maximum allowable MADI channels depending on the selected sample rate.

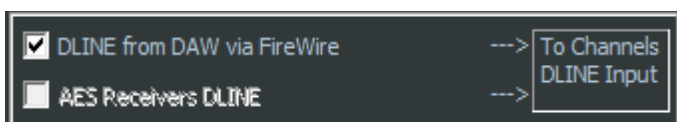
Note:

The *To DAW via MADI* (output) routing options must have unique MADI channels assigned on the console for all MADI boards daisy-chained on the same MADI port.

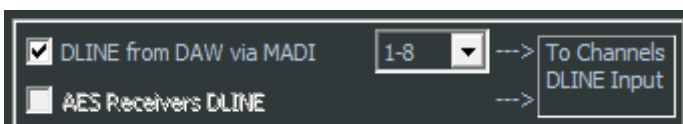
► Once set, click **Apply** to reconfigure the MADI system with your selection.

When you have completed the routing selections, the DAW workstation's audio routing MADI port channels must match that which is selected on the Configurator screen.

Channels DLINE Input



FireWire selected as the Digital Converter System.*



MADI selected as the Digital Converter System.

This covers which audio is sent into the 8 Channels digital line (**DLN**)

inputs.

- There are two options available, only one of which can be selected at a time.
 - DLINE from DAW via FireWire* or MADI: Takes the audio from your DAW through the FireWire* or MADI cable, and sends it to the digital Line input on the channel.
 - AES Receivers DLINE: Takes the audio from the AES digital DLINE Receivers, and sends it to the digital Line input.

MADI digital option only:

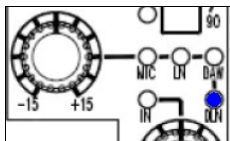
Selecting the *DLINE from DAW via MADI* option will show a list-box to the right of the option. This is the MADI channels you want to use on your DAW for the selected routing option. For example in the screenshot above we want to receive from the DAW via MADI channels 1-8 and send to the console's DLINE input.

The list-box will reflect the maximum allowable MADI channels depending on the selected sample rate.

When you have completed the routing selections, the DAW workstation's audio routing MADI port channels must match that which is selected on the Configurator screen.

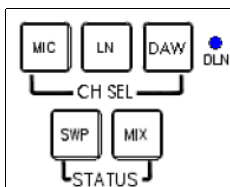
MADI channels in this routing section can be shared. This is to allow monitoring of the same inputs across different console channels if the need arises.

- Once set, click **Apply** to reconfigure the FireWire* or MADI buss with your selection.



- This input is selected on a channel-by-channel basis by pressing the **Input Selector Knob** at the top of a channel strip until the adjacent **DLN** LED lights blue.

This input will not be available for selection if an AD/DA card is not fitted in that section of the console.

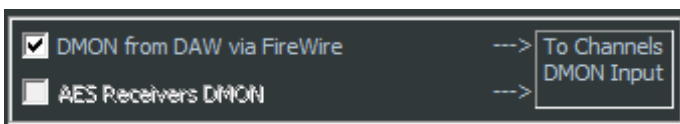


- If you wish to swap ALL of the channel inputs to the Digital Line input, then on the **CH SEL** section of Master Monitor Panel, make sure that none of the **MIC**, **LN** or **DAW** buttons are selected.

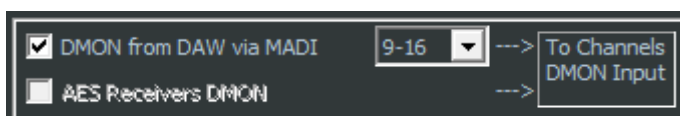
Only once all these three options are switched off will the input will be set to the digital line input.

The adjacent blue **DLN** LED will light to confirm this selection, plus the **DLN** LED will light on each channel strip that has an AD/DA card fitted.

Channels DMON Input



FireWire selected as the Digital Converter System.*



MADI selected as the Digital Converter System.

This selects the audio to be sent on the digital monitor path.

- There are two options available, only one of which can be selected at a

time.

- **DMON from DAW via FireWire* or MADI:** Takes the audio from your DAW through the FireWire* or MADI cable, and sends it to the **DMON** Input of the channel strip.
- **AES Receivers DMON:** Takes the audio from the AES DMON Receivers and sends it to the **DMON** Input of the channel strip.

MADI digital option only:

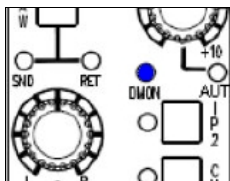
Selecting the *DMON from DAW via MADI* option will show a list-box to the right of the option. This is the MADI channels you want to use on your DAW for the selected routing option. For example in the screenshot above we want to receive from the DAW via MADI channels 9-16 and send to the console's DMON input.

The list-box will reflect the maximum allowable MADI channels depending on the selected sample rate.

When you have completed the routing selections, the DAW workstation's audio routing MADI port channels must match that which is selected on the Configurator screen.

MADI channels in this routing section can be shared. This is to allow monitoring of the same inputs across different console channels if the need arises.

► Once set, click **Apply** to reconfigure the FireWire* or MADI buss with your selection.



► This input is selected on the console surface by pressing the **IP2** button near the bottom of the channel strip until the adjacent **DMON** LED lights blue.

This input will only be available for selection if an AD/DA card is fitted in that section of the console.

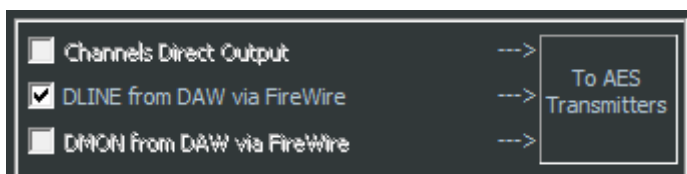


► If you wish to swap ALL of the DAW inputs to the DMON inputs, then on the **MON SEL** section of Master Monitor Panel, make sure that none of the **DAW SND**, **DAW RTN** or **I/P2** buttons are selected.

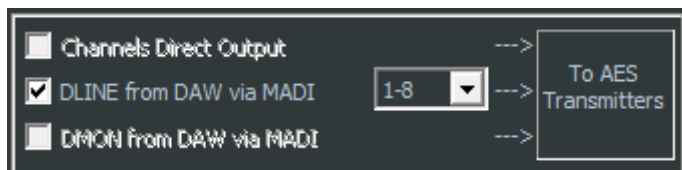
Only once all these three options are switched off will the input will be set to the digital monitor in.

The adjacent blue **DMON** LED will light to confirm this selection, plus the **DMON** LED will light on each channel strip that has an AD/DA card fitted.

AES Transmitters



FireWire selected as the Digital Converter System.*



MADI selected as the Digital Converter System.

These show what can be sent from the console on the 8 AES transmitters per card.

- There are three options available, only one of which can be selected at a time.
- Channels Direct Output: Sends the channel Direct Outputs to the **AES TX** transmitters.
 - DLINE from DAW via FireWire* or MADI: Sends the DLINE signal from DAW through FireWire* or MADI to the **AES TX** transmitters. This means the AD/DA card to be used as a FireWire* or MADI to AES converter, without those signals contributing to the audio busses in the console.
 - DMON from DAW via FireWire* or MADI: Sends the DMON signal from DAW through FireWire* or MADI to the **AES TX** transmitters. This means the AD/DA card to be used as a FireWire* or MADI to AES converter, without those signals contributing to the audio busses in the console.

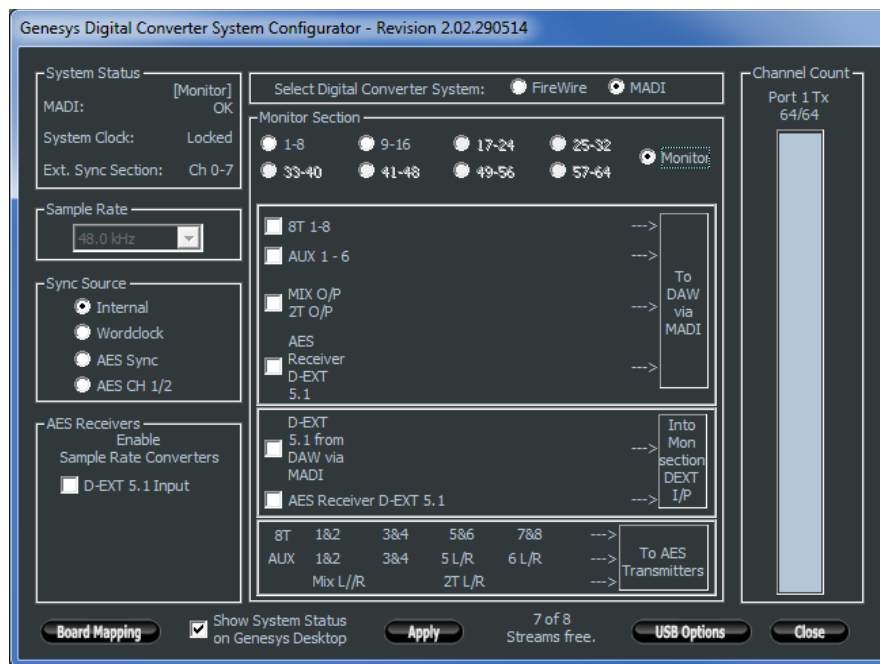
MADI digital option only:

Selecting the *DMON from DAW via MADI* or *DLINE from DAW via MADI* option will show a list-box to the right of the option – only if these routing options have not been previously selected in the Channels DLINE Input and Channels DMON Input sections. This is the MADI channels you want to use on your DAW for the selected routing option.

The list-box will reflect the maximum allowable MADI channels depending on the selected sample rate.

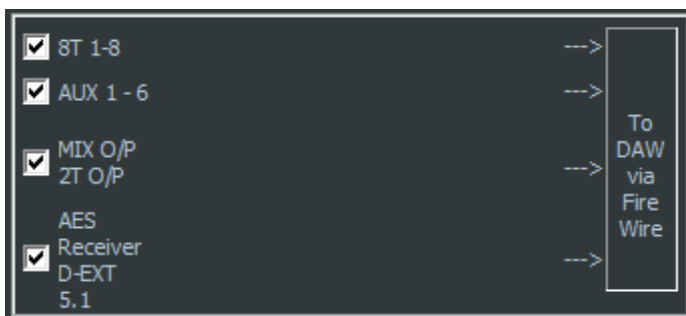
When you have completed the routing selections, the DAW workstation's audio routing MADI port channels must match that which is selected on the Configurator screen.

- Once set, click **Apply** to reconfigure the FireWire* buss with your selection.



► Select the **Monitor** option button at the top of the screen to show the Monitor card input and output options.

To DAW via FireWire* – FireWire* selected as the Digital Converter System.



FireWire selected as the Digital Converter System.*

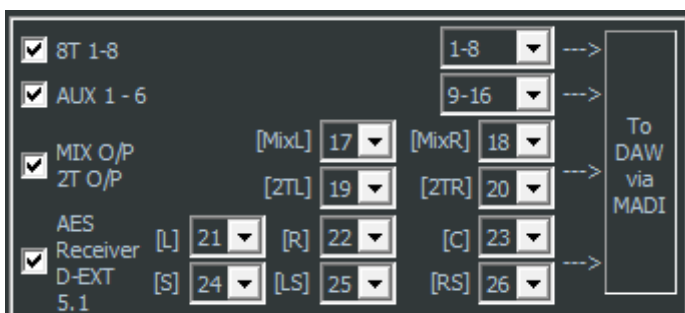
► Select whether you want the **8Ts**, **Auxes**, **AES DEXT** or **MIX / 2T** audio to be sent digitally from the console to your DAW via the FireWire* cable.

These options are not interlocked and all can be selected, dependent on the total FireWire* bandwidth not being exceeded.

- All of the **Auxes** (both mono and stereo) are selected with a single tick.
- All of the **8Ts** (1-8) are selected with a single tick.
- The **MAIN MIX** and **2T MIX** are selected with a single tick.
- The digital 5.1 Externals that come into the console via the AES receivers can also be sent to the FireWire*.

► Once set, click **Apply** to reconfigure the FireWire* buss with your selection.

To DAW via MADI – MADI selected as the Digital Converter System.



MADI selected as the Digital Converter System.

► Select whether you want the **8Ts**, **Auxes**, **AES DEXT** or **MIX / 2T** audio to be sent digitally from the console to your DAW via the MADI cable.

These options are not interlocked and all can be selected, dependent on the total MADI channel count not being exceeded.

- All of the **Auxes** (both mono and stereo) are selected with a single tick.
- All of the **8Ts** (1-8) are selected with a single tick.
- The **MAIN MIX** and **2T MIX** are selected with a single tick and the MADI channels are assigned individually to each L and R.
- The Digital 5.1 Externals (D-EXT) that come into the console via the AES receivers can also be sent to the MADI. The MADI channels are assigned individually to each 5.1 L, R, C, S, LS and RS.

Selecting each option will show a list-box to the right of the option. This is the MADI channels you want to use on your DAW for the selected routing option.

For example in the screenshot above we want to send from the console:

- 8T 1-8 to the DAW via MADI channels 1-8.
- AUX 1-6 to the DAW via MADI channels 9-16.
- MAIN MIX L to the DAW via MADI channel 17.
- MAIN MIX R to the DAW via MADI channel 18.
- 2T MIX L to the DAW via MADI channel 19.
- 2T MIX R to the DAW via MADI channel 20.
- D-EXT L to the DAW via MADI channel 21.
- D-EXT R to the DAW via MADI channel 22.
- D-EXT C to the DAW via MADI channel 23.
- D-EXT S to the DAW via MADI channel 24.
- D-EXT LS to the DAW via MADI channel 25.
- D-EXT RS to the DAW via MADI channel 26.

The list-box will reflect the maximum allowable MADI channels depending on the selected sample rate.

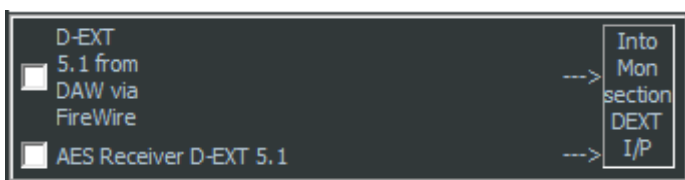
Note:

The *To DAW via MADI* (output) routing options must have unique MADI channels assigned on the console for all MADI boards daisy-chained on the same MADI port.

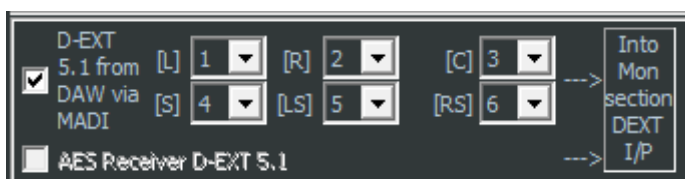
► Once set, click **Apply** to reconfigure the MADI system with your selection.

When you have completed the routing selections, the DAW workstation's audio routing MADI port channels must match that which is selected on the Configurator screen.

Info Monitor section D-EXT Input



FireWire selected as the Digital Converter System.*



MADI selected as the Digital Converter System.

► Select where you want the 5.1 surround digital input to be taken from and fed into the monitoring system, either from the

- **D-EXT 5.1 from DAW via FireWire* or MADI**
or
- **AES D-EXT Receiver 5.1.**

MADI digital option only:

Selecting the *D-EXT 5.1 from DAW via MADI* option will show a group of list-boxes to the right of the option. These are the MADI channels you want to use on your DAW for the selected routing option. The MADI channels are assigned individually to each 5.1 L, R, C, S, LS and RS.

For example in the screenshot above we want to receive from the DAW:

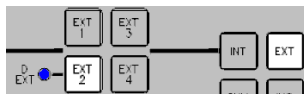
MADI channel 1 and send it to D-EXT L.
MADI channel 2 and send it to D-EXT R.
MADI channel 3 and send it to D-EXT C.
MADI channel 4 and send it to D-EXT S.
MADI channel 5 and send it to D-EXT LS.
MADI channel 6 and send it to D-EXT RS.

The list-box will reflect the maximum allowable MADI channels depending on the selected sample rate.

When you have completed the routing selections, the DAW workstation's audio routing MADI port channels must match that which is selected on the Configurator screen.

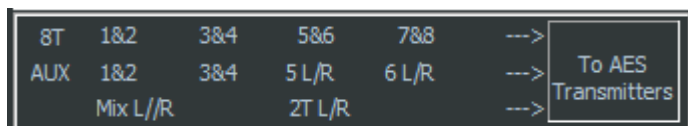
MADI channels in this routing section can be shared. This is to allow monitoring of the same inputs across different console channels/inputs if the need arises.

► Once set, click **Apply** to reconfigure the FireWire* buss with your selection.



On the console surface, the Digital External is selected on the monitoring system by double-pressing the **EXT 2** button. The adjacent **D-EXT** LED will light to show you are monitoring the Digital External (the EXT button to the right will need to be pressed to select External monitoring).

To AES Transmitters

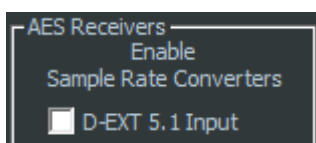


The displayed signals feed into the AES Transmitters all of the time, and require no user intervention.

- **8Ts** 1–8 (sent in pairs)
- **AUX** 1&2 (sent as a pair), 3&4 (sent as a pair), 5 (L&R), 6 (L&R)
- **MIX** L/R (sent as a pair)
- **2T** L/R (sent as a pair)

This screen is for information only and contains no selectable options.

AES Receivers Sample Rate Converters



► Select the **D-EXT 5.1 Input** box to enable the Sample Rate Converters (SRC) on the external 6-wide digital inputs into the monitoring system. By default, these converters will be ticked and therefore in circuit without any user intervention.

Once FireWire* options have been configured on the main configuration screen shown above, the corresponding Genesys audio path names will be sent to the DAW and displayed there (if supported by the DAW application).

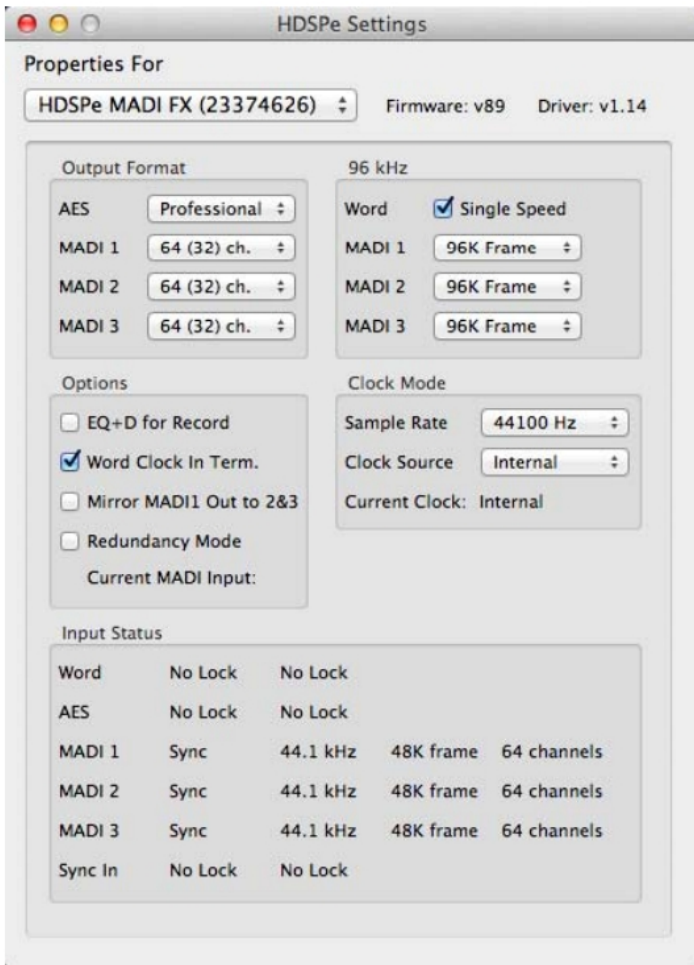
The following table shows the list of path names as displayed on your DAW (with a max of 8 characters) and an explanation of which Genesys path this refers to.

| Genesys path: Channel section | Displayed on your DAW as: |
|-------------------------------------------------|----------------------------------|
| Direct Output on channels 1 to 64 | NDirOp1 to NDirOp64 |
| Digital Line Input on channels 1 to 64 | NLnIp1 to NLnIp64 |
| Digital Monitor Input on channels 1 to 64 | NMonIp1 to NMonIp64 |
| AES Digital Line Input on channels 1 to 64 * | AESLn1 to AESLn64 |
| AES Digital Monitor Input on channels 1 to 64 * | AESMon1 to AESMon64 |

| Genesys path: Monitor section | Displayed on your DAW as: |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Surround Digital External Left Surround Digital External Right Surround Digital External Centre Surround Digital External Sub Surround Digital External Left Surround Surround Digital External Right Surround | NExtIpL NExtIpR NExtIpC NExtIpS NExtIpLS NExtIpRS |
| 2 Track Left 2Track Right | N2TOpL N2TOpR |
| Main Mix Left Main Mix Right | NMixOpL NMixOpR |
| 8T1 to 8T8 | N8TOp1 to N8TOp8 |
| Aux 1 Aux 2 Aux 3 Aux 4 Aux 5 Left Aux 5 Right Aux 6 Left Aux 6 Right | NAuxOp1 NAuxOp2 NAuxOp3 NAuxOp4 NAuxOp5L NAuxOp5R NAuxOp6L NAuxOp6R |
| AES Digital External Left input * AES Digital External Right input * AES Digital External Centre input * AES Digital External Sub input * AES Digital External Left Surround input * AES Digital External Right Surround input * | AESExtL AESExtR AESExtC AESExtS AESExtLS AESExtRS |

* These paths are not true Genesys audio paths. They are inputs that come from another source and are converted from one audio format to another within the console.
This is why their DAW name as displayed above does not begin with **N**, to indicate it is a non-Neve path.

MADI option selected as the digital Converter System.



Here is an example of how to configure the core settings of RME HDSPe MADI FX (3 port) interface software (OS X version) for use with the Genesys MADI system. These settings are also applicable to other third-party interfaces.

Please refer to your DAW MADI interface user manual for information on settings and how to configure.

Configuring the HDSPe MADI FX is done via its own settings screen. The panel 'Settings' can be opened by clicking on the hammer icon in the Mac OS X dock.

Output Format

- **AES** - The channel status of the AES output signal can be set to Consumer or Professional. Set this to Professional.
- **MADI 1, MADI 2 and MADI 3** - Defines the format of the MADI output signal. This should be set to 64.

96 kHz

- **MADI 1, MADI 2 and MADI 3** - If the Genesys Sample Rate is set to 44.1/48k then select 48K Frame, if it is set to 88.2/96k then select 96K Frame.

Word Clock In Term

- Select this option. This option terminates the word clock input internally with 75 Ohms.

Clock Mode

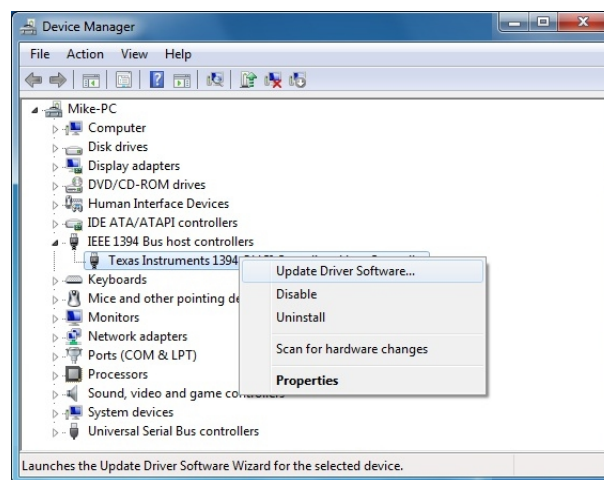
- **Sample Rate** - Used to set the current sample rate. This should be the same setting as the Genesys.
- **Clock Source** - The interface can be configured to use its own clock (Internal = Master), or one of the input signals (Word, MADI, AES, Sync In).

This section only applies if you have **Windows 7** as the operating system on your DAW, and explains how to swap between the standard FireWire* driver, and the Legacy FireWire* driver.

As new drivers and console software builds are released using the legacy driver may not be applicable in future releases, the Genesys software release notes will detail this if it is the case which can be accessed from System > Release Notes. You can swap between legacy and standard FireWire* driver as shown below at any time.

Using the Legacy Driver

► With the FireWire* cable disconnected from the Genesys computer, go to **Start Menu / Control Panel / System** and in the **Device Manager**, find the FireWire* device (IEEE 1394).



- Right-click it and select **Update Driver Software...**
- Select **Browse my computer for driver software**
- Select **Let me pick from a list of device drivers on my computer**
- Install the driver that ends with **1394 OHCI Legacy**.
- Click **OK** to install the driver.
- Reinstall the Genesys driver, as shown on page 16.

If you are using Genesys software V3.3 build 1 or later, then you will need to update the FireWire* driver.

This driver is available from our website, for either Mac or PC:

<http://www.ams-neve.com/Products/Music/Genesys/Genesys.aspx>

Download this driver relevant to your DAW Mac or PC, then run and install it.

PC:

You can check it has been installed by going to All Programs / AMS Neve Ltd / Neve FireWire* Card.

- Click **OK** on the small information screen that opens

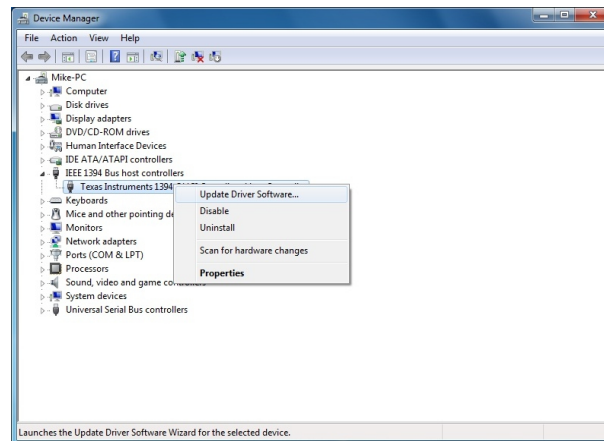
Mac (must be running OS X 10.6 or above software):
You can check it has been installed correctly by going to Applications /
Neve FireWire* card.

Reverting to the Standard Windows FireWire* Driver

If you were previously using a FireWire* device with the Windows
Compliant FireWire* driver, and now need to update your FireWire*
driver, please follow these steps:

► With your interface disconnected, find your FireWire* (IEEE 1394)
controller in **Device Manager**, from **Start Menu / Control Panel /**
System.

► Click **Update driver**.



► Select **Search automatically for updated driver software**.

Once the Driver Update has completed, restart the Genesys computer and
the standard driver will be ready to be used.

Recommended OHCI Chipsets (FireWire*)

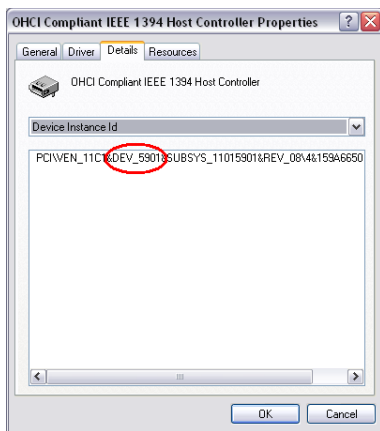
To get best results from the FireWire* protocol (i.e. the maximum number of paths available, and optimum reliability), you are advised to ensure you have the recommended OHCI Chipset on your DAW computer.

We recommend use of the **FW643** chipset as manufactured by Agere (LSI).

This chipset is found on some computers (the latest Mac Book Pro for example), and on some PCI Express or Express cards.

All FireWire* path counts quoted in this document have been achieved using this chipset.

How do I find out which Chipset (FireWire*) my Mac or PC has been fitted with?



PC

In **Control Panel / Device Manager**, select **Properties** then the **Details** tab.

As shown left, if you see the text **DEV_5901**, then you have the FW643 chipset installed.

MAC

Hold both the **Command** (Apple) key and the **S** key down while switching on the computer.

The Mac will display a series of information.

The FireWire* device should be **LUCENT 5901**, and if you see this text, the Mac is fitted with the **FW643** chipset.