Your On-Air Sound is About to Get Awesome.
Your on-air voices need to be clean, clear and distinct. On-air processing tuned for music just doesn’t produce an optimum voice sound — you want your jocks to have punch that cuts through the music. You want to deliver consistent sound from talent to talent regardless of widely varying voice characteristics. One intelligent voice processor with individualized presets can handle it all – that perfectly describes Wheatstone digital voice processing.

Both the M-1 and M-2 begin with high-quality microphone preamplifiers approaching theoretical perfection – clean, transparent, and extremely low noise. Each preamp feeds wide dynamic range 24-bit analog-to-digital converters operating at 96kHz for absolute sonic accuracy. From then on, all processing is done in the digital domain by Vorsis algorithms optimized for broadcast voice. EQ, filtering, dynamics, downward expander noise gate and de-essing—everything you need to create your ideal voice sound.

Like all Wheatstone processors the M-1 and M-2’s operating parameters are adjustable via Vorsis Remote Control Software installed on your PC. Up to 255 processors in a facility can be operated from a single control screen.

**M-1**
Ideal as a production studio tool—a single-channel voice processor with all processing controls available right on the front panel.

**M-2**
A dual-channel voice processor best suited for on-air talent processing. Set once and forget, or create individualized talent settings using custom presets—all recallable via software or automation control. No front panel controls to tempt well meaning but sometimes curious staff.

The M-2 includes an enhanced compressor section capable of operating in up to three bands. Producing a more consistent sound with fewer artifacts than a wideband compressor, it provides the benefits of dynamic spectral enhancement, maintaining bass and brightness balance over changing input levels and talent voice characteristics.

**FEATURES**
Both M-1 and M-2 unless otherwise noted
- M-1: one processing channel
- M-2: two processing channels
- M-1: front panel controls and control via Vorsis Remote Control Software
- M-2: all control is via Vorsis Remote Control Software
- All digital, field proven Vorsis-designed advanced processing algorithms
- Vorsis Remote Control Software to adjust the settings from your PC, locally or remotely
- Talent Control Interface software for preset recall without processor control
- High performance microphone preamplifiers with phantom power
- High- and low-pass filters; the M-2 also includes an adjustable High-Q notch filter
- Downward expander
- Phase Scrambler to correct asymmetrical voice waveforms
- De-esser precision sibilance controller
- Four-band EQ: low-frequency shelving, two-band parametric, high-frequency shelving
- Compressor:
  - M-1: single band
  - M-2: up to three bands
- Final precision peak limiter (M-2 only)

Wheatstone believes that you should have the power to shape your OWN sound—one with a completely unique sonic signature that’s your sound, not the one created by a processor manufacturer. To achieve this goal Wheatstone has developed Vorsis Ultra-High Resolution Processing technology to provide completely clean, high quality ‘draw you in’ sound that even the best ears in the business love to hear. This proven Vorsis technology is embedded in every Wheatstone processor to create the cleanest sound, as loud as you want it.

To get there, it required taking a completely fresh approach to processing. Vorsis Dynamics Control (AGC and compression) employs multiband AGC to ensure consistent spectral balance. Its Multiband Compressor works with the AGC to provide unprecedented dynamics control.

The Vorsis Bass Management System (VBMS) extracts and reveals nuances in the program to deliver pristine, deep, distortion-free bass over the air. No other processor delivers bass this bold and clean.

Vorsis’ Superior Stereo Enhancement is integral to the processing and creates a smear-free perception of a wider sound field in the cleanest possible way. Just stunning.

Our limiting and clipping are, bar none, the finest you’ll ever use. Up to 31-bands ensure surgical precision and the ability to have the cleanest, loudest signal on the dial.

Vorsis’ presets are also some of the best in the world. You may never need to tweak them, but if you do, our Graphical User Interface, whether via the front panel or accessed by a PC, gives you an intuitive toolset that’ll make you feel right at home.

We think Wheatstone’s Vorsis Ultra-High Resolution Processing is the best you’ll ever use. But don’t take our word for it. Try it out. We CAN guarantee you’ll be happy you did!
Processing Presets

A variety of ready-to-use factory presets are provided, all carefully tailored for different processing goals and formats. You can select a factory preset, confident that it will sound great just as it is. Or use a factory preset as a starting point and create a custom sound for your station - or even for each announcer. Then save the new settings as personalized user presets. In a facility with multiple microphone processors, presets saved in one unit can easily be copied to the others.

Vorsis Talent Control Interface

The Vorsis Talent Control Interface software can easily reside on an air studio/control room PC and gives talent the ability to recall presets from any Vorsis microphone processor—but does not allow any adjustments to audio parameters. The interface presents a large high-resolution FFT and scope display of talent real-time voice audio, as well as input and output levels.

There's also a mini Talent Interface window that takes up only a small amount of screen real estate for simple recall of saved presets without visual metering.

M-1 BLOCK DIAGRAM

M-2 BLOCK DIAGRAM

M-2 is a two-channel mic processor, each with 1, 2 or 3 processing bands. Only one channel is shown for clarity.
Vorsis Control Software

In the M-1, processing adjustments are made at the front panel or via Wheatstone’s Vorsis Control Software. In the M-2, all controls are accessed via the software; the front panel has no controls, only metering.

The Vorsis Control Software – separate versions for the M-1 and M-2 – loads on an external PC. You can connect the PC directly to the processor, or install the processor on your station’s Ethernet LAN and access it from anywhere in your network (or remotely over VPN).

With Vorsis Control Software no adjustment is more than two mouse clicks away. And unlike other processors, every processing control is available and labeled for exactly what it does, giving you ultimate power to create your ideal sound.

The remote control screen is divided into an upper control area and a lower dynamic section that includes real-time display of gain reduction as well as a frequency-domain graph that shows the spectral characteristics of your audio. Every screen also includes accurate metering of input and output peak and average levels. Tabs across the top of the GUI software allow immediate access to each section of the processing.

Filters

Both the M-1 and M-2 are equipped with adjustable high- and low-pass filters; the M-2 adds an adjustable high-Q (narrow) notch filter that’s valuable for eliminating fixed interference such as hum. The graphical display clearly shows the response curve of the applied filtering.

De-esser

A sophisticated Vorsis de-esser provides effective and transparent dynamic sibilance management, reducing the annoying bright “esses” common with many voices.

Downward Expander

The downward expander is a powerful tool for eliminating background noise; it works by reducing output when input levels fall below a set threshold.
Parametric EQ

Four fully independent adjustable equalizers sweeten and tailor voice. The equalizer can be placed either ahead of or after the compressor section. When ahead it “preloads” the compressor, making it operate in a frequency conscious way. When after the compressor the effect is more pronounced, producing an altered spectral balance.

The top and bottom equalizer bands are shelving while the two middle bands are full parametric with adjustable frequency, boost/cut and variable Q.

Compressor

Threshold, attack, ratio, and release controls are provided for ultimate flexibility in tailoring your sound, for anything from gentle unobtrusive level control on up to tight aggressive punchy processing. Gain reduction and audio spectral energy are displayed in the FFT/scope section of the software.

The M-1’s compressor is broadband. The M-2’s compressor is more powerful; its specialized multiband processing structure can produce a consistently tailored spectral balance, with tight midrange control unmodified by strong bass energy. (The M-2 can also be operated broadband or two-band if desired.)
**M-1 AND M-2 SPECIFICATIONS**

**PRESETS**
- **Factory**: Factory presets are pre-installed and write-protected. New factory presets can be downloaded from the Vorsis web site and installed via the Vorsis Control Software.
- **User**: M-1: stored on the host PC, M-2: storage for 80 presets in on-board non-volatile memory.

**AUDIO INPUT**
- **Microphone**: XLR-F connector (two on M-2), Electronic differential, >2kΩ (bridging), Optimum source impedance 200Ω.
- **Phantom Power**: 48VDC, switchable on/off.
- **Gain**: -10dB to +70dB in 1dB steps, <0.02% 1kHz/20kHz.
- **Equivalent input noise (EN)**: -120dBu.
- **THD+N**: <0.03%, 20Hz-20kHz, 50dBu input.

**AUDIO OUTPUT**
- **Digital**: XLR-M connector (two on M-2), Two RJ45 to StudioHub standard (M-2 only), Reference Level: 0VU=-20dBFS, Sample Rates: 44.1 kHz, 48 kHz and 96 kHz for M-1, 48 kHz fixed for M-2.
- **Analog**: XLR-M connector (two on M-2), Electronically balanced, <1Ω source impedance, Optimum load impedance >600Ω, Maximum output level 24dBu.

**FILTERS**
- **Asymmetry Filter**: Phase rotator, 4th order allpass, switchable input.
- **High-pass**: 24dB/octave Butterworth, Adjustable 20kHz-1kHz.
- **Low-pass**: 24dB/octave Butterworth, Adjustable 1-20kHz.
- **Notch (M-2 only)**: Fixed bandwidth, Adjustable 20kHz-20kHz.

**DOWNWARD EXPANDER**
- **Threshold**: Adjustable -60dBFS to 0dBFS.
- **Close**: Adjustable 0-40dB.

**DE-ESSER**
- **Control**: Pre or post compressor.
- **Threshold**: Adjustable -10dBFS to -90dBFS.
- **Attack time (M-2 only)**: Adjustable 0.1ms-100ms, 10-800ms.
- **Release time**: Adjustable 20kHz-20kHz.
- **Depth**: Adjustable 0-40dB.
- **De-ess frequency**: Adjustable 20Hz-20kHz.
- **Bandwidth (M-2 only)**: Adjustable 0.15-4 octave.

**PARAMETRIC EQUALIZER**
- **Routable**: Band 1.
- **Bands 2 and 3**: Pre or post compressor.
- **Band 4**: Shifting, Adjustable 20kHz-20kHz.
- **Boost/cut**: ±14dB.
- **Ratio**: 1.1-20:1.

**COMPRESSOR – M-1**
- **Control**: Broadband.
- **Threshold**: Adjustable 0dBFS to -80dBFS.
- **Attack time**: 0.2ms-1s.
- **Release time**: 33ms-1s.
- **Ratio**: 1.1-20:1.

**COMPRESSOR – M-2**
- **Control**: Up to three-bands.
- **Threshold**: Band 1-2 adjustable 20kHz-1kHz, Band 2-3 adjustable 1kHz-20kHz, 10-50dBFS.
- **Attack time**: 0.2ms-1s.
- **Release time**: 33ms-1s.
- **Ratio**: 1.1-20:1.

**FINAL LIMITER (M-2 only)**
- **Control**: Zero-overshoot look-ahead limiter.
- **Threshold**: Adjustable -50 to -100dBFS.
- **Attack time**: 0-1ms.
- **Release time**: 10ms-100ms.

**LOGIC I/O**
- **Remote control**: RJ45 connector (two on M-2), For optional Wheatstone Announcer Panel or custom interface.
- **Connections**: ON, OFF, Cough, ON tally, OFF tally, power and ground.
- **GPI input (M-2 only)**: Eight opto-isolated ports for external switching of presets.

**CONTROL**
- **Ethernet**: 10-100BASE-T, RJ45 connector.

**PHYSICAL – M-1**
- **Dimensions**: 19”/48.3cm wide, 1.75”/4.5cm high, 10”/25.4cm deep.
- **Weight**: 8.1lbs/3.68kg.
- **Shipping weight**: 13lbs/5.9kg.
- **Power Requirements**: 90-260VAC, 50-60Hz, 24VA.

**PHYSICAL – M-2**
- **Dimensions**: 19”/48.3cm wide, 1.75”/4.5cm high, 16”/40.6cm deep.
- **Weight**: 11.35lbs/5.16kg.
- **Shipping weight**: 15lbs/6.8kg.
- **Power**: 90-260VAC, 50-60Hz, 19VA.

Specifications and features subject to change without notice.