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- › WILSON'S DUETTE SERIES 2 SPEAKER

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MARCH
2015

MICHAEL FREMER

Boulder Amplifiers 2110

LINE PREAMPLIFIER

Founded in 1984, Boulder Amplifiers is a conservative audio company that goes quietly about its business, choosing not to call attention to itself with marketing flash or acronym-laden features. Change comes slowly to such companies, which is why the just-retired 2010 preamplifier¹ enjoyed a 17-year run.

On the outside, with the exception of the new, front-panel-spanning display band of mirrored glass, the 2010's replacement, the 2110, looks little different from its predecessor, though changes inside and out are many. And the price has risen, from \$48,000 to \$54,000.

The 2110's basic physical building blocks are the same as the 2010's. The 2110 is a modular design with a main chassis comprising a control module that includes the front-panel; sitting on and behind it are separate housings for the left and right channels. This three-part chassis sits on the massive 2100 outboard power supply, which comprises four separate, isolated supplies connected by three umbilicals: one supply each for the



left- and right-channel analog sections, one for the logic and user-interface circuits, and one for standby and power-up, which Boulder claims substantially decreases power consumption when the preamp is not in use.

To keep noise at vanishingly low levels, there are no electrical connections between the audio and user-interface sections. Control is effected through a system of optical transmitters and sensors that trigger functions within each channel's housing.

1 See www.stereophile.com/phonopreamps/621/index.html.

SPECIFICATIONS

Description Remote-controlled line preamplifier. Analog inputs: 6 balanced (XLR). Analog outputs (all balanced, XLR): 2 main, 1 Aux. Other inputs/outputs: Boulder Link Ethernet and IR mini-plug. Maximum voltage gain: 20dB. Gain range (configurable): -100 to 20dB in increments of 0.5dB. Frequency response: 0.02Hz-300kHz,

-3dB; 20Hz-5kHz, +0.00/-0.03dB. THD+N, 2V output, 20Hz-5kHz: 0.0008% (-102dB); 0.001% at 20kHz (-100dB). Crosstalk, L-R or R-L: -134dB or better, 20Hz-20kHz. Crosstalk, adjacent inputs: -134dB or better, 20Hz-20kHz. Input impedance: 333k ohms. Output impedance: 100 ohms. Power consumption: 240W max,

85W idle, 500mW standby. Manufacturer specifications all taken at 240VAC mains power.

Dimensions Preamplifier: 18" (460mm) W by 6.725" (170mm) H by 16.3" (420mm) D. Weight: 63 lbs (28.6kg) net, 76.8 lbs (34.9kg) shipping. Power supply: 18" (460mm) W by 4.050" (105mm) H by 16.3"

(420mm) D. Weight: 48 lbs (21.8kg) net, 58.3 lbs (26.5kg) shipping.

Serial number of unit reviewed: 11324.

Price \$54,000. Approximate number of dealers: 30.

Manufacturer Boulder Amplifiers, Inc., 3235 Prairie Avenue, Boulder, CO 80301. Tel: (303) 449-8220. Web: www.boulderamp.com.

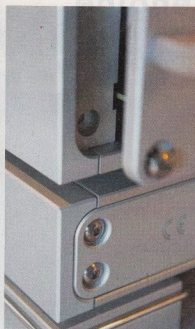
Switching Capabilities and Functionality

To the right of the 2110's centrally positioned and optically controlled, infinite-spin volume control are buttons for Balance, Mute, Left and Right Polarity, Display (intensity), Program, and on/off.

Like the 2010, the 2110 can be switched among its six inputs via a row of hand-polished, stainless-steel pushbuttons on the left of the front panel and labeled One through Six. A seventh button, Aux, lets you set the input routed to that output for recording or other purposes. You can program the 2110 to automatically route all inputs to the Aux output, as most preamps do. You can also configure any input to function as a tape monitor and, to prevent feedback, set the 2110 to block the chosen input from sending its signal back to the Aux output, which would otherwise produce some nasty feedback. The tape-monitor system is complex and ingenious, but Boulder's instructions about how to use



Completely modular construction maximizes audio performance.



To keep noise at vanishingly low levels, there are no electrical connections between the audio and user-interface sections.

it are unnecessarily complicated and obtusely described.

Any input(s) can be configured for Theater Mode, which bypasses

the volume and balance controls to produce unity gain from that input(s) at the 2110's output. This will be useful for those who combine two-channel and surround-sound systems, but Theater Mode must be used with great caution. Boulder's strong warning sows needless panic by stating, in red ink, "there is no way to control the volume of the 2110 while in Theater Mode." Of course you can control the volume of the 2110 while in Theater Mode—just not

MEASUREMENTS

I measured the Boulder 2110's electrical performance with my Audio Precision SYS2722 system (see www.ap.com and the January 2008 "As We See It," <http://tinyurl.com/4ffpve4>). As set up for the review, the volume control operated in accurate 0.5dB steps, the 2110 preserved absolute polarity (ie, was non-inverting, with pin 2 of the XLR jacks hot), and its maximum gain was exactly 20dB, as specified, for both the balanced and unbalanced inputs. The input impedance was very high, at an

estimated 170k ohms (the specification states 333k ohms, but the voltage-drop method I use is not accurate for impedances greater than 100k ohms), and the balanced output impedance was 100 ohms, as specified.

The top pair of traces in fig.1 shows the Boulder's frequency response into 100k ohms, the bottom pair into 600 ohms. In both cases the audioband response is perfectly flat, and has rolled off by only 1.5dB at the 200kHz limit of this measurement. This graph was taken with the 2110's volume control

set to its maximum; the frequency response didn't change at different settings of the control. Crosstalk between the left and right channels was essentially unmeasurable, while the noise floor was free from any power-supply-induced spurious, even though I had the preamp chassis sitting atop its power supply during the measurements. The actual signal/noise ratios, ref. 1V output voltage into 100k ohms with the volume control set to its maximum, were 83.1dB (wideband, unweighted), 95.8dB (22Hz–22kHz, unweighted), and 98.5dB (A-weighted). This is a very quiet preamplifier.

Fig.2 plots the percentage of THD noise in the 2110's output against its balanced output voltage into 100k ohms. Clipping, defined as when the THD+N reaches 1%, doesn't occur until 32V; it was still 27V into 600 ohms! More important, the downward slope of the trace below 15V suggests that the actual distortion remains buried in the noise below that output level. (A constant amount of noise becomes a decreasing percentage of the output level as the latter rises.) I therefore

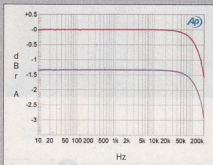


Fig.1 Boulder 2110, balanced frequency response with volume control set to maximum gain at 1V. Into: 100k ohms (left channel blue, right red), 600 ohms (left cyan, right magenta) (1dB/vertical div.).

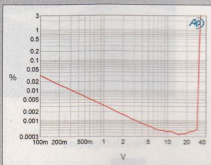
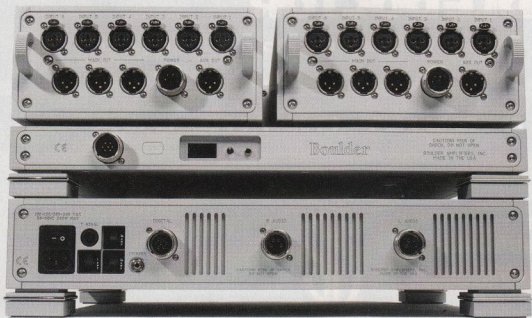


Fig.2 Boulder 2110, balanced input signal, distortion (%) vs 1kHz output voltage into 100k ohms.



Immediately apparent on first listen was the 2110's grip on the music and, especially, on the illusion of space.

the volume of the particular input set to Theater Mode. If Boulder thinks that's too obvious to mention, they need to talk to more consumers.

Other things the 2110 lets you do: invert the polarity of either or both channels, adjust the muting level, set the display to one of eight levels of brightness, change the volume control's default scale (-100dB to 0dB; as set-up for review, the 0dB setting was equivalent to 20dB of gain) and

Inputs and outputs are all balanced, and the circuitry is also fully balanced.

resolution (increments of 0.5dB) to various other options. You can even set the main and Aux output polarity, depending on your choice of power amplifier and/or recording gear. You can program input names, and set individual input levels to produce equal output levels among your inputs. I'll stop there. The 2110's configurability and adjustability are what you'd hope

for and expect for \$54,000.

I hear you: "Yeah, but much of that is available in any \$600 home-theater receiver." True enough. However, the

measurements, continued

plotted how the THD+N percentage changes with frequency at 15V, which I readily admit is well above the output level the Boulder will ever be asked to deliver in practical use. The result is shown in fig. 3, with the 100k ohm result shown in blue and red and the 600 ohm result in cyan and magenta. The THD+N at lower frequencies is superbly low into both impedances, at <0.0004%. Though the THD does rise in the treble, reaching 0.0019% at 20kHz into 100k ohms and 0.0028% into 600 ohms, this is still very low in

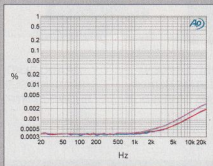


Fig. 3 Boulder 2110, balanced input signal, distortion (%) vs frequency at 15V into: 100k ohms (left channel blue, right red), 600 ohms (left cyan, right magenta).

absolute terms.

The 2110's distortion is so low, in fact, that it taxed my ability to measure it. Figs. 4 and 5 show the spectrum of the preamplifier's output with a 50Hz tone at 10V into 100k ohms with, respectively, balanced and unbalanced input signals. The only harmonics visible are the second, third, and fifth, all at or below -120dB (0.0001%)—and, as I would expect, there is a little more second harmonic with the unbalanced input. But—and this is an enormous "but"—these spectra are not very dif-

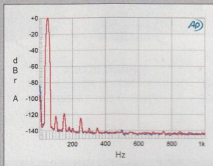


Fig. 4 Boulder 2110, balanced input signal, spectrum of 50Hz sinewave, DC-1kHz, at 10V into 100k ohms (left channel blue, right red; linear frequency scale).

ferent from that of the residual distortion in the Audio Precision analyzer's signal generator (fig. 6) at the output level I used to generate the spectra for the Boulder's output. (The SYS2722 had returned from the Audio Precision mothership in Oregon just prior to my testing of the 2110.)

I therefore repeated the measurement used to create fig. 4, this time notching out the fundamental tone so that the full resolution of the Audio Precision's A/D converter could be applied to just the THD+N. The result

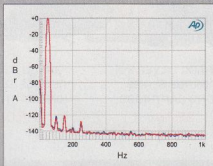


Fig. 5 Boulder 2110, unbalanced input signal, spectrum of 50Hz sinewave, DC-1kHz, at 10V into 100k ohms (left channel blue, right red; linear frequency scale).

2110's sound quality and build quality are most definitely *not* available for \$600. And all configurations and adjustments that can be made using the front panel can also be easily done with Boulder's ergonomically excellent, full-function remote control.

Connections

All of the 2110's connections are via balanced XLR input and output jacks. Single-ended components can easily be accommodated using RCA-to-XLR adapters. (In Boulderese: "The negative input (pin 3) should be wired to ground only at the RCA phono connector.") Of course, to take full advantage of the 2110, you should use differentially balanced source components and a differentially balanced power amplifier. The 2110's three sets of XLR outputs can be used with special splitters to drive up to six power amps.

2110 vs 2010

The 2010 was differentially balanced at its inputs and outputs; its volume control was not. The 2110, however, is fully differentially balanced from input to output. The 2110 replaces the 2010's Boulder-engineered, unbalanced, CMOS-controlled resistor ladder volume control with one that's fully differentially balanced and said to improve signal/noise ratio and eliminate step noise.

The 2010 used Boulder's proprietary 993 gain stage, which had through-hole, hand-soldered boards potted and encased in an extruded housing. This module has been completely reengineered and redesigned. The new 993S features surface-mount technology, with all boards "stuffed,"

assembled, and finished in-house, then potted and enclosed in a machined housing. The 2110 also features new bias-injection and ground-topologies.

Along with the all-new circuit design, the 2110's aluminum case is machined from stock and its surfaces are all bead-blasted and clear-anodized. The 2010's case was a combination of bead-blasted, machined aluminum, and powder-coated sheet stock. The labels on the rear panel are now engraved, not silk-screened. All of Boulder's metalwork is CNC-machined in-house, which in high-end audio is unusual. Boulder also does its own bead blasting while the clear anodizing is performed by a subcontractor.

External control has migrated to the Internet age, with full IP control and two-way feedback, a 12V trigger via a mini-jack, as well as Boulder's Boulder Link via RJ-11 connector. All of this is familiar to home-theater geeks, less so to the rest of us, for whom an on/off switch is less threatening.

There are other, less significant changes. More important is a shift to a more sophisticated protection circuit in which each power-supply is microprocessor controlled and monitored. Should operating temperatures exceed the correct range, the 2110 will mute until the affected supply returns to normal.

Boulder's Game Plan

The foundation of the 2110 is its massive power supply for each channel. These feature big, made-in-USA toroidal transformers potted with a resin of mineral glass and epoxy, and encapsulated in custom, magnetically shielded steel en-

measurements, continued

is shown in fig.7: only the third and fifth harmonics are visible, and by comparing this graph with a similar one taken for the SYS2722's output, it appears as if the Boulder is introducing about the same amount of third-harmonic distortion as the Audio Precision's generator, but not actually introducing any second- or fifth-harmonic distortion for frequencies below the low treble!

Fig.3 shows that the THD does rise toward the top of the audioband, this due to the production of some second harmonic. This can be seen in fig.8,

which shows the spectrum of the 2110's balanced output while the preamp drove an equal mix of 19 and 20kHz tones into 600 ohms. The spikes at 38 and 40kHz are slightly higher than those present in the Audio Precision's output. Though the actual intermodulation products in this graph, at 18, 21, and 39kHz, are all about 10dB higher than those in the SYS2722's output, these spurious are still all extraordinarily low in absolute terms—and there is no difference product visible at 1kHz.

Boulder's 2110 is the best-measuring

preamplifier I have encountered. Not only are its distortion and noise very low, the 2110 doesn't change its operating parameters with output voltage, load impedance, or the setting of the volume control, and hardly at all with frequency. I am not surprised that Michael Fremer was impressed by what the 2110 did in his system. I just regret that I was not able to audition it in my system, the review sample having to be shipped to the 2015 Consumer Electronics Show as soon as I had finished measuring it.—John Atkinson

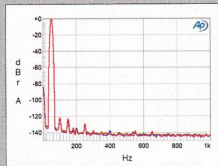


Fig.6 Audio Precision SYS2722, balanced output signal, spectrum of 50Hz sinewave, DC-1kHz, at 1V into 100k ohms (left channel blue, right red; linear frequency scale).

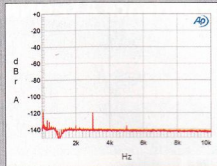


Fig.7 Boulder 2110, balanced input signal, spectrum of 1kHz sinewave, DC-10kHz, at 10V into 100k ohms with fundamental tone notched out (left channel blue, right red; linear frequency scale).

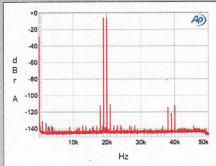
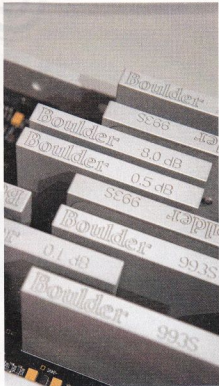
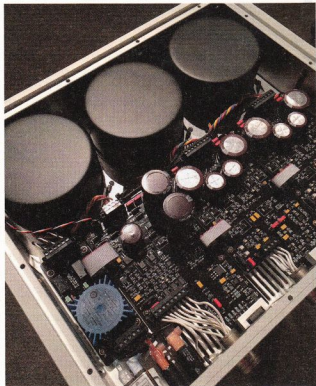


Fig.8 Boulder 2110, balanced input signal, HF intermodulation spectrum, DC-50kHz, 19+20kHz at 2V into 100k ohms (left channel blue, right red; linear frequency scale).



The 2110's rendering of Hejira, and particularly its deft handling of transients, was mesmerizing.

losures. Each assembly weighs more than 8 lbs. The power supplies for the logic circuits are equally well endowed.

The four interlocking chassis that comprise the 2110 are well damped, to eliminate microphonic resonances. This is accomplished with a combination of damping materials and the fact that the vibrational resonances of the entire structure are both higher than those of the individual housings and well above the audioband. I could devote half a page to the design and construction of the multilayer feet that support the 48-lb power supply and the 63-lb main housing.

The 2110's input selection is logic controlled, with signal routing to the six 9935 gain modules via sealed relays. The 2110's input circuit transistors are bipolar, which Boulder says makes them lower in distortion and more reliable than FETs. The 2110's direct-coupled design includes a servo capable of eliminating up to 50mV of source-produced DC offset voltage.

Boulder has paid maximal attention to even the most minimal issues. The display window is made not of plastic but of hand-ground, mirror-coated Pyrex, to prevent warping and/or scratching and to maximize legibility. The mirror finish is produced to Boulder's specs to avoid halo effects and blurring, while maintaining the mirror finish in standby mode.

Speaking of mirror finishes, the 15 buttons on the infrared remote control are cut from stainless steel and hand-polished in-house, in a nine-step process that matches their looks to that of the front panel's buttons and mirrored display.

The 9935 gain module features high current, high slew rate, high current output, low output impedance, and wide bandwidth. Each channel contains three positive and three negative boards, mounted and potted within a machined assembly, and each produces up to 20dB of gain. Before installation, the boards are tested, retested, and trimmed using an automated, computerized process that evaluates up to 10,000 different combinations of resistor values to match each 9935 to a predetermined engineering specification. Whew!

The 2110 uses Boulder's proprietary 9935 op-amps.

and bandwidth limiting." Boulder claims that negative feedback earned its bad reputation because, at one time, the op-amps used in wideband applications were too slow. However, Boulder claims that eliminating feedback produces sonic compromises and increased distortion.

Sound

I used with the Boulder 2110 a combination of single-ended and balanced source components, and ran the big darTZeel NHB-458 monoblocks in balanced mode via a long TARA Labs Zero balanced cable. (The darTZeel's actively balanced inputs use a translator to convert balanced signals to single-ended.) Hum, noise, hiss, and input-switch transients were nonexistent throughout the review period.

Immediately apparent on first listen was the 2110's grip on the music and, especially, on the illusion of space. Both my reference darTZeel NHB-18NS and the Dan D'Agostino Master Audio Systems Momentum preamplifiers throw large soundstages with billowy ease, but the Boulder produced image intensity, physicality, and solidity that were unprecedented in my experience. First take: a giant *Wow*.

Draw a line on a piece of paper. At one end write *hard, etchy, overdamped, hyperfocused, and harmonically bleached*. At the other end write *soft, bulbous, cloudy, rhythmically flaccid, harmonically oversaturated, and dynamically restrained*. You now have a visual representation of the extremes of the sonic continuum along which audio gear generally, and electronics in particular, can be placed. You could create other dichotomies: *noisy-quiet, aggressive-limp, slow-fast*, etc.—or, in the old days, *solid-state-tube* (though today's solid-state needn't sound transistory, nor tubes tubey).

The ultimate preamplifier is the proverbial "straight wire with gain"—as the 2014 December's cover indicates. It does nothing to the sound other than change its volume. Just as John Atkinson in that issue's review of the Ayre KX-R Twenty wishes he could have heard the Dan D'Agostino

Momentum, the Lamm LL1 Signature, and the Simaudio Moon Evolution 850 preamps, I wish I could hear those and Ayre—but lately I've heard only the darTZeel NHB-18S (my reference), the Ypsilon PST-100 MK2, the D'Agostino Momentum—and the Boulder 2110. Though none of those models sounds like any of the others, all sit close to the center of that continuum, well away from either set of extremes. Where does the Boulder sit on the line, and relative to the other preamps I've heard? Well, that was the exercise.

The first recordings I had to hear through the Boulder 2110 were minimally miked spatial spectaculars. *Equinox*, by drummer Markus Schwartz and Lakou Brooklyn, is a remarkable, 24-bit/96kHz digital recording (WAV files, Soundkeeper SR1002). The ensemble consists of trumpet, hollow-bodied electric guitar, bass, and percussion performing lilting, simmering, hypnotic Haitian jazz. *Equinox* reproduces this ensemble with greater intimacy than do some other minimally miked recordings I can think of, yet the air is palpable. I play this file a lot.

Compared to my reference, the Boulder was placed toward the very center of the continuum, where images became better defined, the bass tightened, fingers pressing on guitar frets produced greater on/off delineation, and the overall aural picture snapped into greater focus. The sound was less relaxing and more exciting, with no downside.

That made me try a Norwegian album: *Himmelskip* (Ship of Heaven), by guitarist Iver Kleive and pipe organist Knut Reierstrud, recorded in a church to Studer analog (CD, Kirkelig Kulturverlested FXCD163). It's like a two-man Pink Floyd album. The recording has space, deep bass, and a guitar that's easily lost in the ambience. The darTZeel reproduces it well, similar to how the D'Agostino did it,² but the Boulder 2110's ability to grip the woofers and produce deep pipe-organ pulses as well as space-carving guitar transients brought *Himmelskip* into the greatest relief I've heard from it.

That led me to another recording made in a church: an unreleased 24/88.2k session by fellow *Stereophile* writer Bob Reina's jazz band, Attention Screen, engineered by John Atkinson and featuring Bob on church organ. The results were similar: the space reproduced by the 2110 was as generously wide and deep as through the slightly softer-sounding preamps, but bass definition was better, and in greater relief against the room backdrop. The chimes on this recording had greater crystalline clarity without sounding too etched.

A preamp, like the Boulder 2110, that specializes in carving space, 3D imaging, transient precision, and deep, tight, well-articulated bass can sound analytical and/or harmonically less than fully saturated. The Boulder suffered none of those maladies.

Chris Bellman's recent vinyl mastering of Joni Mitchell's *Hejira* (LP, Asylum/Rhino R1 01087) is much improved over the somewhat dynamically compressed original. Here, chorused electric guitar and Mitchell's closely miked voice could spell trouble for a fast, veil-lifting, well-detailed preamp, but the 2110's rendering of *Hejira*, and particularly its deft handling of transients, was mesmerizing. Its presentation of micro- and macrodynamics produced the good kind of chills. Not that the darTZeel didn't—but those chills just weren't as intense, or as ear-poppingly three-dimensional.

A test pressing of an upcoming reissue of Dean Martin's

ASSOCIATED EQUIPMENT

Analog Sources Continuum Audio Labs Caliburn turntable, Cobra tonearm, Castellon stand; Kuzma 4Point tonearm; Lyra Atlas & Etna, Ortofon Anna, Kiseki PurpleHeart, Miyajima Labs Zero (mono) & Madake cartridges.

Digital Sources Simaudio Moon Evolution 650D DAC/transport; Ayre Acoustics QA-9 A/D converter; Lynx Hilo A/D-D/A converter; Meridian Digital Media System; Pure Vinyl & Vinyl Studio LP-ripping software.

Preamplification Ypsilon MC-10L & MC-16L step-up transformers; Ypsilon VPS-100, Lamm LP 2.1 Deluxe phono preamplifiers; darTZeel NHB-18NS preamplifier.

Power Amplifiers darTZeel NHB 458 monoblocks.

Loudspeakers Wilson Audio Specialties Alexandria XLF.

Cables Interconnect: Snake River Audio Boomslang S/PDFI, Stealth Sakra & Indra, TARA Labs Zero Evolution & Zero, Terasonic Clarison Gold, WireWorld Platinum Eclipse. Speaker: TARA Labs Omega Gold, WireWorld Platinum Eclipse 7, AC; Shunyata Research Ztron Alpha Analog & Alpha Analog HC & Alpha Digital.

Accessories Shunyata Research Hydra Triton & Typhon power conditioners (2 sets); Oyaide AC wall box & receptacles; ASC Tube Traps; RPG BAD, Skyline & Abffusor panels; Stillpoints Aperture Room panels; Synergistic Research UEF products (various); Symposium Rollerblocks & Ultra platform; HRS Signature SXR, Finite Elemente Pagode stands; Audiodharma Cable Cooker; Furutech, Stein Audio demagnetizers; Furutech deStat; Loricaft PRC4 Deluxe, Audio Desk Systeme record-cleaning machines.

—Michael Fremer

Dream with Dean (LP, Reprise/Analogue Productions) demonstrates what a superb singer he was. On this session, backed by a small combo, he's got his lips literally on the microphone. You can hear everything. Dean is in the room, but through a "no filter" preamp like the Boulder I also heard the mike's nonlinearity (or whatever caused the slight tonal asringency). The backing group, placed hard left/right and miked at a greater distance, sounded transparent and cleanly rendered but somewhat mellow, Dean slightly hard.

With the darTZeel back in place, two things happened: the combo's clarity softened and the transients lost some distinction, but Dean's voice sounded more natural, less hyper. Neither preamp gave me all I wanted from this superb recording.

I've been going through some used classical LPs I picked up at Quality Records in Melbourne, Australia, for \$7 Australian, including a minty original pressing from 1972 of pianist Alicia De Larrocha performing Falla's *Nights in the Gardens of Spain* and Chopin's Piano Concerto 2, with Sergio Comissiona and L'Orchestra de la Suisse Romande (UK Decca SXL 6528). As Deccas tend to be, it's a wonderful-sounding recording: a mid-hall perspective with a warm, full sound and natural instrumental focus through the Boulder. The piano sound in the Chopin, in particular, is as you'd hear it from at least 20 rows back, but despite the surrounding warmth, the piano's focus on the stage was cleanly rendered. When I returned the darTZeel to the

² See my August 2014 review: www.stereophile.com/content/dan-dagostino-master-audio-systems-momentum-line-preamplifier.

system, this LP was equally satisfying, but with a slightly more relaxed sound and a bit more warmth, though the piano was equally well rendered and focused. Both presentations were "live"-like, but the Boulder, at almost twice the darTZeel's price—the NHB-18S currently costs 31,700 Swiss Francs, equivalent to \$32,350—drew a more complete picture without sounding analytical. The D'Agostino Momentum would be closer to the darTZeel; the Ypsilon PST-100 MK2 in passive mode would be somewhat closer to the Boulder.

The Boulder 2110's dynamic slam, bottom-end grip, and overall focus made rock records and files pop from the speakers in 3D. The Grateful Dead's *American Beauty* (2 45rpm LPs, Warner Bros./Mobile Fidelity Sound Lab) and a test pressing of the Beach Boys' *Surfer Girl* (LP, Capitol/Analogue Productions) produced particularly holographic images, and a vivid tonality. The Boulder 2110 was as tonally neutral and transparent a preamp as I've heard. It was also drop-dead silent—free of such unwanted artifacts as grain, glare, and hyperdefined edge. I'm sure it will measure as well as it didn't sound.

Conclusions

When a preamplifier costs as much as a really nice car, its buyer is entitled to fanatical build quality in every aspect of its design, an enjoyable user interface, and faultless sound



An "ergonomically excellent" remote control, decided MF.

quality—as small a sonic fingerprint as is humanly possible, or none at all.

The Boulder 2110 delivered all of the above, and more. Its build quality and fit 'n' finish are top shelf, the user interface and remote control are glitch free, and it's easy and pleasant to use (though some might find the size of the characters on the LCD screen billboard-like) and the sound is as transparent and without character as I've heard from any electronics component.

The 2110 definitely did *not* sound, as Boulder detractors like to say, overly analytical, dry, or harmonically bleached. It made recordings I know to be truly exceptional sound even more so through my system. I could listen until as late at night as I could stay awake—and I did.

The 2110 did nothing to hide the badness of truly awful recordings—or "unusual" ones such as Bruce Springsteen's *The River*—but it seemed to separate out the badness in such a way that my ears could more easily ignore it.

All of the preamplifiers mentioned in this review are exceptional components that I'd happily own and consider the job done. All sit close to one another on that continuum of sound quality and each presents a seamless, coherent sonic picture that gets out of the way and lets the recording shine through. But when the Boulder 2110 left the building, it took with it its holographic grip and spatial presentation, as well as its ability to resolve fine detail—qualities that raised my system to a level none of the rest could quite manage. ■

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