Technical Specifications

Version 1.0    February 2003
ULTRA-CURVE PRO DEQ2496

Ultra High-Precision Digital 24-Bit/96 kHz EQ/RTA Mastering Processor

- Ultra high-resolution processor for all EQ, RTA and dynamic applications, especially for PA and audiophile mastering

- 4 concurrently selectable EQ modules (31-band graphic EQ, 10-band parametric EQ, Feedback Destroyer plus three Dynamic EQs per stereo channel)

- Flexible Compressor/Expander function with Peak Limiter per stereo channel as well as additional Stereo Imager and Stereo Delay for delay line applications

- Unique VPQ (Virtual Paragraphic EQ) option allows parametric control of graphic EQs

- Ultra high-resolution 61-band real-time FFT Analyzer with additional auto EQ function for room and loudspeaker equalization

- Multi-functional level meters (peak/RMS, VU and SPL meter with dBA/dBC weighting via RTA mic input)

- 64 user memories for complete setups and/or individual module configurations

- Separate RTA mic/line input with phantom power, professional wordclock input and MIDI connections for full remote control, preset dumps and system updates

- Ultra high-quality AKM® 24-bit/96 kHz A/D- and D/A converters (113 dB dynamic range)

- Open architecture allowing future software updates via MIDI

- Two high-performance 32/40-bit floating-point SHARC® digital signal processors for ultimate sonic resolution

- Balanced inputs and servo-balanced outputs with gold-plated XLR connectors, stereo aux output, AES/EBU and S/PDIF inputs and outputs (XLR and optical)

- Internal switch-mode power supply for maximum flexibility (100 - 240 V~), noise-free audio, superior transient response and lowest possible power consumption

- Manufactured under ISO9000 certified management system
### SPECIFICATIONS

**Analog inputs**
- **Type**: electronically balanced
- **Connector**: XLR
- **Impedance**: 22 kΩ at 1 kHz
- **Max. input level**: +12 or +22 dBu, switchable
- **CMRR**: 40 dB typ.

**Analog outputs (main)**
- **Type**: servo-balanced
- **Connector**: XLR
- **Impedance**: 100 Ω at 1 kHz
- **Max. output level**: +12 or +22 dBu, switchable

**Analog outputs (aux)**
- **Type**: servo-balanced
- **Connector**: 1/4" stereo jack
- **Impedance**: 100 Ω at 1 kHz
- **Max. output level**: +12 dBu

**System specifications**
- **Frequency range**: 10 Hz to 35 kHz (-1 dB) @ 96 kHz sampling rate
- **Signal-to-noise ratio**: > 113 dB main input/output, > 107 dB aux output
- **THD**: 0.007 % typ. @ +4 dBu, 1 kHz, unity gain
- **Crosstalk**: < -92 dB/-95 dB

**Bypass**
- **Type**: Relay, hard-bypass in case of power failure

**Measurement microphone input**
- **Type**: electronically balanced
- **Input impedance**: 2 kΩ
- **Max. input level (LINE)**: variable from -14 dBu to +22 dBu
- **Max. input level (MIC)**: variable from -42 dBV/Pa to -6 dBV/Pa
- **Phantom power**: +15 V, switchable

**Digital input 1**
- **Type**: XLR transformer-balanced
- **Standard**: AES/EBU or S/PDIF
- **Input impedance**: 110 Ω
- **Nom. input level**: 0.2 - 5 V peak-to-peak

**Digital input 2**
- **Type**: TOSLINK optical
- **Standard**: AES/EBU or S/PDIF

**Digital output 1**
- **Type**: XLR transformer-balanced
- **Standard**: AES/EBU or S/PDIF
- **Impedance**: 110 Ω
- **Output level**: 3.5 V peak-to-peak

**Digital output 2**
- **Type**: TOSLINK optical
- **Standard**: AES/EBU or S/PDIF

**Sync input**
- **Type**: BNC
- **Wordclock (1 x sample rate)**: 50 kΩ
- **Input impedance**: 2 - 6 V peak-to-peak

**MIDI interface**
- **Type**: 5-pos. DIN jacks In/Out/Thru

**Implementation**
- cf. MIDI implementation chart

**Digital processing**
- **Converter**: 24-bit Delta-Sigma, 64/128-oversampling (AKM®)
- **Sample rate**: 44.1, 48, 88.2, 96 kHz

**Graphic equalizer (GEQ)**
- **Type**: digital 1/3-oct EQ
- **Frequency range**: 20 Hz to 20 kHz, 31 1/3-oct. bands according to ISO frequencies
- **Bandwidth**: 1/3-oct.
- **Control range**: +15 to -15 dB

**Parametric equalizer (PEQ)**
- **Type**: max. 10 independent, fully parametric filters per channel
- **Frequency range**: 20 Hz to 20 kHz
- **Bandwidth**: 1/10 to 10 oct., shelving filters (6 and 12 dB)
- **Control range**: +15 to -15 dB

**Dynamic equalizer (DEQ)**
- **Type**: max. 3 independent, fully parametric filters per channel
- **Frequency range**: 20 Hz to 20 kHz
- **Bandwidth**: 1/10 to 10 oct., shelving filters (6 and 12 dB)
- **Control range**: +15 to -15 dB
- **Threshold**: variable from 0 to -60 dB
- **Attack**: 0 to 200 msec
- **Release**: 20 to 4000 msec
- **Ratio**: 1:2 to 1:100

**Feedback Destroyer (FBD)**
- **Type**: digital signal analysis for feedback identification
- **Filter**: max. 10 digital notch filters per channel, programmable or as automatic feedback suppression system
- **Frequency range**: 20 Hz to 20 kHz
- **Bandwidth**: 1/10 to 1/60 oct.
- **Control range**: 0 to -60 dB

**Digital delay**
- **Type**: digital stereo delay
- **Max. delay time**: 300 ms, independently adjustable for each channel
- **Min. resolution**: 0.02 ms
- **Delay units**: seconds, meters or feet

**Level meter**
- **Type**: digital level meter with simultaneous graphic display of peak and RMS values and virtual analog VU meter

**SPL meter**
- **Weighting**: dBA, dBC or OFF
- **Microphone calibration**: -42 dBV/Pa to -6 dBV/Pa

**Dynamics**
- **Type**: Expander or compressor with digital IGC (Interactive Gain Control)
- **Threshold**: variable from 0 to -60 dB
- **Attack**: 0 to 200 msec
- **Release**: 20 to 4000 msec
- **Ratio**: 1:1.1 to 1:100
<table>
<thead>
<tr>
<th>Limiter</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Peak limiter (zero attack)</td>
</tr>
<tr>
<td>Hold</td>
<td>0 to 1.000 msec</td>
</tr>
<tr>
<td>Threshold</td>
<td>variable from 0 to -24 dB</td>
</tr>
<tr>
<td>Release</td>
<td>20 to 4.000 msec</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Real-time analyzer</th>
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</thead>
<tbody>
<tr>
<td>Type</td>
<td>digital 61-band FFT analyzer</td>
</tr>
<tr>
<td>Frequency range</td>
<td>20 Hz to 20 kHz, 61 bands according to ISO frequencies</td>
</tr>
<tr>
<td>Detectors</td>
<td>peak and average</td>
</tr>
<tr>
<td>Noise generator</td>
<td>pink noise, levels from 0 to -60 dB</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Display</th>
<th></th>
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<tbody>
<tr>
<td>Type</td>
<td>320 x 80 dot-matrix LC display</td>
</tr>
<tr>
<td>Backlighting</td>
<td>LED, orange</td>
</tr>
<tr>
<td>Contrast</td>
<td>adjustable</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Memory</th>
<th></th>
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<tbody>
<tr>
<td>Presets</td>
<td>64 memory locations with 16-character names, single modules can be recalled and saved</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Power supply</th>
<th></th>
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<tbody>
<tr>
<td>Mains voltage</td>
<td>85 to 250 V~, 50/60 Hz</td>
</tr>
<tr>
<td>Power consumption</td>
<td>10 W typ.</td>
</tr>
<tr>
<td>Fuse</td>
<td>T 1 A H</td>
</tr>
<tr>
<td>Mains connector</td>
<td>Standard IEC receptacle</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Dimensions/weight</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (H x W x D)</td>
<td>1 3/4&quot; (44.5 mm) x 19&quot; (482.6 mm) x 8 1/2&quot; (217 mm)</td>
</tr>
<tr>
<td>Weight</td>
<td>approx. 2.05 kg</td>
</tr>
<tr>
<td>Shipping weight</td>
<td>approx. 3.5 kg</td>
</tr>
</tbody>
</table>

BEHRINGER continuously strives to assure the highest quality standards possible. Required modifications may be implemented without prior notice. Technical data and the appearance of the unit may deviate from the above values and/or illustrations.