BY RUSS LONG

Wheatstone Vorsis AP3 Multiprocessor

The Vorsis AP3 from Wheatstone is a multiprocessor box that can potentially replace an entire rack of dedicated processors. It can be operated as a stereo unit or two independent mono units and it provides a filter, de-esser, expander, multiband compressor, equalizer and limiter. The unit includes real-time spectrum density readouts with full metering and the included PC graphical user interface (GUI) software makes the operation of the AP3 quick, easy and accurate.

FEATURES

The Vorsis AP3 is a single rackspace 16-inch deep box. On the rear panel is a wide assortment of connectors allowing the box to easily interface to most situations. A pair of female XLR connectors provide mic and line input. A third female XLR connector along with a paralleled RJ45 connector provide digital input. A pair of male XLR connectors provide line output and a third male XLR connector along with a paralleled RJ45 connector provide digital output. A DB25 D-sub connector also provides access to all of the digital and analog inputs and outputs. Two RJ45

Fast Facts

■ **Applications:**
Studio, broadcast, post production, sound reinforcement

■ **Key Features:**
Two-channel; parametric EQ, compressor, multiband limiter, de-esser, expander; filters; Automatic Gain Control; 44.1 kHz, 48 kHz sample rates; spectral analyzer

■ **Price:**
$3,199

■ **Contact:**
Wheatstone at 252-638-7000, www.vorsis.com.

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connectors (one for each channel) allow the use of talent mic control panels for On, Off and Cough functions and a fifth RJ45 connector allows the box to be controlled via the GUI software.

The GUI is laid out in an extremely logical manner and is very easy to use. There are eight user screen selector tabs across the top of the screen; Input, Filter, Expander, De-esser, EQ, Compressor/ Multiband limiter, Output and System. The first seven follow the order of the signal path and the System user screen controls the system functions. The equalizer can be pre or post compression and the order of the tabs reflects the setting. This means that regardless of what window you are viewing, by looking at the tabs you can always tell where the equalizer falls in the signal path.

Input can be mic, line or AES. The microphone inputs have phantom power and are adjustable from –10 dB to 70 dB in 1 dB increments. The line inputs are adjustable from –10 dB to 20 dB, again in 1 dB increments. The digital AES/EBU inputs can be adjusted from –12 dB to +12 dB in 0.5 dB increments. In addition to gain and input source, the unit includes adjustments for balance, left and right phase reverse, phantom power, and a Symmetry mode which, through the use of phase shifting, reduces the peak to average ratio and

enables an increase in apparent loudness with minimal audio artifacts.

The filters can be used to clean up the signal prior to dynamic processing. The 24 dB/octave high-pass filter is adjustable from 20 Hz to 1 kHz. The 24 dB/octave low-pass filter is adjustable from 1 kHz to 20 kHz and the extremely tight Q notch filter is adjustable from 20 Hz to 20 kHz.

The Expander, which is similar to a gate, activates when a signal falls below a predetermined level. The variable parameters include threshold (-60 – 0 dB FS), ratio (1:1 – 1:5), depth (0 - 40 dB), open (0.1mS – 100mS), hang (0 - 1 sec) and close (50mS – 3 Sec).

The de-esser reduces the signal level within a designated frequency range when it exceeds a predetermined level. The variable parameters include threshold (-10 to -60 dB FS), attack (0.1mS – 100mS), release (50mS – 500mS), frequency (20 Hz – 20 kHz) and bandwidth (0.15 – 4 octaves).

The parametric EQ has four identical independent bands, each fully adjustable in center frequency (20 Hz–20 kHz), bandwidth (0.2 – 3 octaves), and boost/cut (±14 dB). The entire EQ section is selectable to be pre or post the AP3 multiband compressor section.

The AP3's three-band compressor rides the signal above an associated three-band

Automatic Gain Control (AGC) system bed. All three bands have independent parameter controls that include threshold (-30 to -70 dB FS), attack (0.2mS – 1 sec), release (33mS - 1 Sec), and ratio (1:1 - 20:1). An overall makeup gain control (-20 dB to +48 dB) and individual high, mid and low-band gain trim (±18 dB) allow precise level settings, and a master drive control (0 - 100%) allows all three threshold settings to be dialed back as a group. Compression activity is displayed in real-time in the spectrum analysis graph. The frequency band crossover points (LF crossover point 20 Hz – 1 kHz and HF crossover point 1 kHz – 20 kHz) are fully adjustable and also apply to the three-band AGC circuits. The AGC system has its own master attack (50mS – 500mS) and release (100mS – 4 Sec) settings. Save and Compare buttons allow instant before and after comparisons.

The Output section is the final stage. In addition to controlling output gain (-80 dB - +18 dB), this bypassable stage includes a precision peak limiter which provides maximum output signal without clipping. Adjustable parameters include threshold (20 to -10 dB FS), attack (.2 – 100mS) and release (10mS – 330mS).

The System user screen allows the user to set the system options. Sample Rate function allows the sample rate to be set to 44.1 kHz, 48 kHz, or Auto (in Auto, the AP3 follows the sample rate of the AES/EBU signal). The Mode function allows the operation to be set to stereo, dual mono, stereo from A, or stereo from B. The Security function allows password settings and front panel lockout.

Real-time spectral analysis of the selected audio signal is provided via a Fast-Fourier Transform (FFT) Display. The graph also shows composite curves representing the frequency response of the applied processing. The display is determined by the selector buttons below the graph. Dual indicator bar graph metering indicates the gain reduction and input and output signal levels being applied before and after the multiband compressor. A switch to the left of the display toggles the input bargraph from a 30 dB to a 60 dB range which is helpful when viewing content with a high dynamic range such as classical music.

IN USE

I made the not-so-wise decision to initially use the AP3 without the GUI and what a mistake that was. All of the features can be accessed via the front panel controls but unfortunately it's a fairly complicated process. The GUI is another story completely. It is pleasing to the eye, very easy to navigate and the only way I'll ever use the AP3 from this point on. The computer talks to the AP3 via a single RJ45 Ethernet connection that lets you control one or many AP3 units. The GUI provides complete control of all audio parameters, presets, monitor functions, system settings and security. By using VPN protocols, the remote control of the AP3 can take place from anywhere with an Internet connection. I had to adjust the IP address on my computer and invest in a crossover cable since a regular Ethernet cable won't work but once I got it up and running it has operated flawlessly.

As I have found to be the case with most digital processors, the AP3 sounds the best when it isn't doing anything too extreme. It does, however, have the capability to provide extreme processing and it does it as well as anything else that I've encountered.

I spent a lot of time strapping the AP3 over my stereo buss while mixing and always liked having it in the signal path. This was true going digital in and out of the AP3 while mixing in the box or going analog in and out while mixing on an analog desk. In these situations I typically found myself using the multi-band compressor and the limiter and sometimes a hint of EQ, always varying settings depending on the source material.

The multiband compression sounds great but it takes a bit longer to get the desired results than with most multiband plug-ins that I've used. I think this is primarily because there are so many options with the AP3. I'm sure the more time I spend with the AP3 the less this will feel like it's an issue. This compressor is the heart of the box and once it has been finessed into shape, it performs amazingly well. I would say that it sounds amazing but that's what's great about the processor, you can hardly hear it processing at all.

I found the mic preamp to be smooth and uncolored, a perfect pre for dialog and broadcast work. I compared it to my stable of favorites (the Gordon, Daking and John Hardy) on acoustic and electric guitar, vocals, and tambourine and although I never preferred it, I always felt that it did an adequate job. I wouldn't buy the AP3 for the mic preamp but I'm sure I'd use it without hesitation from time to time if I had an AP3.

The AP3's de-esser works well. I hyped the sibilance on a vocal and then strapped the AP3 across the stereo mix and found the unit to work extremely well removing the sibilance. I also ran an unusually sibilant vocal through the AP3 and again had good results removing the sibilance. During another mix I found that I had a problem with a 60 Hz hum that was recorded on a keyboard track. I had perfect results using the notch filter in the AP3 to eliminate it.

SUMMARY

Whether you're setting up for an HD Radio broadcast, doing final tweaks on an album mix or recording a vocal or guitar, the Vorsis AP3 is a powerful tool that can help you get the job done well. The box will find itself right at home in the recording studio but it is perfectly suited for the broadcast industry. Anyone in need of a flexible box that can do almost anything should give top consideration to the Vorsis AP3.

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