

Pro Tools HD Option Card

Addendum to Symphony I/O Mk II User's Guide



This document provides information on the operation of the Symphony I/O Mk II when equipped with the Pro Tools HD Option Card.

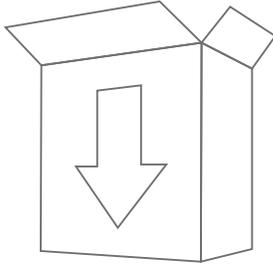
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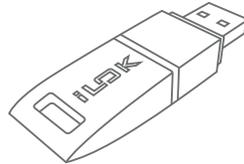
Compatible Pro Tools Systems

Your Pro Tools System must be compatible with the AVID HD I/O to use Symphony I/O Mk II with HD Option card.

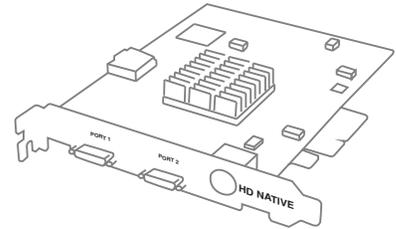
This means you must have Pro Tools HD 8.1.1 or higher, an iLok with HD license connected via USB to your Mac or PC computer, a compatible Pro Tools HD card, and have installed the Pro Tools HD driver (a separate install).



Pro Tools HD Software



iLok with Pro Tools HD License



Pro Tools HD Card

THE FOLLOWING PRO TOOLS HD CARDS ARE COMPATIBLE AS OF THIS WRITING:

HDX



**HD Native:
PCIe and Thunderbolt Interface**



HD Core/Accel/Process PCIe



For complete Pro Tools software and hardware compatibility information, please refer to the AVID website: www.avid.com

Installation

The Symphony I/O Mk II will come from the factory with the Pro Tools HD option card installed.

To add the Pro Tools HD Option card to your existing Symphony I/O Mk II system, please contact Apogee or your region's Apogee Distributor to arrange for factory installation.

Software Installation

Follow the instructions included with your AVID Pro Tools HD system for how to install the Pro Tools software, and HD drivers for an AVID HD I/O. No Apogee software is required.

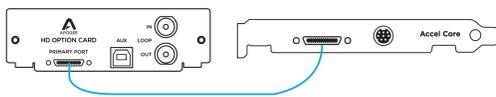
Making Connections

The Pro Tools HD Option card is equipped with a Mini Pro Tools HD (PC32) Port

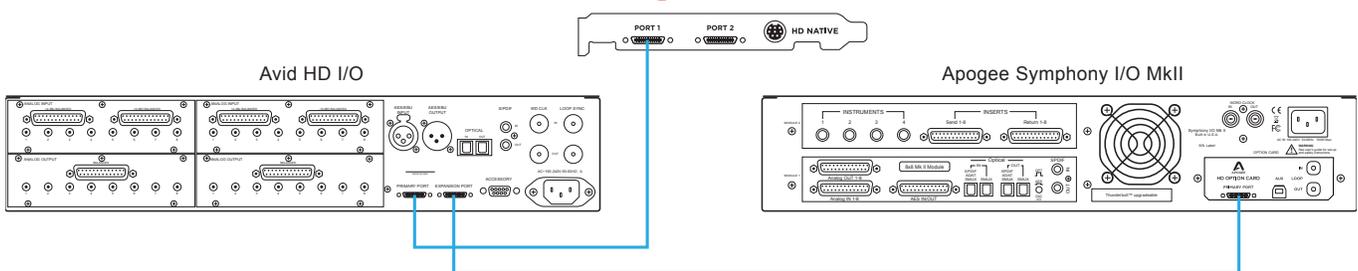
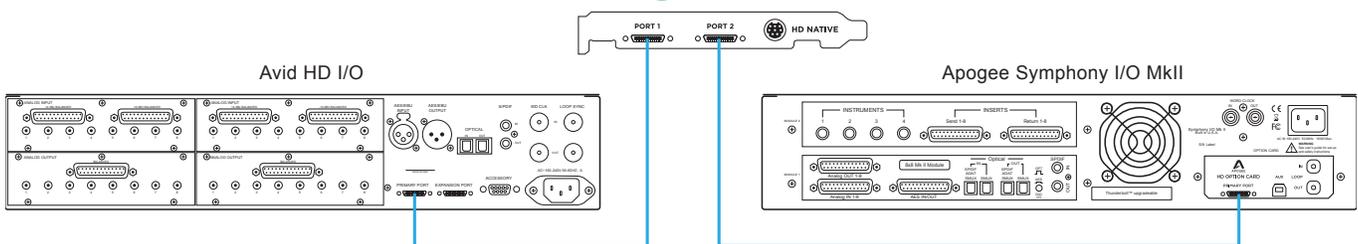
- Using a Pro Tools HD cable, connect the Symphony I/O Mk II directly to a port on your HD Native or HDX card.



- A Mini to regular Pro Tools HD cable (mini PC32) adapter is required to connect to a HD Core or Accel card.



- Do not daisy chain Symphony I/O with other units.



**NOTE: The HD Option Card's AUX port is for firmware updates and is not used.*

Connecting Systems with Multiple Symphony I/O and HD Hardware

Multiple Symphony I/O Mk II Systems

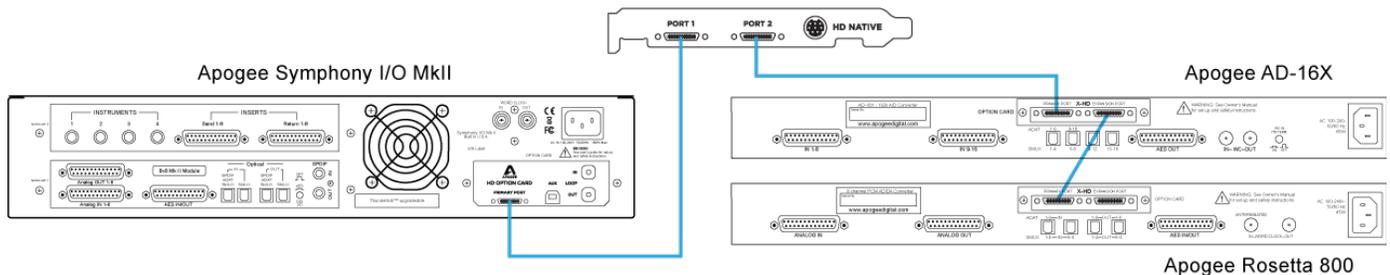
A Pro Tools HD System can be configured with multiple Symphony I/O Mk II units. When setting up such a system, the following requirements must be followed:

- Each unit must connect to its own dedicated Pro Tools HD port on the Pro Tools HD or HDX card.
- If using an HD Native (PCIe or Thunderbolt) card, make sure the unit connected to port 1 has two I/O modules installed.
 - *If only one module installed, routing will be incorrect and/or audio will not show up where expected.*
 - *The Mic Pre module card does NOT count as a second module and should not be used in the first chassis of a multiple Symphony I/O system.*
 - *This only occurs with HD Native cards and does not apply to HDX or HD Core/Accel cards.*
- If using a 2x6 card in a chassis with two I/O modules, ensure the 2x6 is installed in the top module card (slot 2).
 - *Two 2x6 module cards installed into the same Symphony I/O chassis is not supported with the Pro Tools HD option card.*
- Loop Sync must be connected via BNC Word Clock cables (see Syncing on Page 5).

Mixed Hardware Systems

A Pro Tools HD system can be configured to include other AVID HD hardware or legacy Apogee HD compatible converters (like original Symphony I/O, 16x or Rosetta units) along with Symphony I/O Mk II. When setting up such a system, the following requirements must be followed:

- Connect Symphony I/O Mk II to its own dedicated Pro Tools HD port on the HD or HDX card. Do not daisy-chain Symphony I/O with other units.



- Refer to the instructions included with the other AVID HD hardware or legacy Apogee HD compatible converters on how to connect them to the system.
- If using an HD Native (PCIe or Thunderbolt) card, make sure the Symphony I/O connected to port 1 has two I/O modules installed.
 - *If only one module installed, routing will be incorrect and/or audio will not show up where expected.*
 - *The Mic Pre module card does NOT count as a second module and should not be used in the first chassis of a multiple Symphony I/O system.*
 - *This only occurs with HD Native cards and does not apply to HDX or HD Core/Accel cards.*
- If using a 2x6 card in a chassis with two I/O modules, ensure the 2x6 is installed in the top module card (slot 2).
 - *Two 2x6 module cards installed into the same Symphony I/O chassis is not supported with the Pro Tools HD option card.*
- Loop Sync must be connected via BNC Word Clock cables (see Syncing on Page 5). If connecting digital audio devices that do not have Loop Sync, the Symphony Mk II's regular word clock connections can be used instead.

Syncing Symphony I/O Mk II

The Symphony I/O Mk II Pro Tools HD Option card is equipped with Loop Sync In/Out BNC ports. These are only required when your Pro Tools HD system has more than one HD interface (such as multiple Symphony I/O Mk II units).

Connect the Loop Sync OUT port to the next unit's Loop Sync IN port. When you get to the last unit, connect its Loop Sync OUT port back to the very first unit's IN port.

Clock Connections Multiple HD Interfaces



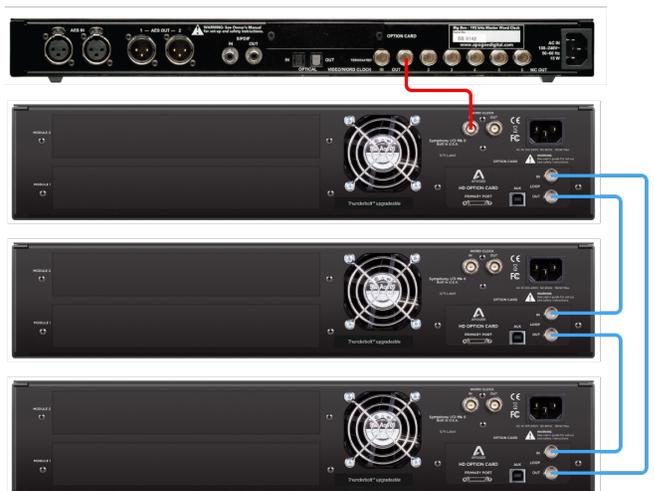
Utilize an Avid Sync HD by connecting its Loop SyncHD Option Card Loop Sync connections in the same way:

Clock Connections Multiple HD Interfaces + Avid Sync HD



Utilize an external master clock into your system by connecting to the regular Word Clock, then use Loop Sync for the rest of your HD hardware:

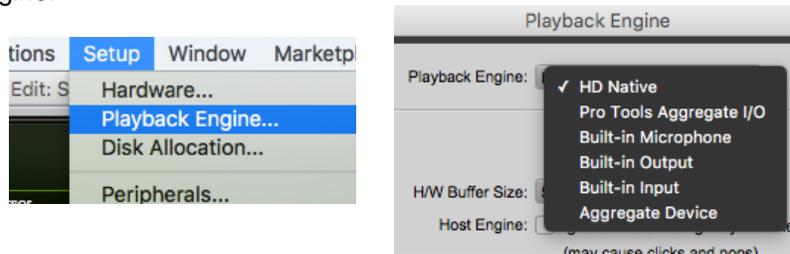
Clock Connections Multiple HD Interfaces + External Master Clock such as Big Ben



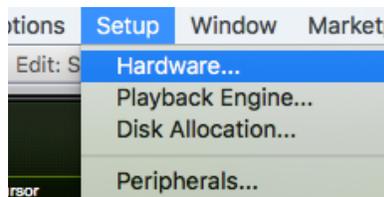
Settings in Pro Tools

Ensure all your Symphony I/O and any other HD interfaces are connected and turned on before you launch Pro Tools HD.

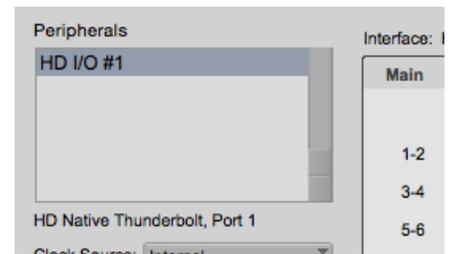
For the system to scan for HD hardware, your HD / HDX / HD Native card must be selected as the “Current Engine” in the Setup menu > Playback Engine.



Each installed I/O module is recognized as a separate HD I/O in the Setup menu > Hardware:



- A **single Symphony I/O** with one module installed is detected as a single HD I/O by Pro Tools.



- A **single Symphony I/O** with *two modules installed is detected as TWO HD I/O's by Pro Tools.



Each HD I/O transmits and receives 16 channels of audio. These 16 channels of audio are detected regardless if it's a 16x16, 8x8, or 2x6 module card.

**NOTE: The Mic Pre module card will not be recognized as a separate HD I/O but will still fully function in conjunction with the card in slot 1. Control of the Mic Module settings such as input gain is done through the Symphony I/O Mk II's front touch-panel display.*

Delay Compensation

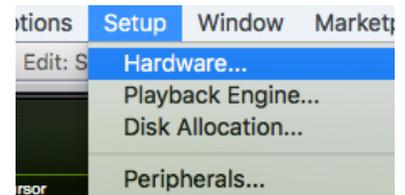
When using hardware inserts in a track of your project, Pro Tools compensates for any hardware latency introduced by the Avid HD I/O converters. It's purpose is to ensure that signal sent out of the system (such as to an external compressor or EQ) will return to the software as sample-accurately as possible. This is all done behind-the-scenes as Pro Tools detects what hardware is connected and applies appropriate compensation.

So that the end-user does not have to worry about the difference in hardware conversion latency between their Apogee converter and an actual Avid HD I/O, Symphony I/O Mk II with Pro Tools HD option card has been engineered so that round-trip latency is the same as an Avid HD I/O down to the sample.

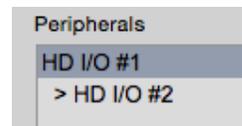
Since Pro Tools does not know which converter module card(s) are installed in your Symphony I/O Mk II, make the following settings in the Hardware Setup window to ensure delay compensation is applied appropriately to the analog and digital I/O of your system:

** For Mk II Symphony module cards at sampling rates of 88.2 - 192kHz, use the same settings below but see note on page 10.*

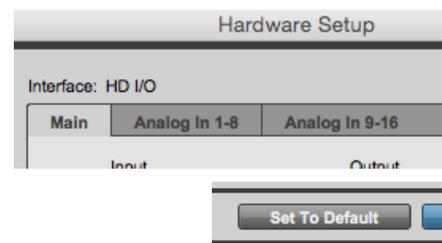
1. Choose Setup > Hardware



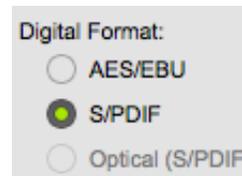
2. In the Peripherals pane, check that each Symphony module is detected as an HD I/O. Choose the first HD I/O in the Peripherals list.



3. Click the Main tab, then click Set To Default. (When using a 2x6 module, a custom setting is used. See Page 8.)



4. Under Digital Format, click the S/PDIF radio button.

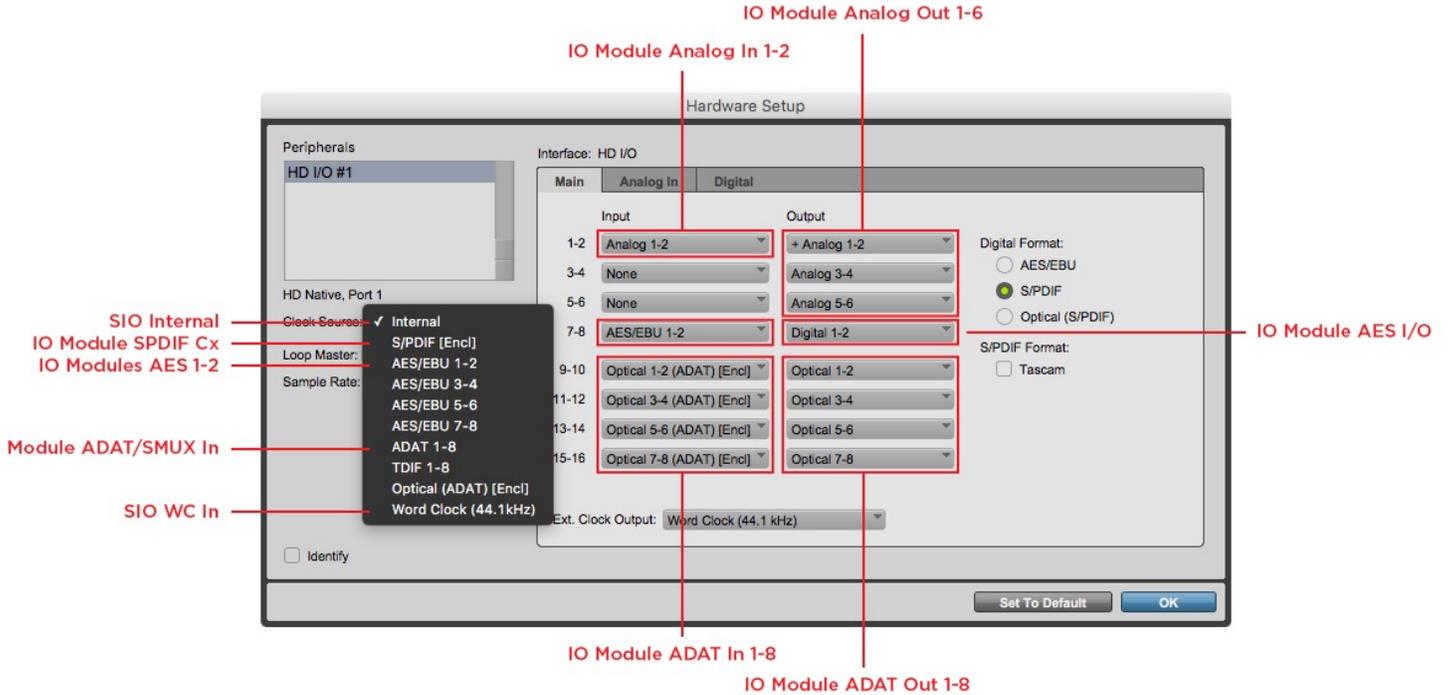


5. Repeat steps 2-4 for each HD I/O in the Peripherals list

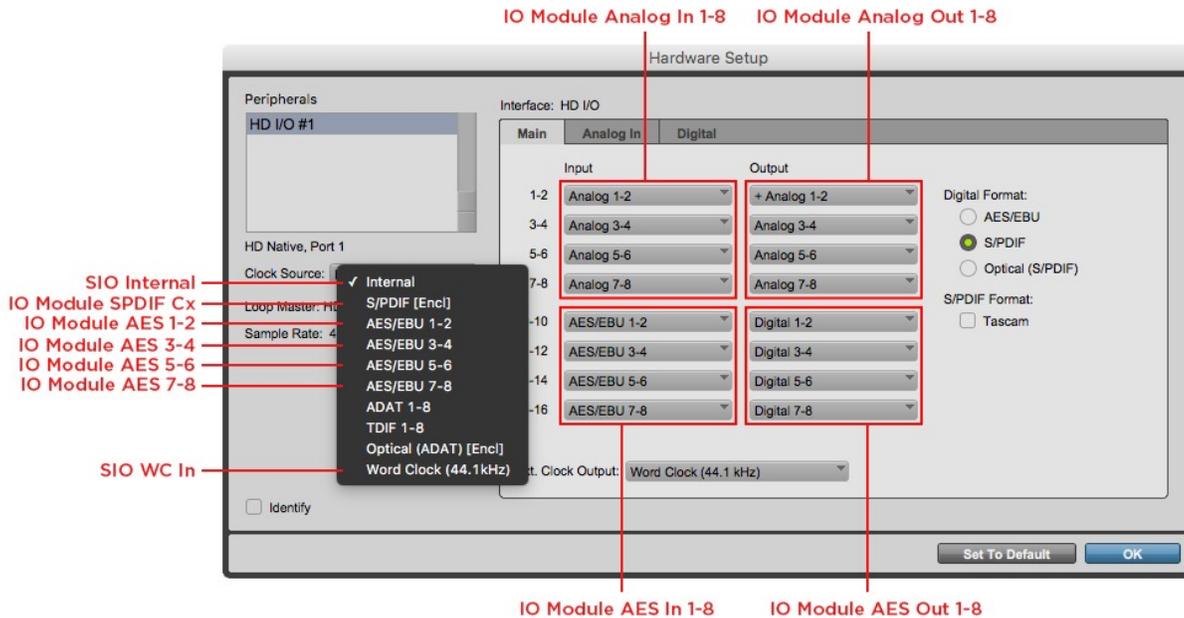
Configure the Hardware Setup window as shown below for each Symphony module card in your system. This configuration reflects the actual routing between the I/O Module and Pro Tools. The Clock Source section represents which digital input on that module you can use if you desire to use an external clock master:

2X6 ANALOG I/O + 8 OPTICAL I/O + AES I/O

Note that optical inputs and outputs (including the Opt In 1 ADAT clock setting) are not available at 176.4 - 192K sampling rates.

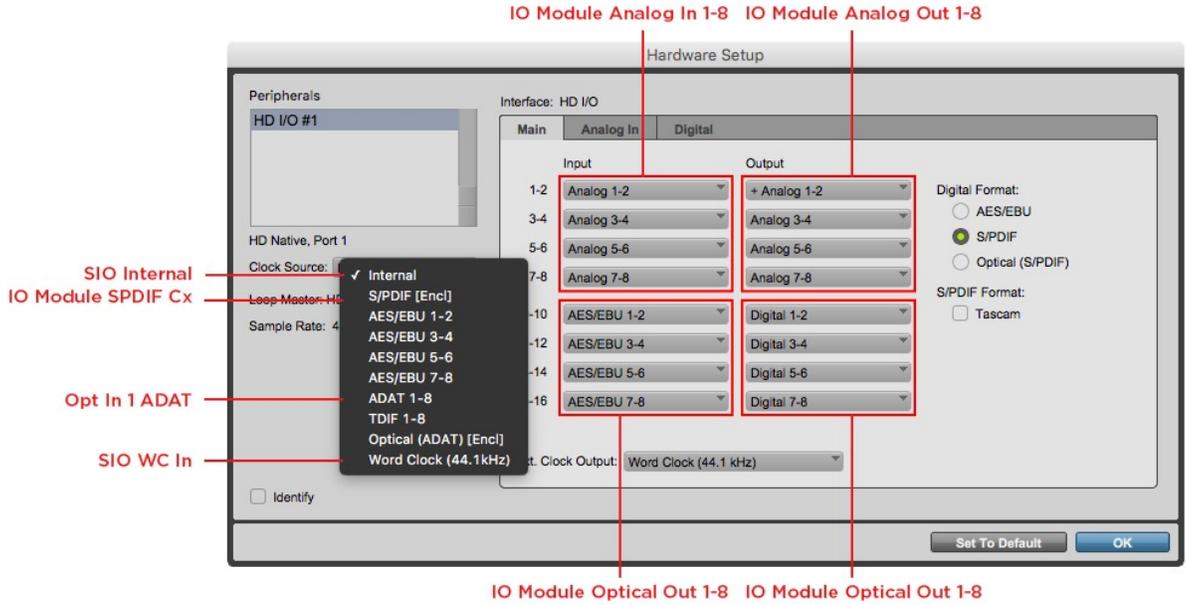


8 ANALOG I/O + 8 AES/OPT I/O IN AES MODE

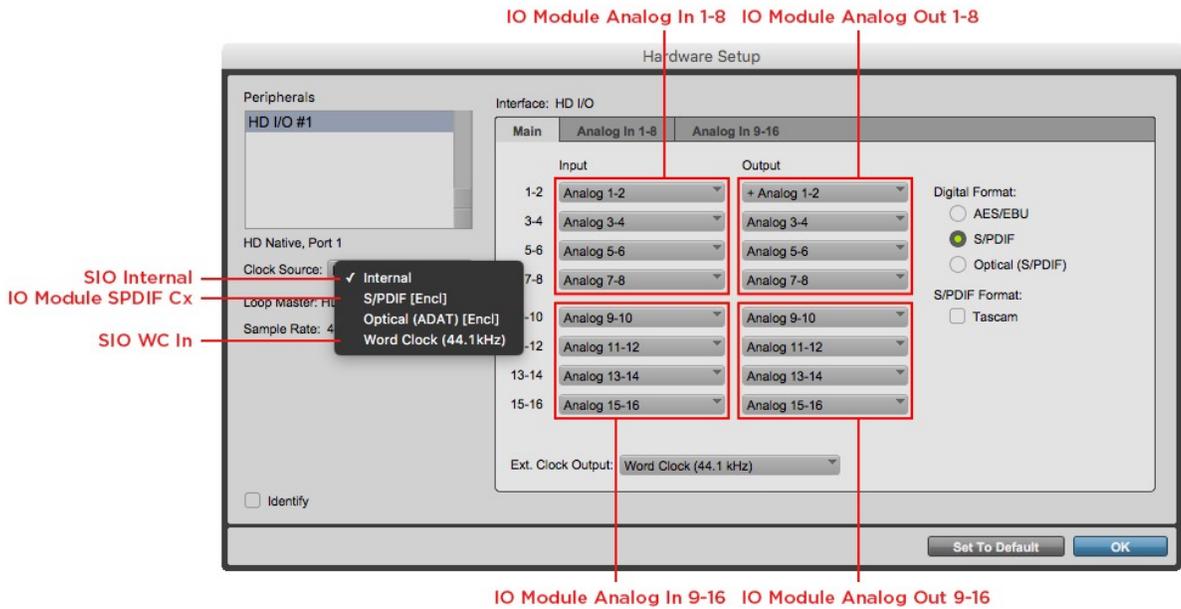


8 ANALOG I/O + 8 AES/OPT I/O IN OPT MODE

Note that optical inputs and outputs (including the Opt In 1 ADAT clock setting) are not available at 176.4 - 192K sampling rates.



16 ANALOG IN + 16 ANALOG OUT



*Special Delay Compensation instructions for Mk II module cards at sampling rates of 88.2 - 192kHz

These special instructions are only necessary under the following circumstances:

- You have a hardware insert plugin active on a track AND
- That hardware insert is set to go through an Mk II module card AND
- The sample rate of the project is 88.2 - 192kHz.

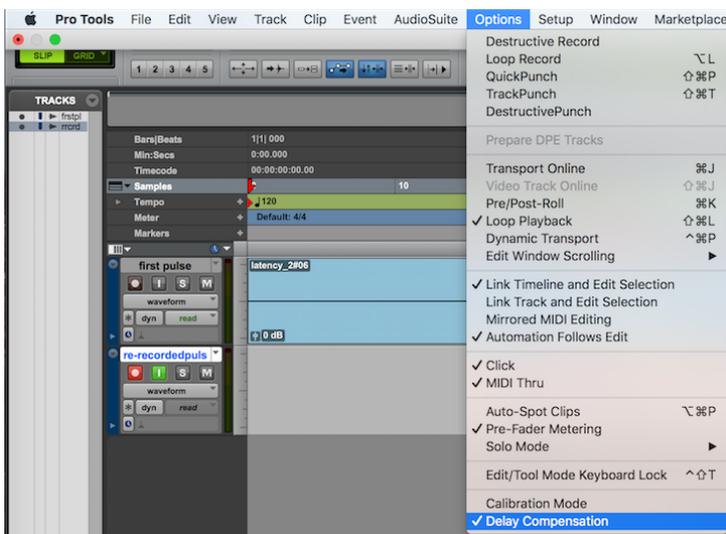
If all of these are not met, this section does not apply.

Due to the Mk II module card's more modern A/D and D/A components, which offer better performance but minutely higher latency at higher sample rates, it's necessary to manually apply an offset of a few samples to maintain perfect alignment. This ONLY needs to be applied to channels with hardware inserts through an Mk II card.

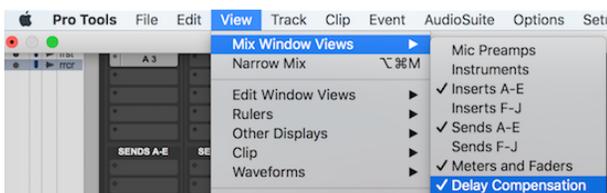
This difference of a few samples is completely imperceptible in most circumstances so it is not vital these special instructions be followed. However where recorded tracks have a delicate phase relationship (such as a classical ensemble recorded with several mics) and hardware inserts are instantiated, the manual offset may be useful.

To apply manual offsets to a track, first Ensure that Delay Compensation is on:

1. Go to the Options menu and ensure that "Delay Compensation" is checked.

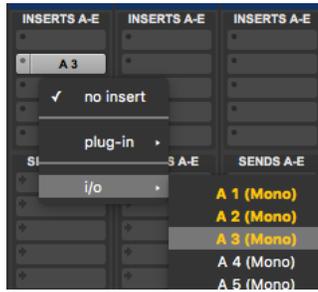


2. Go to the View Menu > Mix Window Views and ensure that "Delay Compensation" is checked.



Delay compensation values are now displayed at the bottom of each Mixer channel.

3. Instantiate a hardware insert onto the track:



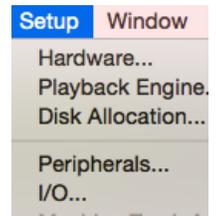
Enter the required sample offset in the User Offset field according to the following chart:



Sample Rate	One hardware insert	Two hardware inserts on the same track	Three hardware inserts on the same track
88.2 - 96kHz	-3 samples	-6 samples	-9 samples
176.4 - 192kHz	-2 samples	-4 samples	-6 samples

* When removing the hardware insert plugin on a track, remember to also return that track's User Offset field back to 0.

Pro Tools I/O Setup Menu

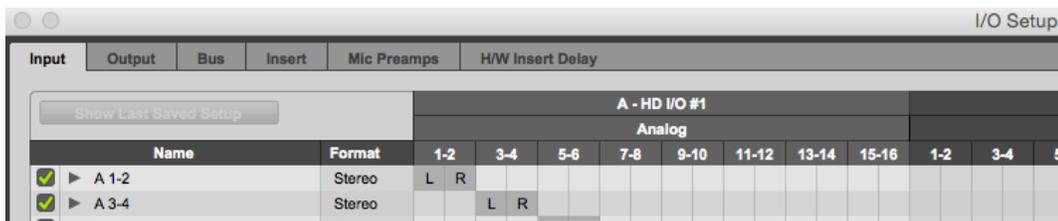


Pro Tools' I/O Setup window is used to assign track channel I/O with the available hardware inputs and outputs of your detected Pro Tools HD hardware.

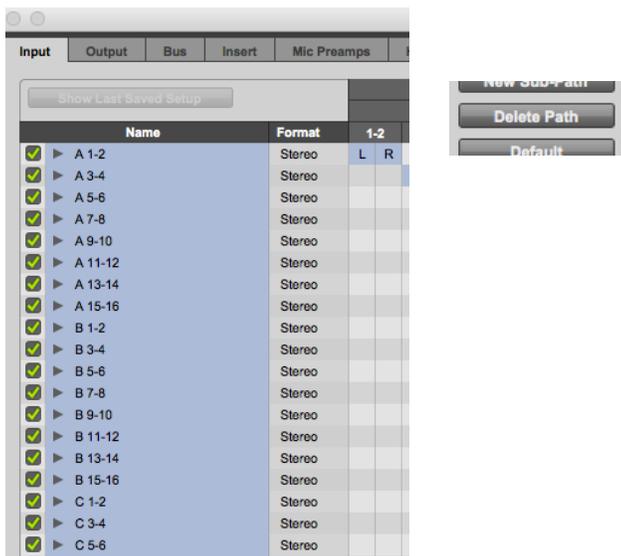
Reconfiguring the Pro Tools I/O to standard default settings

Anytime the Hardware connected to your Pro Tools HD system changes, you will need to reconfigure the I/O menu to reflect the change of available hardware inputs and outputs.

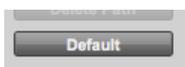
1. Choose Setup > I/O and click the Input tab.



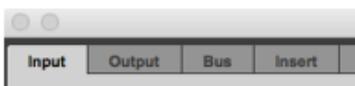
2. Option-click all the audio paths on the left-hand column so they are highlighted, then click Delete Path



3. Once all Paths are deleted, click Default and the appropriate paths will be populated.



4. Repeat these steps for the Output and Insert tabs.



Special Routing for 2x6 module card

Please note that the routing of a 2x6 module card is automatically altered for use in a Pro Tools HD system. This is so the analog and digital channels line up properly for hardware inserts.

INPUTS	Analog Inputs	AES Inputs	ADAT Inputs	Special Notes
With PT HD Option Card	Pro Tools In 1-2	Pro Tools In 7-8	Pro Tools In 9-16	Pro Tools Inputs 3-6 are blank
With Thunderbolt Card	Input 1/2	Input 3/4	Input 5-12	Inputs 13-16 are blank

OUTPUTS	Analog Outputs	AES Outputs	ADAT Outputs
With PT HD Option Card	Pro Tools Out 1-6	Pro Tools Out 7-8	Pro Tools Out 9-16
With Thunderbolt Card	Output 1/2, 3/4, 5/6	Output 7/8	Output 9-16

Monitoring

Symphony I/O Mk II's monitoring features are fully functional when equipped with the Pro Tools HD Option Card. Since there is not Maestro control software, these features are accessed through the built-in touch display interface as described in the main Symphony I/O Mk II User's Guide. This User's Guide may be downloaded from the Apogee website.