

Mytek DIO MADI Card

User Manual

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This manual may be updated

Download the newest version at:

http://www.mytekdigital.com/download_library/

For technical support, technical tips and support check:

<http://www.mytekdigital.com>

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Introduction

The Mytek DIO MADI Card is a physical card that plugs into the back of the Mytek 8X192 ADDA converter.

With this card installed the Mytek 8X192 ADDA can directly interface with other MADI capable equipment. The card can be installed by the user as described further in the manual.

Before You Begin

Before connecting the DIO MADI card, check if the most current firmware (version 4.5.5 or later) is installed in the 8X192 converter. To verify your current version locate the firmware chip on the main converter board or contact Mytek via email and provide the serial number of converter.

(If necessary contact Mytek and request appropriate firmware.)

Quick Start

1. Installation of DIO MADI card

Remove the top cover from the converter, unscrew the *DIOCARD1* or *DIOCARD2* slot plate and install the DIO MADI card using the existing screws. Double check if all the connector pins match properly with the pins of the connector on the main converter board.

Remember to turn off and disconnect power and signal cables while working with the top cover removed.

2. Operation

The card is ready for operation immediately after installing it in the converter.

3. Configuration

After turning on the 8x192ADDA converter you should select the settings appropriate for your configuration needed on the front panel. The DIO MADI card should be connected to another MADI device by one of three cables: optical, BNC or FireWire.

Card Installation

The DIO MADI card can be installed in either DIOCARD1 or DIOCARD2 slot. The card can be installed with any card available for the 8x192 converter.



8x192 ADDA converter's rear panel

WARNING!

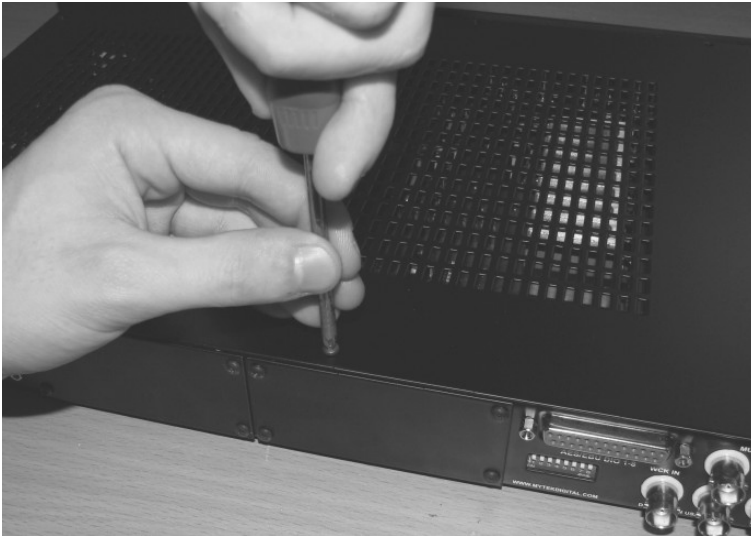
Remember to follow basic safety rules on electronic device handling while opening the converter:

- ✓ Keep your hands dry,
- ✓ Turn off power and detach power and signal cables while working with the top cover removed.

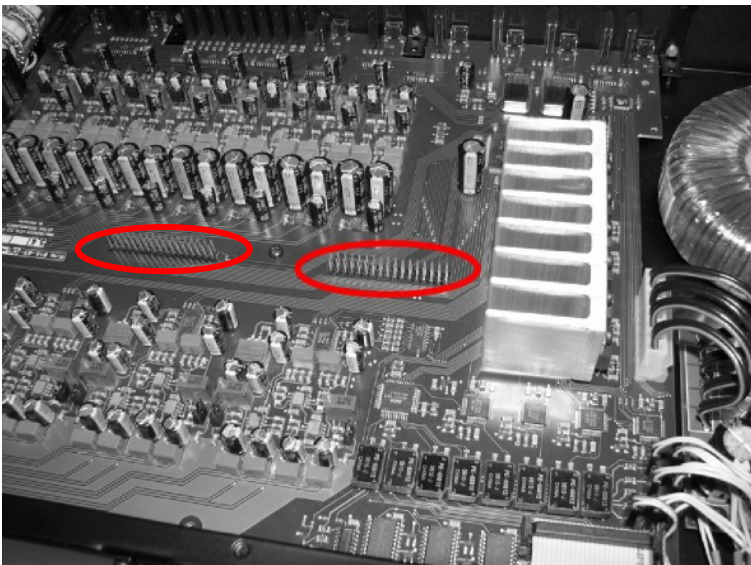
To install the DIO MADI card:

1. Find the DIOCARD1 or DIOCARD2 expansion slot at the mainboard's layout.
2. Make sure that the power cord and all signal and clock lines are disconnected.

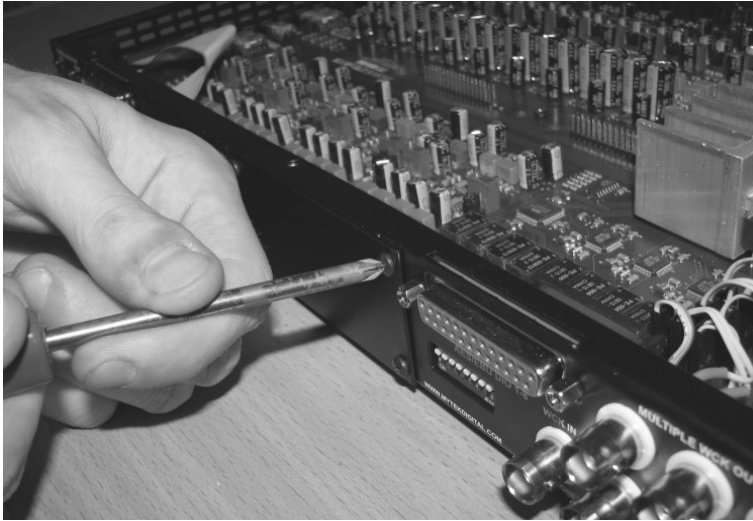
3. Remove the top cover.



4. Locate the DIOCARD1 or DIOCARD2 expansion slot on the mainboard.



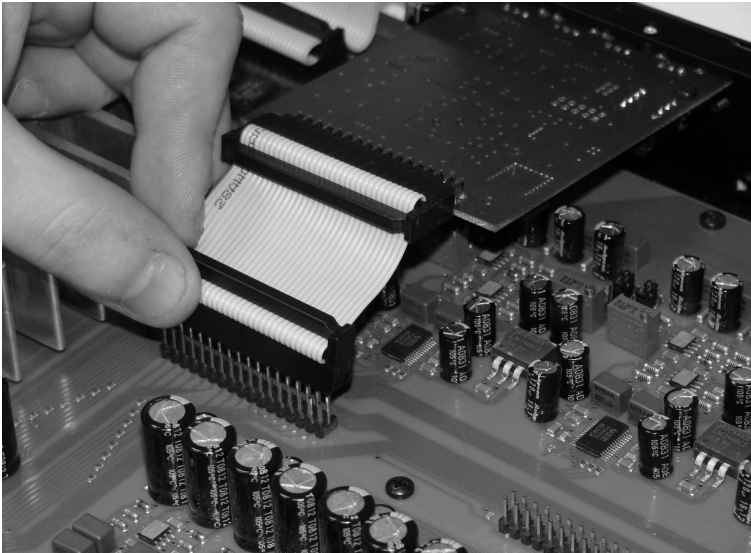
5. Unscrew the cover plate of the chosen slot from the rear panel.



6. Partially insert the card from the back of the converter.



7. Attach card ribbon cable to DIOCARD1 or DIOCARD2 connector on the mainboard.



8. Gently push the card inside and secure it using the pre-existing screws.



9. Screw on the converter top cover.



10. Connect power and signal lines.

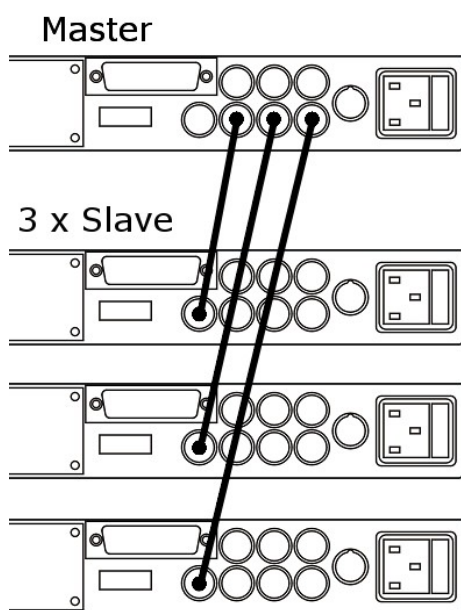
11. Turn the converter on.

After boot up (which takes approx 30 sec), the converter will switch to regular mode, and DIO MADI Card (DIOCARD1 or DIOCARD2) can now be selected as signal source.

Connecting Clock Signal

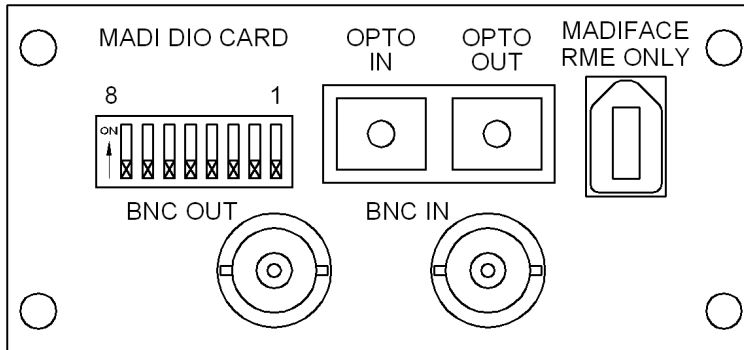
If the DIO MADI card is connected to a device that has no external input clock, the device should be set to Slave or AutoSync mode.

Our recommended setup is to use the Mytek 8X192ADDA as the clock source feeding all other converters from it's multiple clock outputs to all slave devices in a star configuration.



Clock connections

DipSwitch configuration



1,2,3 - channel position (transmitter and receiver)

1 – OFF , 2 – OFF , 3 – OFF: channels 1 – 8

1 – ON , 2 – OFF , 3 – OFF: channels 9 - 16

1 – OFF , 2 – ON , 3 – OFF: channels 17 - 24

1 – ON , 2 – ON , 3 – OFF: channels 25 - 32

1 – OFF , 2 – OFF , 3 – ON: channels 33 – 40

1 – ON , 2 – OFF , 3 – ON: channels 41 - 48

1 – OFF , 2 – ON , 3 – ON: channels 49 - 56

1 – ON , 2 – ON , 3 – ON: channels 57 – 64

4 – format (64 channels - OFF , 56 channels - ON)

5 – frame (48k – OFF , 96k – ON)

7,8 – input selector:

7-OFF , 8-OFF – MADIFACE

7-OFF , 8-ON – BNC

7-ON , 8-ON – OPT

MADI Card Connectors

All outputs of the DIO MADI card are simultaneous. 7 and 8 DipSwitch positions are used to select inputs.

1. Opto IN

To use optical input set the 7th and 8th DipSwitch positions both to ON.

2. BNC IN

To use BNC input set the 7th DipSwitch position to OFF and 8th to ON. BNC connectors are used to transmit MADI signal, do not connect to them Wordclock signal.

3. Madiface RME

To use RME Madiface set the 7th and 8th DipSwitch positions both to OFF. Madiface connector is compatible with RME Madi, do not connect it to FireWire (IEEE 1394) signal.

Note!

When connecting or disconnecting optical connectors an output noise can appear. To prevent this you should first connect the optical connector and then select the card.

Other settings

4th DipSwitch position is used to change format of channels. There are two modes available:

- At frequency of 44.1 and 48 kHz 4th DipSwitch OFF – 64 channels, ON – 56 channels.
- At frequency of 88.2 and 96 kHz 4th DipSwitch OFF – 32 channels, ON – 28 channels.
- At frequency of 176.4 and 192 kHz 4th DipSwitch OFF – 16 channels, ON – 14 channels.

5th DipSwitch position is responsible for the selection frame type. At 44.1 and 48 kHz frame type 48k is used only. At 88.2 and 96 kHz frame type 48k and 96k can be used, and at 176.4 and 192 kHz frame type 48k is used only.

All connected devices must operate at identical frequencies, the same formats, and the same Frame set.

Signal routing

The DIO MADI card works in both DIOCARD1 and DIOCARD2 slots.

If ADC (Source To Digital Out) is set to MADI (DIOCARD1 or DIOCARD2), then the signal incoming to the card is routed to all available digital outputs (AES/EBU or second card plugged in to the converter).

If ADC (Source To Digital Out) is set to Analog or AES/EBU, then those 8 channels are routed to the selected MADI channels (DipSwitch 1-3).

If DAC (Source To Analog Out) is set to MADI (DIOCARD1 or DIOCARD2), then the incoming signal to the card is routed to the analog outputs.

RME Madiface ExpressCard

The Mytek DIO MADI card can directly interface with RME's HDSPe Madiface ExpressCard. There are many advantages to using the Madiface ExpressCard such as:

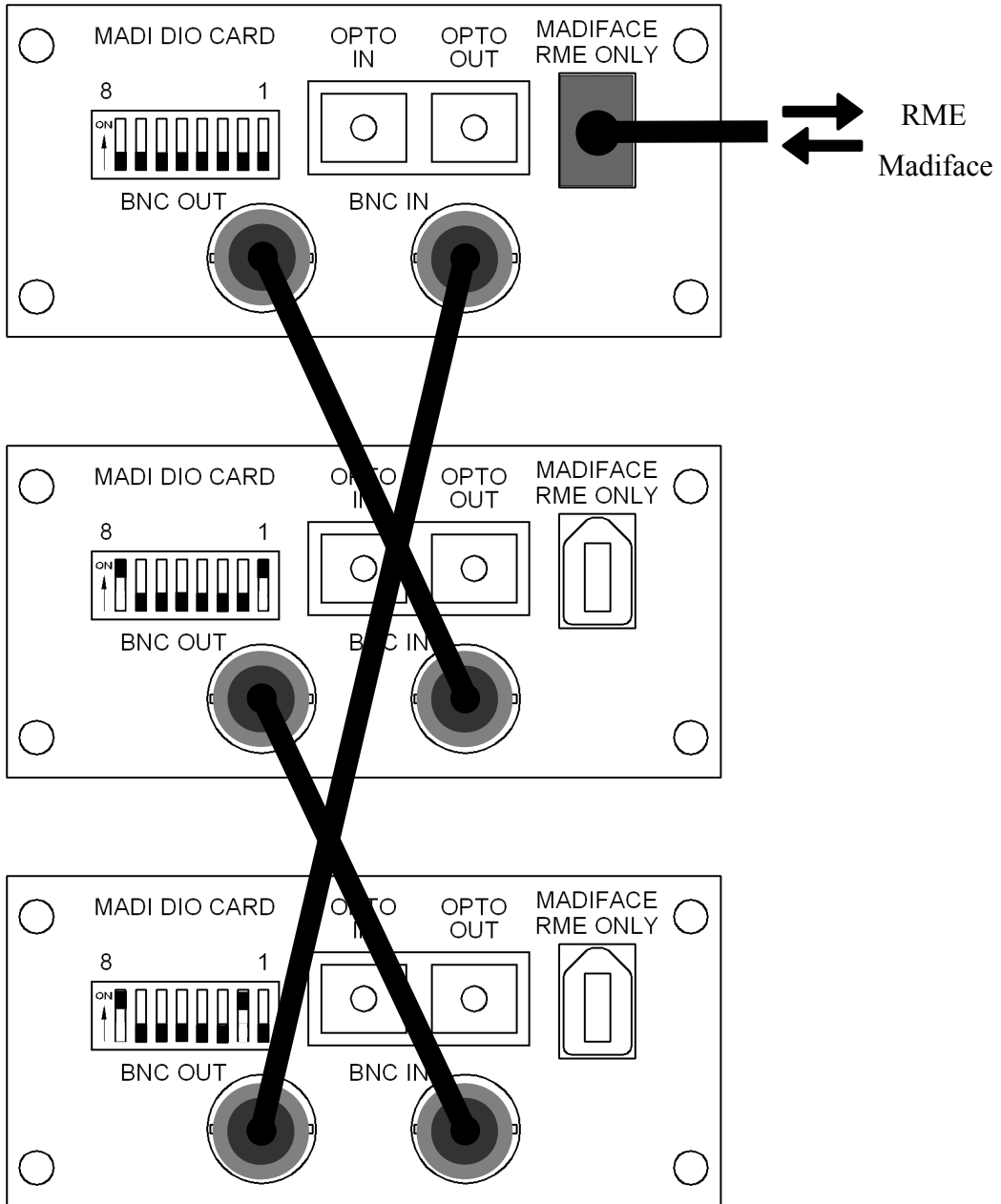
- Full use of the PCI Express bus
- High track count mobile solution
- Low latency operation with RME's robust drivers and TotalMix cue mixing software
- Use of an adapter allows the card to be used on a desktop system

The breakout box can be bypassed by directly connecting the Madiface to the MADI DIO card. The connection is made with a standard 6 pin FireWire cable, but the signal does not use the FireWire protocol. To avoid the risk of damaging the card, please do not connect a FireWire signal to the Madiface port on the DIO card or on the Madiface ExpressCard itself.

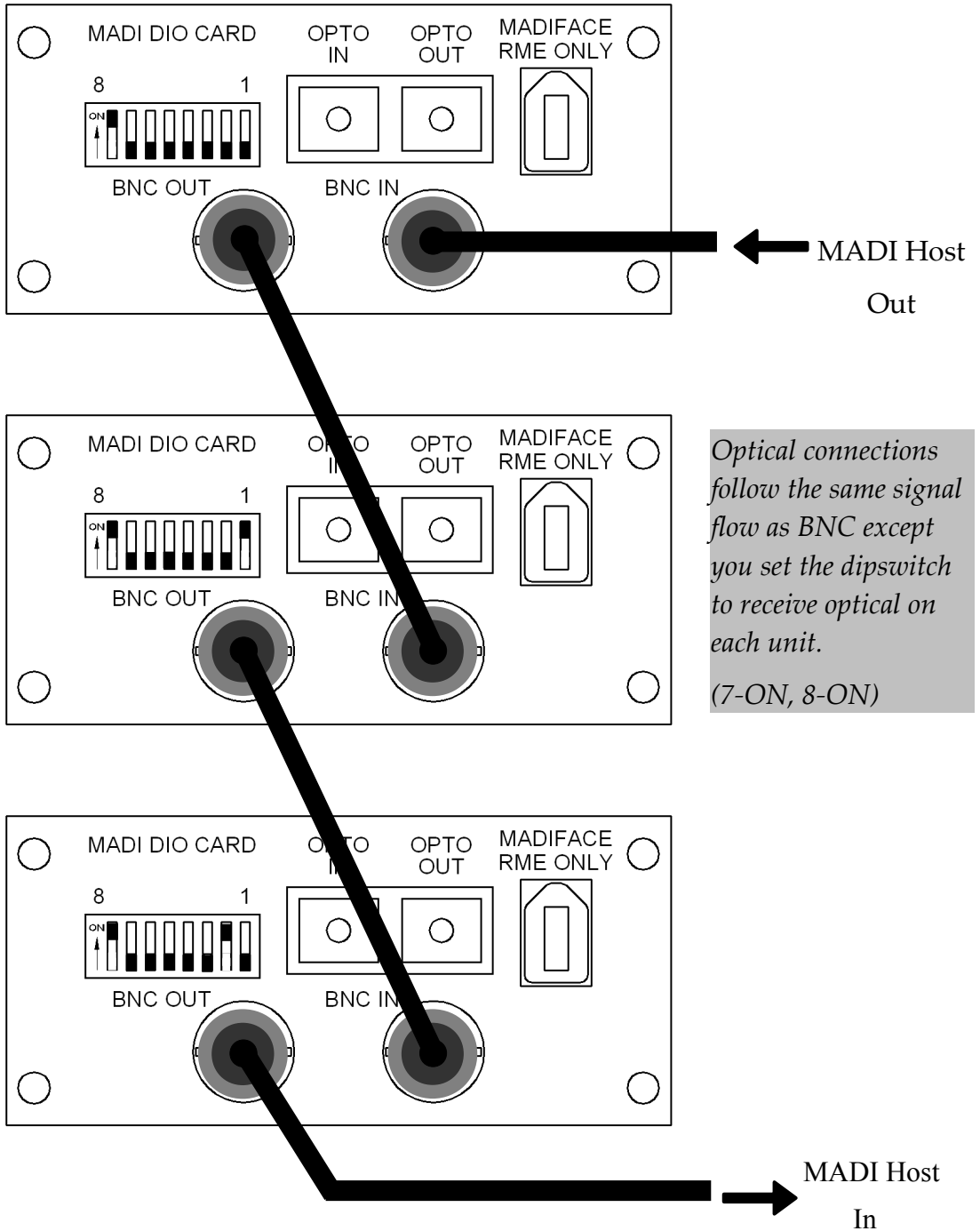
Multiple Converter Configurations

MADI is capable of carrying 64 channels of I/O over BNC, Optical, or through RME's proprietary Madiface port. You can chain multiple converters together using any combination of the three. The following diagrams will detail how to connect the signal lines and jumper settings.

RME Madiface with BNC converter chain



All BNC or optical connections



Mainboard firmware update

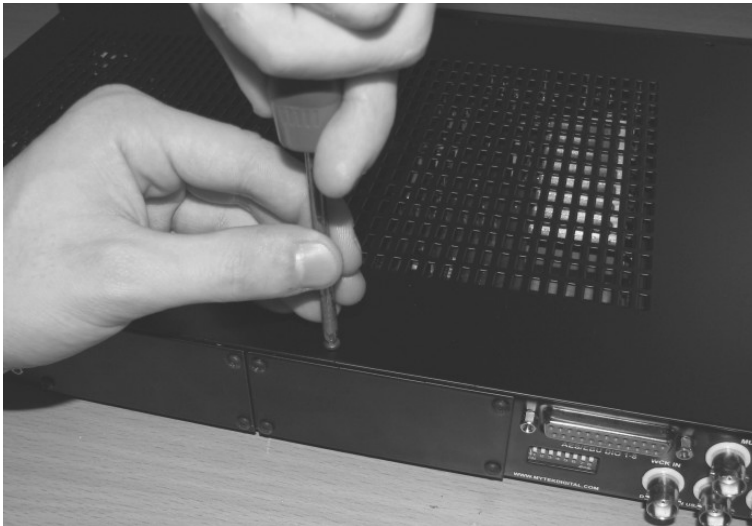
WARNING!

Remember to follow basic safety rules about handling of electronic device while opening the converter:

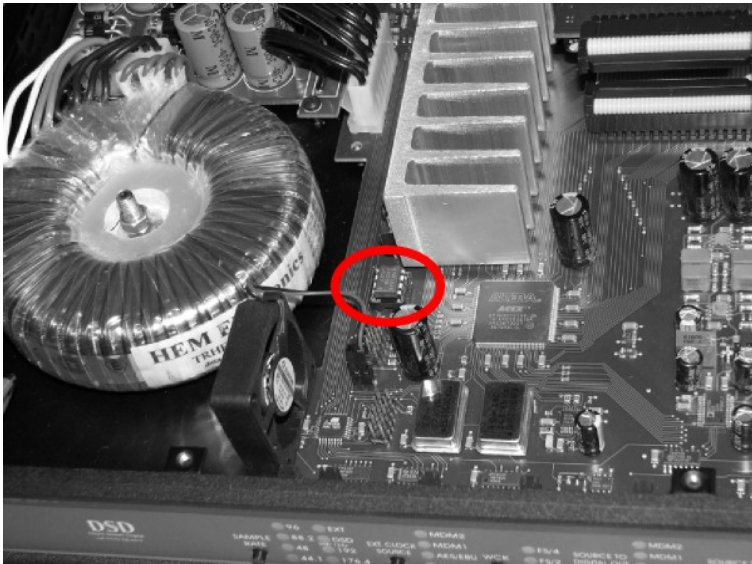
- ✓ keep your hands dry,
- ✓ **remember to turn off power and disconnect power and signal cables** while working with the top cover removed.

To perform firmware update of 8X192 ADDA converter:

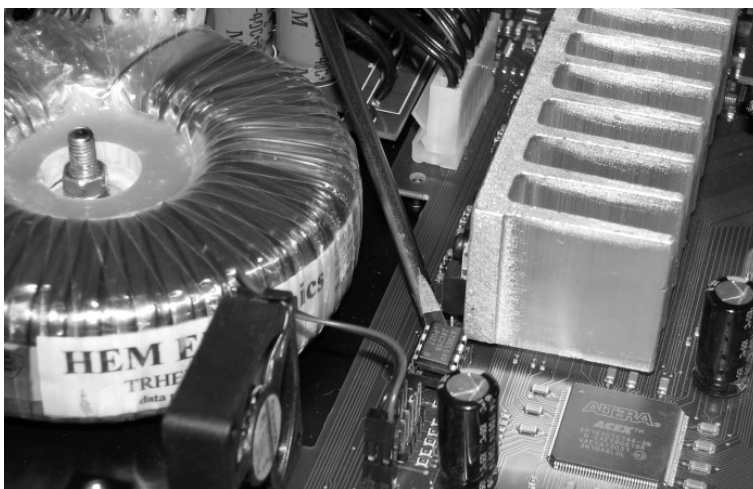
1. Check if the power cord and signal and clock lines are disconnected.
2. Remove the top cover.



3. Locate the memory socket on the converter main board.

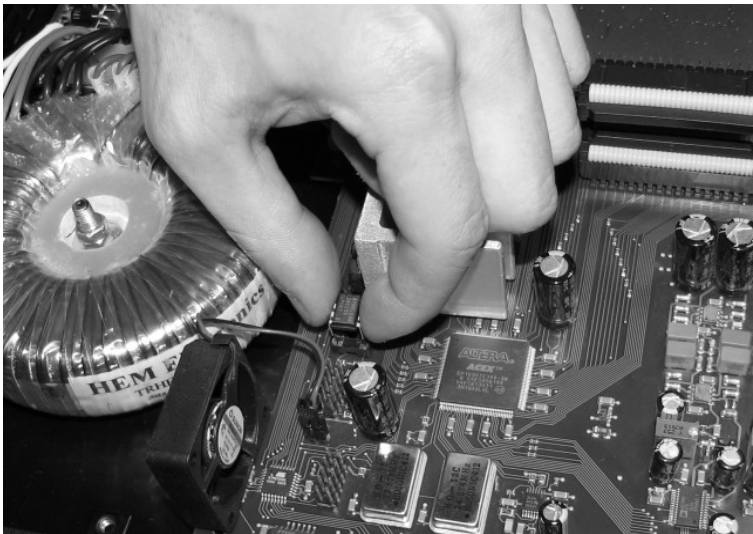


4. Gently remove the old memory chip.



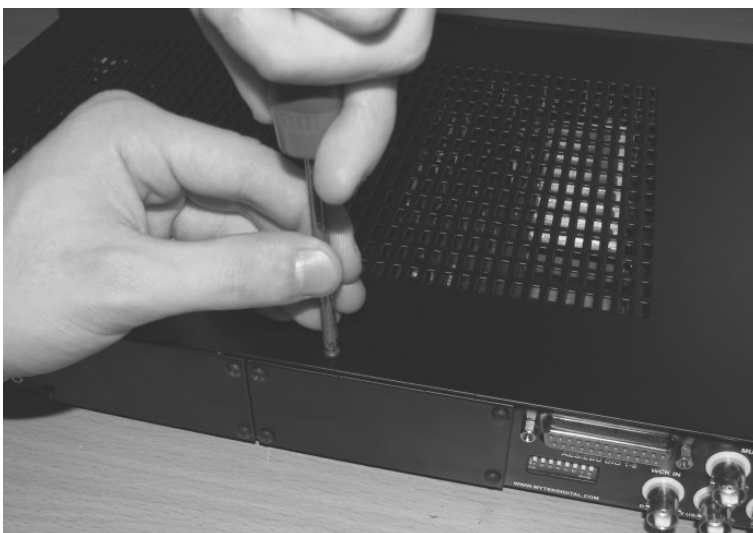
To avoid damaging memory pins, remove the chip vertically. Retain old memory chip.

- Carefully insert new memory chip in the socket.
The chip slot (pin1) should be matching the socket slot i.e. must be facing back of the unit. If necessary gently manually bend pins inward, to match the holes in the slot.



*During installation
check correct chip
orientation.*

- Mount the top cover back.



7. Attach power cord and other cabling.
8. Turn on the converter.

For about 2 seconds no LED should be lit on the converter's front panel, as new software is copied from memory to the main board chips. Then, all LEDs should turn on momentarily for about 10-30sec, and subsequently the unit should begin normal operation.

Check Mytek webpage for information on the latest firmware versions.

www.mytekdigital.com

Important Safety Instructions

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

WARNING

Excessive sound pressure from speakers and headphones can cause hearing loss. In order to use this product safely, avoid prolonged listening at excessive sound pressure levels.

For the customers in the U.S.A.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

All interface cables used to connect peripherals must be shielded in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This product with the CE marking complies with the EMC Directive issued by the Commission of the European Community. Compliance with this directive implies conformity to the following European standards:

- EN55103-1 : Electromagnetic Interference (Emission)
- EN55103-2 : Electromagnetic Susceptibility (Immunity)

This product is intended for use in the following Electromagnetic Environments: E1 (residential), E2 (commercial and light industrial), E3 (urban outdoors), E4 (controlled EMC environment, ex. TV studio).