

Omnia Audio Omnia-4.5am

By Watt Hairston

With 50kW, two new transmitters and an unbeatable tower and ground system combination, WSM, Nashville, already puts a terrific signal into nine states during the day. We cover about half the country and perhaps a little more at night. To be honest, we weren't looking for a new audio processor. We were pleased with our existing audio processor.

About a year ago, I became aware of the Omnia Audio Omnia-4.5 audio processor.

The midday announcer asked me what I had done to the audio. He was ecstatic and remarked that it sounded great in the studio and in his car.

After lunch and more listening, one small change was made to reduce the level of the mid-bass. Even after the change, the bass was still deep, powerful and punchy—just right to sweeten and add some meat to the live and recorded country music for which WSM is famous.

Most notably, the WSM audio is exceptionally clear—more so than I thought was possible with the constraints and challenges of the NRSC curves and mediocre radios. On most any program material, WSM is both the loudest and cleanest station on the Nashville AM dial. The clarity of the audio at such high modulation levels is probably as much due to the solid-state AM transmitters, as it is to the processing, but the Omnia-4.5am most certainly makes the most of what those transmitters can do.

I was also pleased with something that didn't happen after we switched to the Omnia processor. We air the *Grand Ole Opry* on Friday and Saturday nights; a weekly tradition since 1925. The *Opry* engineers can be a fussy bunch. In the past, if I made a change or two that I thought were improvements, I would often hear about it during the *Opry* or the Monday afterward—and not always in a friendly way. After I installed the Omnia, no one from the *Grand Ole Opry* complained about the change in audio. This time we actually received compliments from the *Opry* staff. That's a lot coming from them.

Performance at a glance

- 96kHz sampling rate, 24-bit resolution
- Five-band pre-limiter crossover
- Adjustable, over-sampled five-band limiter
- Non-aliasing, distortion-canceling clipper
- Bass management low frequency enhancement system
- 10/100baseT Ethernet port
- PCMCIA card slot

I was asked by Omnia if I would be interested in trying it on WSM. For me, a day at the WSM transmitter is almost like a day off, so I was open to the idea to experiment.

I installed the Omnia-4.5am processor in the rack under the existing processors and put it on the air. After some tweaking and level setting, I went to lunch. On the way out of the transmitter building my cell phone

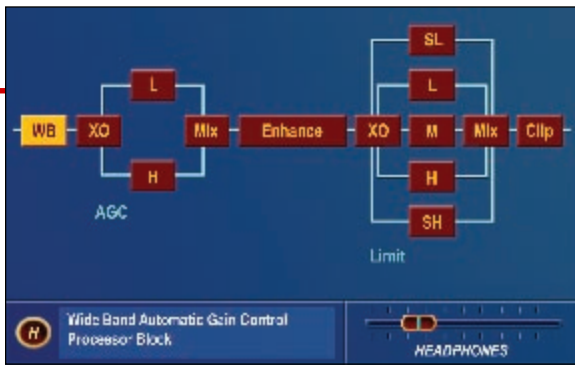
Taking control

The flywheel control is an easy-to-use interface. Menu items are displayed on the screen. By turning the wheel, options and menus are presented. Selections are made by pressing the wheel. The menu structure is so easy to follow that I didn't read the manual before starting. Overall, I found the transition from an analog processor an easy one to make. There is so much control that any aspect can be modified.

There are many processing presets already loaded, which provide a good base reference from which to start. As these are modified, settings can be saved and recalled as needed. In addition, settings can be recalled on a daypart schedule to fit changes in programming.

As far as the overall sound of the unit, I am most impressed with the low end. The bottom end is clearer and sounds better. Overall, the sound is more open and sounds like it is not very processed, when in reality it is somewhat aggressive.

The Omnia 4.5 can be accessed remotely through an Ethernet port or through the RS-232 port. A modem can be



The signal block diagram of the Omnia 4.5.

hesitant to try the Omnia 4.5 when it was offered. Now that I have seen how good it can sound and experience the depth of control, I'm glad I made the switch. 🎧

Hairston is chief engineer of WSM-AM, Nashville.

installed in the PCMCIA slot as well. In addition, a GPI can be used to trigger processing changes.

The unit sports a 96kHz sampling rate with 24-bit resolution; a selectable, four-frequency high pass filter; a selectable multi-stage phase rotator; a two-band AGC and wide-band AGC; a five band pre-limiter crossover; an adjustable, over-sampled five-band limiter; a post multi-band limiter mixer and a non-aliasing, distortion-canceling clipper. In addition, it features the Omnia Bass Management low-frequency enhancement system; an optional Space-EFX stereo enhancement control; discrete, adjustable balanced analog audio outputs; an adjustable, front-panel, high-drive headphone output; an AES3 output selectable for 32-, 44.1-, 48- or 96kHz; an AES3 synchronizing input; a 10/100BaseT Ethernet port and a PCMCIA card slot to save and load software presets.

I admit that I was pleased with the sound of our previous analog processor and was

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