

ALTAIR II / line stage


 constellation


New front touchscreen for easy operation

Hand-selected FETs eliminate audible noise

48 microprocessor-controlled optical resistors assure perfect signal balance

Unprecedented mechanical and electrical isolation for exceptional signal purity

The most advanced construction ever realized in a line-level audio component

The soul of the Altair II preamplifier is the creation of our “dream team” of the world’s best audio engineers. But the face of the Altair II represents a collaboration between our industrial designers and our dealers and customers. The feedback we received from them after we launched the original Altair helped us refine the preamp’s operation, making it easier and more convenient to use. Yet because the audio circuits are identical to the Altair’s, the original sound quality—which a leading audio magazine described as setting a new standard “in virtually every sonic and musical criterion”—is unchanged

The new front-panel touchscreen allows all functions to be adjusted directly from the front panel. Enhanced contrast and large font sizes allow the touchscreen to be seen from across a room. An elegant

machined-aluminum, leather-wrapped remote control provides immediate access to the most commonly used functions, such as volume, balance, mute and phase.

The Circuit

We based the Altair on our Line Stage Gain Module, a fully balanced preamp circuit sheathed in its own machined aluminum shield. The circuit is actually two mirror-imaged amplifiers, with one amplifying the positive half of the signal and the other amplifying the negative half. Through the use of hand-selected FETs (field-effect transistors) and servo circuits, we achieve an essentially perfect balance between the positive and negative halves of the signal.

The FETs we chose for the Altair II have the lowest noise we have ever encoun-

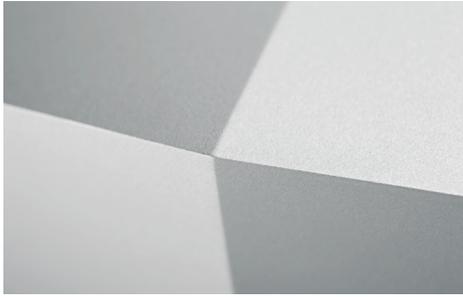
tered. These FETs are no longer made, but fortunately we acquired a substantial inventory of them before they were discontinued.

Instead of the mechanical potentiometer found in most high-end preamps, the Altair II uses optically controlled resistors that can be adjusted to an accuracy of 0.1 dB. To maintain the Altair II’s perfect positive/negative signal balance and left/right channel balance in all operating conditions, we use 48 of these resistors—an expensive but undeniably superior design. A thermal tracking circuit monitors the Altair II’s operating temperature and adjusts the settings of the resistors to compensate.

The Construction

Like a raft floating on a calm lake on a

(more...)



The User Interface

The primary control for the Altair II is the front touchscreen, a 432- x 230-pixel high-contrast LCD that uses large fonts for maximum readability. Five buttons underneath the screen control power and mute, and also activate some key the touchscreen's functions. Traditional rotary volume and balance controls—linked to encoders that control our high-precision optical resistors—provide a comfortable, familiar feel. feedback.

For each input, the Altair II remembers the volume and balance settings last used. Minimum and maximum gain may be set for each input, and inputs can be renamed. A home theater bypass mode, which allows the Altair II to interface with a surround-sound processor, can be set up for any input. The resolution of the volume control can be set to 0.1 dB for the greatest precision, 1 dB for fastest operation, or 0.5 dB for a balance between speed and precision.

An elegant remote control, machined from aluminum and wrapped in leather, provides quick access to commonly used functions such as volume, source, balance, mute and phase.

The Connections

The Altair II provides four unbalanced RCA inputs on Cardas Rhodium jacks, and four XLR balanced inputs using select Neutrik connectors. Balanced and unbalanced recording outputs are also provided.

Two balanced and two unbalanced line outputs allow connection to practically any power amplifier as well as spare outputs for biampification or a subwoofer. The balanced outputs form the Constellation Link, a perfectly balanced connection for use with our Hercules and Pegasus amplifiers.

The Power Supply

In order to prevent the energy of the power supply from interfering with the audio circuitry, we have isolated the supply in a separate enclosure. A trio of three-conductor PCOCC cables interfaces the two components. The cable is terminated with ultra-low-impedance Hypertronics connectors originally developed for aerospace applications.

The Altair II's power supply is actually three separate supplies—one each for left channel, right channel, and control circuitry. Each supply has its own R-core transformer, making it impossible for one channel's operation to affect the other.

The Result

The Altair II's revolutionary circuitry and incomparable construction quality give it a musicality no other preamplifier can match. The sonic detail is compelling, the dynamics breathtaking, the silence between notes almost haunting. Yet all of this performance is delivered with convenience that audiophiles will find surprising, and advanced features too seldom seen in high-end preamps. Stating that the Altair II outperforms its competitors would be inaccurate because truly, it has no competitors.

Constellation reserves the right to change designs, and / or specifications

windless day, the Altair's dual-mono circuit boards hover undisturbed on an elastomeric suspension that damps external vibrations. The top and bottom halves of the "raft" are isolated from each other by a massive panel that sandwiches a thick sheet of polymer between heavy stainless steel sheets.

The tops of the circuit boards host the Line Stage Gain Modules. The bottom halves hold the control circuits. Shields machined from solid aluminum billet protect each Line Stage Gain Module from interference, while a formed aluminum shield provides shielding for the other circuits.

The Altair's chassis cannot resonate because we machine it from a solid block of billet aluminum. The chassis' thick 8.2mm walls shield the circuitry from 50/60-Hertz interference caused by household electrical circuits.

The outcome is nothing short of dramatic: a line stage that reproduces all the musical subtleties of high-resolution sources such as vinyl and SACD, with a warmth and depth reminiscent of the best tube preamps, and dynamics that make other line stages seem uninvolved and banal.

SPECIFICATIONS

Gain, B & UB (Balanced & Unbalanced)	26 dB
THD+N, RI > 10K	< 0.001% 20 Hz – 20 kHz @ 2V out < 0.1% 20 Hz – 20 kHz @ 10V out
Frequency response	+/- 0.5 dB 10 Hz – 200 kHz
Output noise	< 20 uV 20 Hz – 20 kHz bandwidth -100 dB re 2V output
Input impedance	
UB	100K
B	200K
Output impedance, B & UB	< 50 ohm
Weight	line stage: 51lbs/ 23kg power supply: 25 lbs/11.4 kg
Dimensions	line stage: 5.53"/140.4mm x 17.50"/444.5mm x 14.82"/376.4mm (hwd) power supply: 2.82"/71.50mm x 17.50"/444.5mm x 14.50"/383.3mm (hwd)



Audio That Inspires

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