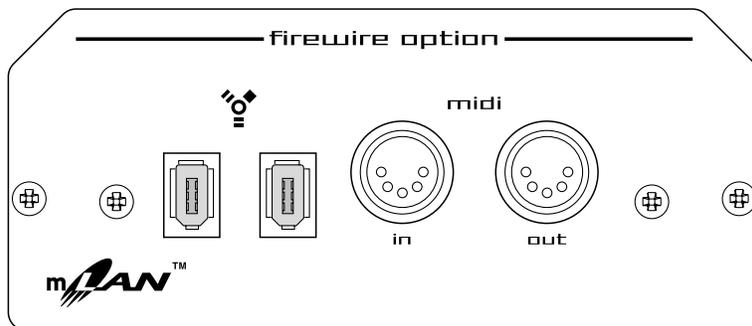


KURZWEIL

Music Systems

KSP8 mLAN I/O Option (KMLN8) Installation and Usage Guide

This document explains how to install and use the Kurzweil KSP8 mLAN I/O Option, which adds FireWire connectivity for MIDI and audio to your KSP8. Please check the www.kurzweilmusicsystems.com website for the latest updates to drivers and documentation.



Other I/O Options for the KSP8

The following I/O Option boards are also available for the KSP8:

- Analog I/O Option Board
- ADAT-TDIF I/O Option Board
- AES I/O Option Board

I/O options are user-installable; no special expertise or special tools are required. Furthermore, the installation procedure is the same for all the option boards.

IMPORTANT: The I/O option boards are not hot-swappable. You must turn off the KSP8 before you add or remove an I/O option board. We also recommend that you power down all devices when connecting FireWire cables.

Before Beginning the Installation

You should back up any objects (presets, chains, or studios) that you have created. You can either save the objects to a SmartMedia card or dump the objects via MIDI using a SysEx dump. Refer to Chapter 10 of the *KSP8 User's Guide* for information on these procedures.

Installing the KSP8 mLAN I/O Option

Tools Required For Installation

- #2 Phillips screwdriver

You will need access to the back panel of the KSP8.

Components of the Option Installation Kit

- I/O Option Board
- CD-ROM
- These instructions

NOTE: FireWire cables are not provided with the Option Installation Kit

Installation

1. Turn the unit off, then unplug all cables from the KSP8.
2. Using a #2 Phillips screwdriver, remove the two screws attaching the option slot cover plate to the back panel of the KSP8. Set the screws aside so that you can use them to attach the option board. The option slot cover plate is shown in Figure 1.

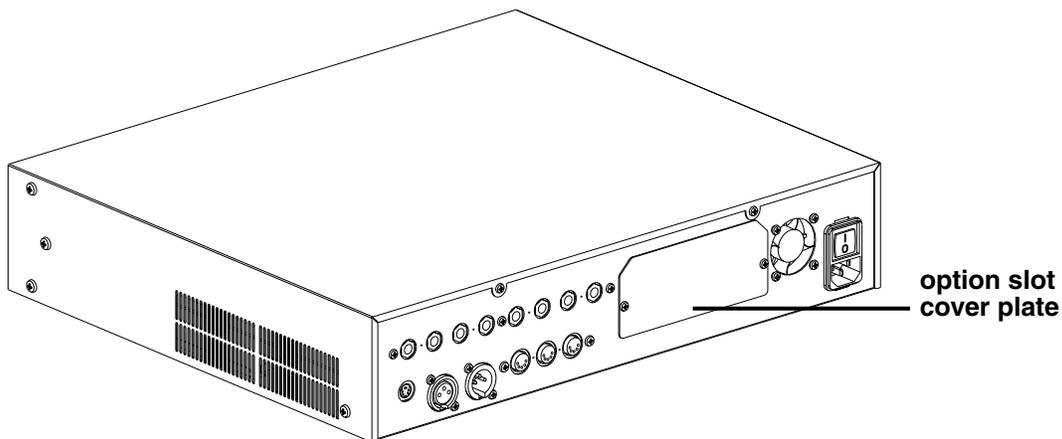


Figure 1. Rear view of KSP8, showing location of option slot cover plate.

3. Slide the I/O option board into the option slot as shown in Figure 2. Make sure the side edges of the board slide into the plastic rails inside the option slot.

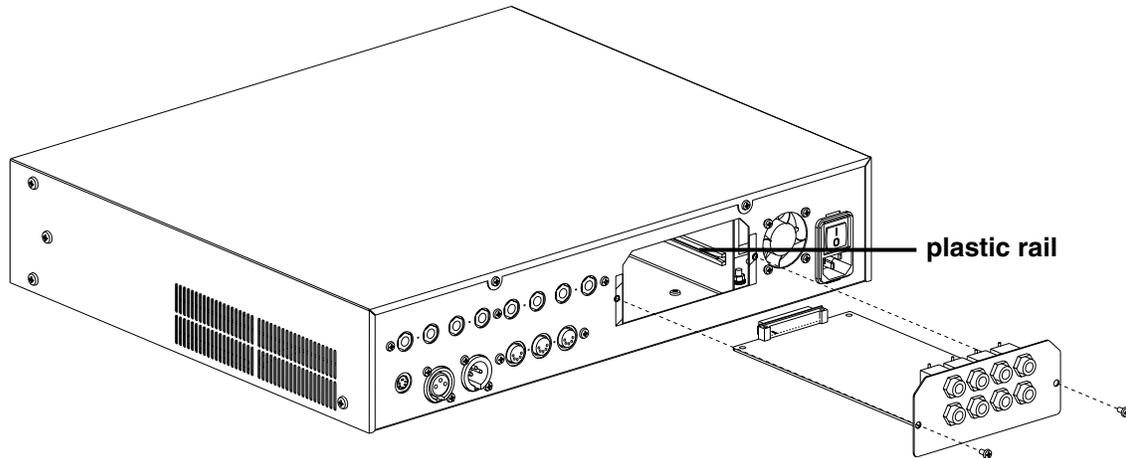


Figure 2. Inserting option board into KSP8 (Analog I/O Option pictured).

4. Slide the board all the way into the KSP8, making sure that it becomes securely seated in the connector at the back of the opening.
5. Attach the board to the KSP8 using the screws that originally held the option slot cover plate in place. Figure 2 shows the location for these screws.
6. To confirm that the installation has been successful, turn the KSP8 on, then refer to the option's usage section below.

Using the KSP8 mLAN I/O Option

The mLAN I/O Option requires that the software revision level on your KSP8 be 1.9 or higher. The most current KSP8 software is provided on the disk included with this option. You can update your software (if necessary) with the KSP8 Boot Loader, as described in the *KSP8 User's Guide*.

To confirm that the installation of the mLAN I/O Option has been successful:

1. Press the **config** button.
2. Press the **INSEL** soft button. Turn the alpha wheel to display the available input selections. The “mLAN *n*” inputs, such as shown below, should be available for all the inputs.

```
Studio:INSEL          I/O Config=Studio
In 1:mLAN 1          In 5:mLAN 5
In 2:mLAN 2          In 6:mLAN 6
In 3:mLAN 3          In 7:mLAN 7
In 4:mLAN 4          In 8:mLAN 8
INSEL  INLVL  INGRP  BUSCFG  OUTSEL  OUTLVL
```

If the “mLAN *n*” inputs do not appear when you scroll through the input selections, the KSP8 is not recognizing the option. In this case, you should confirm that the board is seated properly: turn off the KSP8, remove the board, then reinsert it, making sure that it slides into both plastic rails and becomes seated in the connector at the back of the opening.

While the INSEL page offers mLAN parameters when an mLAN option is detected, nothing changes on the INLVL page, since that page is only concerned with analog inputs.

ClockSource

The ClockSource parameter on the Master page lets you select one of the following as master clock:

- 44.1 KHz Internal
- 48 KHz Internal
- Base AES
- mLAN

You will need to coordinate the clock source setting on the KSP8 with the setting in the mLAN Patchbay application running on the host computer. You may achieve best results if you set the KSP8 to slave to mLAN clock: set the ClockSource parameter on the KSP8's Master page to mLAN, then configure the master/slave relationship on the Patchbay application's WCLK page.

The Digital Lock LED on the front panel of the KSP8 will be solid green when locked to the mLAN clock. If this LED is blinking or unlit, you need to check your clock settings.

DigWordLen

The DigWordLen parameter on the Master page defaults to 24 bits when the mLAN option is installed in the KSP8. You may, however, change this setting if necessary. The KSP8 will dither to match your selected word length.

Connecting the KSP8 to other mLAN Devices

An mLAN-equipped KSP8 will usually be connected via FireWire to a host computer and any other mLAN devices on an mLAN bus. An mLAN bus consists of a group of devices connected by FireWire cables and communicating with the mLAN protocol.

You will connect the KSP8 to another mLAN device (such as the host computer) by inserting one end of a standard 6-pin FireWire cable (not provided with option) into one of the FireWire ports on the back panel of the installed I/O option, and inserting the other end of the FireWire cable into a FireWire port on the host computer or other device. Although communication is possible between mLAN devices that are not attached to a host computer, all mLAN devices must first be initialized by the host computer. Therefore, the first time you use your KSP8 mLAN option will be to communicate with the host computer.

When the host computer initializes the mLAN devices on the bus it provides each with a unique ID number. After they have been initialized, these devices will be able to communicate with each other without being attached to the host computer.

Configuring mLAN on the Host Computer

Once you've physically installed the mLAN option board in your KSP8, you will need to install and configure mLAN software on the host computer before connecting it to the KSP8.

The latest mLAN host software is provided on a disc included with your mLAN option. mLAN is an emerging standard, however, so we suggest that you check with equipment manufacturers for the most up-to-date software and information on system requirements. We also recommend that you check the www.kurzweilmusicsystems.com website, as well as other online resources for the current status of mLAN products.

System Requirements for Apple Macintosh Computers

OS 9.x

FireWire (IEEE 1394) Port

FireWire software must be version 2.8.5 or higher.

Recommended

800 MHz or faster G4 processor

256 MB or more RAM

System Requirements for Windows-Based Computers

Note: This software is currently in beta release and is not provided with the mLAN option.

Windows XP only

ASIO driver (available online)

Software Overview for Macintosh

You will need the following on your Macintosh:

- **Sequencer or hard disk recording program** that supports ASIO (e.g., the current releases of most popular sequencers).
- **ASIO driver** (provided on disc with mLAN option or available online). This enables audio communication between FireWire and application programs.
- **OMS** (provided on disc with mLAN option or available online). This takes care of the MIDI connections between FireWire and application programs.
- **mLAN Patchbay program** (provided on disc with mLAN option or available online). This is where you specify mLAN's inputs and outputs for your configuration.
- **mLAN Control Panel** (provided on disc with mLAN option or available online). This control panel is where you take care of the technical details pertaining to your mLAN setup.

System Setup for Macintosh

We recommend that you quit all programs and disconnect all FireWire and mLAN devices from your computer before running this installation. It may also be necessary to turn off the TCP/IP Control Panel and the Apple ENET Extension.

mLAN and ASIO Driver Installation

Note: The mLAN Installer places the document *104driver's manual.pdf* in the mLAN Tools folder. Refer to this manual for complete information on the mLAN ASIO Driver.

1. Run the mLAN installer application on the host computer:
 - a. If installing from the provided CD-ROM, open the MAC folder on the CD-ROM.
 - b. Double-click on the mLAN Installer *n*.sit icon.
 - c. Choose a location for the file.
 - d. After it has been uncompressed, open mLAN Installer *n* by double-clicking on its icon. Select the Easy Install option to load the following onto your computer:
 - mLAN drivers
 - mLAN OMS driver
 - ASIO mLAN
 - mLAN Patchbay
 - mLAN Control Panel
2. Copy the contents of the "into ASIO drivers" folder into the "ASIO driver" folder of your sequencer, recording software, or other application that will be communicating with the KSP8.
3. Shutdown your computer and also make sure that your KSP8 is powered down. Use a FireWire cable to connect the KSP8's mLAN option to the computer's FireWire port.
4. Restart your KSP8, then power-up the computer. We've found that it works best if you power-up the devices in this order.
5. Run the mLAN Control Panel and mLAN Patchbay applications. Basic instructions for these applications are in the sections below. More complete references are provided as PDF files on the disc included with the option.

You must make the required settings for mLAN and OMS before you run your sequencer or recording application.

mLAN Control Panel Quick Setup Guide

Note: The mLAN Installer places the document *104driver's manual.pdf* in the mLAN Tools folder. Refer to this manual for complete information on the mLAN Control Panel.

1. Go to Control Panels in the Apple menu and open mLAN Control Panel. (The mLAN Control Panel is automatically placed in the Control Panels folder by the mLAN Installer.)
2. The appropriate sample rate should be displayed under SAMPLE (either 44100 or 48100). The SEND and RECEIVE buttons should both be checked. The following items should also be checked:

SEND

Isochronous X*

Audio Sequences 8

MIDI Sequences 1

Buffers Y (this number can be changed to decrease latency)

Buffer Length Z (this number can be changed to decrease latency)

RECEIVE

Isochronous X*

Audio Sequences 8

MIDI Sequences 1

Buffers Y (this number can be changed to decrease latency)

Buffer Length Z (this number can be changed to decrease latency)

Sample 44100 (unless you have the sample rate set to 48000)

You should see circles or dashed lines next to each of the items listed under Sample under RECEIVE STATUS. This indicates that the KSP8 is active and that it is sending and receiving data.

* This number changes from unit to unit

mLAN Patchbay Quick Setup Guide

Note: The mLAN Installer places *PatchbayManual-E.pdf*, the mLAN Patchbay manual, in the mLAN Tools folder. Refer to this manual for complete information on the mLAN Patchbay.

1. Go to the mLAN Tools folder (created by the mLAN Installer) and open the mLAN Patchbay.
2. As soon as the program finishes loading you should see 16 items listed in the FROM column and 16 items listed in the TO column.
3. Drag the first Kurzweil item in the TO column up until it is aligned with the first Yamaha item in the FROM column. Repeat this step for all 16 items listed.
4. Click the APPLY button now to apply the changes that you have made.
5. Click on the MIDI tab and repeat step 3 for the two MIDI connections.
6. Click APPLY to apply the changes.
7. Click on the WCLK tab. You should see the YAMAHA mLAN MacDrvr listed under the MASTER column. The KSP8 should be directly across in the SLAVE column.
8. At this point we recommend that you save this PATCHBAY configuration on your desktop for quick setup after rebooting.

mLAN OMS Installation

Note: The mLAN Installer places the document *104driver's manual.pdf* in the mLAN Tools folder. Refer to this manual for complete information on the mLAN OMS Driver.

1. Download the OMS installer from the website or from CD.
2. Open OMS238.sit.
3. Choose a location for the file.
4. Open Install OMS 2.3.8.
5. Place the OMS mLAN file into the OMS folder inside the System folder.
6. Start the OMS Setup application and select MIDI Cards and Interfaces from the Studio menu. Click the Search button to find mLAN devices; mLAN icons equivalent to the number of installed FireWire (IEEE1394) interface cards will appear.
7. OMS regards mLAN as a MIDI interface. Therefore, to transmit and receive MIDI data, select "Studio" then "New Device" and create a number of devices to match the number of ports used by mLAN, and connect them under the mLAN device. It is a good idea to name these devices, for example, as mLAN port 1, mLAN port 2, etc.

System Setup for Windows

As this document goes to print, mLAN software for Windows operating systems is still in beta release, and therefore is not documented here. Check the www.kurzweilmusicsystems.com website for updates.

Chaining mLAN devices

Using FireWire cables, you can chain up to eight KSP8s (or other FireWire-enabled devices) on a single mLAN bus. The two FireWire connectors on the back of the KSP8 mLAN option allow you to connect the KSP8 to its neighbor devices on the bus.

Chaining devices in this way allows you to use a variety of peripherals with a computer that has a single FireWire port. The KSP8 mLAN option also passes power through its FireWire ports to attached devices.

In order for your FireWire setup to achieve peak performance for data transfer, keep in mind the fact that all FireWire devices are rated at a specific speed. Connecting two devices with different speeds will result in both units running at the lower of the two speeds.

Larger setups consisting of numerous devices with different transfer rates will perform better if connected in relation to each unit's speed rating. It is best to use slower devices at the ends of the FireWire chain, and try to connect similarly rated devices together without slower devices in between.

Connecting MIDI from the KSP8 to mLAN

MIDI messages do not pass automatically from the KSP8 to the mLAN option. For MIDI communication between the KSP8 and the mLAN option, you must attach a MIDI cable from the KSP8's MIDI OUT to the mLAN option's MIDI IN and a MIDI cable from the KSP8's MIDI IN to the mLAN option's MIDI OUT.

mLAN Configuration and Troubleshooting Tips

Buffers and Latency

Increasing the number of buffers and the buffer size in the mLAN Control Panel yields smoother performance but longer latency. Decreasing the number of buffers and buffer size shortens latency time at the cost of system performance. These two parameters must be adjusted to suit your system performance and your needs.

Configuring Recording Applications for use with FireWire

- Open the recording application.
- In the setup menu (this will vary depending on the application), choose the option for “ASIO mLAN”. This tells the application to send and receive audio data via the mLAN driver.

Setup examples

- For **MOTU Digital Performer**, go to the Basic menu / Audio System and choose “ASIO mLAN”. Click OK.
- For **Steinberg Nuendo**, go to the Devices menu / Device Setup / VST Multitrack and choose “ASIO mLAN”. Click OK.
- For **eMagic Logic**, go to the Audio menu / Audio Hardware and Drivers. Click on the triangle next to the “ASIO” box to open the ASIO section. Choose “mLAN” in the “Driver” drop-down menu. Click OK.

Note: Setup in your specific recording application may vary. If your application is not listed in the examples above, and you’re not sure where to find the above settings, check your application’s user manual for setup information.

Application Notes

If your mLAN setup exhibits instability, you may find these notes useful.

In the mLAN Control Panel:

- If the audio seems to drop out frequently, the buffers are probably being overrun. Set the number of buffers to a higher value and increase the buffer length. Note, however, that this will result in higher latency.
- For smoother performance without adding latency, try using more buffers with fewer milliseconds per buffer. For example, instead of 2 buffers with 3 milliseconds each, try 6 buffers with 1 millisecond each.
- If the card generally has a difficult time settling down, try setting the clock source on the mLAN Control Panel after all other parameters are set, then click "set". Note that it can take a few seconds for the FireWire chain to lock onto the clock source. During these few seconds, you may see a flashing red timeout error message.
- It is sometimes helpful to switch the sample rate on the control panel to another sample rate, then back to the desired rate. This can 'reset' the way the mLAN control panel looks for clock in the FireWire stream. It is also a good idea to switch the sample rate back and forth on the device in which the mLAN card is installed, when resetting the clock in the control panel.

Note: It is always necessary to click "Set" after changing any parameter in the mLAN control panel. After clicking "Set", it is almost always necessary to reassign the destinations by clicking on the "Select Source" button under the "Receive" section of the mLAN control panel.

- If the FireWire card is not plugged into the computer port on boot up, you may get an error from the mLAN control panel indicating that there is no FireWire card installed, even on a computer with a built in FireWire port. A restart with the connections intact will resolve this problem.
- If any recording application using the mLAN ASIO driver is running, the mLAN control panel will not allow changes, reporting that "some streams are in use". Close the recording application and then reopen the mLAN control panel to rectify the problem.

After the changes described above are made, the control panel should settle into smooth operation.

The following additional tips may be useful if you continue to experience difficulties.

Macintosh OS 9.x:

- In the Extensions Manager, create an Extensions Set from the OS Base setting; deactivate Apple Enet and TCP/IP; and activate only those extensions needed for the application you're running (for example, you'll need to active iLok extensions for Nuendo, as well as OMS if you're using it).
- Check in the Energy Saver Control Panel's Sleep Schedule page that all parameters are set to NEVER.
- Finally, especially with Titanium PowerBooks, make the FireWire connection first, then power up the KSP8, and finally power up the computer. Do not turn off the KSP8 until you have powered down the computer, and do not disconnect FireWire while the computer is on.

Studio Configuration Files

For your convenience, a configuration file named MLAN01.KSP is provided with your mLAN option. This file is also provided as MLAN01.MID which you can load into your KSP8 as a SysEx dump. This file contains a subset of the base KSP8 studios with the appropriate input selections made; the KSP file also sets the Master Table Clock Source parameter to mLAN. Additionally, the configuration file includes several useful studios created especially for mLAN users.

Loading the Studio Configuration Files

For your convenience, we have provided the studio configuration files in two formats: KSP and MID. Before loading either type of file, however, you should backup any objects you've created on your KSP8.

MLAN01.KSP

To load the KSP file, copy it from the disk to a SmartMedia card, then insert the SmartMedia card (gold side down) into the KSP8. Press the **MASTER** soft button, followed by **CARD**, then **Load**. You will now be able to load the configuration file. (Note that you can place the studios into any bank of your choosing. See the *KSP8 User's Guide* for more information on loading and arranging objects.)

MLAN01.MID

Important: Do not use the KSP8 while you are loading the MIDI file to it. When the MIDI light stops flashing the studios will be available and you can again use the KSP8.

To use the MID file instead of the KSP file, make sure the KSP8 is turned on, then "play" the MID file on a sequencer that has its MIDI OUT connected to the KSP8's MIDI IN. The file will load into the KSP8 automatically, and the MIDI LED on the front panel of the KSP8 will flash while it is receiving MIDI.

Listed below are the objects provided with MLAN01.KSP and MLAN01.MID:

38	Master (MLAN01.KSP only)
800	mLan Overdub
801	mLan Overdub 1+2
802	mLAN 6FX&Monitor
803	mLAN StDrms>8Out
804	mLAN Mn Vox>8Out
805	4SterIn>4SterFX
806	4MonoIn>4SterFX
807	8MonoIn>8MonoFX
808	4StIn>4StFX->Mix
809	4MnIn>4StFX->Mix
810	8MnIn>8MnFX->Mix
811	Morph This
812	6 MonoIn>5.1 FX+
813	8 MonoIn>5.1 FX
814	MnIn>5.1 AutoPan
815	3 SterIn>5.1 FX+
816	4 SterIn>5.1 FX
817	5.1 In>5.1 FX +
818	Default 5.1+Ster
819	Default 8 Mono
820	Default 4 Stereo

New Studios provided with KSP8 mLAN Option

The addition of the mLAN option allows the KSP8 to act as an audio I/O device to a FireWire-equipped computer. In order to accomplish the tasks of I/O device, effects processor, and digital mixer, some of the KSP8's more advanced and overlooked features must be employed:

Inputs

The KSP8's inputs (which are made on the config>INSEL page) are "soft"-this means that they are not tied to a specific physical connection. Some of the studios in the file MLAN01.KSP (or MLAN1.MID) will choose Analog 1 as the input to KSP8 input 5, so do not be alarmed when you send a signal into Analog In jack 1 and see the activity on KSP8 metering for input channel 5.

Mix Buses

Each FXBus can send to up to two of the four stereo MIX buses (you assign an FXBus to a MixBus on the EQ/sends>MIXSEND page). To monitor a MIXBus, you select it on the config>OUTSEL page.

Because the KSP8's analog and digital outputs carry the same signal, some fancy routing must be done in some of the mLAN studios, specifically those designed for overdubbing (where the KSP8 will be taking signals from both analog inputs and MLAN inputs).

Monitoring Your Recording

When using the KSP8 as an audio interface to your computer digital audio workstation (DAW), there are two ways to monitor the sound you are recording:

- directly out of the KSP8, before going into the DAW
- after going through the DAW

The first option allows you to monitor without the latency associated with a trip through your DAW, but the drawback is that you are not listening to what you are recording (i.e., the input of the recorder, not its output). Just be sure that you are recording what you think you are recording (all bussing is correct, etc.). If you hear a delayed copy of your input, you are probably monitoring the input both pre-DAW and post-DAW.

The KSP8's 4 analog outputs are used to monitor these different methods. See the tutorials/studio descriptions for specifics on each studio.

Studio Tutorials

For simplicity and guaranteed results, save your user objects, hard reset your KSP8, then load the file MLAN01.KSP from a SmartMedia card, or the file MLAN01.MID via MIDI. FILL the file into the 800s bank. (Note that if you already have studios in the 800s bank—which you won't if you've just done a hard reset—then the studios listed here will be renumbered starting with the first available location.)

TUTORIAL 1: mLAN recording and overdubbing with no-latency monitoring

STEP 1: RECORD

- Select studio 800 mLAN Overdub.
- Plug four analog sources into the KSP8's 4 analog inputs (set levels on the config>INLVL page).
- Create 4 tracks on your DAW. Use mLAN 5-8 as the input to those four tracks respectively.
- Monitor KSP8 analog outputs 3+4 while you record.

STEP 2: PLAYBACK

- Once you have recorded onto those 4 DAW tracks, send their outputs to mLAN 1+2.
- Monitor KSP8 analog outputs 1+2 while you playback tracks from your DAW.

STEP 3: OVERDUB

- Create another track on your DAW, choosing mLAN 5 as the input to the track. For this track's output, choose NONE, or any output except mLAN1, 2, 3 or 4 (or simply mute the track).
- Continue to monitor your DAW's playback on KSP8 analog outputs 1+2. Monitor the input of the new track you are working on via KSP8 analog outputs 3+4.
- Once that track is recorded, send its output to mLAN 1+2.
- You can also use mLAN 3+4 as outputs to your DAW tracks. For example, you wish to monitor all your tracks dry, but then try out a reverb on a lead vocal. Send the dry tracks to mLAN 1+2 and the vocal to mLAN 3+4, and choose a reverb preset on the KSP8.

[Note: if you wish to monitor both the direct pre-DAW and post-DAW signals on the KSP8 analog outputs 1+2, go to the EQ/sends>MIXSEND page for buses 5-8 and route them to Mix1-2 Pan.]

TUTORIAL 2: mLAN recording and overdubbing with no-latency monitoring when DAW has a restricted number of I/O channels

(Some entry level or demo DAW software allows only 2 channels of mLAN I/O. This tutorial will help if that is your case).

STEP 1: RECORD

- Select studio 801 mLAN Overdub 1+2.
- Plug two analog sources into the KSP8's first 2 analog inputs (set levels on the config>INLVL page).
- Create 2 tracks on your DAW. Use mLAN 1-2 as the input to these tracks.
- Monitor KSP8 analog outputs 1+2.
- *Since your software may not allow you to select different outputs, you may need to turn the fader all the way down on the track to which you are recording until you are ready to playback*

STEP 2: PLAYBACK

- Once you have recorded onto those 2 DAW tracks, send their outputs to mLAN 1+2 and turn the volume up.
- Monitor KSP8 analog outputs 3+4.

STEP 3: OVERDUB

- Create another track on your DAW, choosing mLAN 1 or 2 as the input to the track. Again, turn the fader all the way down on the track you are recording on until you are ready to playback.
- Once that track is recorded, turn its volume up and send its output to mLAN 1+2.

TUTORIAL 3: applying effects while mixing and monitoring through the KSP8

- Select studio 802 mLAN 6FX&Monitor
- Send a stereo track from your DAW on mLAN 3+4 to KSP8 FXBus 3-4.
- Create a new track on your DAW which returns mLAN 3+4. This track should output to mLAN 1+2.
- Send some mono tracks on mLAN outputs 5-8, to KSP8 FXBuses 5-8. Return these effected sounds to your DAW as above.
- Send the main mix output of your DAW to mLAN1+2, and monitor this via KSP8 analog outputs 1+2.

[Note: you can freely change mono/stereo configuration of the individual buses on the config>INGP and BUSCFG pages.]

Studio Descriptions

800 mLAN Overdub-Analog inputs 1-4 are selected as In 5-8 on the INSEL page. These are then sent to mono FX buses 5-8, then to mLAN outs 5-8. They also go to Mix 3-4 which goes out analog 3+4, providing no latency monitoring directly through the KSP8.

Inputs 1-4 select mLAN inputs 1-4, which go through FX bus 1-4, then to Mix 1+2 which goes out Analog 1+2. This provides monitoring of your DAW tracks. (You can send your DAW tracks to either mLAN1+2 or 3+4, depending on whether you wish to apply different EQ/FX to them or not).

on your DAW:

select mLAN inputs 5-8 on your DAW to record ksp8's 4 analog inputs.

select mLAN 1-4 as outputs for DAW channels for monitoring.

Send the KSP8's 4 analog outputs to 2 pairs of stereo channels on your mixer. Use the second pair for no-latency monitoring of your inputs while monitoring your DAW off the first pair.

801 mLAN Overdub 1+2-(Some entry level or demo DAW software may allow only 2 channels of mLAN I/O. This studio will be useful if this is your scenario).

Analog inputs 1+2 are selected as In 1+2 on the INSEL page. These are then sent to mono FX buses 1+2, then to mLAN outs 1+2 and analog outs 1+2, providing no latency monitoring directly through the KSP8.

Inputs 3+4 select mLAN inputs 1+2, which go through FX bus 3-4, then to Mix 1+2 which goes out Analog 3+4. This provides monitoring of your DAW tracks.

on your DAW:

select mLAN inputs 1-2 on your DAW to record ksp8's first 2 analog inputs.

select mLAN 1-2 as outputs for DAW channels for monitoring.

Send the KSP8's 4 analog outputs to 2 pairs of stereo channels on your mixer. Use the first pair for no-latency monitoring of your inputs while monitoring your DAW off the second pair.

802 mLAN 6FX&Monitor-send six channels from your DAW on mLAN 3-8 for effects processing. Return these six channels to your DAW on mLAN 3-8. Assign your DAW's main stereo output to mLAN1-2, which will go to KSP8 analog outputs 1+2 for monitoring.

803 mLAN StDrms>8Out-put a stereo drum mix into analog inputs 1+2 and record 4 stereo pairs onto your DAW using mLAN 1+2, 3+4, 5+6 and 7+8.

804 mLAN Mn Vox>8Out-put a mono source (like a vocal) into analog input 1. The 8 mLAN outputs will have four mono and 2 stereo signals:

mLAN1-dry

mLAN2-compressed

mLAN3-mono filtered/delay chain

mLAN4-distorted

mLAN5+6-stereo chorus

mLAN7+8-stereo room reverb

Studios 805-820-these studios are the same as the base ROM studios found at IDs 1-99, but with mLAN inputs used instead of analog inputs. Since these studios take mLAN inputs and provide mLAN outputs, you will find them useful when mixing down in your DAW, and you have some other means of monitoring.