

CR1604-VLZ®

16 X 4 X 2 MIC/LINE MIXER



You can consider our CR1604-VLZ an update of our classic CR-1604, but there is so much about it that is new or improved, it's more of a reincarnation.

Like all of Mackie Designs' mixers, the CR1604-VLZ is designed for rugged, 24-hours-a-day use. It is a supremely flexible mixer, not just because of its multiple input/output configurations, but because of its true 4-bus architecture, 6 aux sends, and extensive routing capabilities. 16 high-headroom, low-noise mic preamps make vocals come through loud and clear, and a low cut filter on each channel keeps unwanted low frequencies from being reproduced.

Completely configurable.

No matter what the application, the CR1604-VLZ can be configured for optimal use. As a tabletop mixer, input/output jacks can be positioned at the rear of the unit, or with the optional RotoPod-VLZ, positioned

on the same plane as the controls. Placed in a rack system, the CR1604-VLZ can be set so that jacks are facing front or facing the rear, keeping wandering hands from playing with

cords. Whether used in a permanent installation, or as a portable mixer, the CR1604-VLZ is completely at home.

Durable and reliable.

Built like a tank, the CR1604-VLZ is a team player that can stand up to vigorous use, day in and day out, any place it is installed. Its sturdy-yet-light steel monocoque construction houses rugged, double-sided through-hole-plated fiberglass circuit boards, and 60mm faders with ultra-tight lip seals for keeping out dust and other contaminants.

Impact-resistant knobs are mounted so they "ride" just above the steel chassis – they absorb impact without trouble. They're designed to last, too, thanks to co-molded potentiometers that don't get brittle and crack up. Then, we use metal stand-offs at regular intervals to mount thick fiberglass circuit boards inside the CR1604-VLZ.



RELATED PRODUCTS

ROTOPOD-VLZ • MIXER MIXER • REMOTE FADER • CORDPACK

MORE INFORMATION

CR1604-VLZ ARCHITECTS' & ENGINEERS' SPECIFICATIONS

"IN YOUR FACE"
ALL-PRODUCT BROCHURE

FEATURES

- 16 low noise/high headroom XLR mic inputs (-129.5dBm E.I.N.)
- 16 balanced/unbalanced mono line inputs
- True 4-bus design
- Inserts on all channels
- Direct outs on chs. 1-8
- 3-Band EQ with sweepable mids
- Low Cut Filter on all channels
- PFL/AFL (Solo In-Place) on every channel (global)
- Very Low Impedance (VLZ) architecture
- Control Room/Phones source matrix
- 6 aux sends, 2 with master level controls
- Wide input gain range with "virtual pad"
- Mono main output with level control
- Balanced inputs and outputs (except RCAs, phones & inserts)

MACKIE®



Radio frequency interference from TV/radio stations and cellular phone users is virtually eliminated, thanks to Mackie's use of metal jacks (instead of plastic) and shunting capacitors.

Its built-in power supply is beefy enough to handle major power consumption without breaking up. And there's no bulky "wall wart" to be kicked out of place or to cover up extra outlets.

All of this adds up to an extremely durable mixer that can withstand major use and misuse. Multi-user applications like churches, night clubs, A/V rooms and schools are perfect homes for the CR1604-VLZ.

Highly-usable.

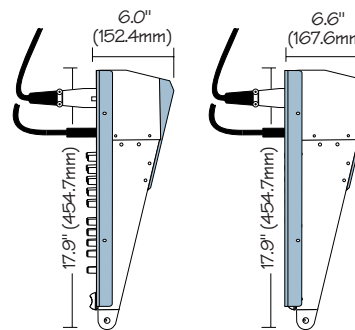
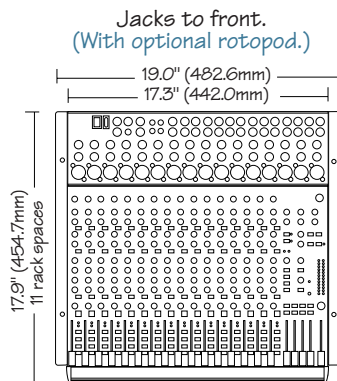
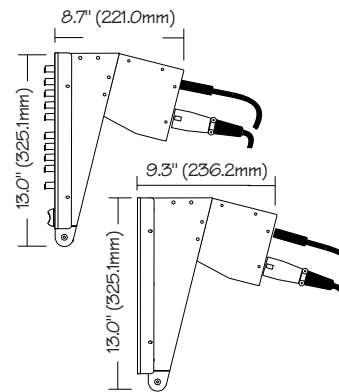
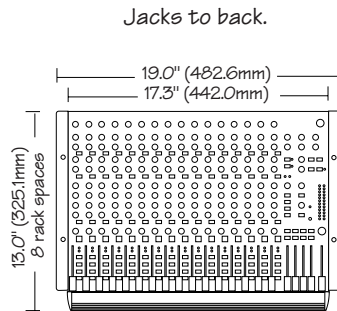
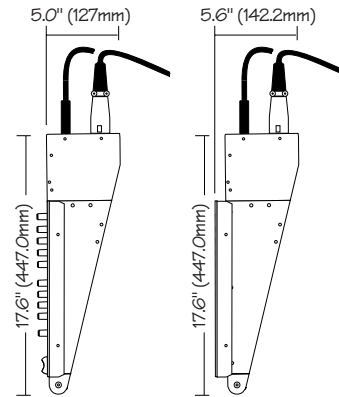
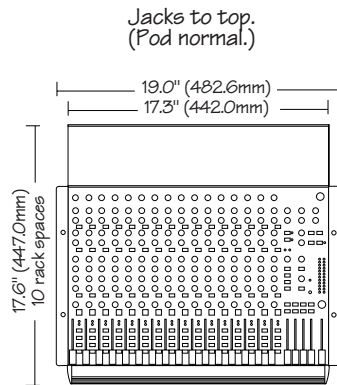
We designed the CR1604-VLZ by taking into consideration a couple of things. One: what made our original CR-1604 so popular and critically acclaimed. And two: what additional features or improvements would make the CR1604-VLZ the new standard in high-quality compact mixers.

Sixteen high-headroom, low-noise mic preamps (with -129.5dBm E.I.N., 0.005% THD, and 60dB max. gain), mean plenty of mic inputs for virtually any use. Additionally, each

channel has its own switchable low cut filter ($18\text{dB/octave @ }75\text{Hz}$), so

mic thumps, room rumble and stage mishaps are left out of the mix without diminishing the audible bass frequency range.

Four buses make the CR1604-VLZ a routing giant. Channels can be assigned to buses 1-2, 3-4 and/or Main Mix, and the 4 subs can be assigned to left and/or right main mix. A Control Room/



Phones source matrix lets you route any combination of tape, subs 1-2, 3-4, main mix or Aux 4 to headphones, control room outputs, and meters. This enables you to monitor 2-track tape output or route a click/cue track to phones, create special phones or broadcast mixes via the subs, or create an extra stereo mix (with its own gain control) for another zone, like a cry room, lobby, or other such place.

For that matter, the CR1604-VLZ's mono main out has its own level control, so a mono mix can be sent to another zone and adjusted accordingly.

The CR1604-VLZ has six aux sends, in a four-knob per channel strip scheme. Aux Sends 1 & 2 are switchable pre- or post-fader, and the next two knobs can be switched between Aux Sends 3 & 4 or 5 & 6 (all four are post-fader).

Playback of a tape or CD is easy with the 1604-VLZ's Tape In volume control and two routing switches.

Solo has its own volume control and is switchable from AFL (In-Place) to PFL. Level setting is easy in PFL, especially when used in conjunction with the mixer's level set LED and marker (near the 12-segment stereo LED ladder). Check a channel's stereo placement to AFL; the CR1604-VLZ's constant-power pan pots maintain a consistent loudness across the stereo horizon.

Each channel has a mute button, making it easy to mute a source when it's not contributing to the mix.

Log-taper 60mm faders deliver a consistent fade throughout the fader's throw, so choppy fade-ins and fade-outs are history. These faders have a copolymer membrane that provides a continuously sealed barrier against dust and liquids without interfering with fader travel. Similarly, the fader's long-wearing contact material (first designed for use in exterior automotive sensors) means longer fader life and improved resistance to the elements.

VLZ, Headroom, and more.

Very Low Impedance – VLZ – isn't just a catchy acronym, it's a fact. We designed the CR1604-VLZ so that noise is minimized and dynamics are maximized.

The noise created by many channels running simultaneously can really

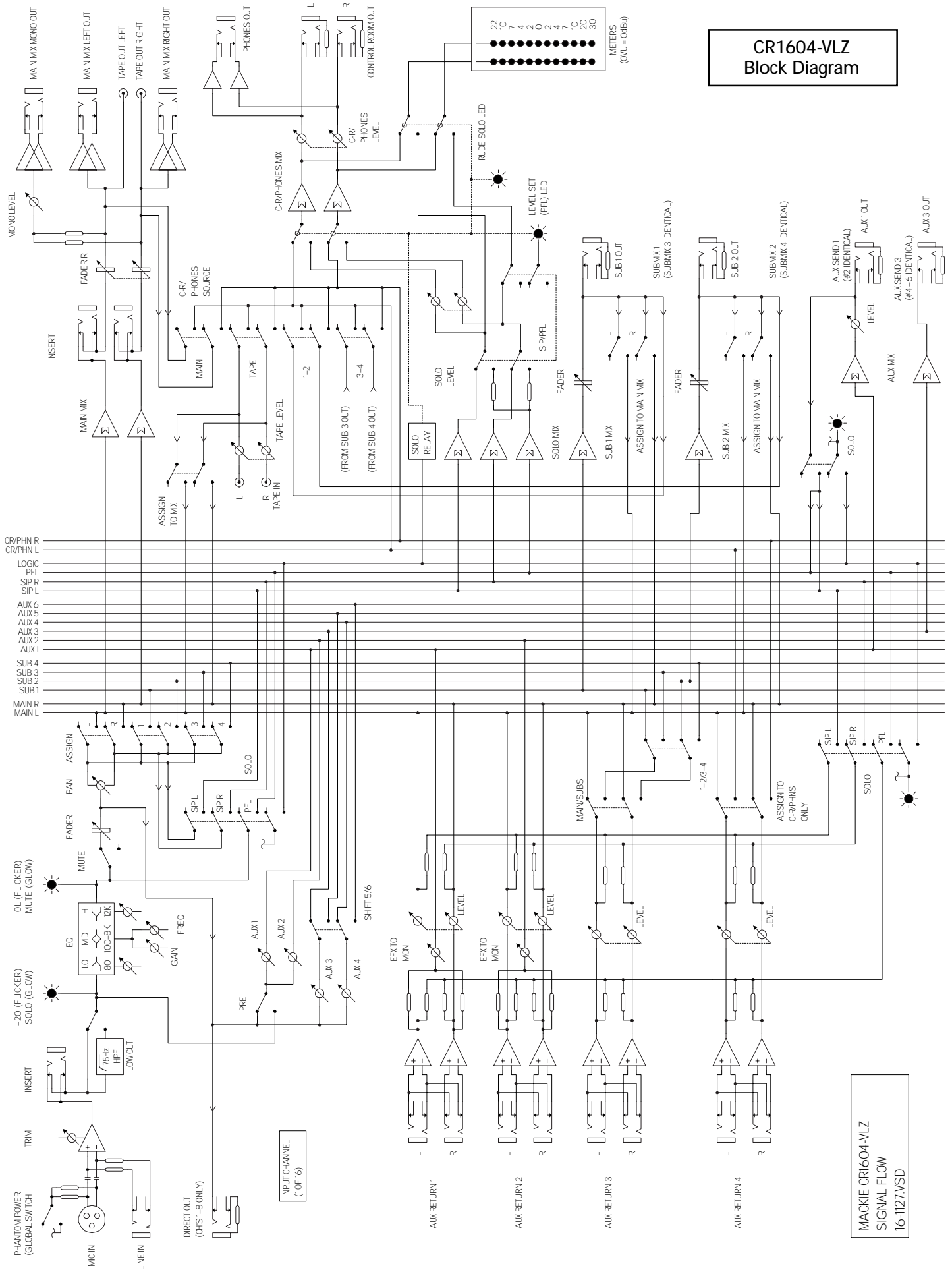
add up (it's called "thermal noise," and has something to do with temperatures, atoms and the like).

Mackie decreases thermal noise by making internal impedances as low as practical, in as many places as possible inside the mixer. Our robust power supply delivers the high current levels necessary to implement VLZ, resulting in astonishingly low noise levels, and minimal crosstalk, too.

Likewise, Mackie's internal UnityPlus circuit design allows for maximum headroom. The CR1604-VLZ can handle multiple, intense signals without distortion because of its negative gain mix amplifier architecture. Channels are mixed together at -6dB, then restored to unity. This gives the mixer the ability to sum 4 times the number of signals before clipping. That's about double the amount of mix amp headroom available with many other compact mixers.



CR1604-VLZ Block Diagram



MACKIE CR1604-VLZ
SIGNAL FLOW
16-1127.VSD

CR1604-VLZ



- EFX to Monitors control
- BNC lamp socket and internal power supply

Optional Add-Ons:

- **RotoPod-VLZ:** Lets you configure the CR1604-VLZ so the jacks are facing up. Comes with rails for rackmounting.
- **MixerMixer:** Combines up to three CR1604-VLZ, mixing the outputs from all connected units so they can be used as if they were one large mixer.
- **Remote Fader:** Allows the main output level of the CR1604-VLZ and connected mixers to be controlled by one remote fader.
- **CordPack:** 36 mono and 3 stereo cables – all the cables needed to connect up to three CR1604-VLZs to a MixerMixer. (They can be used in many other places, too.)

Reliable, durable, flexible.

Those three words best describe the CR1604-VLZ's basic strengths. It's designed for continuous, hassle-free use in any application or installation. So no matter where it goes, it'll remain as reliable in years to come as it is today.

Likewise, the 1604-VLZ's packed with useful features and practical routing capabilities – virtually any combination of channels and subs can be routed to any place.

Simply stated, the CR1604-VLZ offers more features, more peace of mind and more possibilities than any mixer in its class. And it's a Mackie.

Other notable features:

- Dual-Purpose LEDs: –20/Solo LED flickers when there's signal present in that channel, and when solo is engaged, glows steadily. Similarly, the OL/Mute LED flickers when the channel's overloaded, and glows steadily when mute is engaged.
- Sub group faders for subs 1 through 4 (same design as channel faders)
- Phantom power (48V) for powering condenser microphones
- 12-section L & R meter LED ladders
- Our famous Rude Solo Light



SPECIFICATIONS

Frequency Response:

20Hz-60kHz, +0/-1dB,
mic input to any output
20Hz-100kHz, +0/-3dB,
mic input to any output

Total Harmonic Distortion:

Less than 0.005% (any
input to any output, 1kHz
@ +14dBu, 20Hz-20kHz)

Microphone Preamp E.I.N.:

-129.5dBm (150Ω termi-
nated, max. gain)
Main output noise, all
channels assigned: -89dBu
Working S/N ratio: 90dBu
(ref: +4dBu)

Maximum Output:

+28dBu main output bal.
+22dBu all outputs unbal.
Dynamic Range: 108dB

Maximum Gain:

Channel preamp, XLR input:
60dB
Channel preamp, line input:
40dB
Lines: 40dB
Mic in to balanced main
mix out: 86dB
Mic in to unbalanced main
mix out: 80dB
Channel faders: 10dB
Aux Returns: 20dB
L/R master fader: 10dB

Headphone Impedance:

20-200 ohms

Equalization:

Hi Shelving: ±15dB @
12kHz
Mid Sweepable: ±15dB,
100Hz-8kHz
Lo Shelving: ±15dB @
80Hz

Weight:

20 lbs. (9.1 kg)



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