

Tape Op GEAR REVIEWS



API

2448 recording console

Since API introduced the 1608 [Tape Op #81] discrete analog recording console a little over a decade ago, it has become something of an industry standard in its class – highly respected for its build quality and for API's unique combination of sonic transparency and analog warmth. Now the company is upping the ante with its latest analog console offering, the new 2448 inline console, which has been the talk of the town since it was released at the October 2018 AES convention.

The 2448 fits into the API product line between the more utilitarian 1608 (which has been updated recently to the 1608 II) and the more upscale, full-format Legacy AXS. The addition of the inline feature to the 2448 – the crucial difference between the 1608 and the 2448 – is an important one. With an inline console you have twice the number of inputs to the mix bus; doubling the number of inputs on an analog console is a big deal. Considering that the premium class Legacy AXS was previously API's most affordable inline console, the fact that an inline 2448 can now be had for around one half the cost of the AXS has a lot of people talking. As the co-owner of a commercial studio myself, I was impressed enough by the features of the 2448 to order one as a replacement for our trusty 32-channel 1608.

Since I live within driving distance of the API factory I decided to pick up the new console in person, and to everyone's amazement it just barely fit into the back of my Honda Odyssey minivan. While I was there I got a chance to discuss the 2448 console with its designer, API's Director of Engineering, Todd Humora. Todd walked me through the similarities and differences between the 2448, 1608, and Legacy AXS, pointing out that all three consoles use the same key components, including the classic 2520 and 2510 op amps, and API's proprietary transformers. Microphone inputs and all outputs, including insert sends and returns, are transformer balanced on the 2448, just as they are on the AXS. Todd also noted that while the 1608 channel strip had been designed with one eye on the earlier vintage API 1604 and its "upside-down" channel layout, the 2448 was designed taking a fresh approach to the channel strip configuration, and I think they have come up with a very logical and functional layout. There are a whole lot of buttons and knobs, but your fingers never feel like they're being squeezed. The 2448 channel strip layout puts the most important hands-on controls for both the large fader and small fader paths right up close where you can get to them, while seldom changed mic preamps and output assignments are up nearer to the EQs and VU meters.

Walking through the factory we saw lots of consoles at various stages of their manufacture and testing. Looking at a 2448 and a Legacy AXS side-by-side, Todd pointed out how all of the buttons and switches are now the same throughout the API line, giving a consistency to the look and feel of the consoles while streamlining manufacturing. He noted that it was the decision to use parts of the 1608 platform, including the 8-bus architecture, the metering system, and the center section layout, that allows the 2448 to be built to a very competitive price point compared to what the price would have been if the 2448 had been designed as a 24-bus console. I believe that API has made an astute choice by doing this in order to keep the price down. For many users, not having 24 summing buses isn't that big of a deal, since direct outputs are often used to route to the DAW (or tape). And while the Legacy AXS does have a host of additional features compared to the 2448 – things like a more comprehensive center section, full 24-bus architecture, 12 Aux buses, variable filters, and slots for compressors on every channel – the lack of these features won't be deal breakers for a lot of people looking at the 2448.

The 2448 console is available in 24, 32, and 40 channel frame sizes. API also offers optional 24-inch and 30-inch wide DAW buckets for controller and wide-screen monitor, as well as a 19-inch patchbay bucket, so you can configure the console pretty much any way you want. For example, the console center section can be either to the left or to the right of the DAW section. (We ordered ours as a 32-channel with the center section to the left of the DAW section).

Each inline channel on the 2448 provides two independent audio paths, the large fader and the small fader path, so, for a 24-channel console, that's 24 large fader channels plus 24 small fader channels assignable to the mix bus (plus an additional four stereo returns). Most commonly, the small fader path is used for mic inputs in tracking, leaving the large fader path available for monitoring off tape/DAW. During mixdown the 24 small faders can be used as additional line in channels. The 500 Series EQ slot associated with each channel is normalled to the large fader path but is switchable to the small fader path, and you can also switch the eight Summing buses, the Direct output, and Aux sends 5-8 to the small fader path.

The biggest innovation of the 2448 console is the new 648C channel strip, so let's look at its layout in more detail. Starting from the top, there is a 212 mic pre with gain knob and peak indicator, with 20 dB pad, +48V, and Alternate Line In switches (for accessing the additional small fader Line In channels during mixdown). Next are the routing switches for the Summing and Program buses and pan-pots, then comes the excellent Auxiliary Send section (adapted directly from the 1608), with four mono and two stereo sends, switchable to pre-fader in pairs. There is a button that lets you route the Aux 7 and 8 outputs to Summing buses 1, 2, 3, and 4, which can expand the number of available Aux buses, or provide extra stereo buses for surround mixing – a nice feature! Next is the Small Fader section, with gain and pan knobs, and switches for Solo, Mute, Safe, Phase, Insert, and HP Filter. Three additional switches allow you to assign some of the large fader's features (EQ, Auxes 5-8, and the Summing buses) to the small fader path. Rounding out the channel strip is the Large Fader section, with Pan knob and switches for Solo, Mute, Safe, Phase, Flip (which flips the inputs to the small and large faders), Insert, HP Filter, Line Pad, and Direct Out to small fader. Keep in mind that all of these switches (there are 40-something switches per channel) light up when engaged. It makes it easy to see what you're doing, plus it looks pretty cool when you turn off the room lights.

Just above the channel strips are the 500 Series slots, which can be fitted with API 550A, 550B, or 560 [Tape Op #26] EQs, as well as other 500 Series modules. Above the 500 Series section is the meter bridge, with its very well thought out VU metering system. You can globally switch the main channel VUs to meter the Large fader source, the Small fader source, or the Direct Output. Additionally, the first eight VUs can be switched to meter the Summing bus outputs. There are eight smaller VUs for metering either the eight Aux Out masters or the four stereo Aux Returns. The left and right Master VUs also function to meter channels that are being soloed.

Like the metering system, much of the 2448 center section is carried over from the 1608, with one crucial upgrade: API has reconfigured the Aux Return section to provide four stereo automated returns instead of eight mono returns. Each of the stereo returns has switches for Solo, Mute, Safe, Mono, Insert, 500 Series Insert assign (for the eight additional empty 500 Series slots located above the center section), Aux In (routes the Aux Out master to its corresponding Aux return), Program Bus assign, and Summing Buses 7/8 assign. The nice thing about the eight empty 500 Series slots is that they can be switched into the Aux Returns, or they can be patched to any channel on the console. So, we decided to fill ours with 560 EQs (which our engineers love, so now they can have one on any channel) and a few 565 Filter Banks just for fun and to make up for the lack of sweepable filters on every channel.

The remainder of the center section was derived from the 1608 and manages to squeeze a lot of functionality into a relatively modest footprint. Zooming in, we start with the Aux Bus Master section, which provides controls for each of the eight Aux buses, including Gain, Solo, On, VU, and Talkback (routes Talkback to the Aux sends individually). An External Input switch lets you sum the external input to a bus at unity gain. Next is the Summing Bus Master section, where you'll find gain control, individual left/right program bus assignments, and Solo and On switches for the eight Summing buses.

To the right of the Summing Bus Master section is the Monitor Control section, with control room monitoring for Stereo or 5.1 Surround, switchable from three separate 6-track playback sources. There are provisions for control room main monitors plus two sets of stereo nearfields, with Cut, Mono, and Dim switches (with Dim level trim). The last module of the center section contains a solid albeit basic Solo Master section and a Talkback Master section with routing to Buses, Auxes, or All. Also in this strip are some basic utility functions like the Oscillator, Peak level adjustment, VU Masters, and Headphone level. Just above the center section, API left a space for the optional 529C stereo bus compressor. This unit is based on the company's popular 2500 compressor [Tape Op #52], with switchable feedback and feed-forward compression, soft-knee control, and Thrust circuitry.

All of the I/O connectors are on the rear of the 2448, just as they are on the 1608 (another cost saving measure compared to the AXS). I was pleasantly surprised at how little rewiring we had to do when swapping the cables to the new 2448 from the old 1608. The only new cables we needed were for the 32 Alternate Inputs, plus we had to rewire the Direct Outs (which are now on D-sub connectors), but that was it. None of the normaling needed changing at the patchbay, according to wiring guru Thom Canova.

The 2448 is available with or without automation. API's Final Touch automation system is now consistent throughout the line, with implementation customized for the different consoles. This system automates all mutes, inserts, and fader levels for the channel large faders, stereo returns, and stereo master faders. Two dedicated Group Master faders provide control for an unlimited number of Fader Groups. The system is self-contained, does not require an external computer, and features DAW control for easy integration between digital and analog workflow. The automation system is controllable from the built-in 7-inch touch screen, and there are even tape machine style transport controls for Pro Tools – a nice touch.

So how does the console sound? A couple of days after getting everything up and running, producer/engineer John Plymale brought The Connells into the studio to cut some tracks. It was evident from early on that the console sounded just like our 1608, and that's a good thing! Everything we love about the sound of API consoles – the extra headroom, the transparency, the deep, focused bass, and the bigger than life sound field – it's all there, but now we have twice as many channels. Subsequent sessions with other bands and engineers have brought similar rave reviews. This is one seriously professional console.

API's move to build a high quality inline analog console that is affordable for a wider range of studios will give more engineers exposure to the creative and sonic possibilities of mixing outside of the box. Let's face it, as flexible as the 1608 is – and I loved mine – its lack of inline monitoring does subtly encourage engineers to mix in the box (despite the fact that they're working on an analog console) because there's no easy way to monitor off tape while tracking without burning up a ton of channels. This is really ironic, because one of the greatest things about a nice analog console is how good it sounds to mix tracks through it, and it partly defeats the purpose if you end up mixing (or even monitoring) in the box anyway. With the inline 2448, you can be in analog mix mode all of the time, by tracking through the small faders and using the automated large faders to keep a mix always up.

Everybody knows that sometimes the best a song ever sounds is on the day it's initially cut, so imagine being able to save all of those early rough mixes, every time you track! This is the way it should be. All things considered, API seems to have a winner on their hands, and I think that for a lot of studio owners looking at a console upgrade the 2448 is going to be pretty hard to resist. (starting at \$86,400; apiaudio.com)

-Wes Lachot <weslachot.com>

Kendall Howard

10-32 Rack Screws

Oh lord, he's reviewing rack screws. I'll make it quick: these are some nice rack screws! The pilot point makes them much easier to start than the hardware store screws I've used forever, and they're smoother to screw in and out too. Better tolerances? I don't know, but I put all my other screws next to the studio's couch (where all the other free stuff is). Made in the US by a company that makes server racks and cabinets and seems to care about little details. Surely Andy Hong has something to say about this...

(100 pack, \$17 street; kendallhoward.com)

-Scott Evans <antisleep.com>

Grace Design

m801mk2 8-ch mic preamp

First introduced in 1994, the 801 series eight-channel mic preamp set a standard for quality, value, and unique design that still resonates in all the excellent products that Grace Design now offers. This two rack space unit has simple to use preamps, with each channel sporting a single stepped gain control, a level indicator LED, and buttons for phantom power, polarity, -20 dB pad, and RBN – a ribbon mic setting with no phantom power, higher impedance, and a 10 dB boost. The rear panel has XLR ins and dual XLR outs (you can feed two inputs simultaneously). Differences between this unit and the original Model 801 and the 2006 m801 upgrade include an onboard power supply, lower noise floor, and wider low end bandwidth.

I've had a pair of Grace m501 500 Series preamps, which feature similarly-designed circuits with different features, for several years now. I've always liked the neutrality of these preamps, and the ones in the m801mk2 work in the same way. I'm not the kind of engineer that counts on my mic preamps to provide color when tracking. In fact, I have turned around and sold many that I thought were too finicky with their levels or added too much of their own character to the source being recorded. But my studio has also become a haven for at least 16 different brands (and different types) of preamps, meaning that the engineer has to pick and choose which to use on each source. Sometimes this is great, like when a preamp mic combo comes alive on a certain instrument, but other days it's a bit more of a hassle, and we have to think about how every preamp reacts to transients, certain mic levels, and other subtleties. That's where a product like the m801mk2 comes in. Here we have eight channels of a high-quality preamp, with proper controls to get a quick level on any mic. The single LED metering helps immensely, and I was able to intuitively get a sense of level off them via color changes and brightness; a well implemented feature. Please note that with this many channels, the cost per preamp drops to around \$500 per channel, which is one heck of a deal.

I started the review unit out on a 16-track tape session with Cotton, a rockin' songwriter-based project, and put all the drum mics through it for a stress test. Once I determined if pads were needed, levels were quickly set via the gain knob, phase checked, and we were on our way. Transients from the dynamic mics on kick and snare came across perfectly, and details from the tube, small diaphragm overhead mics came through clearer than ever. I tried the m801mk2 on guitar amps, percussion, and vocal overdubs with great results. My next session was a string trio layering up orchestral-style overdubs for an upcoming M. Ward record. With close mics and a pair in the room, we were capturing different levels of detail and the m801mk2 once again performed flawlessly, and the layered tracks of strings never sonically cluttered up the mix. I've kept using these preamps on every session since and have grown quite enamored with them; in fact, I now own the review unit. These mic preamps simply never got in the way of working fast, and no source ever sounded lacking in clarity or punch.

The attention to detail in the design of this preamp shows. No electrolytic capacitors in the signal path, true differential amplifier circuitry, and a transimpedance (current feedback) gain stage result in all the detail of my many microphones coming through. And the pre comes with a 20 year warranty (no joke). I could work with two or three of the m801mk2 units as my only preamps at Jackpot! and I'd be totally happy for the rest of my career. And I could stop worrying about which mic preamp to use...

(\$3990 street, gracedesign.com) -LC

Universal Audio

Apollo x8p Thunderbolt 3 interface

Universal Audio – knock it off, already. We could probably end this review right there, and most existing Universal Audio/UAD users would get the point: the release cycle from this company is nothing if not consistent in its ability to disengage one's better judgment from, ahem, sympathetic management of one's wallet. The latest trio of Apollo X generation interfaces is no exception to this principle. The Apollo range, initially taking flight in (what seems like prehistoric) 2012, has made a considerable impression in professional and project studios across the globe, leading the industry with a price-to-performance ratio that is unparalleled.

Although other manufacturers have, on occasion, inched ahead of Universal Audio in the spec space race, the Apollo Xs have come roaring back, with dynamic range figures that are stellar at this (or any) price point – Apollo x8p boasts 129 dB of dynamic range, with signal-to-noise spec'd at -119 dB THD+N. Specs are specs, of course, but add up all of the additional features and refinements made to this third generation of Apollos, and you have a pretty compelling reason to, I don't know, skip a mortgage payment or two in favor of a studio upgrade.

Let's start with the I/O – of the four available new X-flavors of rack-mount Apollos, we're looking at the x8p variant, which is a direct replacement for the previous-generation 8p [Tape Op #111]. Like the 8p, this particular rocket ship veers towards live tracking, with eight XLR combo jacks, two front panel Hi-Z TS inputs, and TRS monitor outputs. Like the 8p, the x8p also features four ADAT (S/MUX) optical ports (two in and two out). The first significant physical change to the back panel is the presence of two DB25 connectors – one each for line outputs 1-8 and line inputs 1-8. The older 8p combined the line and mic inputs on one combo jack per input (although perhaps not patchbay friendly, that is still an option for the x8p if desired). The 8p also sported the eight line outputs on TRS jacks, two of which were dedicated to the monitor path. In contrast, the addition of the DB25 patch points on the new x8p is a welcome sight and makes it so much easier to wire up to my D-sub patchbays.

The new Apollos are now Thunderbolt 3 enabled, which is again a welcome sight for anyone who has purchased a computer over the last few years – as Thunderbolt 2 has been retired (primarily on Mac hardware) in favor of Thunderbolt 3. Thunderbolt 3 has twice the throughput of Thunderbolt 2, and (on the Apple side of the fence at least) is backward-compatible with Thunderbolt 2 devices (provided you have Apple's ridiculously pricy adapter dongle or a compatible dock). I tested the x8p with a 2017 MacBook Pro and a TS3 Plus Thunderbolt 3 dock from CalDigit. I attached my Apollo Twin MkII [Tape Op #121] directly to the second Thunderbolt 3 port on the x8p via the Apple Thunderbolt 2-to-3 adapter as mentioned above – everything was immediately recognized by the Console app, and I was on my way to the requisite out-of-the-box firmware upgrade, which was applied with nary a hiccup. Using this setup (with other USB peripherals attached to the dock) keeps my studio desktop Marie Kondo-approved – I have a single Thunderbolt 3 cable to plug into my Mac which provides instant, full-throughput, low-latency connections to the interfaces and other studio knick-knacks all while providing power to the laptop. Huzzah!

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