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Boulder 2110 preamp and 2160 power amp

by Alan Sircom

At the top end of any discussion about high-end audio, there is Boulder. The 2110 preamp is currently the biggest and best preamplifier the company makes, but the new 2160 is about middle of the range, with a pair of mono chassis in the 2000 series, and the "I've seen smaller car engines" 3000 stereo and mono chassis above this. Not that the 2160 is in any way a compromise – this stereo chassis weighs a shade under 100kg, is conservatively measured at being able to knock out up to 2.4kW into a two ohm load, and is barely ticking over at 600W into eight ohms.

These are uncompromising amplifiers built to uncompromising specifications, and as such require similarly uncompromising sources and loudspeakers to give their best results. Fortunately, there's a self-selection process here: no one is going to spend more than £100,000 on amplifier electronics and partner them with an entry level disc player and so-so speakers. As a result, the Boulder designs will have some very fruity upstream and downstream partners; the source to show just how little the Boulder introduces to the signal path, the latter to show what it delivers.

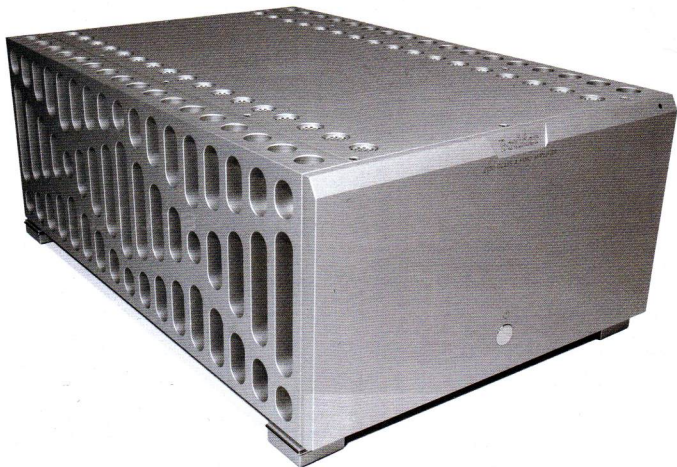
The 2110 preamp is actually four chassis neatly divided into two identical amplifier units, logic, and power supply blocks. From the front, you just see a single control amp, with a separate power supply. Unlike most multi-box designs, the need to physically separate the power supply from the control amp stages is governed more by the load capacities of the shelf than by any potential hum fields: these blocks are designed for immunity from outside influence.

This is a six-input, line-level, balanced only preamplifier – single-ended sources can be used, but will need an adaptor or custom cable. Each one can be allocated a name, has adjustable input gain and trim, polarity adjustment, as well as global adjustments for everything from balance to display level setting. It is also well designed for fault detection and protection outside the signal path, with sensing circuitry that mutes the preamp whenever a problem is detected. There's an irony here; the one preamp that is least likely to require fault protection has some of the best fault-finding circuitry in the business.

The 2160 is similarly specified. It's an all-balanced design, with out-of signal path protection for DC offset, clipping, and thermal protection. Any of these conditions trigger the same red LED in place of the normal white LED when operating (if you connect the pre to power using the company's Boulder Link, these fault conditions can be displayed on the 2110's front panel). In practical terms, the only time that red LED will glow is if you have a source that is running at greater than 3V of DC offset: in other words, if you have a source component that is either broken, or designed by an incompetent engineer. Less than 3V... the 2160 takes care of the problem. Boulder builds this chassis as a pure linear Class A design, but to prevent a 600W Class A design turning your room into a sauna, the bias current is actively monitored and adjusted (in order to increase efficiency and reduce wasted radiated heat energy) using an high efficiency, microprocessor controlled standby mode reduces power consumption when engaged. And it really does 'build this chassis', too: not only are all the surface-mount devices placed and soldered in the Boulder factory, rather than using pressed steel or OEM aluminium parts, the whole casework is CNC milled in-house to extraordinary tolerances. This makes Boulder one of the last true audio electronics 'manufacturers' in the US.

Building everything in-house even extends to producing custom gain stages. In the 2100 series, this means the new 99H2 modules, which feature surface-mount devices, potted and housed in a milled case. The 2160 sports four of these gain modules.

This is not sheer excess, however. This is amplifier building on a nuclear-bomb-proof scale. Short of actually firing shells at it, it's hard to think what could cause this to break. Of course, any electronics – especially electronics as sophisticated as this pairing – has components that can and do go wrong, but the amount of protection this amplifier has, you could run it open circuit for days and not trouble the 2160. Not bad for an amp you could weld with! The secret is lodged in Boulder's history: it made amplifiers for studios in the days when 'down-time' was not an option. Amplifiers in such cases needed to be capable of being driven hard for hours on end,



with zero failures from one decade to the next. Even modern studios don't have the same needs for absolute robustness, and people install for price over reliability and even sonics now, which is why Boulder now delivers the goods to the audiophile cognoscenti.

A strange paradox occurs within that audiophile community. We are more likely to know the brand name of an electronic component than its values and tolerances (indeed, if you talk 'resistor values' to most audiophiles, they'll probably be thinking in terms of '\$' rather than 'Ω'). A lot of companies exploit this, and we in the press end up rattling out a list of 'best' manufacturer names for resistors and capacitors. Boulder, to its infinite credit, doesn't play that game; it just uses the right components for the task. Although given it uses a 16A plug and socket as the connector for the 2160 – the kind of industrial-grade connector more usually found in professional lighting rigs – the 'right components' are frequently the ones built for the long game. This raises the cost of a product considerably. Take input switching for example: you can do it cheap and expect a dozen years before things start to fail, or do it right for five times as much

and know you could switch inputs every second for the next 30 years and not see a failure. "Do it cheap" is not in Boulder's vocabulary.

In short, what you get is an unburstable, unflappable, and unfussy amplifier duo that would be conditionally stable even if you were using it to jump-start a battleship. And that defines the Boulder performance, too. This is an amplifier with depth. No musical signal – no matter how complex – will challenge it, and no loudspeaker – no matter how difficult to drive – will ruffle its feathers. Yes, the mono amps and those in the 3000 Series bring more to the table for those after driving 'impossible' speakers in huge rooms to PA levels, or even perhaps for bragging rights – there's nothing wrong with any of these motivations, just so long as you have a floor strong enough to hold the amps, and a small posse of powerlifters and piano movers ready to heft the amps into place. For most, though, this is enough amplifier for a lifetime or two.

There's a meme floating around the US high-end community that suggests we British are somehow afraid of watts. This is perhaps understandable because some of our best-loved amplifiers barely push out 100 watts at their ▶

“The Boulder pairing brings an overarching sense of structure and order to the sound.”

▶ absolute peak. On the other hand, the reason for this is our best-loved amps are small and reactive; they twist and turn along with every beat of the music the way bigger, slower amps used to struggle to do. Except both sides are holding on to some pretty outdated myths here. The Boulder is one of a very select handful of top-end powerhouses that are capable of sounding tiny when required, and vast when that's called for. It's as lithe as many of those small, fast amplifiers we British are so fond of, and yet can deliver the full might of an orchestra in the way only a big amp with lots of reserves in the tank can.

In a way, I think this represents the truly international nature of modern audio. UK enthusiasts were fine with smaller amplifiers because their speakers were traditionally not full-range, so the midband needed to be exceptional and bass needed to be light and tuneful. Meanwhile, US listeners used full-range loudspeakers and wanted amps that could drive those speakers well.

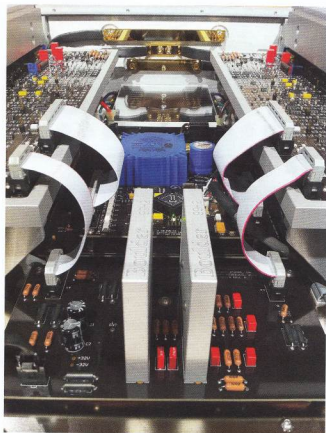
The thing about the top end of the high-end amplifier market is there is a great deal of convergence. These products are not identical, but they all get 95% of the way there together. It's the subtle nuances that make the difference, in a manner not dissimilar to tailored suits, or hand-made shotguns, or that an Anderson & Sheppard suit is better than a Henry Poole & Co. Instead, it's more about picking the best for you, knowing that in the process every aspect of performance is covered well.

The Boulder pairing brings an overarching sense of structure and order to the sound. You can tell this almost immediately, because almost immediately you feel the need to present the amplifiers with 'threat' level music played lustily. I went with Rachmaninov's *Symphonic Dances* [Telarc] followed swiftly by 'Chameleon' by Trentemøller [*The Last Resort*, Poker Flat], played 'catch the cones' loud on a pair of full range YG loudspeakers, streamed through a Naim UnitiServe into a dCS player. Nothing was out of place (except possibly my ear drums), despite the presence of architecturally



challenging bass notes and the kind of dynamic range that most amps cover from. In lesser amps, 'structure' and 'order' can go hand-in-hand with 'ponderous'. Not this time – the sealed box speakers would show up any limitations here, and there were none.

Moving away from less frisky music and on to the kind of sounds one might listen to on a day-to-day basis, it's still clear we are dealing with something ahead of the game. Every aspect of performance, both in terms of musical delivery and expressing that through the usual audiophile terminology, was so well covered by this Boulder pairing, it becomes almost churlish to mention them. Pick an aspect of performance (for example, vocal articulation), pick out a recording that highlights that aspect of performance (say, 'Lucky' by Kat Edmontor) and listen to the Boulder make it seem more correct than you've probably ever heard before. Then repeat the process for detail, soundstaging, dynamics, dynamics of all magnifications, and so on. Basically, unless you were already pitching one of the handful of world-class amplifiers that also make the grade, this Boulder pairing will simply redefine what you though possible from your audio system. Expensive doesn't seem so expensive when it's done right! ▶



TECHNICAL SPECIFICATIONS

2110 Preamplifier

Balanced inputs: Six
 Main balanced outputs: Three
 Record balanced outputs: One
 Auxiliary outputs: One
 Maximum input level: 7V RMS
 Maximum output level: 28V RMS
 Maximum voltage gain: 20dB
 Volume range: 100dB
 Volume steps: 0.1, 0.5, 1.0 dB +/-0.01 dB
 Frequency response: 0.02Hz-300kHz (-3dB)
 Input impedance: 200k ohms
 Output impedance: 49.9 ohms
 Dimensions (main chassis, WxHxD): 46 x 17.5 x 31cm
 Dimensions (power supply, WxHxD): 46 x 11 x 39cm
 Weight (main chassis): 28.6kg
 Weight (power supply): 21.8kg
 Price: £55,000

2160 Stereo Power Amplifier

Output power: 600W into 8, 4, 2 ohms
 Peak power: 1,200W/4 ohms, 2,400W/2 ohms
 Frequency response: 0.015Hz-200kHz (-3dB)
 Voltage gain: 26dB
 Input impedance: Balanced, 200k ohms;
 unbalanced, 100k ohms
 Dimensions (WxHxD): 46 x 27 x 68cm
 Weight: 99.8kg
 Price: £53,000

Manufactured by: Boulder Amplifiers, Inc.
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▶ I think there's an instinctual recognition of transparency. It doesn't need years of listening to increasingly expensive audio components, and it challenges the "I'm no expert," mind-set of the neophyte. The Boulder 2000 series amps here are extremely transparent and faithful to the source, and that is not difficult to hear in test. It's surprisingly easy, in fact. You know it's right on some atavistic level, because the amps offer more of an insight into the recording with less artifice in the way. There are only a handful of amplifiers that offer that kind of clarity, and none of them come cheap.

The Boulder 2110 preamp and 2160 power amps are among the heaviest and most expensive amplifiers we have ever tested at *Hi-Fi+*. They are also in the absolute top class in everything else, too. They are built to last (and

survive anything up to and possibly including a direct hit by a meteor) and they make almost everything else sound like it's compromised somehow. This brings a new definition to the terms 'transparency' and 'accuracy' in audio amplification. If you have the rest of the system to match and the wherewithal to own, house, and use these amps, the latest Boulder duo makes a fine case for being among the best there is. +