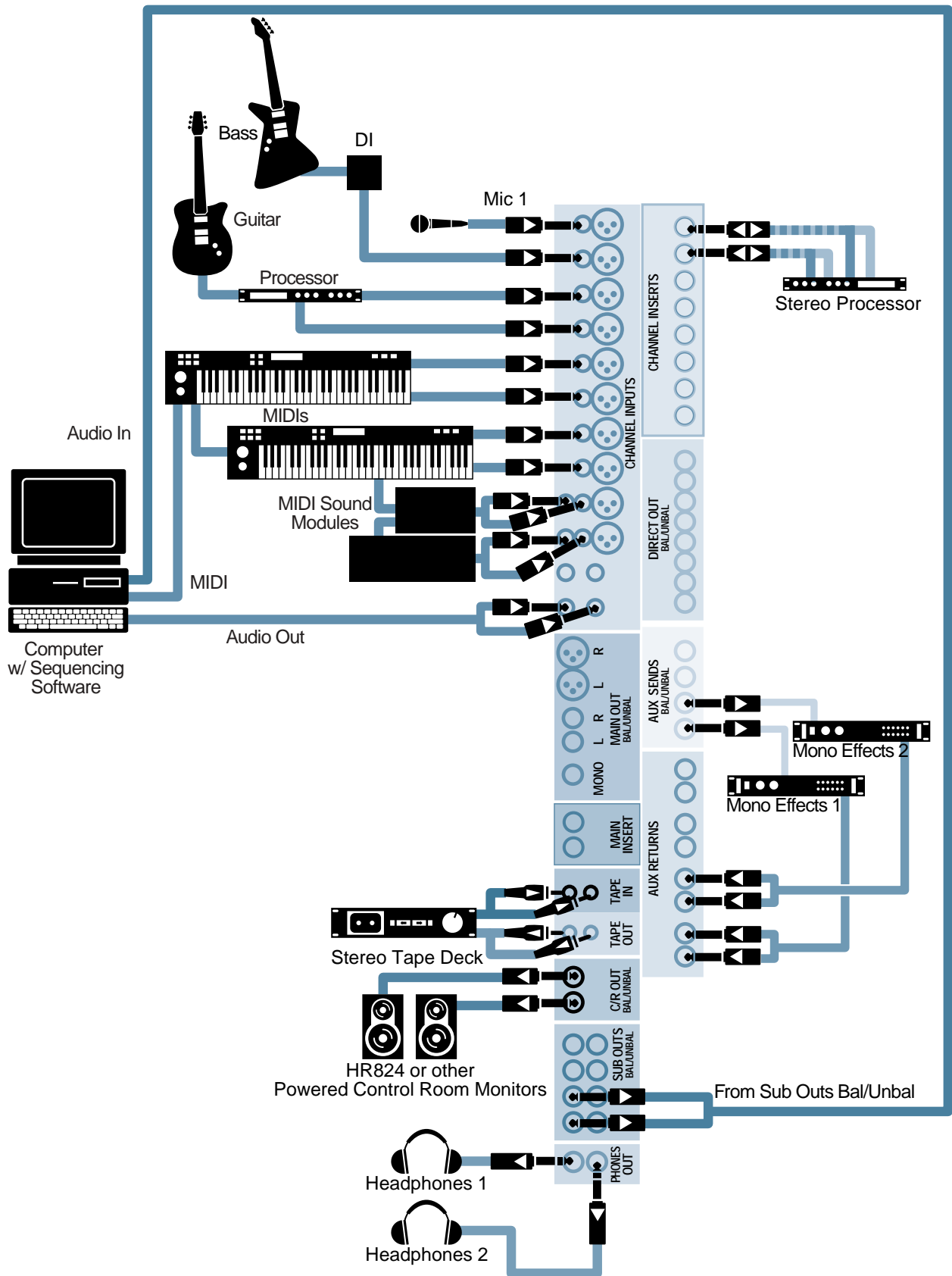


1642-VLZ PRO MIDI Studio



With its plethora of stereo line-level inputs, the 1642VLZ is well suited for a MIDI-based studio. In this application, the computer serves as a MIDI sequencer and doubles as a stereo or even multitrack audio recorder for recording acoustic instruments and vocals.

Connections

Stereo inputs are used for the MIDI sound modules. Keyboards and the stereo outputs of the electric guitar processor are connected to a pair of mono line inputs each for more control. The bass is connected to a mic input through a direct box (DI), and the microphone is connected to (obviously) a mic input.

The stereo audio outputs of the computer's sound card are connected to the stereo LINE IN 15-16 jacks. Assign that stereo channel to L-R so you can hear audio playback from the sound card.



Inputs to the sound card come from SUBOUT 1 and 2. The reason we're feeding the sound card (which is the primary recorder in this setup) from the SUBs, and not from the MAIN or TAPE outputs is because it's awkward to turn off the "input monitor" function of many sound cards. If both the input and output of the sound card were connected to the MAIN L-R bus, feedback would result when you tried to listen to playback from the computer.

We're using those TAPE IN and TAPE OUT jacks for a cassette deck so that you can make a quick reference copy to pass around to friends. Of course you could substitute a CD recorder or these days, an MP3 recorder.



Be sure that you don't turn up the TAPE IN control when the deck is in Input Monitor or Record mode or you'll get feedback.

Operation

Sequencing, Rehearsing or Jamming

In this mode, there's no need to record audio into the computer. Assigning the instruments to L-R sends their outputs directly to the Control Room monitor speakers. At any time, you can record a scratch-pad mix to the cassette deck – it's at the ready, connected to the MAIN TAPE outputs.

Recording Audio to the Computer

Assign the instrument or mic you want to record to bus 1-2. Since you'll want to hear what you're playing and perhaps hear some MIDI tracks, too, don't

un-assign it from L-R. Mute the sound card playback channels (15-16) so you won't get feedback.

Latency



Traditional hardware recorders have a physical switch that connects their input and output jacks together when in the Input Monitor mode. Sound cards perform the same function with software, but the audio has to get converted from analog to digital and back to analog before getting to the output jacks. This takes some time, usually on the order of 1-3 milliseconds, and it's significant enough to have earned a name "latency." Hearing the delayed and direct sound together can sometimes be annoying. With the hookup described here, you can hear the direct sound and mute the output of the sound card.

To listen to the playback of your audio recording, simply un-mute the sound card return channels 15-16.

Refer to the 1604-VLZ PRO 8-Track recording application section for an explanation of how to use the effects, and for making alternate headphone monitor mixes.

Overdubbing

You can overdub if you're using multitrack software that allows you to record several tracks, mix them in the computer, and send that mix out to the sound card's stereo outputs. Sound cards and recording programs work in many ways, so you'll have to pay close attention to their documentation to accomplish what's necessary.

For overdubbing, you need to hear what's being recorded, but you also need to hear what you're playing or singing. The recording software (or possibly the sound card's driver application) may contain a monitor mixer, which allows you to send the track being recorded into the mix along with the previously recorded tracks. You can use this feature and just monitor the sound card output on Channels 15-16.

Sometimes this is clumsy, though, so it may be easier to mute the track being recorded in the sound card software – mute the output of course, not the input (if there's no mute button, you can always just turn the mix level all the way down on that track in the DAW mixer), and assign the mixer channel you're using for the input to both the subgroup feeding the sound card (1-2) and the L-R busses of the mixer. In that way, you'll hear your input live, directly through the mixer, as well as the playback of your previously recorded tracks.



Remember our friend latency from a few paragraphs back? When sending a live input to the monitor mix, you absolutely must be sure that you're listening to only the live input, and not the live input plus that input delayed through the sound card and added to the monitor mix from the sound card output. Combining these two copies of the signal with one delayed by a couple of milliseconds will produce a strange effect called "comb filtering." Although your recording will be fine, what you hear in the monitors while you're recording it will sound funny.

Alternate Hookups

Computer Audio Playback

If you're cramped for input channels, the sound card outputs could be connected to the TAPE IN jacks instead of an input channel. In this case, you'd turn up the TAPE IN knob when you wanted to hear playback from the disk. This is less convenient than using a channel with a MUTE switch.

Multi-Channel Audio Interfaces

A standard stereo sound card has two inputs and two outputs. If you build up multiple tracks on the computer, you'll have to mix them using the computer's tools, not your Mackie mixer.

Many people prefer hands-on mixing, however. There are several audio interfaces available that offer stereo inputs (on the premise that you'll only be recording one or two instrument or vocal tracks at a time) but rather than two, they provide four or eight outputs. With this type of interface, in the recording software you can assign tracks to separate outputs. This is sort of like half of an 8-track recorder – eight tracks for playback but only two tracks for recording. If you have an interface like this, you can free up some line-level inputs on the mixer and connect the eight audio outputs from the computer to eight mixer inputs for more mixing flexibility.

Of course if you have an interface that has eight inputs as well as eight outputs, treat it like an 8-track recorder and refer to the 8-track hookups.

Notes
