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JL AUDIO VX700/5i



AMPLIFIER REVIEW

With all the technology and capability built into the JL Audio VX700/5i, plus the fact that you only need one of them for your whole system, this is likely to be a very popular amplifier.



Every once in a while, a product comes along that's truly innovative and could represent the future of the category. In my opinion, such a product is the VXi Series of amplifiers from JL Audio. By teaming up with microprocessor manufacturer AKM, they have brought to market a series of amplifiers that combine powerful DSP processing with JL's NexD2 Class-D technology. For this review, JL Audio sent us a sample of the new VX700/5i - a five-channel amp that can easily drive an entire audio system.

FEATURES

The VX700/5i is built into a relatively small chassis, measuring only 250-mm long, 168-mm wide, and 54-mm high. With this small of a footprint, it will be easy to find an appropriate mounting location, but despite its size, the VX700/5i packs some serious power. Rated at 75 x 4 + 180 x 1 into four ohms, or 100 x 4 + 300 x 1 into two ohms, the amp will satisfy even enthusiastic listeners. If you need more power, however, there is a VX1000/5i as well...

Connections are typical class J fare. The speaker outputs and signal input connections are accomplished via multi-pin connectors that lock into place once connected. The pigtails are covered in a braided sheath, and the printed heat shrink is used to ID the individual connections. Power is connected by a heavy-duty three-terminal block that accepts up to four-gauge power wire, which then plugs into the amp. The VX700/5i is equipped with JL's differential-balanced inputs, which dramatically reduce the chance of unwanted noise entering the system. This innovative circuit measures the center pin of the RCA connection relative to the RCA shield. Because both the center conductor and the shield see high impedance to ground at the input, a ground loop cannot be formed, but the real beauty of this system is that it works with balanced or unbalanced signal sources, making this input architecture compatible with all standard car and marine audio equipment. No special cables are required, unlike the fully balanced connections used in professional

audio. It also allows the inputs of the amplifier to be compatible with a very wide voltage range of input signals, from as low as 200mV to as much as 16 volts! An optical Toslink connection is also provided to allow direct connection to S/PDIF digital sources up to 24 bit/192 kHz. Unlike its competition, there are no adjustment controls on the amp whatsoever. All of the signal routing, level control, and frequency shaping is done via JL Audio's clever and intuitive TUN DSP software. The software is free to download and play with, and there are apps for iOS and PC computers, as well as iOS and Android tablets and phones, with an optional Bluetooth communicator. DSP software can be complex and intimidating, but I found the TUN software to be intuitive and easy to use and understand.

To try and thoroughly review the TUN software functionality would take a review or two all by itself, but I will do my best to give you an idea of the vast range of capabilities available here:

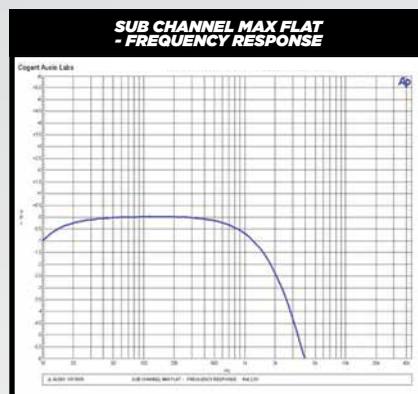
- Signal routing is easy with intuitive graphics in the software. You can basically route any input to any output or multiple outputs.
- Muting of individual or all channels.
- Gain is fully adjustable, complete with clip indicators.
- Channels can be linked together to simplify adjustments common to multiple channels.
- Crossover filtering accommodates all-pass, high-pass, low-pass and bandpass configurations. Selectable slopes and various alignments are included, from 6 to 48 dB/octave in 6-dB increments.
- Depending on the tuning mode selected, you can have a 10-band graphic EQ, or a fully Parametric version.
- Phase/Polarity control
- Individual channel delay in 0.01 millisecond increments.

TECH DATA

The following power measurements were obtained as follows: (100 HZ @ 1.0% THD+N - Battery voltages shown, +/- 0.1V)

MEASURED PERFORMANCE SPECIFICATIONS

Manufacturers Rated Power @ 14.4V Battery	Actual Measured Power @ 1.0% THD+N @ 14.4V Battery
75x4 + 180x1 @ 4 Ω	78x4 + 214x1 @ 4 Ω
100x4 @ 2 Ω	126x4 @ 2 Ω
300x1 @ 2 Ω	404x1 @ 2 Ω



The NexD2 Class-D topology permits the use of surface-mount DirectFET devices for a smaller footprint, better efficiency, and less radiated noise. Additionally, the NexD2 circuitry allows for improved capacitor placement and shorter circuit paths inside the amp. With this much power and such a small footprint, JL Audio's exclusive Advanced Rollback Thermal Protection is employed to monitor the amplifier's thermal condition and adjust the operation to eliminate unwanted thermal shutdowns that could interrupt your music.

LISTENING

For my listening test, I set up the amplifier using the TüN software with the final configuration much as I'd set up a conventional amplifier. The goal was to listen to the amplifier's musicality, not to play with the DSP. I set the main channels to 50 Hz high pass, with a Butterworth alignment and second order [-12 dB/oct] slopes. The subwoofer channel was set to 80 Hz low pass, at -24 dB/oct.

As usual, when evaluating the sonics of a DSP-powered product, one of the first things I do is listen for an audible noise floor. I'm happy to say that the VX700/5i is nice and quiet between tracks and during silent passages. To get started, I began my listening with a true test for any amp running a full system: the Atlanta Symphony playing Introit and Kyrie from Requiem Opus 48. This track is an excellent test for how well an

amplifier can reproduce complex choral voices and a full symphony orchestra at the same time. The JL Audio amplifier performs very well, and the result is an incredibly satisfying listening experience. I moved on to more current, but equally difficult tunes, like the soft passages and sense of space in the Cowboy Junkies' Trinity Sessions, recorded with the band standing around a microphone in The Church of the Holy Trinity in Toronto, Canada. The recording captured the ambience of the room, and the VX700/5i reproduced it with excellent realism. The listening evaluation process continued, listening for any telltale signs of a Class-D design, such as high frequency harshness or added high frequency noise. I found nothing at all to complain about, which is to say, the JL Audio amp proves to be natural and realistic sounding, with plenty of power to handle high dynamics and the ability to be very quiet when it's supposed to be. All in all, this is a very good sounding amplifier, regardless of topology.

ON THE BENCH

On the unforgiving Cogent Audio Labs test bench, the VX700/5i exceeds the published power specifications. Backing up my listening experience, the signal-to-noise performance is very good for a DSP-powered Class-D amplifier, and in fact better than some analog amps I've measured. This is a serious accomplishment and my

Signal to Noise Ratio referenced to 2V output. (CEA-2006A) (1 watt @ 4 ohms)	Main -79.6 dBA
Signal to Noise Ratio referenced to full output.	Main -98.5 dBA
THD+N at rated 4 ohm power	Main 0.87% Sub 0.058%
Maximum Efficiency at full 4 ohm power per ch.	75.1%
Maximum Efficiency at full 2 ohm power per ch.	80.2%
Idle Current	1.0 A
Input Sensitivity	198mV - 16.0V
Maximum Current @ full power, lowest rated impedance	60A
Frequency Response (-3 dB)	Main 10 Hz - 36 kHz
High Pass Crossover	TüN DSP controlled
Low Pass Crossover (Sub ch)	TüN DSP controlled
Subsonic Filter	TüN DSP controlled
EQ	TüN DSP controlled

hat's off to the engineering team. Wideband frequency response is also excellent, with the amp rolling off gently well beyond the upper limit of audibility. The bench testing proved that the five-channel amp can be driven by virtually any

source unit or OEM amp in existence and has excellent thermal performance thanks to the high efficiency design, while the clever Advanced Rollback scheme allows the amp to continue to play when others would simply shut off. **PAS**

CONCLUSION

*With all the technology and capability built into the JL Audio VX700/5i, plus the fact that you only need one of them for your whole system, this is likely to be a very popular amplifier. Add in the ability to interface into virtually any OEM, aftermarket, or digital source, as well as the ability to be tuned and configured to perfection, this really could be the beginning of a whole new era in car audio. **PAS***



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