

THEA 230/330

MIDI LAB MANUAL

THEATER DEPARTMENT, BINGHAMTON UNIVERSITY

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Dedicated to Sue Peters

Introduction to Audio and MIDI

Brief History of Synthesizers and MIDI

Sound

Building Blocks of Sound

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Equipment in MIDI Lab

MIDI Lab Signal Path

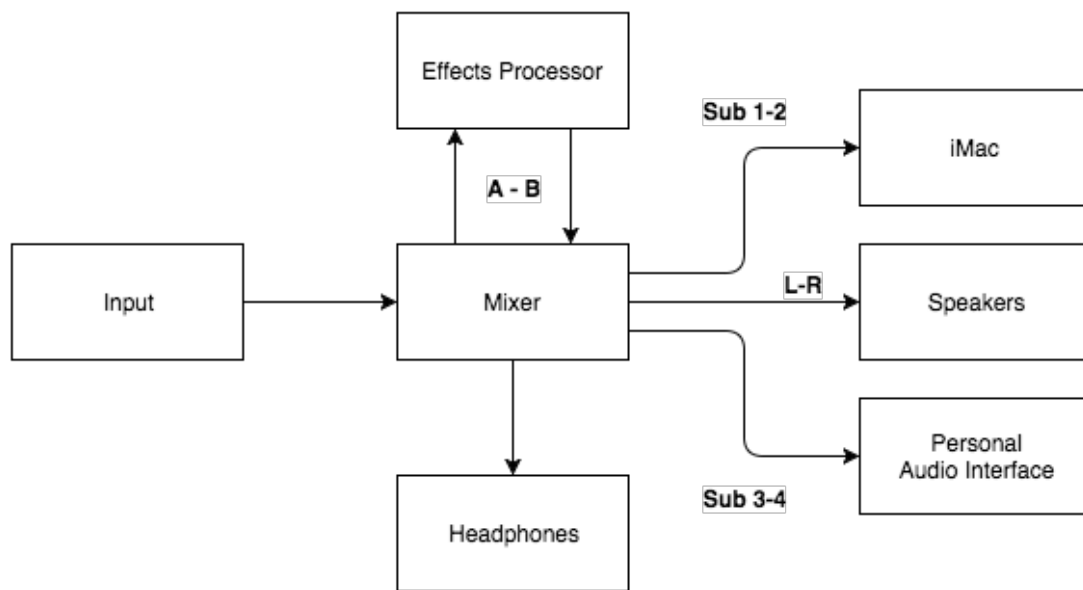


Figure 1: Signal Path

Mackie CR1604 VLZ Mixer

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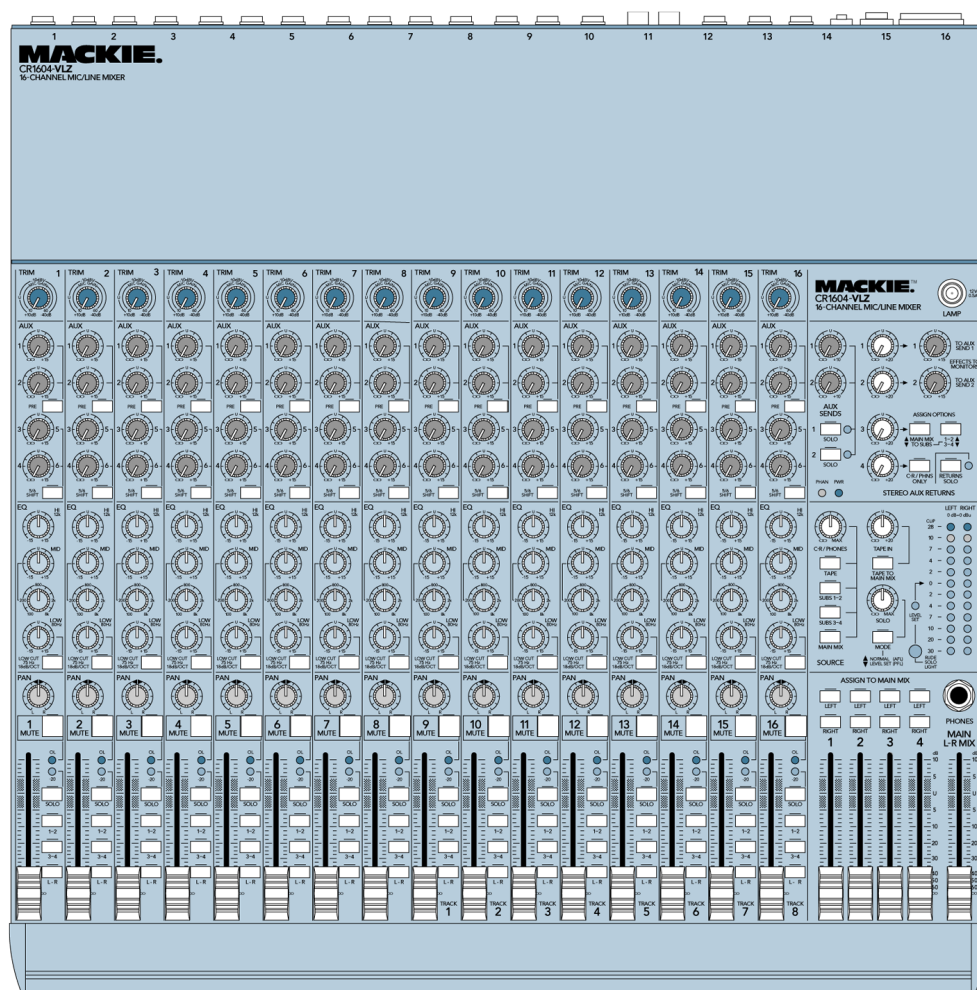


Figure 2: Mackie CR1604 Mixer

Controls of Individual Channel

1. Volume Fader: Controls the volume of the channel within the mixer
2. Path (Subs): Chooses where the channel signal is directed to
 - (a) **Solo**: Isolates the channel in the mix. Useful for when you only want to hear the specific channel without other ones.
 - (b) **1-2**: Sends to Computer for Recording
 - (c) **3-4**: Sends to stereo $\frac{1}{4}$ " cables for use with personal audio interfaces.
 - (d) **L-R**: Sends only to Monitors (Speakers)
3. Mute: Mutes the Channel
4. Pan: Controls the amount of signal sent to the left vs right, 1 vs 2, or 3 vs 4
5. Equalization (EQ)
 - (a) **High EQ**: ± 15 dB at 12 kHz
 - (b) **Mid EQ**: ± 15 dB within 1.5 octaves of the frequency center (Determined by Frequency Sweep)
 - (c) **Frequency Sweep**: Selects the center of the Mid EQ between 100 Hz and 8 kHz
 - (d) **Low Cut Switch**: Removes all signal below 75 Hz (High Pass Filter)
6. Auxiliary Sends: Sends a parallel signal path to other outputs on the mixer. See ?? for more information.
 - (a) **Aux A-B**: The DMV Pro effects processor has two inputs and can run different effects on each input. Aux **A** sends a signal to input 1 on the processor and Aux **B** sends a signal to input 2. See the section on the [effects processor](#).
 - (b) **Aux C-D**: Not used
7. Gain: Controls the amplitude of the signal going into the mixer. Input sensitivity is adjusted by -10 dB to 40 dB. Please do not adjust unless necessary.

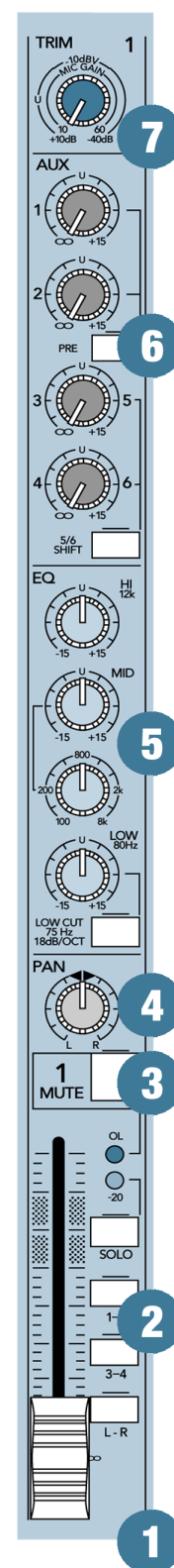


Figure 3: Channel from Mackie CR1604-VLZ Mixer

Mixer

1. Effects to Monitors: Adds effects to monitors.
2. Aux 1-2 Sends: Controls the gain of the AUX 1-2 send output into the mixer.
3. AUX Returns: Controls the volume of the signal returning from the AUX within the mixer.
4. 1-2/3-4 Toggles: Controls the path of the signal to
5. IGNORE ABOVE
6. C-R/Phones: Controls volume to the Control Room out and the [Headphone Jack](#)
7. Selects what inputs are routed to the meter display
8. Meter Display: Visually shows the strength of the signal. Want the highest possible signal strength (green) without clipping (red light). At yellow compression occurs.
9. Selects what inputs are routed to the meter display, the C-R out and the headphone jack.
10. Solo Knob: Controls the level of the soloed channels
11. Mode Control:
 - (a) **Normal (AFL)**: solo signal is post EQ, Pan, and Fader
 - (b) **Level Set (PFL)**: solo signal is pre EQ, Pan, and Fader
12. Headphone Jack: Accepts $\frac{1}{4}$ in. plug. Feel free to use your own headphones.
13. Main Mix Assigns: Allows fader subgroups 1-4 to be assigned left, right, or both channels in main mix.
14. Subgroup Volume Faders: Control the output levels of chosen group. Adjusting the volume of subgroup 1-2 will change the volume audio into the iMac. Adjusting 3-4 will change volume of the audio going into personal audio equipment.
15. Master Fader: controls output to speakers.

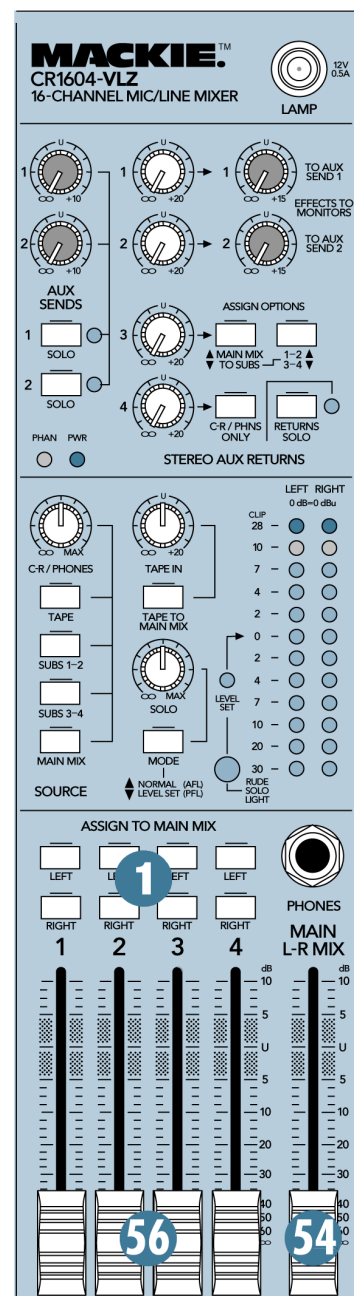


Figure 4: Master, Sub and Send Controls from Mackie CR1604-VLZ Mixer

MIDI Time Piece MTP AV (MOTU)

Subsection 1

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Chapter 2 Title

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