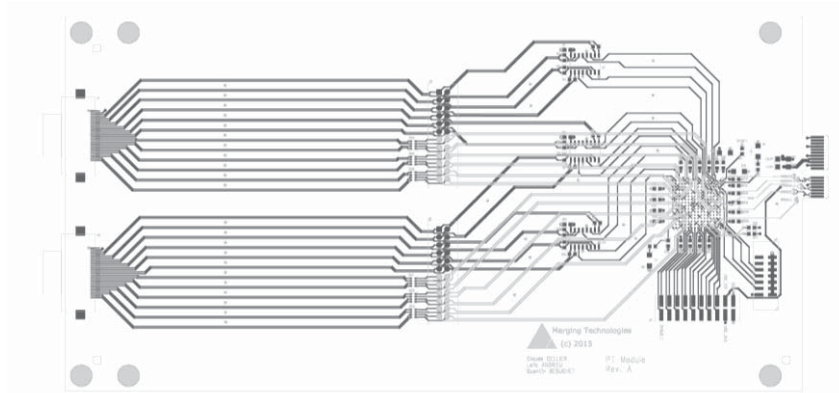


IOM-H-PT64

This module allows you to connect your Horus directly to a Pro Tools HD or Pro Tools HDX system through its two Digilink Mini connectors. You can plug up to two modules in a device, meaning you can record up to 128 Channels at a time. Note that the cards can only be mounted in Slot 3 and Slot 6. *Requires Firmware 3.0.5b28137 and above*

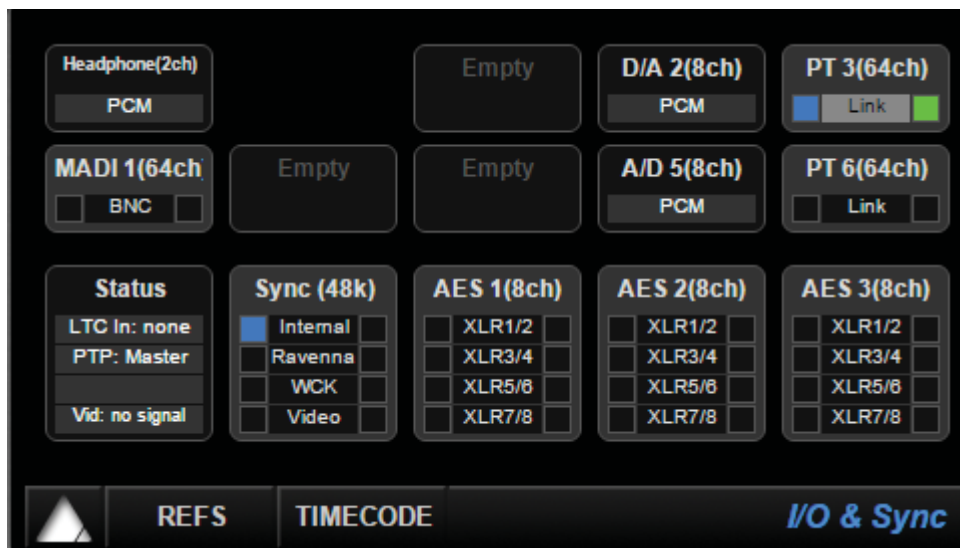


IOM-H-PT64 Key Features

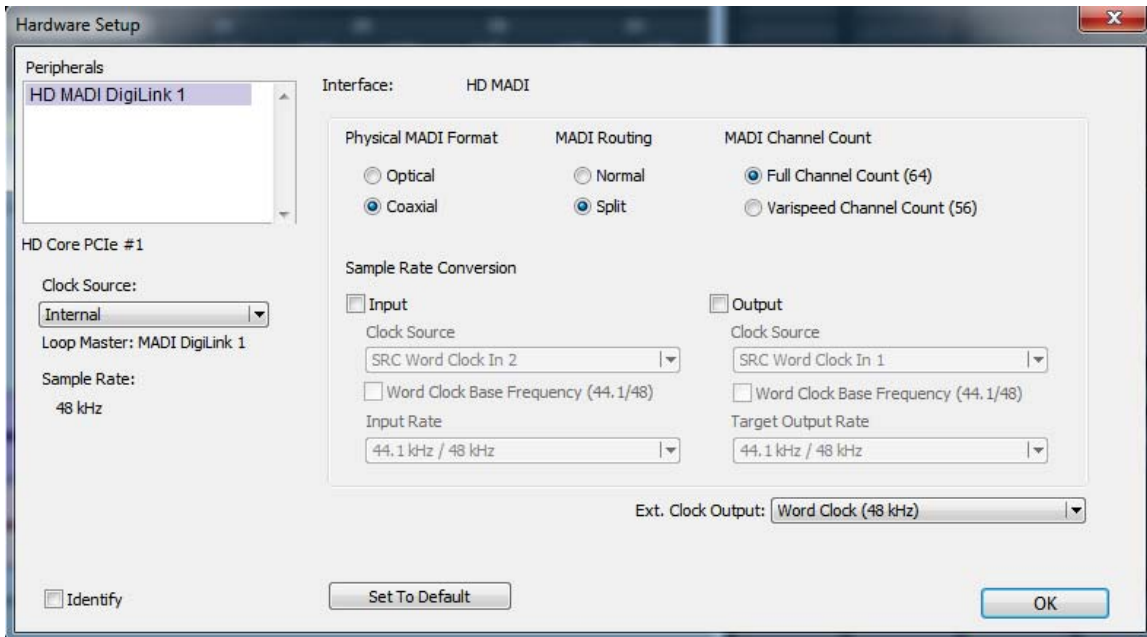
- Up to 64 Channels @48kHz per module (32 ch. @ 96kHz, 16 ch. @192kHz)
- Up to two IOM-H-PT64 modules in one Horus/Hapi
- Automatic Delay Compensation
- Three hardware emulation modes (Digidesign 192I/O, HDIO and HDMADI)
- Two Digilink mini connectors

Synchronization and Word Clock

When properly configured, a Horus is able to automatically change its internal clock to match a Pro Tools project's Sample Rate. The proper IOM-H-PT64 module must be selected in the I/O & Sync menu (PT 3 or PT 6 if module is in Slot 3 or 6). The Auto-follow option must be enabled in Setup -> Format menu, and Horus will change its Internal Sample Rate automatically.



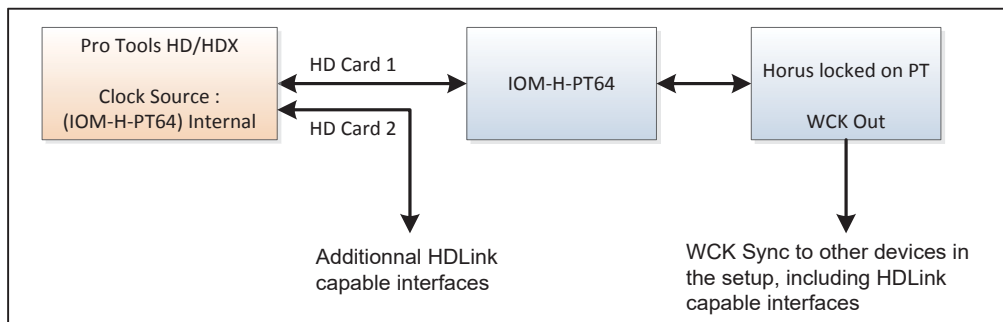
In Pro Tools, the Clock source should be set to Internal for the device emulated by the IOM-H-PT64 module (HD MADI in the following example).



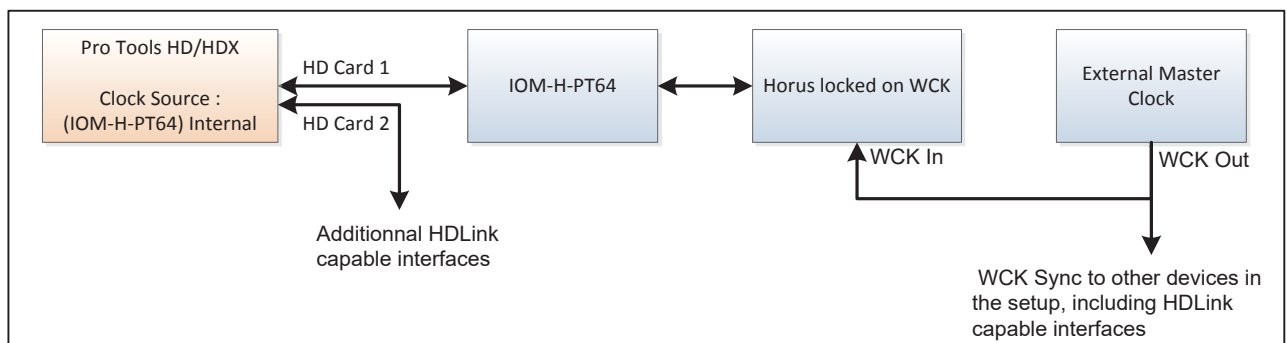
Setups with multiple devices

If your setup is made of several Pro Tools Hardware interfaces that need to be synchronized, our recommendation is to select Internal Clock Source of your IOM-H-PT64 module as the Master Clock. The other devices present in the setup can be synchronized several different ways.

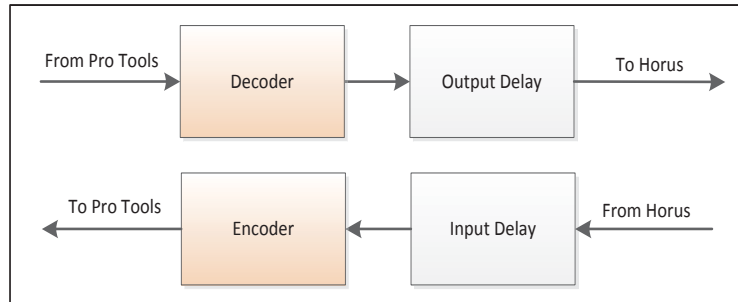
The first possible setup is using Horus as the Master clock for all devices. In this case, if the Auto-follow option is enabled in the Setup->Format Menu, Horus will automatically change Sample Rate when opening a Pro Tools project.



In the following setup, an external Master Clock is used for all devices. In this case, the external Master Clock controls the Horus Sample Rate, which means it won't automatically match Pro Tools Sample Rate required. The Horus Word Clock Out connector could also have been used to synchronize the other devices as seen in the first example.



IOM-H-PT64 block diagram



Delay compensation

Input and Output delay are strongly dependent on the Hardware. This implies that if one records a single source with two different devices at the same time, one will get two slightly out-of-phase tracks. This is explained by the fact that every device has its own circuitry and different components. To minimize this issue, Pro Tools implemented an Auto Delay Compensation feature which will automatically shift the recording depending on the Hardware used.

The IOM-H-PT64 module was made to emulate three different Digidesign interfaces and match every interface's actual input/output latency (within a margin of maximum 3 samples). This chart shows what latency to expect for different setups. Analog/Digital modules latencies are already included in these measures.

Emulation Mode		Routing	44k1/48k	88k2/96k	176k4/192k
None	Input	-	2* smpl.	2* smpl.	2* smpl.
	Output	-	2* smpl.	2* smpl.	2* smpl.
192IO	Input	From AD8D	65 smpl.	65 smpl.	65 smpl.
	Output	To DA8	24 smpl.	14 smpl.	15 smpl.
HDIO	Input	From AD8D	16 smpl.	12 smpl.	11 smpl.
	Output	To DA8	56 smpl.	21 smpl.	21 smpl.
HD MADI	Input	From MADI	6 smpl.	6 smpl.	7 smpl.
	Output	To MADI	5 smpl.	5 smpl.	7 smpl.

* Added to the other modules used

Emulation Mode

Pro Tools will see the IOM-H-PT64 as a Digidesign interface. The options do not affect the Horus routing or preamps, it will just set the Input/Output Delays as seen above.

When set to None, Pro Tools will see the module as an HD MADI, but Horus will use the minimum latency. Therefore, Analog Delay Compensation will not be accurate on Pro Tools.