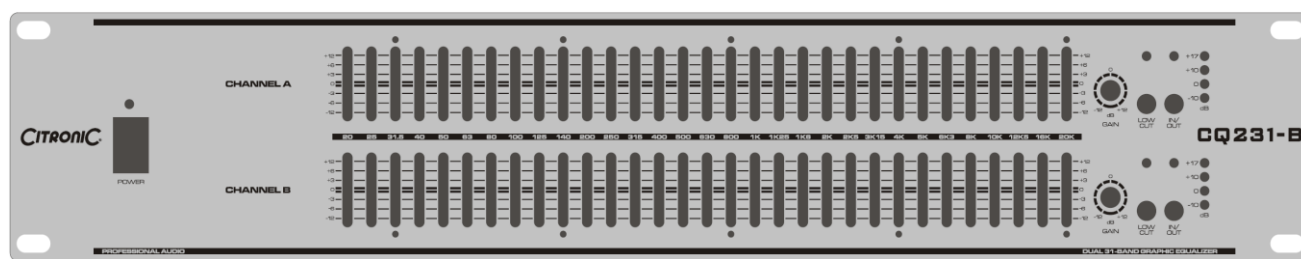


CITRONIC®

CQ231-B



170.925UK

Introduction

Thank you for purchasing this high quality Citronic equalization product. The aim of our audio processing range is to offer cost-effective, high performance sound sculpting tools for the musician, studio engineer and sound contractor. The layout of our rack equalizers is designed to give a clear, graphic view of the cut or boost applied to each slice across the audio spectrum and offers focussed and accurate control over each frequency allowing the user to cure a wide range of EQ problems.

This unit offers up to 12dB of cut or boost per frequency band with a switchable low cut filter for each channel (low noise electronic switches help eliminate clicks and pops when switching in these functions). 12dB of channel level boost or cut is available via a GAIN rotary to compensate for an overall boost or cut resulting from EQ adjustments and an IN/OUT switch for each channel to allow comparison between the EQ'd and unaffected sound.

Connection to the equalizer is via balanced or unbalanced 6.3mm jack or XLR connectors allowing flexible linking options. The unit may be considered as a single stereo unit or 2 independent mono equalizers.

Each channel has 31 bands of 1/3 octave filter, spaced evenly across the audible range, from 20Hz to 20kHz. An octave is a musical term describing the distance between note 1 and 8 of a scale. In scientific terms, an octave is a doubling of the frequency of a tone, therefore each band is approximately 1.26 times the frequency of the previous band. This means that the EQ control is very frequency specific and accurate.

This unit has been built to Citronic's exacting standards using high grade circuit boards and components housed in a heavy duty steel chassis casing to give long term, reliable service.

Installation

Set the equalizer into a 2U space in a rack, ensuring enough depth to contain the unit and any connectors attached to it. Secure the front panel with rack screws and nuts to hold in place and stop the unit slipping. Plug the included power cable into the rear panel IEC connector and connect to the mains. The unit may be turned on and off as required but draws relatively little current and so may be left powered whilst in the audio chain without great concern for current drain.

The equalizer will not require special venting requirements as there is little heat generated compared to amps etc. However, performance of this product may be impaired by exposure to continuous high temperatures generated by adjacent equipment. Also, this unit is very well shielded against electromagnetic interference but high levels in close proximity should be avoided.

Connection to each channel is served by either jack or XLR for both inputs and outputs. Use either jack or XLR but never both for any input or output. For balanced connections, follow the table below.

Connection	6.3mm TRS Jack	XLR connector
Hot (+)	Tip	Pin 2
Cold (-)	Ring	Pin 3
Earth	Sleeve	Pin 1

For unbalanced connections, follow the table below.

Connection	6.3mm TRS Jack	XLR connector
Signal (Hot)	Tip	Pin 2
Earth (Cold)	Sleeve	Pin 1 + 3

Applications

A graphic equalizer is an audio tool used to accurately shape the tonal response of any audio system.

Live sound reinforcement applications can include...

- Compensating the resonance of a room, reducing low end frequencies in a “boomy” space or cutting high frequencies in a room with high pitch reverberation.
- Feedback control, cutting individual frequency bands that are prone to oscillate through microphone feedback.
- Crossover peak equalization, reducing gain around the cutoff frequency of a crossover reducing the interference between low and high cabinets sharing these frequencies.
- Amplifier protection, cutting away the very lowest and highest frequencies to avoid inefficient amplifier use and potentially damaging signals.

Musical instrument applications can include...

- Creatively altering the tonal quality by increasing higher frequencies to brighten a tone or increasing lower frequencies to add body and depth.
- Cutting problem frequencies in electric instruments such as circuitry hiss or mains hum.

Studio applications can include...

- Compensating for individual track tone adjustments, which when mixed together can give a false accumulated result.
- Emphasizing a particular frequency range per instrument to give each track a portion of frequencies, making each easier to differentiate. This is called spectral mixing.
- Disguising certain instruments by severely altering their tonal response
- Allocating particular frequencies to opposite sides of the stereo field creating a spatial image from a mono source.
- Creating a tone profile to insert into the side-chain of a compressor unit to control the dynamic contour. This can be used as a de-esser (compressing when high frequencies are boosted in the chain) or to give a “pumping” effect (when low frequencies are boosted in the chain)

Operation

Front Panel

- POWER Switch – Turns on the mains to the unit
- Frequency Sliders – Each addresses a fixed narrow frequency band with a cut or boost of up to 12dB
- GAIN Rotary Controls – Allows control over the gain compensation for each channel
- LOW CUT Switch – Engages the low frequency cut for each channel
- IN/OUT Switch – Switches the EQ for either channel in or out for A-B comparison
- Level Meters – 4 LED indicators to represent overall channel levels

Rear Panel

- XLR and jack inputs for each channel – Input via either jack or XLR, balanced or unbalanced
- XLR and jack outputs for each channel – Output via either jack or XLR, balanced or unbalanced
- IEC Connector – Connection to mains supply
- Voltage switch – 115/230V switch (Only for use dependent upon regional power supply)

Maintenance and Servicing

There are no user serviceable parts inside this unit. General case cleaning may be recommended using a dry or slightly damp cloth and connectors should be checked periodically for good electrical contact. Any attempt to open and modify or repair the circuitry of this unit will void the warranty. Refer all repair and servicing to qualified personnel and all warranty issues must be handled by the retailer where the unit was purchased.

Technical Specification

Model	CQ231-B
Format	2 x 31 band EQ
Frequency Response	20Hz – 20kHz
Constant-Q Gain	±12dB
Low Cut Filter	12dB/Octave @ 50Hz (Switchable)
Working Level	-10dBu - +12dB
Input Impedance	40kΩ balanced, 20kΩ unbalanced
Maximum Output Level	+21dBu
Input Level Gain	-12dB - +12dB
Output Impedance	51kΩ balanced, 120kΩ unbalanced
Output Level Display	LED: -10, 0, +10 and +17dB
THD	<0.003%@1kHz
SNR	>85dB
Filter Switching	Low cut FET low noise type
Power	AC 240V, 18W

