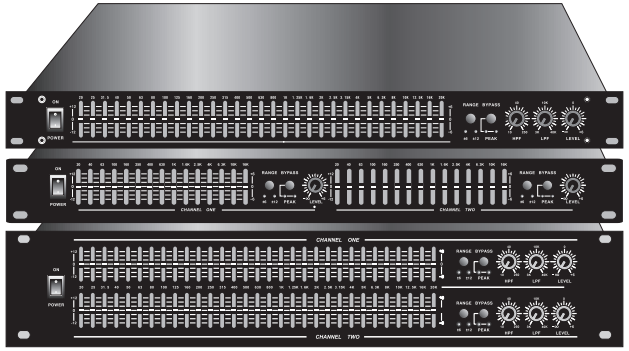
OWNER'S MANUAL



Please read this manual carefully and proper take care of this manual

1. GENERAL DESCRIPTION

2×31 BAND is a two channel 31 band 1/3 octave graphic equalizer. The 2×31 band incorporates constant-Q circuitry with a 5% center frequency accuracy. Special features include variable Low and High pass filters, selectable range ±6dB or ±12dB, balanced and unbalanced input / output connectors, RFI filters, variable level control, passive bypass switch, PEAK LED, ground lift switch.

1×31 BAND is a single channel 31 band 1/3 octave graphic equalizer. The 1×31 band incorporates constant-Q circuitry with a 5% center frequency accuracy. Special features include variable Low and High pass filters, selectable range ±6dB or ±12dB, balanced and unbalanced input/output connectors, RFI filters, variable level control, passive bypass switch, PEAK LED, ground lift switch.

2×15 BAND is a two channel 15 band 2/3 octave graphic equalizer. The 2×15 band incorporates constant-Q circuitry with a 5% center frequency accuracy. Special features include selected range ±6dB or ±12dB, balanced and unbalanced input / output connectors, RFI filters, variable level control, passive bypass switch, PEAK LED, ground lift switch.

☆ Features

- Two channel 31 band 1/3 octive
- Single channel 31 band 1/3 octive
- Two channle 15 band 2/3 octive
- Constant-Q performance
- LPF/HPF fiters (2×31/1×31 BAND)
- Boost/Cut range 6dB or 12dB
- Balanced and unbalanced input/output connectors
- RFI filters
- Varible Level control
- Passive bypass switch
- Ground lift switch

☆ Applications

- Cinema sound systems
- Live sound systems
- Night clubs
- Churches
- Auditoriums
- Sports arenas
- Theaters
- Hotels
- Convention centers
- Karaoke sounds
- Recording studies
- Home sound systems

4. SPECIFICATION

Equalizer:

2×31 band	1/3-Octave ISO Spacing From 20Hz to 20KHz
1×31 band	1/3-Octave ISO Spacing From 20Hz to 20KHz
2×15 band	2/3-Octave ISO Spacing From 25Hz to 16KHz
Type	Constant Q (Accuracy 5% Center Frequency)
Range	±6dB or ±12dB(Switch Selectable)

Inputs:

Connectors	XLR 3Pin, 1/4" TRS
Impedance	20K Ohms Bals; 15K Ohms
Maximum Level	+24dBu (Bal) +18dBu(Unbal)

Outputs:

Connectors	XLR-3Pin, 1/4" TRS
Impedance	Typ. ＜150 Ohms
Maximum Level	+24dB Bal; +18dB Unbal (2K Ohms)
	+18dB Bal; +12dB Unbal (600 Ohms)
Overall Gain Range	Off to 3dB (Unbal Out) Sliders Centered
	Off to 9dB (Bal Out) Sliders Centered
PEAK LED	Threshold 5dB (Below Clipping)
Frequency Response	20~20KHz +0, -2dB
HPF Filter	10~250Hz, 12dB/Oct
LPF Filter	3K~40KHz, 12dB/Oct
THD + Noise	0.05% (1KHz +3dB)
Signal-to-Noise Ratio	96dB below Max. Level (A weighting)
Equivalent Input Noise	-81dB(0dB=0.775V)
Line Voltage	95~130VAC, 50/60Hz 190~250VAC, 50Hz
	2×31 band Input AC Power: 12W
	1×31 band Input AC Power: 7W
	2×15 band Input AC Power: 7W

Unit:

Construction All Steel

Size:	2×31 band	3.5"H x 19"W x 8.5"D (2U) (8.9cm x 48.3cm x 21.6cm)
	1×31 / 2×15 band	1.75"H x 19"W x 8.5"D (1U) (4.45cm x 48.3cm x 21.6cm)
Weight:	2×31 band	9 lbs (4.1Kg)
	1×31 / 2×15 band	4.5 lbs (2.05Kg)

◆*FRONT & REAR PANEL CONTROL*

(9). Peak Indicator
This red LED illuminates if any section of the equalizer is within 5dB of clipping. Occasional blinking of this LED is acceptable, but if remains in more than intermittently you should turn down either the equalizer's level controls or reduce the output level of the preceding component to avoid audible distortion.

(10). Input & Output Connectors
Graphic equalizers have two paralleled input and output connectors.
The XLR connector is balanced and wired as Pin2=Hi (+) , Pin3=Lo (-) , Pin1=Ground
CAUTION: Only one of these sockets can be chosen for audio connection at the same time.
The TRS (Tip Ring Sleeve) connector is balanced and wired as Tip=Hi (+), Ring=Lo (-), and the Sleeve=Ground.
CAUTION: Only one of these sockets can be chosen for audio connection at the same time.

XLR and 1/4" TRS are actively balanced with pin2 or the being Hi, Pin3 or the ring being Lo, and Pin1 or sleeve being ground. Unbalanced operation requires use Pin2 of the XLR or tip 1/4" TRS as Hi(+) and Pin1 of the XLR or sleeve of the 1/4" TRS as ground.

Paralleling inputs and outputs may be accomplished by using any of the three connectors.
Note:1/4" TRS are normally used.

(11). Fuse Holder
This fuse holder contains an AC primary fuse. This fuse should be replaced by the same type fuse when this is blown out. If they continuously blow, stop replacing fuse and refer servicing to qualified personnel.

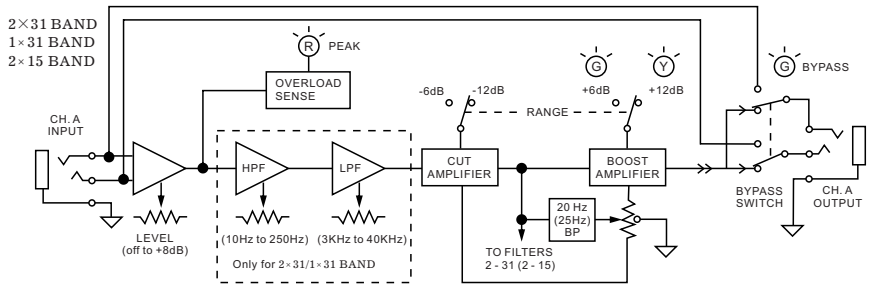
(12). Ground-Lift Switch
This switch is used to disconnect the signal ground from the mains and chassis earth ground. User is suggested to put the witch to LIFT position if "HUM", caused by, ground-loop can be heard at the speakers.

(13). Power Socket With Fuse Holder
This cord is used connect the AC power source to your equalizer.
CAUTION: Equipment for domestic (USA) consumption includes a captive power cord with a three pin polarized plug.
DO NOT REMOVE THE CENTER GROUNDING PIN.

2. GENERAL DESCRIPTION

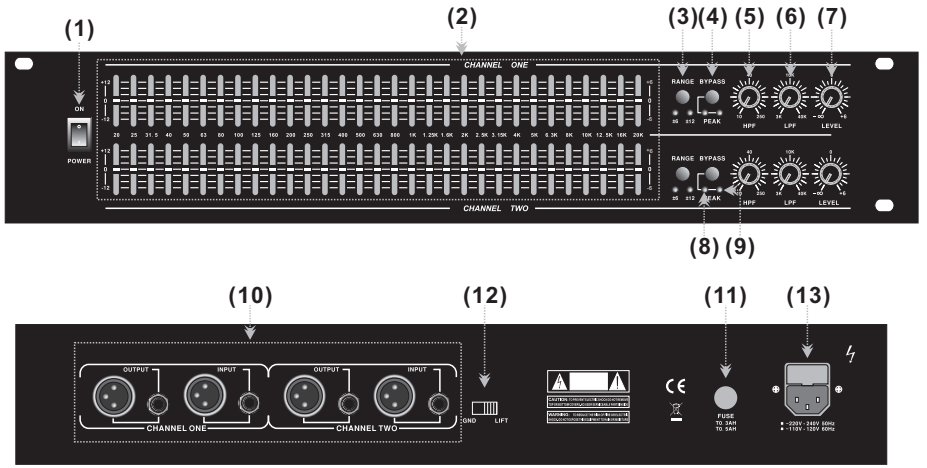
The 2×31 BAND,1×31 BAND and 2×15 BAND offers the same high quality constant-Qperformance circuitry graphic equalizers.

Constant-Q graphic equalizer arose from the sound professional's need for greater control with less interaction than previously possible with conventional equalizers. Truth in slider position became a requirement. The curve traced out by the slider positions on constant-Q designs indeed represents the actual changes to the frequency response. On conventional designs they do not.



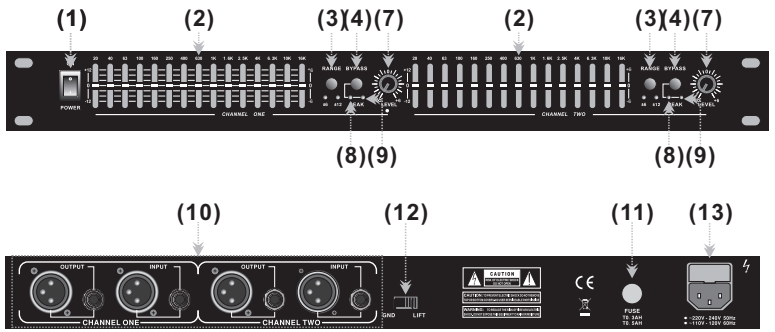
(Ch. A Shown, Ch. B Identical)

3. FRONT & REAR PANEL

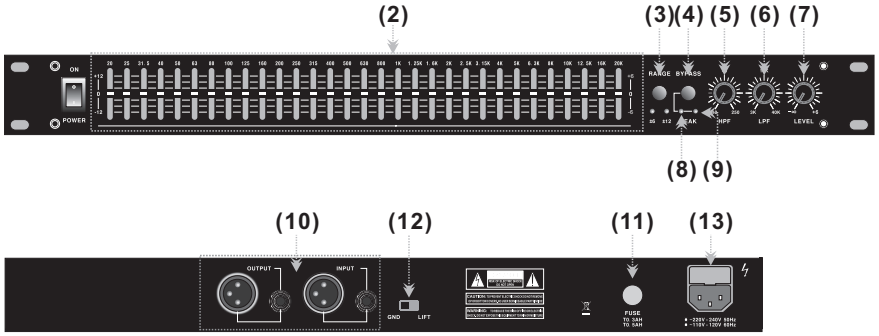


2×31 BAND

◆FRONT & REAR PANEL



2×15 BAND



1×31 BAND

(1) Power Switch
(2) Filter Level Controls
(3) Filter Range Switch & Indicators
(4) Bypass Switch
(5) HPF Frequency Control
(6) LPF Frequency Control
(7) Level Control
(8) Bypass Indicator
(9) Peak Indicator
(10) Input & Output Connectors
(11). Fuse Holder
(12) Ground-Lift Switch
(13) Socket with fuse holder

◆FRONT & REAR PANEL CONTROL

(1). Power Switch
When this switch is pressed to turn power ON, pressing the switch again turns the power off.
CAUTION: Always turn on your equalizer BEFORE your power amplifiers are turned on, and always turn off equalizer AFTER your power amplifiers have been turned off.

(2). Filter Level Controls
Each of these sliders control the output level of each of the 31(or 15) bandpass filter. Center detent position is grounded for guaranteed flat response.

(3). Filter Range Switch & Indicators
The gain range of the filter sliders is switchable (as a group) from+/-6dB to +/-12dB for maximum boost/cut capability. When this switch is in the "UPPER" position, at 6dB the green LED will illuminate, When it is in the "LOWER" position, at 12dB the yellow LED will illuminate.

(4). Bypass Switch
When it is the "LOWER" position, equalized is bypassed. its associated LED indicator light. (See 8. Bypass indicator)

(5). HPF Frequency Control
2×31 band and1×31 band, to cut down unwanted signal, this control determines the roll-off frequency of the High-Pass Filter in the instrument. The roll-off frequency can be adjusted from 10Hz to 250Hz by turning this knob. Because of its high roll-off slope, the HPF can be efficiently used to cut down the "HUM" noise from preceding instruments, or to prevent the low-frequency resonance while the speakers are installed in an enclosed acoustic environment.

(6). LPF Frequency Control
2×31 band and 1×31 band, to cut down unwanted signal this control determines the roll-off frequency of the Low-pass filter in the instrument. The roll-off frequency can be adjusted from 3KHz to 40KHz by turning the knob. Because of its high roll-off slope, this LPF can be efficiently used to cut down the high-frequency noise from preceding instruments, or especially used to roll-off high-frequency sound to obtain a more natural sound in acoustic situations.

(7). Level Control
This control the level of signal coming into the instrument. Turn this control down if the PEAK LED illuminates steadily (meaning too strong on input signal). Unity gain can be set by turning this knob its center detent position.

(8). Bypass Indicator
When the green LED is illuminate, this indicator that the unit or channel is in the bypass mode. Signal is routed directly from the input to the output without passing through any circuit (often referred to as "hard-white bypass").