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Guitar Tools

Amplifiers : Atomic Amplifiers - Reactor 112

Posted by [Dan](#) on 2005/4/6 0:44:00

Digital amp modelers like the Line 6 POD®, Behringer VAMP®, and the VOX Tonelab ® truly represent some of the most amazing technological achievements in the guitar universe. The idea is brilliant – simply analyze the waveforms of the most popular guitar tones, amps, cabinets, and effects and then throw them all into a small electronic box where you can access these tones with an easy turn of the dial. If that is not enough, you can infinitely tweak those tones by changing any of dozens of parameters. It is without question that digital modelers sound outstanding in a recording mix or through headphones. However, even with the best modelers, it seems that the authenticity and dynamic feel is lost when you plug these devices into an amplifier or a PA system for a live sound application. Fortunately, Tom King, the founder of Atomic Amplifiers enlisted Harry Kolbe (recognized as one of the world's legendary amp gurus) to solve this problem. Out of Harry's lab came the first "transparent" amplifier designed specifically to harness the power of today's digital technology. The result was the Atomic Reactor 112!



Let's back up for just a moment and address the issue of modelers and live sound reinforcement. Why do amp and effects modelers sound great in a recording mix or on headphones, but not so good when run through a traditional amplifier? I can promise you that it's not the device's fault – these modelers are amazing and can replace a studio's worth of equipment with a small highly portable box (or red bean if you choose). The answer could probably get technologically complex, but it boils down to a simple fact. Amplifiers and PA systems are not designed to accept direct signals from modeling devices.

Here's another key problem. Amplifiers almost by definition have their own distinctive tone. Don't believe me? What is the sound you think of when you hear the words "Marshall" or "Mesa Boogie" or "Fender Twin". By running an amp modeler through any given traditional amplifier it completely defeats the purpose of the "model". Similarly, PA systems change the model space and do not offer the ability to push the tone into that awesomely warm and richly responsive "tube-only" zone.

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Atomic Reactor 112

The Atomic Reactor 112 is both unique and brilliant in its design, but fundamentally "old school" relative to tone. The 112 was designed by the legendary engineer Harry Kolbe, one of the masters of tube amplification specifically to de-digitize and dynamically enhance the modeled signal for live performance.

Here are the specifications:

- Power: 115V AC, 50/60 Hz 45 Watt (U.S. Version)
- Power: 240V AC, 50 Hz 45 Watt (European version; CE Approved)
- Amplifier Power Output: 18 Watt into 8 Ohms @ 3% THD
- Power Amp Input: 175 MV (-13db) at 1000 Hz for 18watts output
- Power Amp Input Impedance: 56 K ohm
- Tubes: Two EL84 tubes and one 12AX7A tube
- Speaker: One 12", 8 ohm, 150 watt custom designed speaker
- Fuse: 2A 250V at 115V setting; 1A 250V at 240V setting
- Dimensions: Height 19.25" - Width 26.00" - Depth 11.00";
- Weight: 48 lbs.

There are essentially two components of this amplifier. The first component being the amplifier and enclosure itself, and the second is the docking system.



As I was researching this unit, I found that many people were confused by the wattage of this unit. Because of its unique design, it uses an 18W amplifier, which draws 45W of power, and emanates through a 150W speaker. Make no mistake, this is an 18W amplifier; however, that does not mean that you should relegate it to the corner as your "practice amp". This bad boy is loud...really loud. In my estimation, it compares favorably to a 30W tube amp and perhaps a 60W solid state amplifier. My guess is that there are two factors that principally account for this performance advantage. First, the use of digitally modeled input and a low distortion power amplifier creates a super clean signal path that minimizes noise artifacts even at full-power. Second, the use of a 12" speaker and a ported cabinet greatly enhances the perceived volume of this amplifier and at the same time produces outstanding bass response down to 20kHz.

The docking system is a work of genius. It allows for seamless integration of your Behringer VAMP® (Version 1 or 2), Line 6 POD® (1.0, 2.0., or XT), or VOX Tonelab® into the amplifier itself. It's so perfect, that the modeler actually becomes the controls for the amplifier! Turning up the volume or the gain on the modeler turns up the volume or the gain on the amplifier. Installation is relatively simple and straightforward. Both the right and left stereo channels are integrated and the dock also distributes power to the modeler. Just plug the amplifier into the wall, and throw the modeler's power brick in a drawer someplace because you won't need it with this amp. Furthermore, the docks are hot swappable – allowing you to utilize more than one modeler.



Do you have a floor modeler like the Line 6 POD XT LIVE® or VOX Tonelab SE® or the new Boss GT-8®? No problem. Use a blank dock and run the modeler to the effects return in the back, you'll wind up with the same benefits as the built in modeler. This is clearly an amp built for versatility, both for the gig and for the studio.

Construction

Matching its design efficiency is its looks. This amplifier is sexy! The entire unit is covered in black Tolex. A grey and black checked cloth covers the front. The Atomic "flame" and logo are understated and elegant. Each of the eight corners is protected by a metal cover for the inevitable bumps and bruises caused by road travel. There is a handle on the side of the unit to improve portability. Everything about this unit suggests it is ready for serious gigging.

Sound Test

I tested both a Behringer VAMP® and a Line 6 POD XT® through the Reactor 112. The first thing I thought when I played this was "Finally, this is what I was expecting all along!" Both of the modelers sounded amazingly good. Overall, my feeling is that any modeler will perform well with this unit; however, my personal opinion was that the models on the POD XT® sounded a bit more authentic. I would have loved to have tested the Reactor 112 with a VOX Tonelab® which uses an authentic 12AX7 tube in its power amp simulation which may enhance amp authenticity to even greater heights.

One of the most common complaints I hear about these modelers is that the preset tones don't sound all that great out of the box. However, I found the presets to be extremely well suited to the Reactor 112 and quickly picked out my favorites. Nevertheless, the folks who like to "tweak" should be extremely pleased with the Reactor's ability to render subtleties in tone.

Even though the Reactor 112 is a transparent amplifier relative to its own tonal characteristics, you may find that **your** perceptions may have to change. This unit is a very well designed tube amplifier, and responds in kind. For those of you used to digital sounding, solid-state timbre, it may take a listen or two before your ears accept the idea that the warmth and dynamically rich sound is truly what your modeler actually intends to replicate.

What I enjoyed most about this amplifier is the ease of which you can use your own pedal effects in addition to the modeler. In a simple test, I used the modeler to emulate the amp, the cabinet, reverb type, and all effects except distortion. I plugged my guitar into my favorite distortion pedal (the ProCo "YouDirtyRat") and plugged the pedal into the guitar input. After a little trial and error to get my clean and distorted volumes matched I found the result to be the perfect blend of technology and tone. In hindsight, it's the perfect balance. You can let the computer handle the chores that you don't want to have to manage during the gig, yet you can still control those that are important to your individual sound. If you want to rearrange the signal chain, (i. e., put your pedals after the modeler signal) then I suggest you not use the dock, rather set up your chain and run it through the effects return.

My only minor concern was the fan on the back of this unit. Although largely inaudible for live sound reinforcement, it may prove to be a bit too loud for some recording situations.

Amplifier Tricks

This amplifier has a few more tricks up its proverbial sleeve. The first trick you should be aware of starts by noticing that the Reactor 112 provides a left and right output on the back panel. With a modeler plugged into the DS-1 docking system you can run a standard cable from the SEND-R jack to the effects return of a second Reactor 112, allowing you to hear the modeled sound in stereo! If you have a floor modeler, just run the right and left signals directly to the effects returns of the two amps for the same outcome. Not only will this expand the sound field depth substantially, but also increases total volume.

The next trick to recognize is that you are not limited to desktop and floor modelers. This amp is equally as versatile when used with a rack system as long as the rack includes some kind of amplification support.

The final trick is to realize that this amplifier is truly a transparent amplifier. Because of the ported cabinet, the Reactor 112 delivers outstanding bass response. Being the curious type, I plugged in a G&L bass and found that this amplifier did a very reasonable job as bass amplifier. Please take this last trick with a warning; I'm no engineer so I'm not sure if long term or high volume use of this amp with a bass guitar would damage the speaker. You've been warned.

The Future

I spoke with Tom King at length regarding how Atomic Amplifiers was born and his vision for future products. Tom promised that they would continue to innovate on existing products, and that in fact, they were testing docking capabilities for some of the newer modelers that have reached the marketplace in the last year. Atomic's next product; however, is a 55W dual speaker, ported cabinet (about the size of a 4x12 cab) with similar capability to the 112 relative to docking of digital modelers. More information on this product will be available soon on Atomic's website (www.atomicamps.com).

Conclusion

I want to personally thank Tom King, the founder of Atomic Amps for recognizing a long outstanding problem and stepping up to plate with an outstanding solution. At a street price of about \$500 (plus the cost of the modeler) this is one product that is hard to resist. Finally, an amplifier exists that can breathe life and warmth into digitally modeled tones. Harry Kolbe did an outstanding job in designing this amplifier, it really does live up to its hype!

Not only does the Atomic Reactor 112 receive a GearHead "Approved" award for 2005, but they are the first to receive our coveted "Rig Ready" award given only to products that are so good they've been added to our personal rigs!



Written by Daniel L. Halberg

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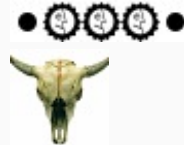
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Gary

Posted: 2005/4/6 22:17 Updated: 2005/4/6 22:17

Webmaster



Joined:
2004/1/26

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Re: Atomic Amplifiers - Reactor 112

Great review Dan. This piece of gear looked and sounded awesome at the NAMM show.

Gary Allen