

### Architects Specifications

#### Protea System II 4.24C

The programmable digital crossover shall consist of four inputs and eight outputs with the ability to assign any output to any input. Each input channel shall include: a delay stage with a maximum delay of 682.5ms; a gain stage capable of +12dB boost and -40dB cut; six filter stages configurable to be a parametric filter with a frequency range of 19.7Hz to 21.9KHz, 1/24th octave step and a +15dB boost, -40dB cut, or a 6 or 12dB/octave high or low shelf filter. Each output channel shall include: a routing stage allowing the user to assign the output to any or a combination of input(s); a high pass/ low pass crossover filter stage with selectable slopes of 12, 18, 24 and 48dB per octave using Linkwitz-Riley, Bessel or Butterworth filter configurations; four filter stages configurable to be a parametric filter with a frequency range of 19.7Hz to 21.9KHz, 1/24th octave step and a +15dB boost, -40dB cut, or a 6 or 12dB/octave high or low shelf filter; a delay stage with a maximum delay of 21.33ms; a gain stage capable of +12dB boost and -40dB cut and the ability to invert the phase; a full function compressor/limiter with a threshold range of -20dBu to +20dBu. Each input and output

shall have individual mute capability. The programmable digital crossover shall have a maximum in/out level of +20dBu. Frequency response shall be ±.25dB 20Hz to 20kHz. Dynamic Range shall be greater than 110dB (20-20KHz, unweighted) and SMPTE intermodulation distortion or THD shall be less than 0.01% at 1KHz, +20dBu. Input impedance shall be 18K ohms active balanced. Output impedance shall be active balanced, 100 ohms. Inputs and outputs shall be balanced type on XLR connectors. A 2 X 20 backlit LCD display will show all parameter, function and utility information. LED indicators shall show signal level, clip, limit threshold and mute conditions. Full programming and control of the unit shall be from the front panel or via the front panel accessible RS-232 serial port using Ashly Protea System Software, or via MIDI. There shall be 30 factory presets that may be overwritten by the user and stored. There shall also be a four level security lockout feature. The programmable digital crossover shall weigh 10 lbs net and mount in a standard 19" rack using 1 space (1.75" high). The power requirement shall be 80-260VAC, 50-60Hz, 30W. The unit shall be an Ashly Audio Protea System II 4.24C Digital Crossover/System Processor.

#### Features:

- One Rack Space
- Four Inputs - Eight Outputs
- Outputs Assignable to Any Input
- Crossover, EQ, Delay and Limiter Functions
- Linkwitz-Riley, Bessel and Butterworth Filters
- 12, 18, 24 and 48dB/Octave Slopes
- Parametric EQ: Full Bandwidth, 1/64th to 4 Octave Range
- Input and Output Delay
- Limiter on Each Output
- Intuitive User Interface
- Programmable by Front Panel, PC or MIDI
- Individual Input and Output Metering
- Balanced Inputs and Outputs
- XLR Audio Connections
- Password Protected System Security
- Five Year Warranty

## General Specifications Protea System II 4.24C

INPUT: Active Balanced, 18 Kohms  
 MAX. INPUT LEVEL: +20 dBu  
 OUTPUT: Active Balanced, 100 ohms  
 MAX. OUTPUT LEVEL: +20 dBu  
 FREQUENCY RESPONSE: 20 Hz-20KHz,  $\pm 0.25$  dB  
 THD: <0.01% @1 KHz, +20 dBu  
 DYNAMIC RANGE: >110 dB (20 Hz-20 kHz) unweighted  
 OUTPUT NOISE: <-90 dBu unweighted

### EQ FILTERS:

NUMBER: 6 per Input, 4 per Output Selectable  
 As:  
 PARAMETRIC  
 BANDWIDTH: 1/64th Octave to 4 Octave  
 RANGE: +15/-30dB, 0.1 dB increments  
 RESOLUTION: 1/24th Octave  
 HIGH-SHELF  
 SLOPE: Selectable 6 or 12dB/Octave (1 High Shelf, 2 High Shelf)  
 FREQUENCY RANGE: 19.7Hz to 2KHz  
 RANGE: +/-15dB, 0.1dB increments  
 LOW-SHELF  
 SLOPE: Selectable 6 or 12dB/Octave (1 Low Shelf, 2 Low Shelf)  
 FREQUENCY RANGE: 3.1886KHz to 20.1587KHz  
 RANGE: +/-15 dB, 0.1dB increments

### CROSSOVER FILTERS:

HIGH PASS FILTER  
 TYPE: Linkwitz-Riley, Bessel, Butterworth  
 SLOPE: 12, 18, 24 and 48dB/Octave  
 FREQUENCY RANGE: Off to 21.983.3KHz, 1/24 Octave  
 LOW PASS FILTER  
 TYPE: Linkwitz-Riley, Bessel, Butterworth  
 SLOPE: 12, 18, 24 and 48dB/Octave  
 FREQUENCY RANGE: Off to 21.983.3KHz, 245 step increments

### DELAY:

INPUT MAXIMUM DELAY: 682.5ms  
 OUTPUT MAXIMUM DELAY: 21.33ms  
 INCREMENT: 20 $\mu$ s  
 INPUT and OUTPUT GAIN: RANGE: +12/-40dB, 0.1dB increments

### POLARITY

0 or 180 degrees (selectable in the Output Gain Stage)

### COMPRESSOR/LIMITER:

THRESHOLD: -20dBu to +20 dBu, 1.0dB increments  
 RATIO: 1.2 :1 to Infinity (1.2, 1.5, 2., 3, 4, 6, 10, 20, Infinite:1)  
 ATTACK: 0.5 ms to 50 ms per dB  
 RELEASE: 10 ms to 1 sec. per dB

### PROCESSOR:

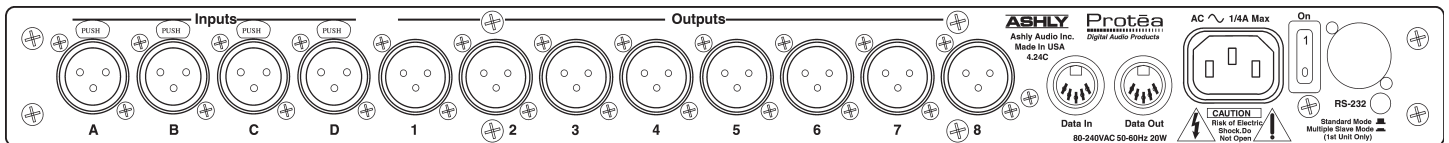
INPUT A TO D: 24 bit  
 OUTPUT D TO A: 24 bit  
 PROCESSOR: 24 bit, 56 bit accumulator  
 SAMPLE RATE: 48 kHz  
 PROPAGATION DELAY: 1.46 ms

### OTHER:

SIGNAL AND CLIP LEDs: Inputs: -20/Mute, -10, 0, +10, Clip (dBu or VU)  
 Outputs: -20/Mute, -10, 0, Limit, Threshold, Clip (dBu or VU)  
 RS232 CABLE DISTANCE: 1300ft (Max)  
 MIDI CABLE DISTANCE: 500ft (Max)  
 POWER REQUIREMENTS: 80 - 260VAC, 30W max  
 SHIPPING WEIGHT: 10lbs  
 DIMENSIONS: 19.0"L x 1.75"H x 6.0"D  
 I/O CONNECTORS: XLR  
 ENVIRONMENTAL: 40-120 deg. F, noncondensing

Notes: 0dBu = 0.775V RMS

## Rear Panel Protea System II 4.24C



### Applications:

Distributed Sound, Sound Masking, Multi-Room Installations for Lobby or Under Balcony Speaker Management, FOH Speaker Management, Delay Towers and Side Fills, Monitor Systems (wedge and in-ear) Tuning and Protection

### Misc:

Protea System Software for PC control of the Protea 4.24C may be downloaded free from our website. Use it to control the 4.24C, 4.24D, 4.24G, 4.24GS, 4.24PS, 2.24GS and 2.24PS. Download it now to preview the capabilities of the Protea System II Digital Products. Protea System Software operates on Windows™ 95, 98, 2000, XP and NT platforms.

Ashly manufactures a complete and comprehensive line of Graphic and Parametric Equalizers, Electronic Crossovers, Power Amplifiers, Compressor-Limiters, Mixers, and Amplifier Input Options. Please call, write or visit our web site for information on any of these Ashly Products.

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