



**GQX Series Graphic Equalizer**

**MQX Series Graphic Equalizer**

**PQX Series Parametric Equalizer**

**XR Series Electronic Crossover**

**CLX Series Compressor/Limiter**

**DPX Series Equalizer & Compressor/Limiter**

**VCM-88 VCA Matrixing Level Controller**

**P r o d u c t I n f o r m a t i o n**

# Graphic Equalizers - GQX Series

## GQX-3102 TWO CHANNEL 31-BAND



## GQX-1502 TWO CHANNEL 15-BAND



## GQX-3101 SINGLE CHANNEL 31-BAND



Ashly's GQX Series models take advantage of 20 years' experience with some true advances in technology. Precision Wein-Bridge filters and specially designed summing amplifiers provide extremely accurate response, low noise, negligible distortion, and excellent immunity to magnetic fields. All filters exhibit true constant "Q" response, with absolute minimum ripple. The full-throw faders are a custom-manufactured metal-shaft type, with the center detented position utilized as an "on/off" switch for that filter (to minimize any possible degradation in signal noise levels). These units continue to meet specifications when voltage drops down to as low as 93VAC, making them the ideal choice when power stability presents a problem to the installer. The GQX Series is available in three different configurations: the GQX-1502 features two channels of 15-band 2/3-octave equalization and a switchable high-pass filter. The GQX-3101 is a single-channel 31-band model, while the GQX-3102 features two channels of 31-band 1/3-octave EQ. Both the GQX-3101 and GQX-3102 offer tunable high-pass filter circuits and 10-segment, two color LED meter displays, referencing 0 VU to +4dBu. The GQX-3101 and GQX-3102 features switch-selectable cut or boost of either 6dB or 15dB, and carries the same Five Year Worry-Free Warranty offered on all sound products from Ashly. All GQX models are also U.L. Listed to meet the requirements of permanent installations.

### FEATURES:

- Detented Metal-Shaft Fader
- Precision Wein-bridge Filters for Accurate Response and Low Distortion
- Constant "Q" Design with Low Ripple and Accurate Response Near the "Flat" Setting
- Balanced XLR, 1/4", and Barrier Strip Inputs
- Servo-Balanced XLR, 1/4", and Barrier Strip Outputs
- Selectable 15dB or 6dB range on 31-band models
- Switchable-Tunable Low-Cut Filter on 31-band models
- 10 Position, 2 Color LED Level Meter plus Peak LED Indicators on 31-band models

### GQX SPECIFICATIONS:

Input type:	Active balanced
Input impedance:	20kOhms
Max. input level:	+23dBu
Output type:	Servo-balanced
Min. output load impedance:	600ohms
Max. output level:	+23dBu
Connectors:	1/4" phone jack, XLR, and barrier strip
Frequency response:	20Hz-20kHz, $\pm 0.25$ dB
Total harmonic distortion:	<.01% @ +20dBu
IM distortion (SMPTE):	<.01% @ +20dBu
Output hum and noise:	<-92dBu (unweighted)
Channel separation:	
GQX-1502:	>85dB @ 1kHz
GQX-3101/3102:	>95dB @ 1kHz
Gain control:	$-\infty$ to +6dB
Filter type:	Constant Q/Wein Bridge
Bandwidth:	GQX-1502: 2/3 octave GQX-3101/3102: 1/3 octave
Tolerance:	$\pm 3\%$
Range:	
GQX-1502:	$\pm 15$ dB
GQX-3101/3102:	$\pm 6$ or $\pm 15$ dB
Subsonic filter:	
GQX-1502:	18dB/octave @ 40Hz
GQX-3101/3102:	12dB/octave, 12-285Hz
Power requirements:	120VAC, 50-60Hz (240VAC available)
Power:	
GQX-1502/3101:	12W
GQX-3102:	17W
Shipping weight:	
GQX-1502/3101:	10lbs
GQX-3102:	15lbs
Dimensions:	
GQX-1502/3101:	19" L x 3.5" H x 6" D
GQX-3102:	19" L x 5.25" H x 6" D

(EQ in, all faders flat 20Hz-20kHz unless otherwise noted)



# Graphic Equalizers - MQX Series

## MQX-2310 TWO CHANNEL 31-BAND



## MQX-2150 TWO CHANNEL 15-BAND



## MQX-1310 SINGLE CHANNEL 31-BAND



At Ashly, we believe that engineers should never have to compromise their standards for the sake of miniaturization. So we proudly offer the MQX Series equalizers, which feature all the performance and great sound of our legendary GQX models in uniquely compact packages.

The MQX Series uses the same precision filter design and summing circuitry as the GQX Series, with each filter exhibiting true constant "Q" response. The center-detented position of each fader acts as an on/off switch for its filter, ensuring absolutely flat response and high signal-to-noise ratios. The faders themselves put these equalizers into a class all their own. A full 25 mm throw makes use of every last bit of panel space so that small panel size doesn't compromise resolution. The additional range and incredible accuracy of this fader allow us to offer  $\pm 15\text{dB}$  of amplitude adjustment on each individual filter (an Ashly exclusive in this class of product). Housed in a rugged steel chassis, each model features multiple input and output connectors. For engineers looking to avoid those cumbersome "wall warts," Ashly features internal power supplies on all our products. And, of course, each MQX Series equalizer is covered by our exclusive Five Year Worry-Free Warranty.

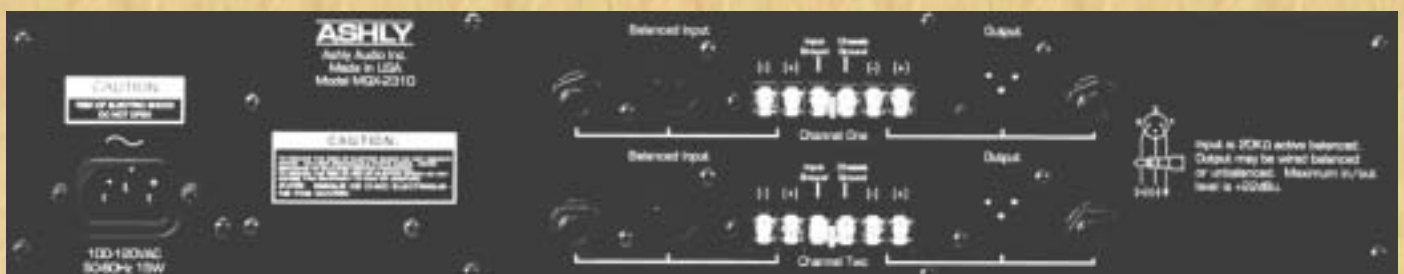
### FEATURES:

- Low Noise Design
- Balanced XLR, 1/4" TRS & Barrier Strip Screw Terminals on Inputs and Outputs (except on 2150)
- Silent In/Out Switching
- Signal Present and Clip LEDs
- Precision Wein Bridge Filters
- 25 mm Fader with Center-Off Position
- Constant "Q" Design
- Switchable Low Cut Filter on 31-band models
- Selectable 15dB or 6dB Range

### MQX SPECIFICATIONS:

Input type:	Active balanced
Input impedance:	20kOhms
Max. input level:	+23dBu
Output type:	Quasi-balanced
Min. output load impedance:	600ohms
Max. output level:	+23dBu
Connectors:	1/4" phone jack, XLR, and barrier strip (except on 2150)
Frequency response:	20Hz–20kHz, $\pm .25\text{dB}$
Total harmonic distortion:	<.01% @ +20dBu
IM distortion (SMPTE):	<.01% @ +20dBu
Output hum and noise:	<-92dBu (unweighted)
Channel separation:	
MQX-2150:	>85dB @ 1kHz
MQX-1310/2310:	>95dB @ 1kHz
Gain control:	$-\infty$ to +6dB
Filter type:	Constant Q/Wein Bridge
Bandwidth:	MQX-2150: 2/3 octave MQX-1310/2310: 1/3 octave
Tolerance:	$\pm 3\%$
Range:	$\pm 6$ or $\pm 15\text{dB}$
Subsonic Filter:	
MQX-2150:	18dB/octave @ 20Hz
MQX-1310/2310:	18dB/octave, 40Hz
Power requirements:	120VAC, 50–60Hz (240VAC available)
Power: MQX 2150/1310:	10W
MQX 2310:	13W
Shipping weight:	
MQX-2150/1310:	9lbs
MQX-2310:	11lbs
Dimensions:	
MQX-2150/1310:	19" L x 1.75" H x 6" D
MQX-2310:	19" L x 3.5" H x 6" D

(EQ in, all faders flat 20Hz–20kHz unless otherwise noted)



# Parametric Equalizers - PQX Series

## PQX-571 SEVEN BAND SINGLE CHANNEL



## PQX-572 SEVEN BAND TWO CHANNEL



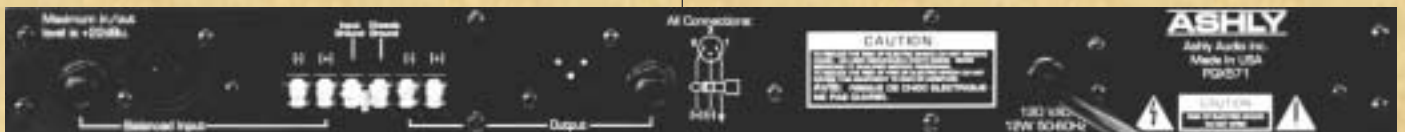
Ashly Audio was among the first professional audio manufacturers to offer parametric equalizers. Today, our design includes five fully parametric bands per channel, sweepable over the entire audible range of 20Hz to 20kHz. Tunable low and high shelving filters are also provided to equalize frequency extremes. All seven filters have in/out bypass switches, while the use of separate summing amplifiers eliminates filter interaction. The PQX Series offers low noise, great headroom, full 20Hz–20kHz range on all parametric filters, and dynamic range of 112dB with all filters engaged (130dB in bypass mode). Individual filter bypass switching, as well as a master bypass switch, are provided for easy setup. Bandwidth adjustment ranges from 3.3 octaves to 1/20th of an octave for very selective filtering of problem frequencies. The single-channel PQX-571 offers a total of seven bands of equalization—five fully parametric filters, as well as tunable low- and high-frequency shelving. The PQX-572 is a stereo or dual-channel model with the same features on each channel. Each is covered by our exclusive 5-year, Worry-Free warranty.

### FEATURES:

- 5 Fully Parametric Bands
- Parametric Filters Tunable from 20Hz–20kHz
- Tunable Low and High Frequency Shelving Filters
- 5 Year Worry-Free Warranty
- Very Low Hum and Noise Design
- Adjustable Bandwidth from 1/20 to 3 1/3 of an Octave
- True Reciprocal Curves
- Master and Individual Band In/Out Bypass Switching
- XLR, 1/4", and Barrier Strip Inputs

### PQX SPECIFICATIONS:

Master gain:	±15dB
Master defeat switch:	Yes
Per band amplitude:	±15dB
Per band defeat switch:	Yes
Frequencies:	200Hz–20kHz (20Hz–2kHz range switch in)
Bandwidth:	3-1/3 to 1/20 octave
Input impedance:	20k Ohms balanced
Output impedance:	200 ohms, term. w/600ohms or more
Maximum input level:	+23dBu (+7dBu at max boost, >.3 oct.)
Frequency response:	20Hz–20kHz, ±0.2dB
THD:	<.03%, +4dBu 20Hz–20kHz
Hum and noise (unweighted):	–90dBu (EQ in) –109dBu (EQ out)
Power requirements:	94–130VAC, 50–60Hz
PQX-571:	9W
PQX-572:	15W
Shipping weight:	
PQX-571:	8lbs
PQX-572:	12lbs
Dimensions:	
PQX-571:	19" L x 1.75" H x 6" D
PQX-572:	19" L x 3.5" H x 6" D



# Crossovers - XR Series

## XR-1001 STEREO 2-WAY, MONO 3-WAY



## XR-2001 STEREO 3-WAY, MONO 4/5-WAY



## XR-4001 STEREO 4-WAY



The XR Series II crossover feature 24dB per octave filters, infinitely variable crossover frequency and response, as well as both 1/4" TRS phone jacks and XLR connectors for all inputs and outputs. Output Mute switches on each channel are included for convenient and accurate setup operation, and a peak overload indicator monitors all critical points in the circuit to ensure low-distortion operation. A recessed switch on the front panel with an LED indicator allows for either normal or "divide by ten" frequency selection.

The XR Series II models feature Ashly's exclusive "Response" control, allowing the user to select the best performance for a given application. The purpose of this control is to help offset the inaccuracies inherent in typical loudspeakers, where many anomalies can occur at the crossover point. This Response control adjusts the damping of the filter, affecting its shape near the crossover point. The "Butterworth" response, for instance, results in a gentle 3dB rise when the two filter output signals are combined. Similarly, a "6dB" setting produces a "Linkwitz-Riley" response for flat summing. Other responses are possible to correct for driver, cabinet, and room problems at the crossover point. No other crossover offers the ability to dynamically shape filter response as precisely. For the ultimate in sound system control and accuracy, the XR Series II models are the logical choice.

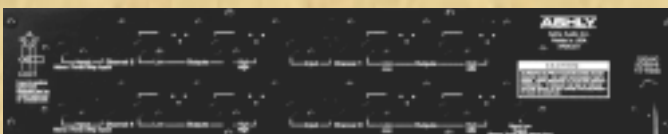
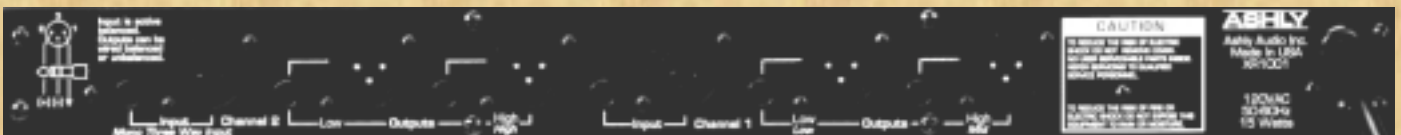
The XR-1001 is a stereo two-way or mono three-way crossover. The XR-2001 offers the unique ability to operate as a stereo three-way or mono four- (or five-) way, or even as a four-channel two-way configuration for bi-amplifying on-stage monitor systems. The XR-4001 fulfills the needs of four-way stereo setups. All Ashly crossovers are U.L. Listed and backed by our exclusive Five Year Worry-Free Warranty.

### FEATURES:

- 24dB Per Octave Slopes
- Variable Filter Response Allows Tuning-In Linkwitz-Riley or Other Filter Performances
- Output Mute Switches
- XLR and 1/4" Inputs and Outputs
- 20Hz Third Order Hi-Pass Filter
- Extra Wide Tuning Range
- Peak Overload Warning Lights
- Tamperproof Security Covers Optionally Available

### XR SPECIFICATIONS:

Input gain:	$\infty$ - +8dB
Response control:	1.5dB-12dB
Output gain:	$\infty$ - +15dB
Input impedance:	20k Ohms balanced
Max. input level:	+23dBu
Max. output level:	+23dBu
Output impedance:	200ohms quasi-balanced
Frequency response:	20Hz-20kHz, $\pm$ .5dB
Distortion:	<.05% THD +20dBu, 20Hz-20kHz
Slew rate:	6V/ $\mu$ S
Hum and noise (unweighted):	-90dBu
Power requirements:	92-120VAC, 50-60Hz, 5W (240W available)
Dimensions:	
XR-1001:	19" L x 1.75" H x 6" D
XR-2001:	19" L x 3.5" H x 6" D
XR-4001:	19" L x 3.5" H x 6" D
Shipping weight:	
XR-1001:	8 lbs
XR-2001:	10 lbs
XR-4001:	10 lbs



# Signal Processors

## CLX-51 SINGLE CHANNEL COMPRESSOR/LIMITER



## CLX-52 DUAL CHANNEL COMPRESSOR/LIMITER



The CLX Series compressor/limiters use an "infinite soft-knee" characteristic and timing based on compression ratio. This, combined with a dual release time, allows program density to increase as the input signal increases. The result is a peak controller with very low noise, smooth sound, and excellent stereo tracking without the usual "constricted" limiter sound. Ashly's CLX series uses peak rather than RMS limiters. While an RMS limiter may be used to restrict material to a given loudness, a peak limiter looks at the maximum voltage a signal reaches regardless of its waveform, making it the right choice to prevent clipping, overmodulation or tape saturation.

The CLX-51 and CLX-52 have many ways to deal with any gain structure. The mechanical design is ready for years of rugged service and we back our quality with Ashly's exclusive Five Year Worry-Free Warranty.

The CLX series is extremely useful for such diverse applications as loudspeaker protection, vocal level control, broadcast limiting, musical instrument sustain, special effects, and CD to cassette transfers.

### FEATURES:

- Extremely low noise and distortion
- Dual release time for minimum "pumping"
- Wide-range control of all parameters
- Powerful peak control with minimum audible side effects
- Both XLR and 1/4" input and output connectors

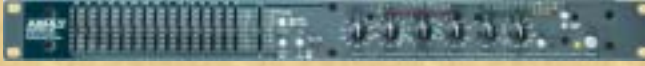
### CLX SPECIFICATIONS:

Gain:	±15dB
Ratio:	2.1-∞
Attack time:	200 μS-20 mS
Release time:	100 mS-3 Sec.
Output:	-∞ to +18dB
Max. input level:	>+23dBu
Max. output level:	>+23dBu
Input impedance:	20k Ohms balanced
Output impedance:	200ohms quasi-balanced
Connections:	1/4" TRS, XLR
Frequency response:	20Hz-20kHz, ±0.2dB
Distortion:	<.01% THD, 15dBu, 1kHz <0.15% THD, +15dBu, 20Hz-20kHz
Hum and noise:	<-96dBu
Power requirements:	93-120VAC, 50-60Hz, 5W (240V available)
Shipping weight:	8lbs
Dimensions: 19"	L x 1.75" H x 6" D



# Signal Processors

## DPX-100 GRAPHIC EQUALIZER & COMPRESSOR



The DPX Series was created to provide a simple solution for systems requiring general EQ and comp/limiting. Two products are available, the DPX-100 Graphic Equalizer & Compressor/Limiter and DPX-200 Parametric Equalizer & Compressor/Limiter. The equalizer section and compressor/limiter may be used independently or chained together in series. Audio connections are balanced XLR and 1/4" TRS.

Using proven circuitry from our popular MQX and PQX series equalizers and combining these features with our CLX series compressor/limiters provides two tools no audio system should be without. By combining the features and benefits of two processors into one unit, the result is two powerful tools providing a simple solution to everyday audio applications.

The EQ section of the DPX-100 is a 15-band, constant Q, 2/3 octave, ISO center, precision wein bridge filter design. Other EQ features are: frequency range from 25Hz to 16KHz, selectable 15dB or 6dB range, 25mm faders with 'center off' position, EQ in/out switch, signal present and clip LEDs and switchable 18dB/octave -20Hz high pass filter.

Two separate inputs are available in the DPX-200; a microphone preamp with input pad and a line input. The EQ section consists of 4 bands of filtering; two full-bandwidth parametric EQs as well as a low-shelf and high-shelf filter. Other EQ features are: in/out switching for each filter, cut and boost of 15dB, signal present and clip LEDs, and master EQ level control.

The compressor/limiter section uses peak detection circuitry and has individual controls for gain, threshold, ratio, attack, release and output level. More compressor/limiter features include: in/out switch, 11-stage LED gain reduction meter, selectable 11-stage LED input/output level meter, and a detector patch point for frequency-selective limiting or ducking.

### FEATURES:

#### DPX-100

- Precision Wein-bridge filters
- Constant "Q" design for low ripple and minimum interaction
- High quality detented 25mm faders
- Compressor/Limiter use peak detection circuitry
- Balanced Inputs and Outputs
- XLR and 1/4" TRS audio connections

#### DPX-200

- Separate Mic Pre and Line Inputs
- 2 fully parametric bands
- Parametric filters tunable from 20Hz to 20KHz
- Adjustable bandwidth from 3 1/3 to 1/20 of an octave
- High and Low Shelf filters
- True reciprocal curves
- Individual band in/out bypass switching
- Balanced Inputs and Outputs
- XLR, 1/4" TRS audio connections



## DPX-200 PARAMETRIC EQUALIZER & COMPRESSOR



### DPX SPECIFICATIONS:

DPX-100 Graphic Equalizer & Compressor/Limiter  
Graphic EQ

Input Impedance: 20K ohm Balanced, 10k ohm Unbalanced  
Max. Input Level: +23dBu  
Output Impedance: 200 ohm Balanced, 100 ohm Unbalanced  
Max. Output Level: +23dBu  
Frequency Response:  $\pm$  .25dB 20-Hz-20kHz  
Total Harmonic Distortion: < 0.01% @ +20dBu  
IM Distortion (SMPTE): < 0.01% @ +20dBu  
Output Hum and Noise: -95dBu (typ., 20Hz-20kHz unweighted)  
Filter Type: Constant Q/Wein Bridge  
Bandwidth: 2/3 octave  
Tolerance:  $\pm$ 3%  
Range:  $\pm$ 6 or  $\pm$ 15 dB  
Subsonic Filter: 18dB/octave @ 20Hz

DPX-200 Parametric Equalizer & Compressor/Limiter

Input Section

Mic Input Impedance:  $\geq$  1K ohm  
Line Input Impedance: 20K ohm Balanced, 10k ohm Unbalanced  
Mic Input Connection: XLR  
Mic Gain: 55dB  $\pm$  2dB without pad  
Line Input Gain: 15dB  
Mic Gain Range: +20dB to +55dB  
Line Gain Range: (-) infinity to +15dB  
Phantom Power: 48VDC

Parametric EQ

Max. Input Level: +22dBu  
Output Impedance: 200 ohm Balanced, 100 ohm Unbalanced  
Max. Output Level: +22dBu  
Frequency Response: 20Hz - 20KHz,  $\pm$  .2dB  
Total Harmonic Distortion: < 0.01% @ +4dBu 20Hz - 20KHz  
Output Hum and Noise: -90dBu (typ., 20Hz-20kHz unweighted)  
Bandwidth: 3 1/3 - 1/20 octave  
Peaking Frequency: 20Hz - 20KHz  
Range:  $\pm$ 15 dB  
Low Shelving Frequency: 40 - 400Hz  
High Shelving Frequency: 1.6K - 16KHz  
Range:  $\pm$ 15 dB

Compressor/Limiter

Gain: +/-15dB, Threshold: -40dBu +22dBu  
Ratio: 2:1 to infinite  
Attack Time: 200uSec - 20mSec  
Release Time: 0.1Sec - 3Sec  
Output: -40dBu - +20dBu  
Input Impedance: 20k Ohms, 10k ohm Unbalanced  
Output Impedance: 200 ohm Balanced, 100 ohm Unbalanced  
Frequency Response: +/- 0.2dB 20Hz-20kHz  
THD: <0.01%, +15dBu, 1kHz <0.15%, +15dBu, 20Hz-20kHz  
Output Hum and Noise: -95dBu, (typ.) unity gain

I/O Connectors: XLR, 1/4" TRS

Power Requirements: 90-125VAC, 50-60Hz, 10W (240V available)

Shipping Weight: 8 lbs.

Dimensions: 19"W x 1.75"H x 6"D



# Signal Processors



## VCM-88 VCA MATRIXING LEVEL CONTROLLER



### RD-8, RW-8 REMOTE CONTROL



### RD-8 RACKMOUNT



The VCM-88 provides eight fully-independent VCA channels in a single rack unit capable of limiting, remote level control, and mixing. It is designed for installations such as houses of worship, boardrooms, nightclubs, or any place remote control of individual levels is required. By itself, the VCM-88 functions as a precise eight-channel limiter with recessed threshold adjustments on each channel.

Control is accomplished by Ashly's RD-8 or RW-8 remote controllers, RS-232 control using Ashly's Protea System Software, Crestron or AMX touchscreen controllers, MIDI, or DC control using external potentiometers.

When connected to the Ashly RD-8 Remote Controller or DC control, the VCM-88 adjusts individual channel and master levels with a range of -75dB to +20dB. Each VCA channel has separate input and output jacks for patching into line-level signal paths, and can be reconfigured to use single jack TRS insertion for patching into mixing consoles. In addition to setting and controlling the VCM-88 from the front panel, a dedicated RS-232 computer interface and full MIDI implementation is also provided.

Internal switching allows you to patch channels for signal routing and matrixing and select channel pass-through for cascading multiple units in parallel. The VCM-88 also has a master output jack providing a summed output of all channels, allowing the unit to function as a fully-contained eight-channel remote controlled line-level mixer.

#### FEATURES:

- Eight Channels of Remote Level Control
- RS-232 Interface Connector
- MIDI In and Thru
- PC Control Using Protea System Software
- Digital Control over a Single XLR Mic or Snake Line
- AMX Compatible NetLinx Control
- Internal Channel Patching for Flexible Signal Routing and Matrixing
- Internal Selection of Crestron, AMX, MIDI, or RS-232 Protocol
- Internal Channel Passthrough for Cascading
- Multiple Units in Parallel
- Signal Present LEDs on each channel
- RD-8, RW-8 Compatible
- Works With Any Mixer with Channel Insert Points
- Master Sum Output Jack
- +20dB to -75dB Level Control
- Individual Limiter Threshold Adjustment for Each Channel

#### VCM SPECIFICATIONS:

Input impedance: 20k Ohm balanced, 10k Ohm unbalanced  
 Max. Input level: +23dB  
 Output impedance: 200 ohm pseudo-balanced, 100 ohm unbalanced  
 Max. output level: +22dBu  
 Nominal gain: 0dB  
 Gain range: +20dB to -75dB

Frequency response: ± 0.2dB, 20Hz-20kHz  
 THD: <0.01% @ 0dBu, 1kHz; <0.15% @ +20dBu, 20Hz-20kHz  
 Output hum and noise: <-94dBu, 20Hz-20kHz unweighted  
 Crosstalk: <-80dB @ 20Hz-20kHz

Connectors: 1/4" TRS

Limiter threshold range: -23dBu to +22dBu  
 Limiter compression ratio: 10:1  
 Data input type: 9-pin female D-Sub connector  
 Data format: RS-232 using Protea System Software  
 Data format XLR: 2Vp raised cosine, RS-232 or RS-422  
 1-start, 9-data, 1 stop bits @ 4800 baud  
 DC control input type: 15-pin female D-Sub connector  
 DC control voltage: -4V to +15V provided for external 10k Ohm potentiometers

Power requirements: 95-125VAC, 50-60Hz, 18W (240V available)  
 Shipping weight: 9 lbs  
 Dimensions: 19" L x 1.75" H x 6" D

#### RD-8 SPECIFICATIONS:

Fader range: +10dB to -75dB (master fader @ 0dB)  
 Data/power connector: Male XLR jack  
 Max. data cable length: 1500 ft (24 ga, twisted pair)  
 Data format: 4800 baud, 2 Vp raised cosine  
 Data crosstalk to audio: <-120dB along 1000 ft of 150 Ω shielded cable  
 Size: 7.5" L x 3.5" H x 1.75" D



Protea System Software (pictured above) can be used to control the VCM 88.

Both the RW-8 and the RD-8 remote control units can be used to control the VCM-88. Additionally, two RD-8s can be mounted in a single rack-space unit. With their dual (top and back) XLR jacks, they can be used just as easily in a rack as they can when freestanding.



sig-pro-0803



Ashly Audio, Inc. 847 Holt Road, Webster, NY 14580-9103 USA  
Toll Free: 800.828.6308 • Tel: 585.872.0010 • Fax: 585.872.0739 • <http://www.ashly.com>