

Since 1984

Boulder

1110

Preamplifier

*An introduction to the technology within the
Boulder 1110 Stereo Preamplifier.*

Welcome

What constitutes a high-performance preamplifier? The feel of the controls? Exotic design? Partially. But there's more to it than that. Advanced technology and verifiable sound quality are just as—if not more—important. Technology in the service of art appeals to both our minds and our hearts. It is innovation and engineering that inspires.

The 1110 Preamplifier is no exception. For Boulder, form always follows function. It must prove itself on the test bench as well as the sound room before anything else. And the 1110 does both quite well.

Architecture

Isolation is key in the pursuit of performance, but how do you isolate each part of a preamplifier within a single chassis? The 1110's architecture provides an elegant solution: each portion of circuitry is housed in the main enclosure to maximize value, and the ten major subassemblies—left input, right input, left analog, right analog, ARM processor supervision and logic, display, analog transformer, digital transformer, power supply regulation, and standby power supply—are each completely separated into individual assemblies to maximize isolation.

By separating each section of circuitry and the power supplies, Boulder's engineers have eliminated crosstalk between channels and prevented any of the analog stages from picking up noise generated by any of the power supplies, the ARM processor, or the

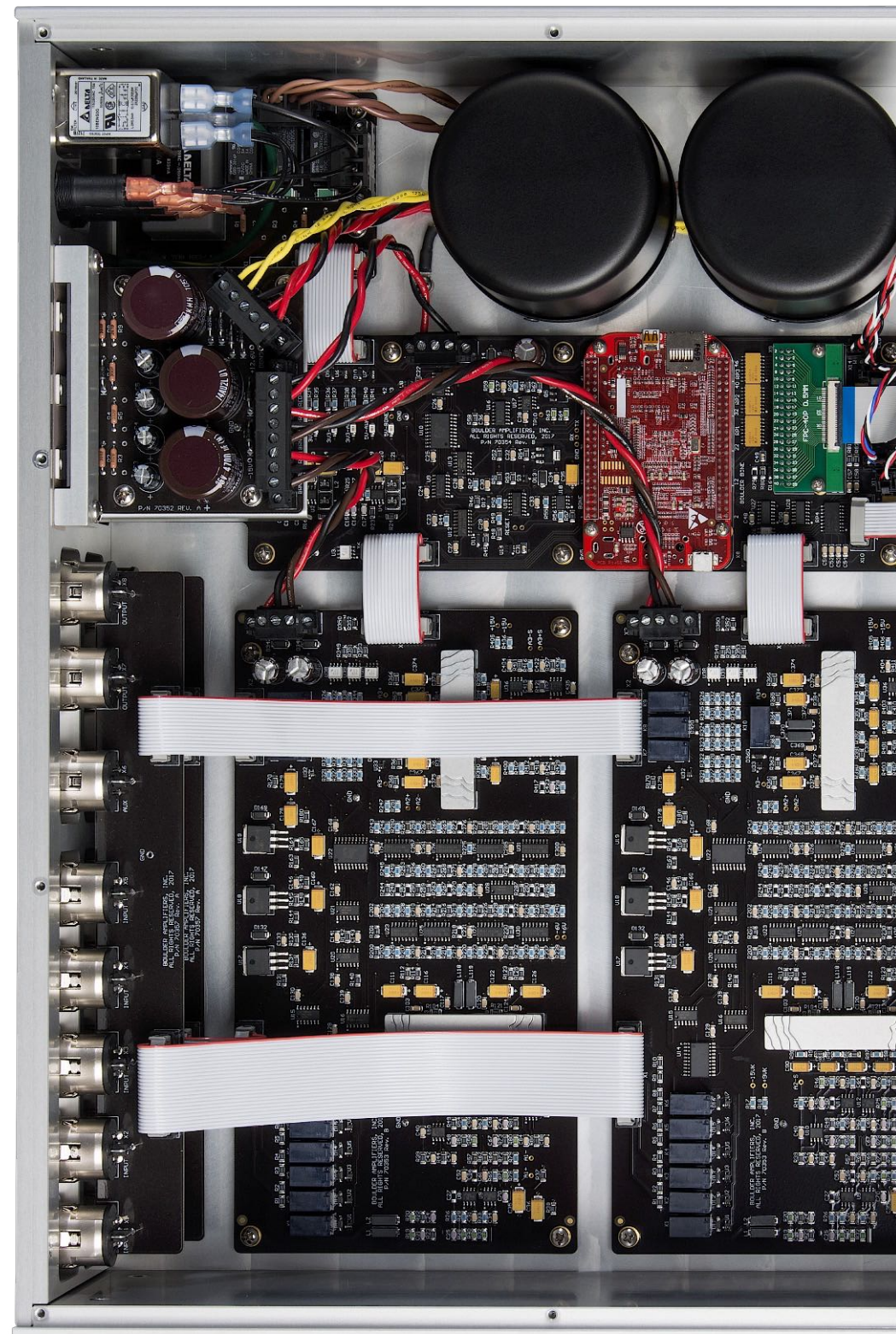
display. The verifiable information? The 1110 achieves a -96.5 dB noise floor for the preamplifier, channel-to-channel crosstalk of -101 dB, and RF and EMI interference that are vanishingly low.

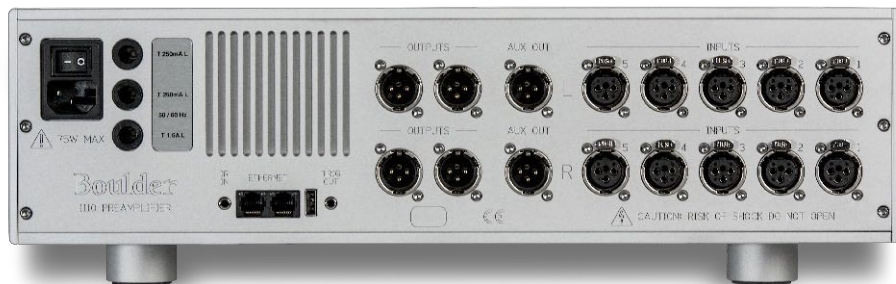
Front Panel Controls and Full-function Display

The 1110's communication, display, integration, and control systems are hosted by a powerful Advanced RISC Machine (ARM) processor. All front panel menu, display, and user controls descend directly from Boulder's flagship 3010 Preamplifier. Direct input access and volume control are readily available, while a system of soft buttons and the volume knob in tandem with a nested option and setup menu allow you to adjust portions of the preamp's operation to suit your personal needs.

Centered in the 1110's front panel is a full-color LCD display showing all important selected settings and adjustments. The chosen input name, volume, input trim, output trim and any shift in balance or polarity are all clearly indicated on the front panel.

In addition to current playback status, the front panel display is also used in tandem with the front panel buttons for a comprehensive set of programmable Option and Setup configurations. When connected to a network, these configurations can also be accessed and adjusted from the 1110's HTML-based programming page via any common computer browser.





Analog Design

Boulder has a heritage and reputation forged in broadcast and recording: we were chosen to monitor some of the most important recordings ever made because of our transparency and reliability. The 1110 continues this tradition and mates a balanced instrumentation-style input circuit to our latest version of the 985 gain stage for sound quality that is truly neutral and connectivity that is always perfect. The 985's high-current output can also drive extremely long cable runs with no stress or loss of fidelity.

As with all 1100 Series components, the 1110 is balanced from input to output, including a new version of our renowned volume control, borrowed directly from the 3010 Preamplifier.

Power Supply

In order to maintain ideal separation for the standby, left and right analog, and control/user interface, each power supply subsection is isolated.

The standby power supply is a small, ultra-efficient supply that keeps the supervisor portion of the preamplifier awake when in standby mode in order to meet even the toughest power consumption regulations. The standby power supply is then turned off and switched entirely out of the active power circuit when the 1110 is on.

The analog and digital supplies have their own individual transformers to prevent the digital portions of the

preamp from affecting sound quality.

Transformer hum is not permitted. To keep the transformers from humming or emitting mechanical noise due to vibration, each is potted in a proprietary compound and encased in a riveted steel enclosure. Both transformer housings are then mounted on rubber isolation feet to further eliminate vibration and noise.

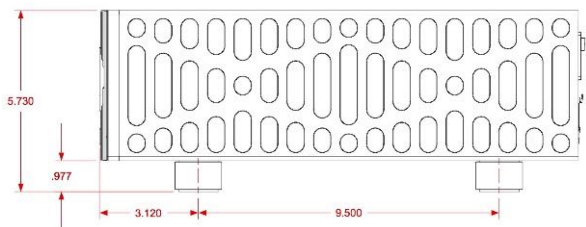
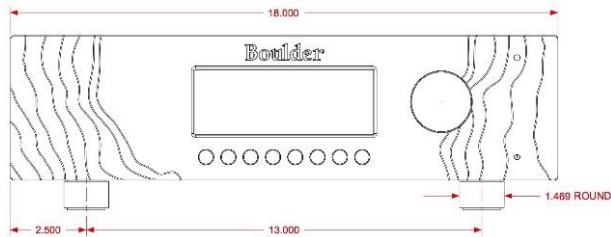
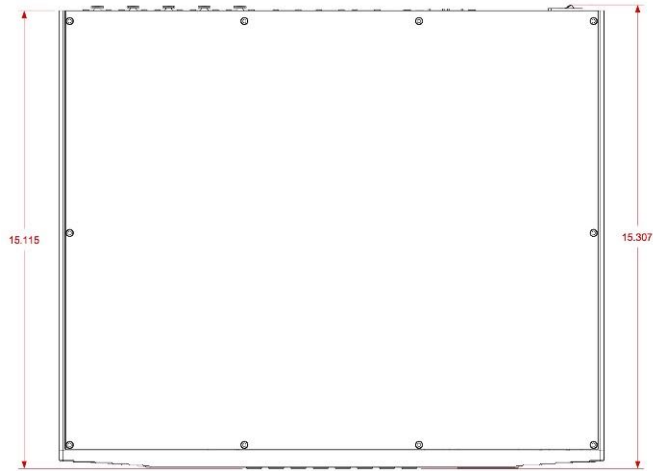
Power supply regulation is handled by a dedicated circuit board that handles power regulation for each subsection of the 1110. High-speed regulators are mounted to the rear panel of the preamp for heatsinking and power is then distributed to each portion of the preamplifier.

Mechanical Design

Every plate and panel of the 1110's casework is machined from a solid plate of aluminum on Boulder's own CNC machining centers before being hand-sanded and bead blasted. Every button and the volume knob are hand-polished to a mirror finish in a dedicated polishing chamber before all parts of the preamplifier—the circuit boards, display, buttons, volume knob—are assembled and tested by Boulder's team of dedicated craftsmen and technicians.

Boulder remains one of the last high-end electronics companies to keep every aspect of manufacturing under our own roof and the proof is in what you hear. But don't take our word for it. Listen for yourself.

Dimensions



Technical Specifications

Balanced Inputs	5, via 3-pin XLR
Balanced Outputs, Dual	2, via 3-pin XLR
Auxiliary Balanced Output	1, via 3-pin XLR
Maximum Input Level	6 Vrms
Maximum Output Level	14 Vrms
THD+N, 2V Output, 20 Hz to 5 kHz	0.0015%, (-96.5 dB)
Output Loaded with 150 ohms	<1 dB distortion change, 20-10 kHz
Maximum Voltage Gain	20 dB
Volume Range	100 dB
Volume Steps	0.5, 1.0 dB \pm 0.01 dB
Auxiliary Path Gain	+8.5 dB
Frequency Response, 20 Hz to 20 kHz	+0.00, -0.03 dB
Frequency Response, -3 dB	0.02 Hz and 250 kHz
Clip to Noise Ratio	118 dB
Input Impedance	100k Ω , Balanced
Output Impedance	100 Ω , Balanced
Power Requirements	90-120V, 200-240 VAC, 50-60Hz
Power Consumption	75W Maximum
Preamplifier Chassis Dimensions	18" W x 15.3" D x 5.7" H 45.7 cm W x 38.9 cm D x 14.5 cm H
Preamplifier Chassis Weight	36 lbs. (16.3 kg)
Shipping Dimensions	24" W x 23" D x 16" H 61 cm W x 59 cm D x 41 cm H
Shipping Weight	49 lbs. (22.2 kg)

All specifications measured at 120VAC mains power

Boulder Amplifiers

255 S. Taylor Avenue

Louisville, CO 80027

Tel: 303-449-8220

e-mail: sales@boulderamp.com

web: www.boulderamp.com

facebook: www.facebook.com/BoulderAmplifiersInc