

WORSIS

ULTRA-HIGH RESOLUTION PROCESSING

M-1

DIGITAL MIC PROCESSOR



M-2

DIGITAL VOICE PROCESSOR



 *Wheatstone*

► 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 a versatile production tool that can sweeten voiceover sound. 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.

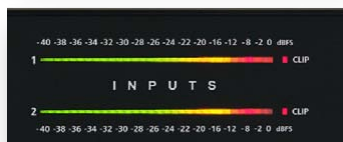
Both the M-1 and M-2 begin with high-quality microphone preamplifiers approaching theoretical perfection – clean, transparent, and extremely low noise. Each preamp feeds wide dynamic range 24-bit analog-to-digital converters operating at 96kHz for absolute sonic accuracy. From then on, all processing 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**)

VORSIS® ULTRA-HIGH RESOLUTION PROCESSING

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!

M-1

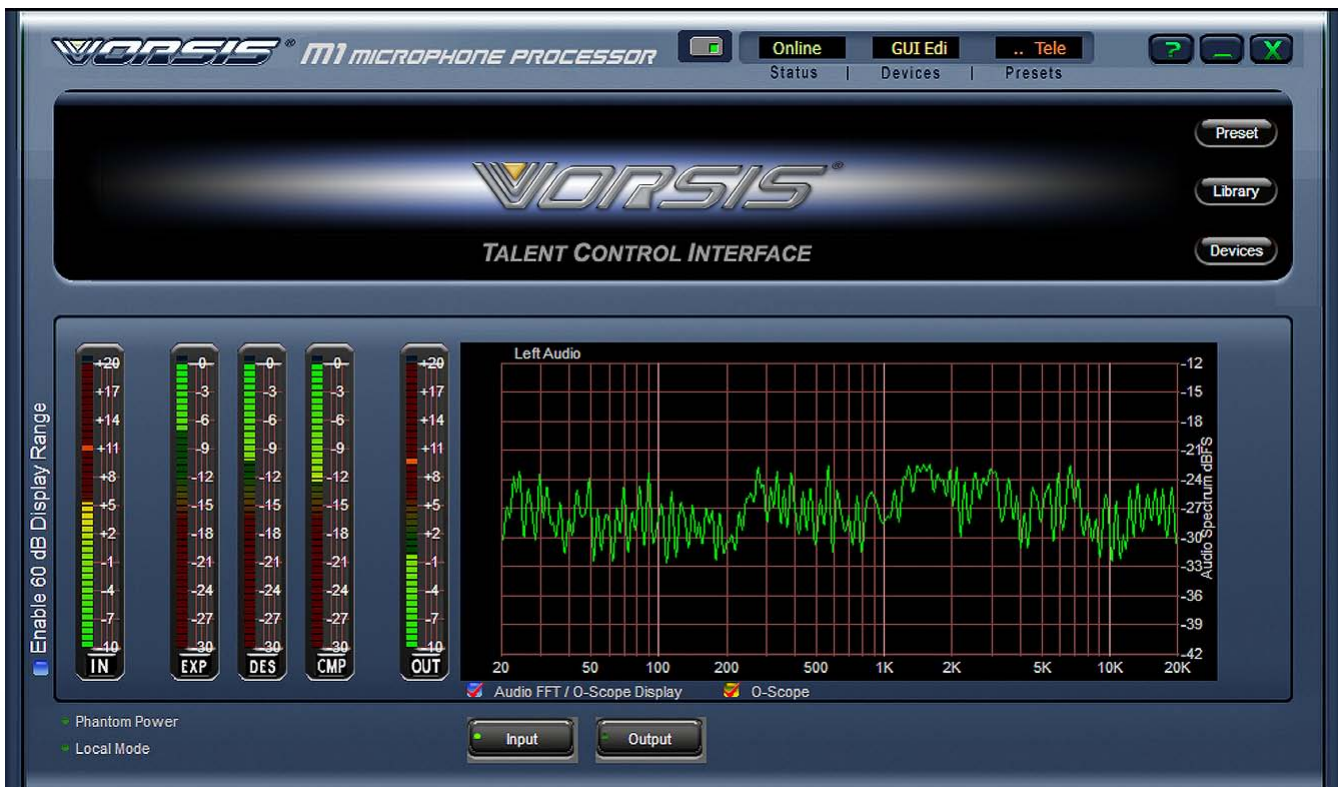
DIGITAL MIC
PROCESSOR

M-2

DIGITAL VOICE
PROCESSOR

Processing Presets

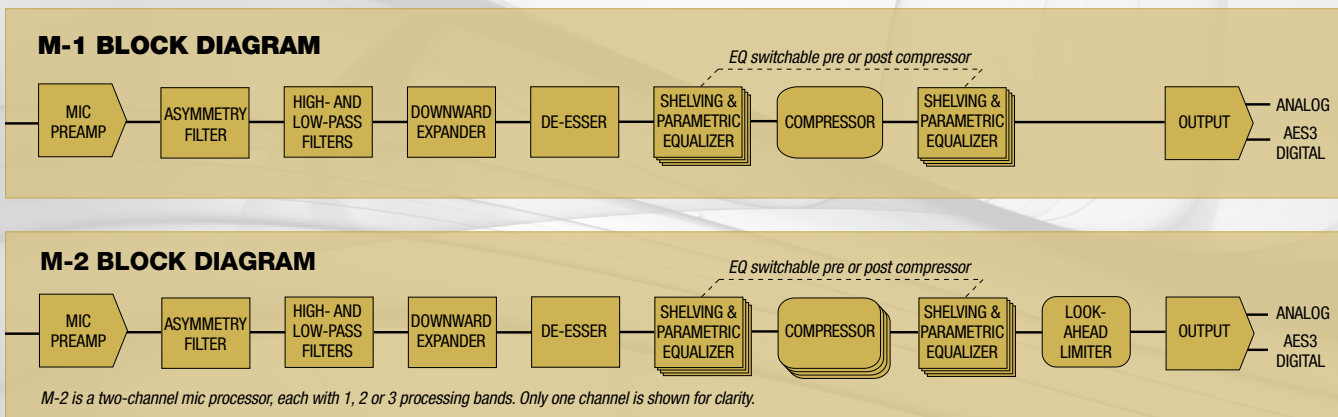
A variety of ready-to-use factory presets are provided, all carefully tailored for different processing goals and formats. You can select a factory preset, confident that it will sound great just as it is. Or use a factory preset as a starting point and create a custom sound for your station - or even 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.



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.



De-esser

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



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.



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.



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 unmodulated by strong bass energy. (The M-2 can also be operated broadband or two-band if desired.)



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.

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
48VDC, switchable on/off
Gain -10dB to +70dB in 1dB steps
Frequency response ±0.2dB 20Hz-20KHz
Equivalent input noise (EIN) -128dBu
THD+N <0.03%, 20Hz-20kHz, -50dBu input
SMPTE DIM 0.00007%

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.
Balanced 110Ω AES-3
0VU=-20dBfs

Analog
XLR-M connector (two on M-2)
Electronically balanced
<10Ω source impedance
Optimum load impedance >600Ω
Maximum output level +24dBu

FILTERS

Asymmetry filter
Phase rotator, 4th order allpass, switchable in/out

High-pass
24dB/octave Butterworth
Adjustable 20Hz-1kHz

Low-pass
24dB/octave Butterworth
Adjustable 1-20kHz

Notch (M-2 only)
Fixed bandwidth
Adjustable 20Hz-20kHz

DOWNWARD EXPANDER

Threshold Adjustable -60dBFS to 0dBFS
Depth Adjustable 0-40dB
Close Adjustable 50ms-3s

DE-ESSER

Control Recursive-style
Threshold Adjustable -10dBFS to -60dBFS
Attack time (M-2 only) Adjustable 0.1ms-100ms
Release time Adjustable 50ms-500ms
De-ess frequency Adjustable 20Hz-20kHz
Bandwidth (M-2 only) Adjustable 0.15-4 octave

PARAMETRIC EQUALIZER

Routable Pre or post compressor
Band 1 Shelving
Adjustable 20-200Hz
Boost/cut ±14dB
Parametric
Adjustable 20Hz-20kHz
Boost/cut ±14dB
Bandwidth 0.2-3.0 octave

Bands 2 and 3 Shelving
Adjustable 2kHz-20kHz
Boost/cut ±14dB

Band 4 Shelving
Adjustable 2kHz-20kHz
Boost/cut ±14dB

COMPRESSOR - M-1

Control Broadband
Threshold Adjustable -10dBFS to -50dBFS
Attack time 0.2ms-1s
Release time 33ms-1s
Ratio 1:1-20:1

COMPRESSOR - M-2

Control Up to three-bands
Crossover frequency Band 1-2 adjustable 20Hz-1kHz
Band 2-3 adjustable 1kHz-20kHz

Threshold 10 to -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 -50 to -10dBFS
Attack 0-100ms
Release 10ms-330ms

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) DB9 connector
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
(allow 3.25"/8.25cm for rear connectors)

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
(allow 3.25"/8.25cm for rear connectors)

Weight 11.35lbs/5.16kg
Shipping weight 15lbs/6.8kg
Power 90-260VAC, 50-60Hz, 19VA

Specifications and features subject to change without notice.

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Wheatstone

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