



# BOULDER 866

## INTEGRATED AMPLIFIER

Reviewer Nate Grkinich

I didn't like it when I heard that Boulder had moved from its home in Boulder, Colorado. OK, so the company still does all its design and manufacturing in good 'ol Colorado, but now all Boulder products are being built in Louisville, Colorado... and Louisville just doesn't have quite the same ring to it. I guess it's just lucky the company didn't start out there, otherwise this might have been a review of the Louisville 866 Integrated Amplifier.

Boulder builds everything it sells in-house, indeed the company claims to be last manufacturer in the USA to be doing so. Its website states, 'Every part of our products, every piece of metal, every circuit is created and assembled in-house by our own craftsmen and technicians. Boulder is the last audio manufacturer in North America to hold this degree of control over our own designs.' It's perhaps partly because of this that Boulder does not change models very often, not least because it needs to recoup its research, engineering and tooling costs for each model. So the new 866 is a very exciting release. It replaces the Boulder 865 integrated amplifier, which dates back to 2007, but was in essence just a Boulder 810 preamp and 860 power amp coupled on a single chassis, which dates the original design to back beyond the turn of the century. The 866 is a brand new beast... and what a beast it is!

### THE EQUIPMENT

Boulder has been bold with the front panel of the 866 because, as you can see, it slopes gently backwards. Very few audio equipment manufacturers have been brave enough to use sloping front panels, but it's a great idea because it makes the controls on the front panel easier to see and easier to use.

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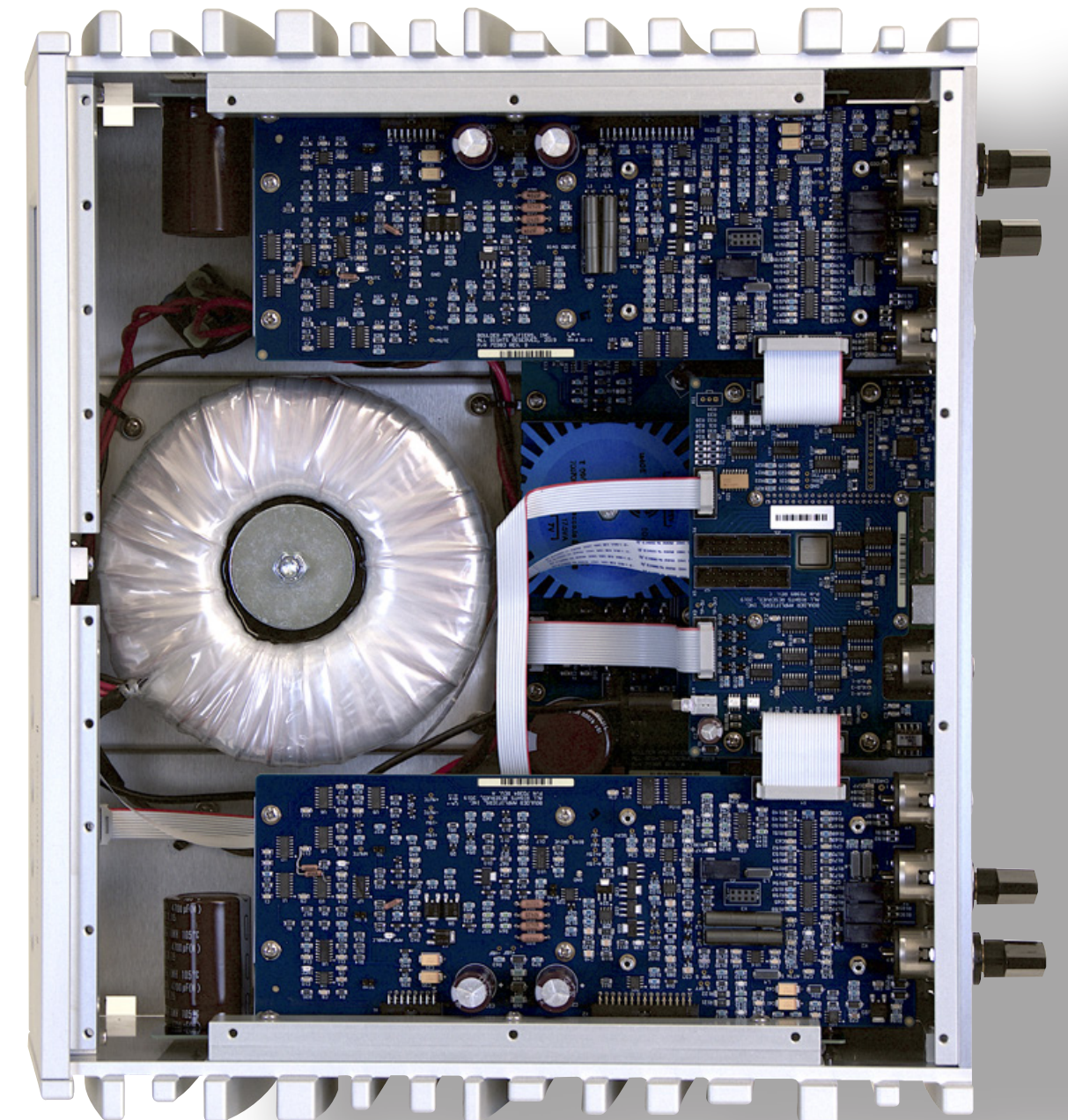
The new Boulder 866 is more powerful than the amplifier it replaces and also electronically and sonically superior.

Not that the 866 has many controls on the front panel anyway—almost everything is done by using the huge (155 × 85mm) full-colour touch-screen display (but the sloped panel still makes it easier to see and use this display). You might wonder why sloping panels aren't more common. Back in the day, the reason was that hi-fi components were always stacked one atop the other, so if you built a component with a sloping front panel, it couldn't be stacked, so you'd dramatically reduce the number of potential buyers.

These days cost and complexity are the more important factors.

It makes the metalwork more difficult, means you can't put devices such as sockets or potentiometers low down on the panel (not enough room behind them) and so on. But since Boulder CNC routes all its own metalwork from solid blocks of aluminium, metalwork is simply not a problem for them.

That front-panel display can be used to select inputs (you can also do this via your phone, via Android or Apple app) and input selection is made by swiping the panel to the left or to the right over the inputs until the source you'd like to listen to is displayed and then touch that input. By default, the 866 shows icons to identify inputs, but you can replace these with an image of your own, which can be loaded into the amp from your smart phone or tablet.



▷ THE DAC SECTION INSIDE THE 866 IS DERIVED FROM BOULDER'S FLAGSHIP 2120 DAC WHICH USES A FAIRLY UNCOMMON DELTA/SIGMA DAC. BOULDER ALSO USES AN EXTERNAL DIGITAL FILTER OF ITS OWN DESIGN, RATHER THAN A FILTER BUILT INTO THE DAC.





△ THE FRONT-PANEL DISPLAY CAN BE USED TO SELECT INPUTS (YOU CAN ALSO DO THIS VIA YOUR PHONE, VIA ANDROID OR APPLE APP) PLUS IT DISPLAYS ALBUM ARTWORK AND MUCH MORE...

▽ AMAZON SELLS RF/USB REMOTE CONTROLS THAT CAN BE USED TO CONTROL THE BOULDER 866.



However, if you do choose to buy the base (analogue-only) version of the Boulder 866, you won't have to do much swiping because it has only three inputs. They're all balanced inputs (via XLR), but there are only three nonetheless, which is probably too few for most users. What were they thinking? The obvious thing to do is opt for the 'digital' version of the 866 (the one supplied to me for this review), which adds optical and AES/EBU digital inputs, USB inputs, and an Ethernet connection. I say 'obvious' because while the analogue-only version retails for \$20,500 you'll pay only an additional four grand to get all the bells and whistles, so it's a no-brainer, really. And if you add in the DAC/Streamer card, you'll discover that the Boulder 866 also becomes a certified Roon endpoint, so you can use that huge full-colour front panel display for media browsing, displaying artwork, text and all the other relevant music information for which Roon is justifiably famous. (You do, however, need a Roon subscription!)

#### INTERNAL DAC

The DAC section inside the 866 is derived from Boulder's flagship 2120 DAC. Boulder also uses an external digital filter of its own design, rather than a filter built into the DAC. 'We use this DAC chip because we wanted to create a truly optimised DAC section and are not afraid of the complexity required to implement it ourselves,' says Boulder's Sales Manager, Steve Huntley. Accepted sample rates: 44.1, 48, 88.2, 96, 176.4, 192, 352.8, and 384kHz. DSD 1x and 2x. MP3 up to 320kbs. File types include FLAC, WAV, Ogg, AC3, MP3, AIFF, Apple Lossless as well as DSD and network streamable DSD (DSF). He says all files are upsampled and oversampled to a data rate of 192kHz and data is moved asynchronously.

#### ROLL YOUR OWN REMOTE

As you can see from the photographs accompanying this review, the touch-screen isn't the only way to control the Boulder 866. The four buttons to its right are for (from left to right): Volume Up, Volume Down, Muting, and Stand-By Power (the main power switch being at the rear of the unit). You can also control the 866 remotely, using an r.f. to USB remote control, but you have to, as they say, 'bring your own'. Boulder recommends you purchase one of two remotes available on Amazon [www.tinyurl.com/866-Remote1 or tinyurl.com/866-Remote2] both of which sell for less than \$15, not including shipping. The USB r.f. receiver dongle will use up one of the USB inputs on the rear of the 866, but because there are four, you will still have three others available to you.

Boulder has built 'smarts' into the 866's volume and muting circuitry, because you can pre-set a turn-on volume, as well as set a 'maximum volume' level so no-one can destroy your loudspeakers while you're away. As for the muting circuitry, you can pre-set that so the output will be attenuated by any level you choose (so long as you choose a level between somewhere between -6dB and -80dB.) The default setting is -20dB. Boulder takes great pains to point out that the signal is attenuated by the level you specify relative to the level at which you're listening so if, for example, you set the mute level to -40dB, the volume will be decreased by 40dB from that level when you press the 'Mute' button. I suspect most users will leave it at the default -20dB setting.

The rear panel of the Boulder 866 is fairly sparse, not least because there are only three analogue inputs, as mentioned previously, and a single set of loudspeaker terminals. The digital inputs are almost exactly in the centre, and from left to right are AES (XLR), Ethernet, four USB Type-A connectors and an optical digital input (Toslink). The elephant in the digital input room is the SPDIF input, because there isn't one. I know you can get an RCA/XLR adaptor for the AES input (indeed Boulder makes one—called DABL—available as an accessory) but I think one should be included with every amplifier.

#### IN USE AND LISTENING SESSIONS

The first hurdle for many audiophiles who purchase a Boulder 866 may very well be that the equipment they own may not have balanced outputs. This will mean they will have to make up an 'unbalanced to balanced cable' using one of the two methods Boulder describes in its Owner's Manual, or buy one (though most of the ones available for sale will use a wiring method that Boulder says is inferior). Possibly the best option would be to purchase an RCA to XLR adaptor.



△ THE BOULDER 866 HAS ONLY THREE ANALOGUE INPUTS (ALL BALANCED) AND NO SPDIF DIGITAL INPUT SO YOU WILL NEED A COAXIAL TO XLR ADAPTOR FOR THE AES INPUT.

Frankly, given the price Boulder is asking for the 866, I thought the company could have afforded to include two cables or two adaptors in the box.

I found firing up the Boulder from cold to be a time-consuming business. When I first pressed the power switch, I thought my review unit was, as they say, 'dead out of the box,' because nothing at all happened. Then, after six seconds, the screen sprang to life, with a small Boulder logo and a short line underneath displayed on it. But then nothing happened... for a long time. Well, 26 seconds actually, after which the screen flashed momentarily and the words 'Initializing System' came on underneath the short line. Then nothing happened... for a long time. Well, actually 34 seconds, after which it finally turned on. But then, rather than staying on, the 866 turned itself off! What?

Initially I thought that I must have accidentally wired the speaker outputs wrongly

(the + and - symbols are a little hard to see and there's no colour coding), or that the amplifier had detected an internal fault and switched itself off for self-protection. But it turned out that the 866 had not turned off, but had just gone straight into its Standby mode. So I pressed the power button on the front panel, rather expecting another long wait, but thankfully the screen immediately lit up, showed the words 'Resuming from Standby' and six seconds later I was good to go. Phew!

Actually, by the time you read this, the turn-on process may have been sped-up by a software update. (Boulder's newest version of its software (V0.85) was not available prior to my deadline).

I also wasn't good to go until after I'd warmed the amplifier up properly, a process that didn't take too long, because it actually runs very hot. Those bars along the sides that look like they were designed by Frank Gehry and are presumably intended to dissipate heat certainly look fantastic, but they don't dissipate heat nearly so well as the ugly black finned stuff does! The sound. What can I tell you about the sound? It's not great. By which I mean that it's excellent... extraordinarily good, in fact. So exceptionally good that you won't have to spend hours in lengthy listening sessions, auditioning track after track after track to judge its quality—you'll know in the first few instants that you're listening to a remarkable amplifier.

You'll know in the first few instants that you're listening to a remarkable amplifier.



This is an amplifier you will keep... and enjoy... for the rest of your life.



## SPECIFICATIONS

### Boulder 866

**Price:** \$24,500 RRP (inc digital section)

**Power Output (8Ω):** 200-watts per channel

**Power Output (4Ω):** 400-watts per channel

**Frequency Response:** 20–20kHz (+0.00/–0.04dB)

**Frequency Bandwidth:** 0.015Hz–150kHz (–3dB)

**THD:** 0.01%

**Equivalent Input Noise:** 2μV

**Input Impedance:** 100kΩ (Balanced)

**Analogue Gain (Max):** 40.4dB

**Power Consumption:** 1000-watts (Max)

**Dimensions (WDH):** 440×390×190mm

**Weight:** 24.5kg

**Contact:** Absolute HiEnd on (04) 8877 7999 or visit [www.absolutehiend.com](http://www.absolutehiend.com)

For starters, the Boulder 866's control over bass is exceptional. If you thought your speakers delivered tight, taut and rhythmic bass, you won't really have heard them at their best until you've connected them to Boulder's 866. The tonal quality, the depth of the bass, the perfect pacing of bass lines, the dynamism revealed by the sound from a close-miked drum kit... the Boulder 866 has it all in spades. No, it's better than just spades, it's a full lay-down *misère*.

To further check out the 866's power reserves I switched albums and set the volume of Louisa Rose Allen's 'Glorious' to 'stun' to check out whether the overblown kick drums and synth bass notes on it would push the 866 into clipping. No chance! Not only did I not hear any clipping, I could not hear any type of distortion at all... the sound remained as clean as a whistle, even though I was playing back so loudly I was essentially listening from the next room to protect my hearing. I can truly believe Boulder's claim for 200-watts per channel into 8Ω and that it doubles to 400-watts into 4Ω.

To give my ears a break from the noise and to also try out the Boulder 866's inbuilt DAC, I switched to a 192/24 recording of 'Unfold' where the Kreutzer Quartet plays works by Australian composers Don Banks, Nigel Butterley, Richard Meale and Felix Werder. All the compositions depend on perfect timing, yet timing that is mostly organic rather than dictated by the music... as evidenced by Butterley's String Quartet (1965) where in the second movement, there are no bar lines, and the players are directed that 'the upper parts are independent of each other, but each player should relate his part fairly closely to the cello part.' I found the reproduction to be perfect. The sound of all the instruments was sweet, pure and perfectly accurate, and when low-level sounds died away into the acoustic—such as on Meale's String Quartet No 1—the silence at the end was absolute. There was absolutely no circuit noise whatsoever audible from the Boulder 866. It's so noiseless that I'd venture to say that it's the quietest amplifier I have ever auditioned.

I trialed the DAC section with Art Halperin's 'Winds of Change' which, thanks to the grace of Barry Diament, of Soundkeeper Recordings, I have in all available digital formats. The Boulder 866 treated each with equanimity. No matter what your preferred digital format, the 866's DAC section will deliver exactly the exact information recorded, from MP3 through to high-res, after which the analogue amplification that follows will add the *coup de grâce*. Zappa's remastered 'Apostrophe/Overnight Sensation' proved to be yet another sonic *tour de force* from the Boulder 866, from the insane sound of the guitar on Fifty/Fifty,

to the trumpet squawk in *Zombie Wool* and the joy of hearing Zappa's perfect enunciation of such a perfect line as 'like a pink donation to the dragon in your dreams' (*Dirty Love*). Perfectionist that he was, all of Zappa's recordings are superb for test tracks because he was as fanatical about recorded sound quality as he was about getting his—and everyone else's—performances perfect.

Listening to Amarillo's 'Eyes Still Fixed' the purity of the sound from Nick O'Mara's lap steel guitar was true to life, but the sonic transparency with which the Boulder 866 rendered the wordless vocals by Jac Tonks on the title track was jaw-dropping. I listened to her perfect pitching and the way the layers built, both of her voice and the accompanying instruments, with increasing levels of astonishment.

Listening to a recording of one of the largest choirs I have heard, singing Handel's Messiah at Sydney Opera House, the choral sound was just as I remembered from the night (the CD was recorded at the concert I attended). The detailing of the individual voices amongst the full-bore choral onslaught was absolutely astonishing and there was none of the blurring that I've heard from other amplifiers. The soundstaging was such that I pinpointed the positions of the soloists instantly, and they were positioned on the reproduced stage exactly where they were standing on the real stage on the night. The sound from the massed sopranos was so beautiful it brought tears to my eyes on the night, and it did so again when I was auditioning the Boulder 866... and when an amplifier produces sound so unbelievably good that it evokes an actual physical emotional response, I can tell you that you don't really need to continue auditioning—you already know everything you need to know.

## CONCLUSION

The new Boulder 866 is more powerful than the amplifier it replaces and it's also electronically and sonically superior to that amplifier. It's also much better-looking... or at least it is in the opinion of everyone that I asked. Because of this I was—quite frankly—expecting Boulder to be charging quite a lot more for it than it is. Indeed I was more than a little surprised to discover that a standard Model 866 costs less than the equivalent 865 did when it was available. Of course the price rises if you add the digital option (and you'd be mad not to!) but considering that you're buying what is essentially a custom hand-built amplifier, with a great DAC on-board—and a Roon endpoint—that sounds absolutely superb, you are most definitely getting top value for your hard-earned. This is an amplifier you will keep... and enjoy... for the rest of your life. **A**