

WaveFrame/7 Mykerinos IO Readme

Since the Mykerinos board uses various daughter cards with standard digital audio I/O connections, most often WaveFrame/7 will be used with external audio converters for D/A (playback) and A/D (recording) . Many such converters are available from WaveFrame as options: for example, the WaveFrame/Kronauer ADDA series includes AD/DA boxes with various combinations of AD/DA , LED meters, Mic preamps, etc. using either ADAT, AES/EBU, or MADI connections to the WaveFrame Mykerinos card. Contact WaveFrame Sales for more information about these options. Other commercially available I/O boxes that can connect via standard digital I/O connections can also be used, including units from Lucid Technology, Merging Technologies, Prism, and many others. The capabilities of each D/A-A/D converter box can vary widely. Please check with the box manufacturer to ascertain supported sample rates, word length and number of I/O channels. You will need this information later for appropriate configuration of the WaveFrame/7 software. Simple stereo analog output can be accessed at a mini jack on the rear of the Mykerinos card (much like in the WaveFrame 408).

VS3 Software Notes: After installing the Mykerinos or changing out a daughtercard, it is recommended to set up the internal routing for the Mykerinos card. Go to Start..Programs..VS3 Runtime..VS3 Control Panel. In the Configuration tab, click Auto Routing. This assigns the 1st N channels to the physical I/O, leaving the remainder to the Aux sends. You must save the routing hitting the OK button. It is possible that this step is not really necessary when using a single card but we suggest it nonetheless.

The Mykerinos card has 64 total internal channels, and these can be routed in banks of 8 in a variety of ways. These 64 internal channels should be routed to physical I/O on the daughtercard, and also (if there are channels left over, as there always will be with WF/7 and its 32 maximum channels) to any internal bussing, e.g. Aux Sends. With a 16 channel ADAT card, the 1st 16 should be physical I/O, leaving you with 48 potential Aux Sends; with a 24 channel AES card, the 1st 24 should be physical I/O, leaving 40 sends. Although you can manually route things however you want (using the methods of the VS3 Control Panel), the easiest method (especially with a single card) is the one described above.

The Mykerinos DSP Board

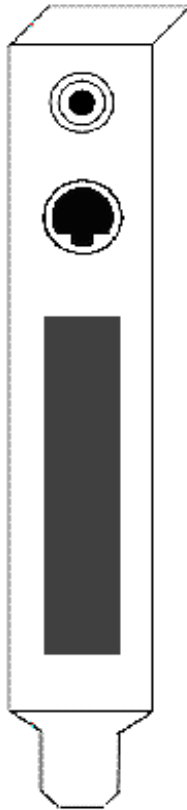
The back plate of the Mykerinos board has one multi-pin mini-DIN connector, which carries the synchronization signals. Provision for all Video/LTC related signals are on the Mini-DIN connector for external connections and on a 16-pin header for internal connections. The Video Out can also serve as VITC output and/or TC burn-in output.

- NTSC/PAL/VITC Video Reference Input
- NTSC/PAL/VITC Video 2 Input or Word Clock Input
- NTSC/PAL/VITC Video Output
- SMPTE/EBU (LTC) Input (balanced, nominal 2 Vp-p)
- SMPTE/EBU (LTC) Output (balanced, programmable level)

There is also a 1/8" stereo mini-phone jack for a 24-bit and up to 96kHz sampling rate unbalanced headphone/monitoring output, which can send anything from a single mono channel or submaster

to a stereo mix. Mixing and levels are set from within the WaveFrame software.

The connections on the edge of the Mykerinos board are named according to the following diagram:



3.5mm Mini-Phone Jack for analog monitor output

9-pin Mini-DIN for sync breakout cable

Area where I/O Daughter Card output connectors appear. There are different connectors on each of the different Daughter Cards available.

The Mykerinos board I/O bracket

Mykerinos Modular Architecture

The Mykerinos DSP board is designed in two parts; the main PCI card (the Mykerinos DSP card itself) and one of several available Daughter Cards that plug into the Mykerinos, allowing for a variety of I/O capabilities. This allows for the design and manufacture of different I/O configurations to fit the specific needs of the end user, without being locked into a single, inflexible configuration. Currently there are three I/O daughter cards – ADAT, MADI and AES.

Mykerinos ADAT I/O Daughter Card

The ADAT Daughter Card has two digital optical input connectors and two digital optical output connectors.

- The top-most connector (Input A) is for ADAT input (ch. 1-8) or for an optical S/PDIF input (ch. 1-2).
- The second connector (Input B) is for ADAT input (ch. 9-16).
- The third connector (Output A) is for ADAT output (ch. 1-8) or S/PDIF output (ch. 1-2), depending on the currently selected I/O mode.
- The fourth connector (Output B) is for ADAT output (ch. 9-16).

The I/O format of optical connectors Input A and Output A can be set from the WaveFrame software (under Options..Sync) to operate in either ADAT mode or S/PDIF mode. When in ADAT mode, there are 8 discrete audio channels carried per each optical connector, while the S/PDIF mode has only 2 channels per optical connector.

Audio Input and Output on the ADAT Daughter Card

All audio input and output to WaveFrame/7 is provided by the connectors on the Mykerinos board and the Daughter Cards that connect to it. Typical audio input and output connections for the ADAT Daughter Card are detailed below.

To input digital audio

ADAT Optical connections

Connect the digital audio output of the ADAT or ADAT compatible device to the Optical A and/or Optical B Input connectors on the ADAT Daughter card for the Mykerinos board. Typical cable is TOS link optical of ten meters or less.

S/PDIF Optical connection

Connect the digital audio output of the S/PDIF compatible device (for example a DAT machine or CD player with optical digital output) to the Optical A (S/PDIF) Input connector on the Mykerinos boards. Typical cable is TOS link optical of ten meters or less.

TDIF Bracket Connection

If the TDIF connector bracket is installed on your system, you can connect eight channels of digital audio input and output from Tascam DA-88, DA-38 or other TDIF compatible devices.

Attach a TDIF I/O cable between the bracket connector and the TDIF I/O port on the digital multitrack machine.

To input analog audio

To input analog audio signals, use a suitable Analog to Digital converter device such as the Merging Dua or Sphynx interfaces, an ADAT, DAT machine, or other A/D converter to convert analog audio to a digital format. Then connect the digital audio output of the converter to the Mykerinos boards via one of the methods described above.

To output digital audio

ADAT Optical connection

Connect the digital audio input of the ADAT or ADAT compatible device to the Optical A or optical B (ADAT) Output connectors on the Mykerinos board. Typical cable is TOSLink optical of ten meters or less.

S/PDIF Optical connection

Connect the digital audio input of the S/PDIF compatible device (for example a DAT machine with optical digital input) to the Optical A (S/PDIF) Output connector on the Mykerinos board. Typical cable is TOSLink optical of ten meters or less.

TDIF Bracket Connection

If the TDIF connector bracket is installed on your system, you can connect eight channels of digital audio input and output from Tascam DA-88, DA-38 or other TDIF compatible devices. Attach a TDIF I/O cable between the bracket connector and the TDIF I/O port on the digital multitrack machine.

To monitor analog audio output

There are two methods possible:

1. You can use the 3.5mm stereo mini-phone jack on the Mykerinos' bracket as a stereo monitor send; D/A is up to 96 kHz, 24 bit, unbalanced, programmable level.
2. Connect the digital audio output of the Mykerinos board to a suitable Digital to Analog converter device such as Merging Dua or Sphynx Interfaces, ADAT, DAT recorder/player, or other D/A converter to convert digital audio to analog audio via one of the methods described above. Then attach the analog audio outputs of the converter to a suitable audio monitoring system.

MADI I/O Daughter Card

The MADI Daughter Card option allows for up to 64 channels (at 48 kHz sampling rate) of audio I/O on a single Mykerinos card. WaveFrame/7 supports 32 in and out. It features two BNC connectors for MADI TX and RX, as well as another BNC connector that can be software configured as a Word Clock In (Slave Mode) or Word Clock Out (Master Mode). The MADI option can be run at any standard sampling rate. In the future, WF/7 will support x2 sampling rates such as 96 kHz and even x4 sampling rates such as 192 kHz. Just divide the maximum number of I/O channels available by 2 or 4 for the High Sampling rates as per the table below:

Sampling Rate	Max. I/O channels (Std mode)	Max. I/O channels (Extended mode)
32 kHz – 48 kHz	56	64
64 kHz – 96 kHz	28	32
128 kHz – 192 kHz	14	16

WaveFrame/7 will automatically identify and configure the appropriate I/O settings in software if a MADI card is installed. To verify this, go to Options..Sync in the Editor.

AES I/O Daughter Card

The AES I/O option offers a full 24 channels of AES/EBU digital I/O. Once installed, WaveFrame/7 will automatically identify and configure most of the appropriate I/O settings in software if the AES card is installed. To verify this, go to Options..Sync in the Editor.

Digital Source – choose AES/EBU AUTO or AES/EBU 1 & 2, etc. (Auto is recommended)

Digital Format – AES IO option is auto-selected as AES/EBU.

Please contact Customer Support for further assistance in using this option.

The following chart shows the special cable pinouts required for using the AES daughtercard. Please adhere to this exactly. Not doing so will cause I/O problems with this option.

I/O CONNECTORS PINOUT CONFIGURATION AES/EBU Multicore:

Function	Header 15 x 2 Channels 9-24*	DB 25 Female Channels 1-8	XLR	Cable color
GND	9	5	1	GREEN
OUT1-2P	1	1	2	
OUT1-2N	2	14	3	
GND	10	18	1	BLUE
OUT3-4P	3	2	2	
OUT3-4N	4	15	3	
GND	11	6	1	PURPLE
OUT5-6P	5	3	2	
OUT5-6N	6	16	3	
GND	12	19	1	GRAY
OUT7-8P	7	4	2	
OUT7-8N	8	17	3	
GND	14	20	1	YELLOW
IN7-8P	19	10	2	
IN7-8N	18	22	3	
GND	15	8	1	ORANGE
IN5-6P	21	11	2	
IN5-6N	20	23	3	
GND	16	21	1	RED
IN3-4P	23	12	2	
IN3-4N	22	24	3	
GND	17	9	1	BROWN
IN1-2P	25	13	2	
IN1-2N	24	25	3	
GND	13	7		
GND	26			

* The channel range carried by Header JP2 is Channels 9 to 16.
The channel range carried by Header JP3 is Channels 17 to 24.

Removing one daughtercard from a Mykerinos board and replacing it with another daughtercard.

All Mykerinos boards consist of 2 basic parts: i) a main board with DSP processor, stereo miniphone monitor jack and circular mini-DIN connector; and ii) a daughtercard with either ADAT, AES or MADI I/O connections. The following procedure will explain how to remove one daughtercard from a Mykerinos board and replace it with another daughtercard.

IMPORTANT!!! ALWAYS observe proper static precautions when handling the Mykerinos board! If possible, work on a static safe mat with a grounding wrist strap. If you do not have a static mat, work on the static bag which came with your Mykerinos board or daughtercard.

1) Identify the stereo miniphone monitor jack on the main board. With a suitable pair of pliers, loosen the circular nut securing the jack to the slot cover plate. Unscrew this nut to remove it and reserve in a safe place.

2) Lay the Mykerinos board down on a flat surface. Orient the board so that the I/O connectors face left, and the PCI connector faces you. The daughtercard will be on the top. With a small flat blade screwdriver, carefully remove the 4 screws holding the daughtercard to the spacers on the main board. These screws will be located in the top left, top right and bottom left corners of the board. The 4th screw will either be in bottom right corner or near the center of the board (or occasionally this 4th screw will not be present). Reserve these screws in a safe place.

3) Turn the board over so that the main board is now on top. Locate the slightly larger screw holding the slot cover plate to the main board. Remove this screw and reserve it in a safe place.

4) Now carefully remove the slot cover plate from the Mykerinos board and reserve in a safe place. **IMPORTANT:** the slot cover should always stay with the daughtercard! When returning daughtercards to WaveFrame, always include this slot cover; when temporarily switching to another daughtercard, keep the original slot cover with the original daughtercard so that you can find it again when reinstalling at a later date. Each slot cover is unique to each type of daughtercard, and they are not interchangeable.

5) Turn the board over again so that the daughtercard faces up. Gently pull the daughtercard off the main board. Carefully pull up on the side of the board farthest from the daughtercard I/O connectors, then work the other side of the board off. Do not force anything! Put the old daughtercard with its slot cover in a safe place, preferably in a static bag.

6) The main board and daughtercard connect together by a single multi-pin connector located vertically about 3/4 way toward the end farthest from the I/O connectors. Locate this connector. **IMPORTANT:** AES daughtercards must NEVER be installed with the center Mykerinos board spacer present; if this spacer is present, move it to the lower right corner, or remove it altogether!

7) **VERY** carefully reverse your steps. Seat the new daughtercard and main board together, then gently but firmly squeeze them together just above the connector junction.

8) Fit the new slot cover in place over the main board miniphone connector and daughtercard I/O connectors. Secure this to the main board with the larger slot cover plate screw removed in step #3 above.

9) Replace the 4 smaller screws removed in step #2 above.

10) Replace the circular miniphone jack nut removed in step #1 above.

After this procedure, carefully reseal your Mykerinos board in your system and test it. Contact WaveFrame support should you have any questions or problems.