DLS ULTIMATE TA2

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MSRP: $2,500

AUDIO PURISTS ARE A FINICKY BUNCH. If you take a look at any of the high-end amplifiers and preamplifiers sold for home audio, you'll find creatively designed, solid built, high-quality products, but many lack the features commonly found on lower cost products. It's normal to find home amps and preamps priced about the same as a decent new car without even as much as a tone or balance control. After all, the perfect amplifier is a straight piece of wire with gain, right?

Some folks believe there's really no difference in the way one amplifier sounds versus another amplifier. I'm not one of them. I also think MP3s are degrading our ability to appreciate true high fidelity, but I'll leave that for another day.

Because of the common acceptability of "mid-fi" sources, there are a lot of amplifiers that sound virtually identical to the majority of listeners. Perhaps we're losing a bit of our ability to really listen to music. And I'll agree that if things like frequency response curves are matched and the amps never get driven into clipping, most will sound similar. Ten years ago, I even took a 100-sample test (a couple of times) and proved to myself that in those conditions I couldn't hear the difference between two radically different amplifiers.

But, in my world, I don't listen to amps with carefully pre-matched response curves, and I do occasionally drive 'em hard enough to clip. And when I use them like this, I can hear definite differences. Sometimes it's subtle, and other times it's a bit more obvious. But rest assured, differences in the way an amplifier sounds can exist in real world conditions.

It seems the engineers at DLS also subscribe to this principle, as evidenced by their high-end Ultimate TA2 stereo amplifier ($2,500). While the TA2 includes minimal features to make it usable in most systems, the focus is definitely on sound.

The Swedish company has been building high-quality audio components since 1979. While they're probably best known for their mobile audio amps and speakers, they also began to produce high-quality home audio systems. Their concept is simple — design products that sound good, and don't be afraid to experiment along the way. Rated at 100 watts per channel into 4 ohms and 200 watts per channel into 2 ohms, the Ultimate TA2 stereo amplifier is a good example of the experimentation that occurs when an engineer thinks outside the box and combines time-tested home audio techniques with mobile audio amplifier technology.

OVERVIEW

The DLS Ultimate TA2 is different from your garden-variety car amp. It measures about 16" x 9.5" x 2.75", and uses a flawless, brushed aluminum heatsink anodized to a medium gray color. Even the end panels are perfectly finished in the same style. The impression of quality is unmistakable. Think high-end home audio fit and finish, and you'll have the right idea.

The top of the heatsink has a window to show off the CV4010 pentode vacuum tubes used in the preamp section. (I told you it was different!) We'll talk more about the tubes later, because other design elements are also worth noting. Like a high-end home component, the TA2 uses large, gold-plated panel-mount style RCA connectors and even boasts gold-plated ends for the detented independent left and right gain pots, crossover frequency control, and crossover on/off switch. The power and speaker connections are well made and the five-gauge connections also use gold plating.

While looking at these connectors, I realized there are independent power connections for the left and right channels, and these are actually electrically isolated inside, not just paired together where the connector meets the pcb. Each channel uses a separate 20-amp fuse, power supply toroid, and associated rectification, so you must connect both B+ cables and both grounds to get both channels working. Studying the connections further, I learned the amp isn't bridgeable. It's designed to only provide a signal to your main stereo speakers and isn't designed to drive subwoofers. In fact, the minimalist -12dB crossover is highpass only. There are no bass EQ controls, subsonic filters, phase knobs or any of the other fairly common features — more suggestions that this amp is designed to appeal to the purist. My only nitpick on the fit and finish was the ATC fuse holders. They didn't hold the fuses as securely as I would've liked, and they are both mounted crooked in the heatsink. This is a fault of the fuse holder's design, but I would've expected better at this price level.

When you first power up the amp, blue LEDs illuminate the area around the vacuum tubes, as an indication that the amp is not yet ready for use. After about seven seconds, the LEDs turn red and the amp will pass a signal. Also, unlike some other amps I've tested, these tubes are not just for looks. They actually pass audio signals. I checked.

CIRCUIT DESIGN

Inside the Ultimate TA2, I found more high-end, top-quality components. The pcb itself is a heavy-duty, double-sided, plated-through, glass/epoxy type board, very much like pcbs found in military-spec equipment. The independent power supplies each use a pair of 2,200µF caps on the input, and filtering is used at the outputs of the separate toroids to minimize ripple and noise in the secondary rail voltages. The rails use a total of eight 4,700µF caps — four on each channel — as well as what appears to be a smaller "bypass" cap to speed the current delivery. Very nicely done.

The power supplies use a total of 12 high-current capable International Rectifier IRZ44 Mosfets, and the outputs are complementary pairs of 2N6488 and 2N6491 bi-polar transistors, with each transistor rated for 75 watts, so there is plenty of headroom designed into the output section. All of the Mosfets and output transistors are sandwiched between the pcb and the heatsink to take advantage of the heatsink's maximum surface area.

Another high-end feature that I believe greatly affects sonics are the capacitors used in the low-level signal path. In this case, the DLS TA2 uses some of the best-quality parts available in the world at any price. All the "small signal" passing caps are ultra high-quality polystyrene or polypropylene, some from WIMA, and some evidently proprietary to DLS. This type of attention to detail represents a "cost be damned" approach to sound reproduction, and helps to justify the amplifier's price tag.

PERFORMANCE

The DLS Ultimate TA2 performed very well on the revealing Cogent bench. Measured distortion plus noise at rated 4-ohm power was an ultra low 0.01 percent, and the signal to noise (referenced to full 4-ohm power) was also very good at -99.9dBA.

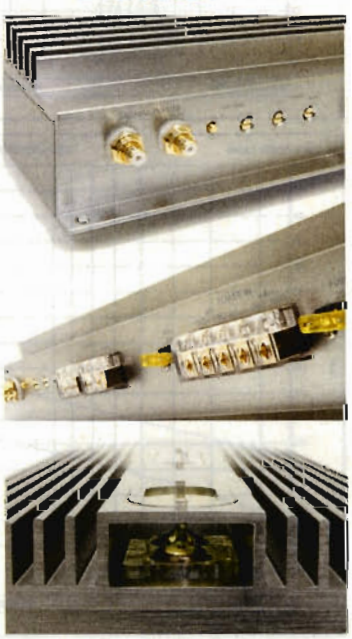
At a test voltage of 14.4 volts the amp developed 170 watts into 4 ohms, and 290 watts per channel into 2 ohms, easily exceeding all the published specifications. It also exceeded the published power specs with an input voltage of 12.5 volts. So rest assured you'll get the power you paid for.

Frequency response was very flat from below 10Hz all the way to 130kHz. I've measured respectable home amps with less bandwidth!

What about the tubes? Many people claim to prefer the "warm sound" of a tube. But generally speaking, the tube amps that they refer to used the tubes as output devices, and while tubes do exhibit even order distortion, which does not sound as harsh as the odd order distortion we get from transistors, the "warmth" to an amp using vacuum tubes as the output devices usually came from nothing more mystical than a rolled-off high frequency response.

The tubes in this amp appear to be used for a small amount of gain in the pre-amp signal path, and I don't believe they have a huge effect on the overall sound of the amp. But, then again I had no way to do a direct A/B comparison of the circuit with and without them. They do, however, look cool and make a statement that this is no ordinary amplifier. Remember, these tubes are not used as output devices like they are on a conventional home audio tube amplifier. The TA2 uses proven bi-polar transistors for the outputs, which for many reasons are an infinitely better choice than tubes as outputs for a car amp.

BUT, IN MY WORLD, I DON'T LISTEN TO AMPS WITH CAREFULLY PRE-MATCHED RESPONSE CURVES, AND I DO OCCASIONALLY DRIVE 'EM HARD ENOUGH TO CLIP. AND WHEN I USE THEM LIKE THIS, I CAN HEAR DEFINITE DIFFERENCES.



There is also some information in the manual about allowing the amp to warm up for at least 30 minutes to get the best performance. The turn-on delay times varied throughout testing, from just under two seconds when warm, to about seven seconds when the amp had been off for several hours. That's a little odd, but I sort of like quirky gear — it adds personality.

Despite the independent power supply circuitry and the non-bridgeable design, the stereo separation figure was 52.5dB, which is about average for a well-engineered amp.

Although the TA2 uses some very nice detented potentiometers for the independent gain controls, I did notice a small issue when setting them. You'd expect the advantage to having detents in the gain pots would be to allow you to simply count the clicks and set both of them the same. But don't put away your trusty voltmeter just yet, because I found the counting click method to be off by as much as 0.5 volts depending on where you were in the pots rotation. In roughly the center area of adjustment, the channels need to be set about one click different from each other (left at 13, right at 14) to minimize the difference in output voltage between channels. Still, the independent pots were nice, and I'll concede that even just matching the detents would get you closer than some ganged pots do. The crossover adjustment potentiometer was spot on however, with the range from 20Hz and 200Hz measured exactly as indicated.

Inter-channel phase differences measured very low, at only 0.9 degrees at 20kHz, partly due to the lack of bridging capability, and also the high-speed, high-quality parts in the preamp section. Low inter-channel phase differences contribute to good stereo imaging.

MANUAL

The Ultimate TA2 comes with a decent six-page manual, outlining the specifications, controls, connections and troubleshooting topics you'd expect. This amp is basic enough that any installer worth his Makita would not require any help, but in the manual there are some good tips and advice that make it a good thing to read, especially if you've never installed a DLS amp. But unfortunately like most manuals, it will probably never be read.

LISTENING

After looking inside, I connected the DLS Ultimate TA2 amplifier to my reference system and sat down for some serious listening. I prefer to do my listening evaluations in my lab's sound room, with speak-

ers and acoustics that I'm familiar with. It also gives me the opportunity to sit in a quiet environment to best evaluate the amplifier's character. I didn't wait the suggested 30 minutes. I simply turned it on, carefully set the gains and began listening. Immediately I was rewarded with a terrific listening experience. I played Don Dorsey's masterful rendition of Bach's Toccata in D minor to check out the dynamics of the amp and give it a good track to "warm up" on. The synthesizer had great size and depth, and sounded very much like a full-on pipe organ. With an abundance of power, headroom for the track's awesome dynamics was never an issue. Excellent! For a change of pace, I played some female vocals, including some favorites from Rebecca Pidgeon, Jennifer Warnes and Sarah McLachlan. Highs were smooth and detailed without any harshness or edginess and the vocals sounded warm and natural. The Cowboy Junkies' "Trinity Sessions" sounded like you were in the church where the recording was made. Stereo imaging was excellent, with good depth and a sense of space. Bottom-end authority was evident as well, from the very lowest registers. Thomas Dolby's "Aliens Ate My Buick" sounded tight and controlled with great round and fat bass bottom, and amazing detail on the plucks. Same with Rickie Lee Jones' "Danny's All Star Joint" — the bass line was up front and very detailed. This is one of those amps that lets you tell Fender Precision from a Jazz bass.

Louder you say? No problem, the TA2 drove my system as loud as I would care to listen to it without any sign of stress or distortion. While listening, I repeated several tracks and specifically paid attention to any changes as the amp got warmer, but I didn't notice anything significant. Rock, country, classical, hip-hop — whatever you like, the TA2 will bring it.

CONCLUSION

Whatever your taste in music, the DLS Ultimate TA2 will not disappoint. Obviously it's designed with sonic performance being the primary consideration and the result is an amp that is distinguished from the rest in looks and performance. This is a very natural, transparent-sounding amplifier. The music was reproduced without any added character. It simply sounded the way the recording engineer intended. I rated the sound quality of this amp right up there with some of the best amps for your home or car. If you have the budget and care more about sonic excellence than fancy features, you won't be disappointed with this amp. But if you believe that all amps sound the same, it will be hard to justify the price.

PERFORMANCE DATA

OUTPUT POWER @ 1% THD, 1KHZ, 14.4 VOLTS	
Stereo @ 4 ohms	170 watts x 2
Stereo @ 2 ohms	290 watts x 2
OUTPUT POWER @ 1% THD, 1KHZ, 12.5 VOLTS	
Stereo @ 4 ohms	130 watts x 2
Stereo @ 2 ohms	223 watts x 2
Distortion at rated power, 1kHz, 14.4 volts	0.01% @ 4 ohms
Input sensitivity	565mV to 8.5V
Frequency response (+ 1dB)	<10Hz - 130kHz
S/N Ratio (A weighted, full 4-ohm power, min gain)	> -99.9dB
Output impedance @ 100Hz, 4 ohms	0.025 ohms (DF 160)
Idle current	1.5 amps
Maximum current consumption, unclipped	63 amps @ 290 watts x 2
Efficiency at ⅓ power, lowest impedance	29.5 %
Efficiency at full power, 1% THD, lowest impedance	68 %
Crossover slope	-12dB/octave
Crossover range, highpass	20Hz - 200Hz
Dimensions	16"L x 9.5"W x 2.75"H