DP11EQ Digital Signal Processor
Specification Sheet

DP11EQ DIGITAL SIGNAL PROCESSOR

The Shure Model DP11EQ is a single-channel, digital signal processor that combines a comprehensive dynamics processor, two parametric equalizers, and a delay in a single, half-rack enclosure. The DP11EQ can function as a gate, expander, Automatic Gain Control (AGC) leveler, compressor, limiter, and no overshoot peak limiter. All of these features are accessed via the supplied Windows® software. You can connect a computer to set up the unit in a sound system, then remove the computer so no one can tamper with the settings when the unit is left unattended. The DP11EQ is designed for installed sound reinforcement applications: theater, conference rooms, meeting halls, houses of worship, etc.

HARDWARE FEATURES

- Crystal* 20-bit A/D and D/A converters (Analog-to-Digital, Digital-to-Analog) for 104 dB dynamic range.
- 48 kHz sampling rate for flat response to 20 kHz.
- Half-rack space chassis allows rack mounting of one or two units in a single rack space with no sagging or bending.
- Shure Link Interface allows multiple units to be programmed with a single computer.
- Independently driven, cross-coupled, balanced ¼-inch and XLR outputs. Can be used with balanced or unbalanced inputs.
- Electronically balanced input with combination ¼-inch and XLR connector. Can be used with balanced or unbalanced outputs.
- No internal batteries. Settings and DSP program stored in internal EEPROM.

SOFTWARE FEATURES

- Four (4) processing blocks: pre-dynamics equalizer (EQ1), dynamics (DYN), post-dynamics (EQ2), and Delay.
- The dynamics processor functions as a Gate, Expander, leveler, Compressor, Limiter, and No Overshoot Peak Limiter.
- The parametric equalizer offers up to 10 filters with adjustable frequency, up to 6 dB of boost or −18 dB of cut per filter, 1/40 to 2 octave bandwidth.

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TL1034(BH)
SPECIFICATIONS

GENERAL

Frequency Response
20 to 20k Hz ± 1.0 dB re 1 kHz

Dynamic Range
104 dB minimum, A-weighted, 20 Hz to 20 kHz

Sampling Rate
48 kHz

Digital-to-Analog, Analog-to-Digital Conversion
20 bit resolution

Voltage Gain
-1 dB ± 1 dB (power off)
12 dB ± 2 dB (input -10 dBV, output +4 dBu)
-12 dB ± 2 dB (input +4 dBu, output -10 dBV)
0 dB ± 2 dB (equal input and output sensitivities)

Impedance
Input: 47 kΩ ± 20% actual
Output: 120 Ω ± 20% actual

Input Clipping Level
+18 dBu minimum (at +4 dBu setting)
+6 dBV minimum (at -10 dBV setting)

Output Clipping Level
+18 dBu minimum (at +4 dBu setting)
+6 dBV minimum (at -10 dBV setting)

Total Harmonic Distortion
< 0.05% at 1 kHz, +4 dBu, 20 to 20 kHz

LED Signal Indicators
Signal: -40 dB
Clip: 6 dB down from input clipping

Propagation Delay from Input to Output
0.08 ms (all filters flat, no dynamics processing, 0 ms delay), up to 2.1 ms (all processing enabled)

Polarity
Input to output: inverting optional (default: non-inverting)
XLR: pin 2 positive with respect to pin 3
1/4-inch TRS: tip positive with respect to ring

Operating Voltage
DP11EQ: 120 Vac, 50/60 Hz, 50 mA max
DP11EQE: 230 Vac, 50/60 Hz, 25 mA max
DP11EQJ: 100 Vac, 50/60 Hz, 50 mA max

Temperature Range
Operating: 0° to 60°C (32° to 140°F)

Fuse
DP11EQ: 120 Vac. Fuse: 100 mA, 250V time delay
DP11EQE: 230 Vac. Fuse: 50 mA, 250 V time delay
DP11EQJ: 100 Vac. Fuse: 100 mA, 250 V time delay

CERTIFICATIONS

DP11EQ: UL Listed and cUL Listed to UL 813 and CSA C22.2 No. 1. Authorized under Verification provision of FCC Part 15 as a Class B Digital Device.


FURNISHED ACCESSORIES

Power Cable (DP11EQ) 95A8389
Power Cable (DP11EQE) 95A8247
5-pin DIN Shure Link Cable 95A8676

In order to change a blown fuse, remove the power cord and pry open the drawer with a flathead screwdriver.

Dimensions
219 mm x 137 mm x 44 mm
8 5/6 in x 5 3/4 in x 1 3/4 in

Weight
930 g (2.05 lbs)

DYNAMICS PROCESSOR

Gate and Expander
Threshold: -72 to -1 dB, 0.5 dB resolution
Attack: 1.0 to 200 ms
Decay: 0.05 to 1 second
Gate Hold Time: 0 to 0.5 seconds

AGC Leveler
Threshold: -72 to -1 dB, 0.5 dB resolution
Attack: 0.2 to 3 seconds
Decay: 0.5 to 5 seconds
Hinge: Threshold to -1 dB, 0.5 dB resolution

Compressor and Limiter
Threshold: -72 to -1 dB, 0.5 dB resolution
Attack: 1.0 to 200 ms
Decay: 0.05 to 1 second
Knee: Hard or Soft selectable

No Overshoot Peak Limiter
Propagation delay: 1 ms
Threshold: -72 to -1 dB, 0.5 dB resolution
Attack: 0 ms
Decay: 100 ms

PARAMETRIC EQUALIZER

Parametric Filter Frequency Bands
Up to 9 bands, variable frequency, variable Q

Boost/Cut Range
+6 dB to -18 dB per band

Q Range
1/40-octave to 2 octave

High and Low Shelf/Cut Filters
Shelf, +6 to -18 dB per filter
Cut, -12 dB per octave nominal

DELAY
Up to 1.3 seconds, 21 microsecond resolution