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Behringer DEQ2496

Behringer Ultracurve Pro DEQ2496 User Manual

Ultra-High Precision 24-Bit/96 kHz Equalizer and Mastering Processor

1. Introduction

The BEHRINGER ULTRACURVE PRO DEQ2496 is a state-of-the-art digital 24-bit/96 kHz EQ/RTA mastering processor. It is engineered for both demanding live sound environments and critical audiophile mastering applications, offering unparalleled control and sonic optimization. This manual provides essential information for setting up, operating, and maintaining your DEQ2496.

Key features include ultra-high resolution 24-bit/96 kHz A/D and D/A converters with 113 dB dynamic range, and powerful 32/40-bit floating-point DSP technology. It integrates four concurrently selectable EQ modules, a 61-band real-time FFT analyzer with auto EQ, and comprehensive dynamics processing tools.

2. SETUP

2.1 Unpacking and Inspection

Carefully unpack your DEQ2496 and inspect it for any signs of damage that may have occurred during transit. If damage is found, contact your dealer immediately. Ensure all components listed in the packaging are present. The package should include the DEQ2496 Digital Mastering Processor.

2.2 Connections

The DEQ2496 offers a variety of input and output options for versatile integration into your audio setup. All connections are designed for optimal signal integrity.

- Audio Inputs/Outputs: Utilize the balanced inputs and servo-balanced outputs with gold-plated XLR connectors for main audio signals. A stereo auxiliary output is also provided.
- **Digital Connections:** AES/EBU and S/PDIF inputs and outputs are available via XLR and optical connectors for digital audio routing.
- RTA/Mic Input: A separate mic/line input with phantom power is included for Real-Time Analyzer (RTA) and Auto-EQ applications, allowing for precise room and loudspeaker equalization.
- **Control Connections:** Professional Wordclock input ensures synchronization in complex digital setups. MIDI connections (IN, OUT, THRU) enable full remote control, preset dumps, and future system updates.



Figure 2.1: Rear panel connections of the DEQ2496, illustrating the balanced XLR inputs and outputs, digital S/PDIF and AES/EBU ports, MIDI connections, and the RTA/Mic input.

2.3 Powering On

Connect the power cable to the DEQ2496 and a suitable power outlet (100 - 240 V~). The unit features a "Planet Earth" switching power supply for global compatibility and efficient operation. Press the POWER button on the front panel to turn the unit on. The display will illuminate, indicating the unit is initializing.



Figure 2.2: Front panel of the DEQ2496, showing the display and primary control knobs and buttons.

3. OPERATING INSTRUCTIONS

The DEQ2496 provides extensive control over your audio signal. Navigation is intuitive, often guided by on-screen block diagram displays.

3.1 EQ Modules

The unit features four concurrently selectable EQ modules:

- 31-band Graphic EQ: Offers precise frequency adjustments across 31 bands.
- 10-band Parametric EQ: Provides fine-tuned control over frequency, bandwidth, and gain for each of the 10 bands.
- Feedback Destroyer: Automatically identifies and notches out feedback frequencies.
- 3 Dynamic EQs per stereo channel: Allows for frequency-specific dynamic processing.

The unique VPQ (Virtual Paragraphic EQ) option enables parametric control over the graphic EQs, offering enhanced flexibility.

3.2 Dynamics Processing

A comprehensive suite of dynamics tools is available:

- Compressor/Expander: Features variable ratios (1:1.1 to 1:100), adjustable attack (0-200ms), variable knee (0-3dB), and release (20-4000ms). Can operate as two independent channels or stereo linked.
- Peak Limiter: Includes Threshold, Hold, and Release functions to prevent signal clipping.

3.3 Stereo Imager (WIDTH)

This module allows for manipulation of the stereo field, useful in both mastering and live sound. Controls include STEREOWIDTH, ASYMMETRY, ROTATION, and a SHUFFLE function for low-frequency stereo width effects.

3.4 Digital Delay

Delay can be applied to either the Main or AUX outputs, ranging from 0 to 300ms. Left and right channels can be processed independently. Delay time can be specified in feet or meters, with compensation for ambient temperature.

3.5 RTA/SPL/FFT Analyzer with Auto EQ Function

The DEQ2496 features a 61-band FFT real-time analyzer for precise graphic display of frequency content. It can monitor main or digital inputs/outputs, AUX/digital out, or a feed from an RTA microphone. The user-definable Auto EQ function allows for automatic analysis and adjustment of your system's frequency response, ideal for initial room adjustments.

3.6 User Memories and Presets

The unit supports 64 user memories for complete setups or individual module configurations. Presets can be saved, recalled, dumped, and loaded via MIDI. Individual modules (e.g., DEQ, PEQ, WIDTH, DYN) can also be saved and recalled independently, allowing for flexible adjustments without creating entirely new presets.

4. MAINTENANCE

To ensure the longevity and optimal performance of your DEQ2496, follow these maintenance guidelines:

- Cleaning: Use a soft, dry cloth to clean the exterior of the unit. Avoid abrasive cleaners or solvents that could damage the finish or controls.
- **Ventilation:** Ensure adequate ventilation around the unit to prevent overheating. Do not block the ventilation openings.
- **Software Updates:** The DEQ2496 features an open architecture that allows for future software updates via MIDI. Check the Behringer website periodically for available firmware updates and instructions.
- **Storage:** When not in use for extended periods, store the unit in a cool, dry place, protected from dust and extreme temperatures.

5. TROUBLESHOOTING

This section addresses common issues you might encounter with your DEQ2496.

5.1 No Power

- Check Power Cable: Ensure the power cable is securely connected to the unit and a working power outlet.
- Power Button: Verify the POWER button on the front panel is pressed in.
- Power Source: Confirm the power outlet is active by testing it with another device.

5.2 No Audio Output

- Input/Output Connections: Double-check all audio cables (XLR, optical, S/PDIF) are correctly connected to the DEQ2496 and your other audio equipment.
- Signal Levels: Ensure input signal levels are adequate and output levels are not set too low. Check the multifunctional level meters.
- Bypass Mode: Verify the unit is not in bypass mode. The BYPASS button should not be illuminated if you want processing.
- **Preset Settings:** Some presets might have extreme EQ or dynamics settings that could mute or significantly attenuate the signal. Try recalling a default or flat preset.

5.3 Unwanted Noise or Distortion

- Cabling: Use high-quality, shielded cables. Check for damaged cables or loose connections.
- Ground Loops: Ensure all equipment in your audio chain is properly grounded. Ground loop isolators may be necessary in some setups.
- Input Overload: Reduce the input gain if the input meters are consistently peaking or showing red.
- Power Supply: The internal switch-mode power supply is designed for noise-free audio. If noise persists, ensure

the power supply is stable and not affected by other noisy electrical devices.

5.4 Display Issues

- Brightness: Check display brightness settings within the utility menu.
- Firmware: Ensure the unit has the latest firmware, as display glitches can sometimes be resolved with updates.

6. Specifications

Feature	Specification
Model Name	DEQ2496
Product Dimensions	19 x 1.75 x 8.46 inches
Item Weight	6.73 pounds
Signal-to-Noise Ratio	113 dB
Processor Count	2
Connectivity Technology	Auxiliary, XLR, Optical
Included Components	Digital Mastering Processor
Power Source	Corded Electric (100 - 240 V~)
Audio Output Mode	Stereo
Color	Silver & Black
UPC	616268518166, 689076811583, 210000042539, 411378073686

7. WARRANTY AND SUPPORT

For detailed information regarding the product warranty, technical support, and service options, please refer to the official Behringer website or contact your local authorized Behringer dealer. Keep your purchase receipt as proof of purchase for warranty claims.

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Related Documents - DEQ2496



Quick Start Guide for Behringer ULTRACURVE PRO DEQ2496

This guide provides essential safety instructions and an overview of the controls and specifications for the Behringer ULTRACURVE PRO DEQ2496 equalizer and processor.



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