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# Introduction

Congratulations on your purchase of the Delta 1010 ADAT Interface, designed and manufactured by M Audio. The **Delta 1010-AI** is a companion to the Delta 1010 PCI Recording System, and when used together, the **Delta 1010-AI** will add ADAT Optical 8-channel input and output capability to your Delta 1010.

Please follow the instructions contained in this manual to properly connect the **Delta 1010-AI** to your existing Delta 1010 setup, and to completely understand the versatility of the **Delta 1010-AI**. If you have not yet installed your Delta 1010, please refer to the Delta 1010 manual to install and configure the Delta 1010's PCI card.

## Features

- ADAT\* I/O for PC(Windows 95/98, NT, Linux) and Apple (MacOS) computers operating up to a full 24 bit 48kHz.
- Provides ADAT record through and playback using premium 24 bit converters.
- Simultaneous ADAT recording and computer playback.
- Select between analog and ADAT optical for computer input.
- Select between computer out and ADAT in for routing to the Delta 1010 D/A section.
- Select between computer out and analog in for ADAT input source.
- ADAT In to ADAT Out "Thru" mode.

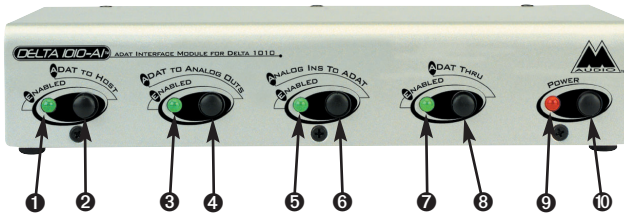
\* ADAT is a registered trademark of Alesis.

## What's in the Box?

Contained in the **Delta 1010-AI** package, you should find the following:

- This manual.
- Delta 1010 ADAT Interface Module for the Delta 1010.
- 25-pin male to female standard printer cable.
- 9v DC 500 mA center positive power supply.

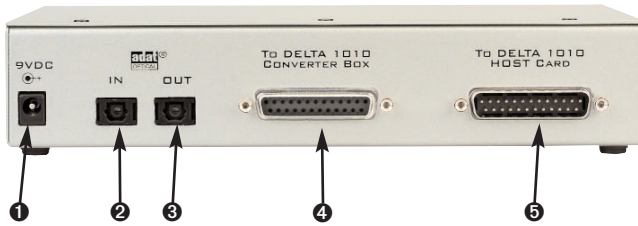
# Front and Back Panel Descriptions



## Front Panel

1. ADAT to Host “Enabled” LED: When lit, this LED indicates that “ADAT to Host” mode has been enabled.
2. ADAT to Host Button: Pressing this button and locking it to the “in” position will enable “ADAT to Host” mode. The incoming **Delta 1010-AI** ADAT signal will then be routed to the Delta 1010 PCI “host” card in your computer.
3. ADAT to Analog Outs “Enabled” LED: When lit, this LED indicates that “ADAT to Analog Outs” mode has been enabled.
4. ADAT to Analog Outs Button: Pressing this button and locking it to the “in” position will enable “ADAT to Analog Outs” mode. The incoming **Delta 1010-AI** ADAT signal will then be routed directly to the analog outs on the Delta 1010 rack unit.
5. Analog Ins to ADAT “Enabled” LED: When lit, this LED indicates that “Analog Ins to ADAT” mode has been enabled.
6. Analog Ins to ADAT Button: Pressing this button and locking it to the “in” position will enable “Analog Ins to ADAT” mode. Analog inputs on the Delta 1010 rack unit will then be routed directly to the ADAT out on the **Delta 1010-AI**.
7. ADAT Thru “Enabled” LED: When lit, this LED indicates that “ADAT Thru” mode has been enabled.
8. ADAT Thru Button: Pressing this button and locking it to the “in” position will enable “ADAT Thru” mode. The **Delta 1010-AI** ADAT In is then routed directly to the **Delta 1010-AI** ADAT Out.
9. Power Indicator LED: When lit, this LED indicates that power has been applied to the **Delta 1010-AI**.
10. Power Button: Pressing the “Power” button and locking it to the “in” position will apply power to the **Delta 1010-AI**, provided that the proper power supply has been plugged into the **Delta 1010-AI** 9v DC jack.

## Back Panel



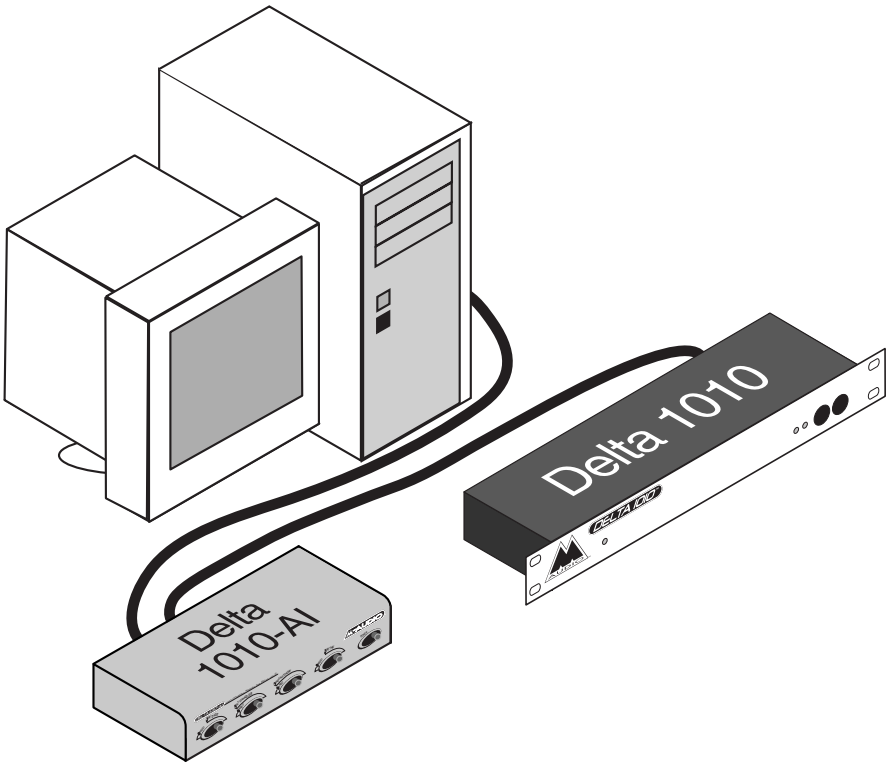
1. 9v DC Power Adapter Jack: This jack accepts a 2.5 mm, 9v center positive 500 mA power supply, provided with your **Delta 1010-AI**. Use only the proper power supply to power your **Delta 1010-AI**.
2. ADAT In Jack: This TOSlink standard optical jack accepts an 8-channel ADAT optical output signal on a standard TOSlink plug.
3. ADAT Out Jack: This TOSlink standard optical jack accepts a standard TOSlink plug, sending an 8-channel ADAT optical signal.
4. "To Delta 1010 Converter Box" 25-pin female D type connector: This connector transfers information to and from the Delta 1010 rack mount unit using the male to male printer cable supplied with your Delta 1010 Recording Interface.
5. "To Delta 1010 Host Card" 25-pin male D type connector: Using the standard printer cable that came with your **Delta 1010-AI**, this connector will transfer information to and from the Delta 1010 PCI host card and the **Delta 1010-AI**.

## Setting up the Delta 1010-AI with your Delta 1010

If you already have your Delta 1010 PCI Recording System installed, make sure that you have your computer's power turned OFF before following this procedure. If you have not yet installed your Delta 1010 PCI host card, you may incorporate the **Delta 1010-AI** setup when hooking up your Delta 1010.

1. Connect the male end of the supplied 25-pin cable to the Delta 1010's PCI "host card," which has been properly seated and secured in one of your computer's PCI expansion slots.
2. Connect the female end of the supplied 25-pin cable to the **Delta 1010-AI**'s "To Delta 1010 Host Card" connector on the back of the **Delta 1010-AI**.
3. Connect one end (male) of the 25-pin cable that came with your Delta 1010 Recording System into the "To Delta 1010 Converter Box" connector on the back of the **Delta 1010-AI** Interface.
4. Connect the other end (also male) of the 25-pin cable that came with your Delta 1010 Recording System to the rack mount unit of the Delta 1010.

Your setup should look like this:



**NOTE:** If you are using your Delta 1010 solely for optical transfers and do not need A/D or D/A capability, it is not necessary to connect the Delta 1010 rack mount unit. However, synchronization via MTC may be desired, and your Delta system will lose its MIDI function without the rack unit (see section, "Synchronizing Your ADATs").

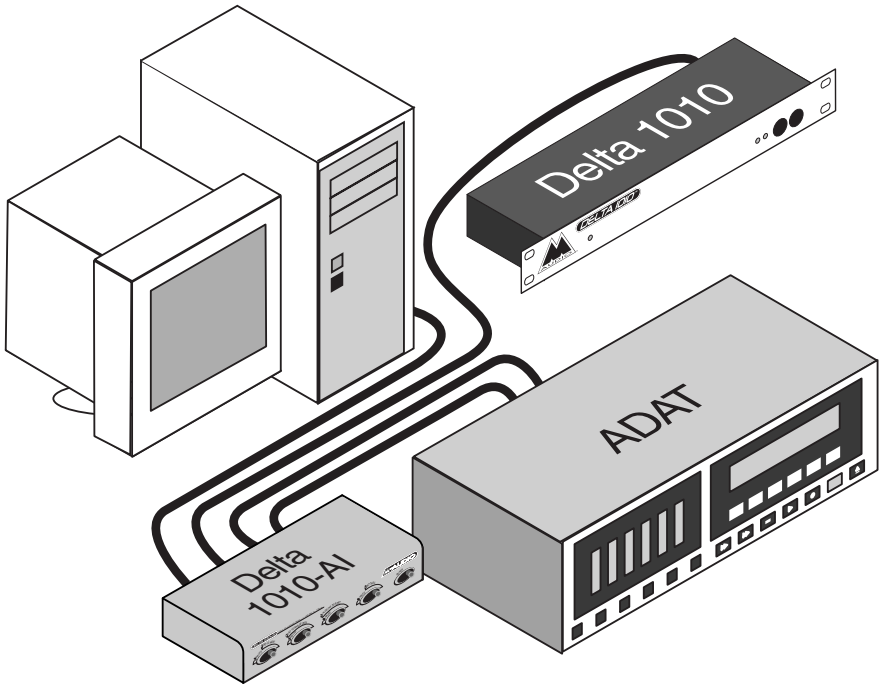
## Hooking Up Your ADAT Optical Device

TOSLink is the name of the standard for optical cables, plugs, and jacks. Using two good quality TOSLink optical cables:

1. Plug one end of an optical cable into the TOSLink optical output jack of your ADAT (or other 8-channel ADAT optical capable device).
2. Plug the other end of your optical cable into the ADAT Optical "In" jack of the **Delta 1010-AI**.
3. Plug one end of the second optical cable into the ADAT Optical "Out" jack of the **Delta 1010-AI**.

4. Plug the other end of the second optical cable into the TOSLink input jack of your ADAT or other 8-channel optical capable device.

If you are using a single ADAT for this example, your setup should look like this:



## Using Your Delta 1010-AI

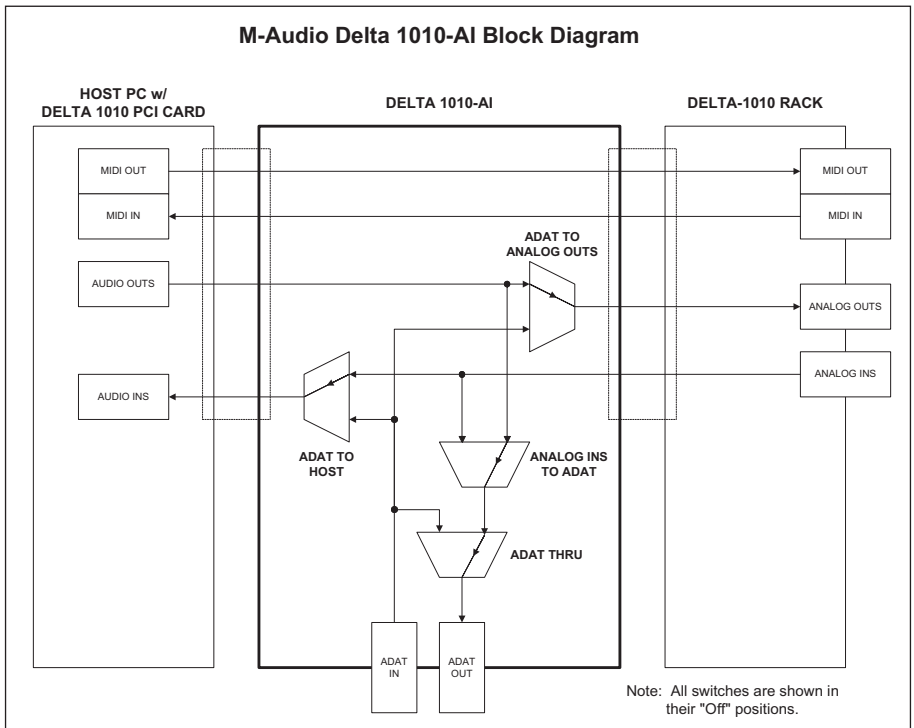
Adding the **Delta 1010-AI** to the Delta 1010 Recording System gives you the ability to convert your Delta's 8 analog inputs into one ADAT Optical input and its 8 analog outputs into one ADAT Optical output. Your **Delta 1010-AI** and the Delta 1010 rack mount unit can also be used in a "standalone" mode, in which the Delta 1010 A/D converters send signal directly to the AI's optical output, and the **Delta 1010-AI** optical input connects directly to the 1010 rack unit's D/A converters.

This can be done in several configurations using the front panel selection switches, as well as certain mixed modes or combinations of switches. These configurations, mixed modes, and standalone mode are covered in this section.

Any device that transmits or receives the ADAT optical format may be used with the Delta 1010 ADAT Interface. Many digital mixers use this ADAT "standard" 8-channel format, as do other computer interface cards. The audio you wish to transfer may come from or go to devices such as these.

The **Delta 1010-AI** Block Diagram below gives you an overview of the signal flow possible with your **Delta 1010-AI**. As shown, with all of the **Delta 1010-AI**'s switches in the "Off" position, the Delta 1010 PCI card's hardware outputs 1 through 8 are routed to the ADAT Optical out of the **Delta 1010-AI** in addition to the Delta 1010 analog outs 1 through 8 on the 1010's rack mount unit "by default." All other **Delta 1010-AI** modes are bypassed. MIDI I/O simply passes through the **Delta 1010-AI** to the Delta 1010 rack unit.

This default setting may be useful during mixdown. If, while mixing, you use your ADAT Out from the **Delta 1010-AI** to send audio to a digital mixer (for example), the analog outs may be used as additional sends to effect units or dynamics processors.



**ADAT to Host:** When “ADAT to Host” is enabled, the ADAT Optical input of the **Delta 1010-AI** becomes hardware inputs one through eight of the Delta 1010 Recording System. When this mode is selected, the 8 analog inputs on the Delta 1010 rack-mount unit are no longer routed to the Delta 1010 PCI card. In your music recording software, software inputs 1 through 8 will then receive their signal from the ADAT Optical input. Select this mode when recording an ADAT Optical signal into your computer.

**IMPORTANT:** When choosing ADAT to Host mode, you must now set the Delta 1010 to receive its master clock source from the ADAT optical signal seen at the Delta 1010-AI ADAT Optical input. To do so, open the Delta control panel in your computer to the Hardware Settings page, and in the Master Clock section select “Wordclock” as your master clock source. When the Delta 1010-AI is ADAT optical input is engaged and Wordclock is selected as the master clock, the wordclock input of the Delta 1010 rack unit is rendered inactive.

**NOTE:** If you are using the ASIO drivers with your Delta 1010, your master clock setting will be selected from within your music program’s audio setup page. Once you have opened that page, select “Wordclock” as your master clock source.

You must also set the Delta control panel to match the sample rate of your ADAT optical device. Typically, ADATs default to 48kHz sampling rate, but they can be set to 44.1kHz using the Alesis BRC.

**ADAT to Analog Outs:** With this mode enabled, the ADAT Optical input on the **Delta 1010-AI** is routed through the Delta 1010 rack mount unit 24 bit D/A converters to analog outs 1 through 8. The audio outs of the Delta 1010 PCI card, which are normally routed to the analog outs of the 1010’s rack unit, are defeated. Select this mode when you wish to use the D/A converters of the Delta 1010 rack unit to convert your ADAT Optical signal to analog.

**NOTE:** As stated, unless a different routing is selected, the audio outs of the Delta 1010 PCI card are routed, by default, to the ADAT Optical output of the Delta 1010-AI unit.

**IMPORTANT:** When choosing ADAT to Analog Outs mode, you must also set the Delta 1010 to receive its master clock source from the ADAT optical signal seen at the Delta 1010-AI ADAT Optical input. To do so, open the Delta control panel in your computer to the Hardware Settings page, and in the Master Clock section select “Wordclock” as your master clock source.



**Analog Ins to ADAT:** When “Analog Ins to ADAT” mode is enabled, the analog inputs 1 through 8 on your Delta 1010 rack mount unit are routed through the rack unit’s 24 bit A/D converters to the ADAT Optical output of the **Delta 1010-AI**. Select this mode when you wish to use the A/D converters on your Delta 1010 rack unit to convert the signal directly to ADAT optical. This may be desirable if, when doing your recording onto an ADAT, you find that you prefer using the Delta 1010’s A/D converters.

**NOTE: When this mode is selected, the audio outs of the Delta 1010 PCI card are no longer routed to the ADAT Optical out of the Delta 1010-AI. This “default” routing is defeated.**

**ADAT Thru:** When “ADAT Thru” is enabled, the signal present at the ADAT Optical In of the **Delta 1010-AI** is routed directly to the ADAT Optical Out. This mode is desirable when the ADAT input signal must be maintained, or passed ‘thru’ to the ADAT output. The ADAT Optical in can still be routed to the Delta 1010 PCI host card and/or the analog outs of the Delta 1010 rack unit.

**NOTE: When this mode is selected, the audio outs of the Delta 1010 PCI card are no longer routed to the ADAT Optical out of the Delta 1010-AI. This “default” routing is defeated whenever a different source is selected for the ADAT Optical out (such as “Analog Ins to ADAT”).**

**Mixed Modes:** Any combination of **Delta 1010-AI** modes can be selected, the results of which can be determined simply by summing the characteristics of the different modes described in this section. ADAT Thru mode can be applied to any of these combinations, with the result as described above, in “ADAT Thru.”

**NOTE: Whenever “ADAT Thru” mode is enabled, the “Analog Ins to ADAT” mode will be defeated. Pressing the ‘Analog Ins to ADAT’ button will have no effect in this case, since this switch precedes ADAT Thru in the signal path.**

**Standalone Mode:** To use the 1010 rack unit and **Delta 1010-AI** in “standalone” mode, your **Delta 1010-AI** does not need to be connected to your host computer. When the **Delta 1010-AI** is connected to the Delta 1010 rack unit with the rack unit’s power supply properly attached, engaging the power button on the **Delta 1010-AI** will trigger the Delta 1010 rack unit to power up.

When the **Delta 1010-AI** is not connected to the host computer or the when the host computer is not powered on, the **Delta 1010-AI** in standalone mode is capable of receiving its master clock signal from the ADAT optical input and communicating this to the Delta 1010 rack unit’s D/A converters. “ADAT to

Analog Outs,” “Analog Ins to ADAT,” and “ADAT Thru” are the modes that will function independent of the host computer, hence the term “standalone.”

The standalone mode functions are also available when the **Delta 1010-AI** is attached to the computer and the computer is powered on. However, as described in the “ADAT to Analog Outs” section, the Delta control panel master clock must be set to “Wordclock” in order for the analog outs to receive their clock signal from the ADAT optical input.

## **Master Clock Settings and the Delta 1010-AI**

Whenever a valid ADAT 8-channel digital audio signal is present at the **Delta 1010-AI**'s ADAT Optical In and routed to either the host computer's Delta 1010 PCI card or Delta rack unit's analog outs, the system must get its sampling clock or “wordclock” from that incoming digital signal so that all digital audio sampling clocks are synchronized. When the host computer Delta 1010 PCI card, the **Delta 1010-AI**, and the Delta rack unit are connected and powered, the Delta control panel's “Master Clock” setting in the Hardware Settings page must be set to “Wordclock” in order for the system will lock to the incoming digital signal. When host computer is off or not attached and the **Delta 1010-AI** is in standalone mode, the Delta rack unit's D/A converters will know to get its master clock signal from the ADAT signal at the optical input of the **Delta 1010-AI**.

When there is no digital audio signal present at the **Delta 1010-AI** optical input, the master clock will be determined by the Delta 1010 Control Panel setting when the host computer is involved (refer to your Delta 1010 manual), or in standalone mode by the A/D converters on the Delta 1010 rack-mount unit. It is important to be aware of these settings, since incorrect master clock sync settings can cause undesired anomalies and/or audio artifacts.

If your Delta 1010 PCI card or your Delta 1010 rack unit's A/D converters are controlling the sampling clock and you are sending a digital audio signal from the Delta AI's optical out, make sure that the device that receives that ADAT 8-channel signal is set to have its sampling clock determined by the incoming digital audio signal or the wordclock signal. On the ADAT, set the input to “digital,” and the Clock Select to “Digi.” On digital mixers and other ADAT Optical capable devices, set the master clock to either “ADAT,” or “wordclock” if using wordclock for your sampling clock master. Check your device's user guide for advice on setting the master clock synchronization.

# Synchronizing your ADATs

**Using a BRC:** You may need to keep your ADAT(s) in sync while transferring audio to the Delta 1010 Recording System. This is made simple using the Alesis BRC, by taking MTC (MIDI timecode) from the MIDI output of the BRC to the MIDI input of the Delta 1010. A digital mixer may have the capability of sending MTC as well. To set the BRC to send MTC:

1. Click the "Edit" button.
2. Click the "Gen Sync" button.
3. Select "MTC," then de-select "Edit."

ADAT sync is a combination of wordclock and SMPTE/MTC sync. The Delta master clock is already receiving its clock signal from the wordclock information contained in the ADAT optical signal at the input of the **Delta 1010-AI**, in conjunction with having selected "Wordclock" in the Hardware Settings page of the Delta control panel (see "Using Your **Delta 1010-AI** "ADAT to Host" section).

It will then be necessary to set your music software sync page to "MTC" as its timing reference or clock source so that it will chase the incoming timecode (make sure that the Delta 1010's MIDI I/O is enabled in the software's MIDI setup page). Check your software's documentation.

You will need to enter a "timecode offset" into the software's sync setup page also. Your BRC may be sending out MTC from a point relative to the song's position on the tape. Either the BRC or your music software can give you a readout of the timecode position, but you'll want to enter in an offset time within your music software that's 10 seconds or so before the actual start of the song. That way, the computer has plenty of time to lock up before the transfer of audio begins. Some people use that time or a greater amount as a safety net, in case they decide to add or expand an intro.

**Without a BRC:** If you are running an ADAT(s) without a BRC, or otherwise do not have the capability of sending MTC from your ADAT optical device, you will have to create this timing reference in some other fashion.

You will need a device that generates SMPTE timecode, which can then read SMPTE timecode and convert it to MTC. One audio track on your ADAT must then be dedicated to recording the SMPTE timecode. A standalone device such as the "Syncman" by Midiman is capable of performing such a feat. A synchronization tutorial is included in its manual.

## Limited Lifetime Warranty

MIDIMAN warrants that this product is free of defects in materials and workmanship under normal use so long as the product is: owned by the original purchaser; the original purchaser has proof of purchase from an authorized MIDIMAN dealer; and the purchaser has registered his/her ownership of the product by sending in the completed warranty card.

This warranty explicitly excludes power supplies and included cables which may become defective as a result of normal wear and tear.

In the event that MIDIMAN receives written notice of defects in materials or workmanship from such an original purchaser, MIDIMAN will either replace the product, repair the product, or refund the purchase price at its option. In the event any repair is required, shipment to and from MIDIMAN and a nominal handling charge shall be born by the purchaser. In the event that repair is required, a Return Authorization number must be obtained from MIDIMAN. After this number is obtained, the unit should be shipped back to MIDIMAN in a protective package with a description of the problem and the Return Authorization clearly written on the package.

In the event that MIDIMAN determines that the product requires repair because of user misuse or regular wear, it will assess a fair repair or replacement fee. The customer will have the option to pay this fee and have the unit repaired and returned, or not pay this fee and have the unit returned unrepared.

The remedy for breach of this limited warranty shall not include any other damages. MIDIMAN will not be liable for consequential, special, indirect, or similar damages or claims including loss of profit or any other commercial damage, even if its agents have been advised of the possibility of such damages, and in no event will MIDIMAN's liability for any damages to the purchaser or any other person exceed the price paid for the product, regardless of any form of the claim. MIDIMAN specifically disclaims all other warranties, expressed or implied. Specifically, MIDIMAN makes no warranty that the product is fit for any particular purpose.

This warranty shall be construed, interpreted, and governed by the laws of the state of California. If any provision of this warranty is found void, invalid or unenforceable, it will not affect the validity of the balance of the warranty, which shall remain valid and enforceable according to its terms. In the event any remedy hereunder is determined to have failed of its essential purpose, all limitations of liability and exclusion of damages set forth herein shall remain in full force and effect.

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