



Protea System II Digital Processors

24.24M Matrix Processor

3.24CL 3x6 Speaker Processor

4.24C 4x8 Speaker Processor

4.24D Distribution System Processor

4.24G Graphic Equalizer/System Processor

4.24/2.24GS Graphic Equalizer/System Processor

4.24RD Graphic Remote Control

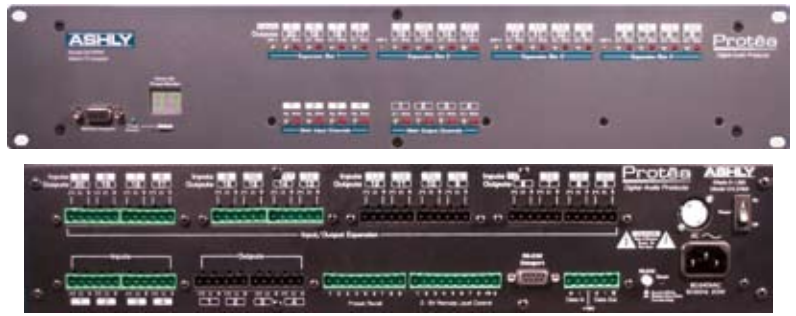
4.24/2.24PS Parametric Equalizer/System Processor

Protea System Software

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

24.24M MATRIX PROCESSOR

The Protea 24.24M Matrix Processor uses modular expansion cards to provide up to twenty-four channels of audio matrixing and processing. The base unit offers a four-input/four-output configuration. Each input and output expansion card has an individual DSP processor allowing you to expand the base unit's total inputs or outputs four channels at a time. These cards are easily installed in the field without the need to reprogram the device. Matrixing allows you to route any input to any output and control individual levels once they have been assigned. Fixed path architecture and extensive processing power per channel will reduce the amount of time it takes to set up your system. All programming is accomplished using Ashly's Protea System Software on a PC platform. No front panel controls and multi-level software security assures you a tamperproof audio system. Whether you are designing or installing a system for corporate boardrooms, restaurants, courtrooms, houses of worship, left/center/right theatres, auditoriums or conference centers, the Protea 24.24M will more than satisfy your requirements for any zoned system requiring input/output matrixing with signal processing.



FEATURES:

- 24-bit A/D–D/A audio resolution
- 24-bit/100 MHz (x2) digital signal processing
- Up to 24 channels of audio processing
- 4x4 base unit configuration
- Expand inputs or outputs 4 channels per module
- Modules easily field installable
- Euroblock connectors for audio, preset recall, dc remote level control and data in/out
- Mic/Line inputs
- Intuitive user interface
- 35 preset locations
- RS-232 computer interface
- AMX Compatible NetLinx Control
- Input and output metering viewable in dB or VU
- Password protection of system operation
- Five year worry-free warranty

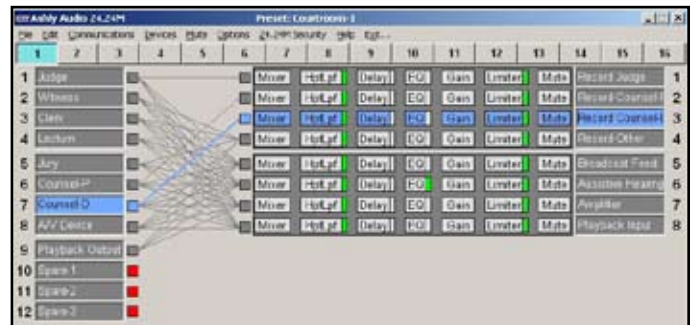
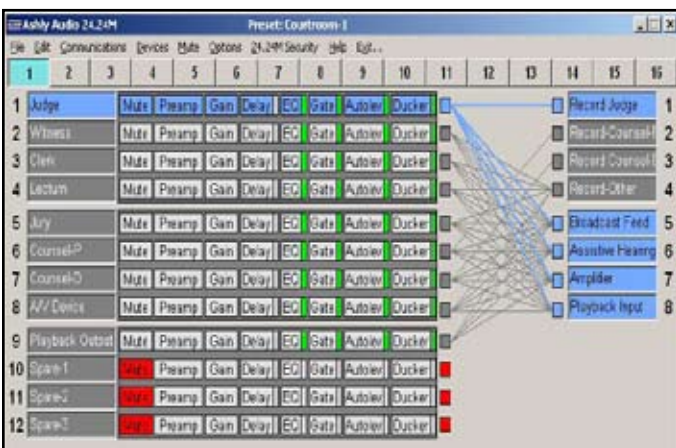
Specifications:

Input: Active Balanced, 18 kohms
 Max Input Level: +20 dBu
 Input Gain Range: -50dB to +12dB, selectable polarity
 Output: Active Servo Balanced, 112 ohms
 Max Output Level: +20 dBu
 Output Gain Range: -50dB to +12dB, selectable polarity
 Frequency Response: 20 Hz-20kHz, ±0.25 dB
 THD: <0.01% @1 kHz, +20 dBu
 Dynamic Range: >110 dB (20 Hz-20 kHz) unweighted
 Output Noise: <-90 dBu unweighted

Processor
 Input A/D: 24 bit | Output D/A: 24 bit
 Processors: 24 bit signal, 48 bit filters, 56 bit accumulator
 Sample Rate: 48 kHz | Propagation Delay: 1.46 ms

Other
 Power Requirements: 90 - 240VAC, 40W
 Shipping Weight: 13lbs (Maximum)
 Dimensions: 19.0"L x 3.5"H x 8.5"D
 Connections: Euroblock
 Environmental: 40-120 deg. F, (4-49 deg. C) noncondensing

Input channel processing blocks include Mic Preamp with Phantom Power, Gain, Delay, fifteen EQ Filters, Gate, Autoleveler and Ducker. Inputs may be configured as either mic or line level. Output channel processing blocks consist of a Cross Point Mixer, HPF/LPF, Delay, fifteen EQ Filters, Gain and Limiter. The cross point mixer in the output section allows you to route any input to any output at any level and mute any input at any output without affecting the true input configuration. The HPF/LPF block offers Bessel, Butterworth and Linkwitz-Riley filters with 12, 18, 24 and 48dB/octave slopes.



RD/RW-8C with the Protea 24.24M: each slide fader can be assigned to attenuate any 24.24M input, output, or input/output combination, limited only by the number of available 24.24M channels.



The WR-5 has six programmable function buttons, each with an LED, Up/Down buttons and a two-character alphanumeric display.

1. Preset Recall – Immediately recall an assigned 24.24M preset.
2. Preset Scroll – Allows user to select any of the allowed 24.24M presets via the up/down arrow button shown by the alphanumeric display.
3. Gain Control – Allows volume control of assigned inputs/outputs.
4. Channel Mute – Allows mute control of assigned inputs/outputs.
5. Zone Source Selection – Allows for on/off control of assigned inputs, but only for a specific output.

Remote volume (WR-1) and tactile switch (WR-2) accessories are also available.



3.24CL 3X6 SPEAKER PROCESSOR

3.24CL-D 3X6 SPEAKER PROCESSOR/ZONE DISTRIBUTION

Both the 3.24CL and 3.24CL-d were developed for smaller audio systems requiring fewer inputs and outputs without sacrificing sonic quality. Either version has three inputs and six outputs coupled with an incredibly easy front panel user interface with all the audio processing tools you need for precise crossover, system control and superior sound.



The Protea 3.24CL-d is a variant of the 3.24CL with the only difference being the adjustable input and output delay times. Input delay is 85ms and output delay is 256ms. With the 3.24CL-d's longer delay on the outputs, distribution of audio to zones is possible.

Each input allows you to control gain, delay and six filters (each of them your choice of parametric, low or high shelf). Each output permits you to set your crossover frequencies and may be assigned to any one or a combination of inputs. Additionally, you can program four filters (each of them your choice of parametric, low or high shelf), control delay for time delay adjustments, adjust output gain, reverse polarity and control a compressor/limiter for speaker protection. All this in one rack space with XLR input and output connections.

FEATURES:

- Three Inputs - Six Outputs
- Extremely Intuitive User Interface
- Programmable by Front Panel
- Superior Sonic Quality
- One Rack Space
- 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: 1/64th to 4 Octave Range
- Input and Output Delay
- Limiter on Each Output
- Individual Input and Output Metering
- Balanced Inputs and Outputs
- XLR Audio Connections
- Four Levels of Security

Specifications:

Input:	Active balanced, 18kOhms
Max. input level:	+20dBu
Output:	Active balanced, 100Ohms
Max. output level:	+20dBu
Frequency response:	20Hz-20kHz, ± 0.25 dB
THD:	<0.01% @1kHz, +20dBu
Dynamic range:	>110dB (20Hz-20kHz) unweighted
Output noise:	<-90dBu unweighted
Processor	
Input A/D:	24 bit Output D/A: 24 bit
Processors:	24 bit signal, 48 bit filters, 56 bit accumulator
Sample Rate:	48 kHz Propagation Delay: 1.46 ms
Other	
Power Requirements:	80 - 260VAC, 30W
Shipping Weight:	10lbs (Maximum)
Dimensions:	19.0" L x 1.75" H x 8.5" D
Environmental:	40-120 deg. F, (4-49 deg, C) noncondensing

4.24C 4X8 SPEAKER PROCESSOR

Four inputs and eight outputs coupled with a user interface that's so easy you won't even need the manual, the Ashly Protea System II 4.24C Digital Crossover/System Processor has all the audio processing tools you'll ever need for precise crossover and sound control.



Each input allows you to control gain, delay and six filters (each of them your choice of parametric, low or high shelf). Each output permits you to set your crossover frequencies and may be assigned to any one or a combination of inputs. Additionally, you can program four filters (each of them your choice of parametric, low or high shelf), control delay for time delay adjustments, adjust output gain, reverse polarity and control a compressor/limiter for speaker protection. All this in a one rack space with XLR input and output connections. You may also program and control the 4.24C with Ashly's Protea System Software (Windows™ 95, 98, 2000 and NT platforms), MIDI or SIA-Smart software. Preset recall, input level, output level and mute functions may also be controlled by an AMX NetLinX system. The Protea 4.24C is a powerful tool for use in live sound or fixed installation applications.

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
- AMX Compatible NetLinX Control
- Individual Input and Output Metering
- Balanced Inputs and Outputs
- XLR Audio Connections
- Four Levels of Security

Specifications:

Input:	Active balanced, 18kOhms
Max. input level:	+20dBu
Output:	Active balanced, 100Ohms
Max. output level:	+20dBu
Frequency response:	20Hz-20kHz, ± 0.25 dB
THD:	<0.01% @1kHz, +20dBu
Dynamic range:	>110dB (20Hz-20kHz) unweighted
Output noise:	<-90dBu unweighted
Processor	
Input A/D:	24 bit Output D/A: 24 bit
Processors:	24 bit signal, 48 bit filters, 56 bit accumulator
Sample Rate:	48 kHz Propagation Delay: 1.46 ms
Other	
Power requirements:	80-260VAC, 30W
Shipping weight:	10 lbs
Dimensions:	19.0" L x 1.75" H x 6.0" D
I/O connectors:	XLR
Environmental:	40-120 deg. F, non-condensing

4.24D DISTRIBUTION SYSTEM PROCESSOR

Four Inputs and Eight Outputs allow you to distribute audio from a variety of sources to multiple locations, the Protea System II 4.24D Digital Distribution System Processor has all the audio processing tools needed for precise crossover and sound control.



Each input allows you to control gain, six filters (each of them your choice of parametric, low or high shelf) and may be assigned to any one or a combination of outputs. Each output permits you to set your crossover frequencies. Additionally, you can program four filters (each of them your choice of parametric, low or high shelf), control delay (up to 682ms), adjust output gain, reverse polarity and control a compressor/limiter for speaker protection. All this in a one rack space with euroblock input and output connections. To program the 4.24D, Ashly's Protea System Software (Windows™ 95, 98, 2000 and NT platforms) is used. Thirty presets may be saved and eight may be recalled via an external switch connected to the contact closure port on the rear panel. Preset recall, input level, output level and mute functions may also be controlled by an AMX NetLinx system.

FEATURES:

- One Rack Space
- Four Inputs - Eight Outputs
- Inputs Assignable to Any Output
- 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
- 682ms of Output Delay on Each Output
- Limiter on Each Output
- 30 Presets, 8 Contact Closure Preset Recall
- Programmable by PC or MIDI
- AMX Compatible NetLinx Control
- Individual Signal Present, Clip and Limiter Threshold LEDs
- Balanced Inputs and Outputs
- Euroblock Connections
- Four Levels of Security

Specifications:

Input:	Active balanced, 18kOhms
Max. input level:	+20dBu
Output:	Active balanced, 100Ohms
Max. output level:	+20dBu
Frequency response:	20Hz-20kHz, ±0.25dB
THD:	<0.01% @1kHz, +20dBu
Dynamic range:	>110dB (20Hz-20kHz) unweighted
Output noise:	<-90dBu unweighted
Processor	
Input A/D:	24 bit Output D/A: 24 bit
Processors:	24 bit signal, 48 bit filters, 56 bit accumulator
Sample Rate:	48 kHz Propagation Delay: 1.46 ms
Other	
Power requirements:	80-260VAC, 30W
Shipping weight:	10 lbs
Dimensions:	19.0" L x 1.75" H x 6.0" D
I/O connectors:	Euroblock
Environmental:	40-120 deg. F, non-condensing

4.24G GRAPHIC EQUALIZER/SYSTEM PROCESSOR

The Protea Series 4.24G digital equalizer offers true 24-bit resolution from input to output and provides you unparalleled audio processing power for a wide range of applications—monitor systems, front of house PAs, commercial sound installations requiring fixed and tamperproof equalization, recording and broadcast studios, Surround-Sound™, digital audio workstations, and computer recording applications.



The 4.24G has all the audio processing tools needed for flawless graphic equalization and sound control. In addition to 28 bands of 1/3-octave EQ, the 4.24G features a programmable compressor/limiter for general compression or speaker protection, and programmable delay of up to 1.364 sec. for time compensation of speaker clusters, arrays, or monitor speakers. Individual, programmable 24dB/octave high- and low-pass filters allow you to zero in and fine tune the audio spectrum. A large 240 x 64 fluorescent backlit display keeps you constantly informed of every parameter, function and utility. Full control of the 4.24G is available from the front panel in an intuitive and straightforward layout. When used with the 4.24RD Full-function Remote Control, leveling a system becomes a breeze. Stand anywhere in the room with your sound system or monitors and adjusting your EQ on the spot! No running back and forth between your sound source and the board to make EQ adjustments. The 4.24G is expandable to provide up to 16 channels of digital equalization with the addition of the 2- or 4-channel slave units, easily controlled from the 4.24G main unit, from the 4.24RD remote control, or by using a PC running the included Protea System Software. Scene recall, output level and mute functions may also be controlled by an AMX NetLinx system. Never before has equalization been this powerful and simple at the same time.

FEATURES:

- 24-bit A/D-D/A audio resolution
- 24-bit/100 MHz (x2) digital signal processing
- Four 28-band 1/3-octave channels of EQ
- Programmable compressor/limiter, delay and high- and low-pass filters
- Balanced XLR and 1/4" inputs and outputs
- Intuitive user interface
- Large, 240 x 64 fluorescent backlit display
- Linkable channels
- Constant Q/reciprocal filter design
- ±15dB boost and cut, 0.5dB increments
- 128 preset locations, 50 scenes
- RS-232 computer interface, AMX NetLinx Compatible
- Full MIDI implementation
- Input and output metering viewable in dB or VU
- UL/CUL listed
- Password protection of system operation

Specifications:

Input:	Active balanced, 18 kohms
Max. input level:	+20 dBu
Output:	Pseudo-balanced, 200 ohms
Max. output level:	+20 dBu
Frequency response:	20 Hz-20kHz, ± .5 dB
THD:	<0.01% @1 kHz, +20 dBu
Dynamic range:	>110 dB (20 Hz-20 kHz) unweighted
Output noise:	<-90 dBu unweighted
Processor	
Input A/D:	24 bit Output D/A: 24 bit
Processors:	24 bit signal, 48 bit filters, 56 bit accumulator
Sample Rate:	48 kHz Propagation Delay: 1.46 ms
Other	
I/O Connectors:	XLR 1/4"
Environmental:	40-120 deg. F, non-condensing
Power requirements:	90-125 VAC, 50-60 Hz, 30W; 180-250 VAX, 50-60 Hz, 30 W
Shipping weight:	14 lbs.
Dimensions:	19.0"L x 3.5"H x 8.0"D

4.24/2.24GS GRAPHIC EQUALIZER/SYSTEM PROCESSOR

The 4.24GS and 2.24GS allow for the installation of multiple channel graphic equalizers where tamperproof sound shaping equalization is required. Control and programming of either product is easily achieved from the 4.24G Main Unit, 4.24RD Remote Control, through the use of Ashly's exclusive Protea System Software running on a PC, or by a MIDI controller. Scene recall, output level and mute functions may also be controlled by an AMX NetLinX system. The Protea 4.24GS is housed in an all-steel 2RU chassis, and has four independent channels of fully programmable 28-band graphic EQ with with compressor/limiter, high- and low-pass filter, and time delay functions. The 2.24GS offers the same specs and features in a single rack-space, two-channel unit.

Each channel allows for 28 bands of 1/3-octave, ISO centered, constant Q filters, ranging from 31Hz to 16kHz. High- and low-pass filters are 24dB/octave adjustable from 20Hz to 10.6kHz and 33Hz to 20kHz, respectively. Time delay is adjustable up to 1.364 seconds. Other features include 24-bit A/D-D/A conversion, 24-bit/100 MHz digital processing, RS-232 and MIDI interfaces, linkable channels, +6dB/-infinity master gain, and 128 preset locations.

Both units display individual MIDI channel numbers with 7-segment displays. Discrete LEDs indicate signal present and signal clip levels. Rear-panel connections include balanced XLR and 1/4" ins/outs for each channel, RS-232, MIDI In/Thru and Ashly's exclusive digital remote control protocol via two standard XLR connectors.



FEATURES:

- 24-bit A/D-D/A audio resolution
- 24-bit/100 MHz (x2) digital signal processing
- 28-band 1/3-octave channels of EQ (4-Ch 4.24GS, 2-Ch 2.24GS)
- Contact Closure for External Recall of 6 Scenes
- Control From 4.24G, 4.24RD, PC or MIDI
- Programmable compressor/limiter, delay and high- and low-pass filters
- Balanced XLR and 1/4" inputs and outputs
- Contact Closure for External Recall of 6 Scenes
- Linkable channels
- Constant Q/reciprocal filter design
- ±15dB boost and cut, 0.5dB increments
- 128 preset locations, 50 scenes
- RS-232 computer interface
- Full MIDI implementation
- AMX Compatible NetLinX Control
- Password protection of system operation

Specifications:

Input:	Active balanced, 18 kohms
Max. input level:	+20 dBu
Output:	Pseudo-balanced, 200 ohms
Max. output level:	+20 dBu
Frequency response:	20 Hz-20kHz, ± .5 dB
THD:	<0.01% @1 kHz, +20 dBu
Dynamic range:	>110 dB (20 Hz-20 kHz) unweighted
Output noise:	<-90 dBu unweighted
Processor	24 bit Output D/A: 24 bit
Input A/D:	24 bit signal, 48 bit filters, 56 bit accumulator
Processors:	48 kHz Propagation Delay: 1.46 ms
Sample Rate:	
Other	
Shipping weight:	14lbs (4.24GS); 9lbs (2.24GS)
Dimensions:	19" L x 3.5" H x 8" D (4.24GS) 19" L x 1.75" H x 8" D (2.24GS)
Power requirements:	(4.24GS), (2.24GS) 90-125VAC, 50-60Hz 180-250VAC
Power:	27W, 20 W

4.24RD GRAPHIC REMOTE CONTROL

The 4.24RD is a full-function remote controller used to control the 4.24G, 4.24GS and 2.24GS via two standard mic cables. Cable length can be up to 1000 feet. The control buttons and display are an exact replica of the front panel of the 4.24G, allowing you to program Protea Graphic Equalizers from a remote location. When multiples of the processing units are used in a system, up to sixteen channels may be controlled by the remote. The best live sound application for the remote is to EQ individual monitors on-location without having to repeatedly return to the processor to make adjustments. For a fixed installation using the 4.24GS or 2.24GS, the 4.24RD remote may be temporarily used to set up all EQ curves and processing parameters, and then removed for complete tamperproof operation. With the optional Protea 4.24RD remote control, tuning a room for optimal response has never been easier.



FEATURES:

- Portable
- 2-Way communication over standard mic cables
- Powered by 4.24G, 4.24GS or 2.24GS
- Large, 240 x 64 fluorescent backlit display

Specifications:

Connections:	XLR
Power requirements:	Phantom (supplied by controlled device)
Shipping weight:	5lbs
Dimensions:	16.94" L x 1.65" H x 5.36" D

4.24/2.24PS PARAMETRIC EQUALIZER/SYSTEM PROCESSOR

The 4.24PS and 2.24PS allow for the installation of multiple channel parametric equalizers where tamperproof, precise audio equalization is required. Control and programming of either product is easily achieved through the use of Ashly's exclusive Protea System Software running on a PC, or by a MIDI controller. Scene recall, output level and mute functions may also be controlled by an AMX NetLinX system.

The Protea 4.24PS is housed in an all-steel, 2RU chassis, and has four independent channels of fully programmable 12-band parametric EQ. The 2.24PS offers the same specs and features in a single rack-space, two-channel unit. Each parametric band allows for 1/25th to 3.3 octave Q, a twenty-four step/octave frequency adjustment from 20Hz to 20kHz and level control of +10/-20dB in 0.5dB increments. High- and low-shelf filters are adjustable from 1.6kHz to 20kHz and 20Hz to 240Hz, respectively, and are selectable 6dB or 12dB/octave. High- and low-pass filters are 24dB/octave adjustable from 20Hz to 10.6kHz and 33Hz to 20kHz, respectively. Time delay is adjustable up to 1.364 seconds. Other features include 24-bit A/D-D/A conversion, 24-bit/100 MHz digital processing, RS-232 and MIDI interfaces, linkable channels, +6dB/-infinity master gain, and 128 preset locations. Both units display individual channel numbers using 7-segment displays. Signal present and signal clip levels are indicated by discrete LEDs. Connections on the rear panel include: balanced XLR and 1/4" ins and outs for each channel, RS-232, and MIDI In/Thru.



FEATURES:

- 24-bit A/D-D/A audio resolution
- 24-bit/100 MHz (x2) digital signal processing
- 12-band Parametric channels of EQ (4-Ch 4.24PS, 2-Ch 2.24PS)
- Contact Closure for External Recall of 6 Scenes
- Control PC or MIDI
- Programmable compressor/limiter, delay and high- and low-pass filters
- Balanced XLR and 1/4" inputs and outputs
- Contact Closure for External Recall of 6 Scenes
- Linkable channels
- Constant Q/reciprocal filter design
- +10/-20dB boost and cut, 0.5dB increments
- 128 preset locations, 50 scenes
- RS-232 computer interface
- AMX Compatible NetLinX Control
- Full MIDI implementation
- Password protection of system operation

Specifications:

Input:	Active balanced, 18 kohms
Max. input level:	+20 dBu
Output:	Pseudo-balanced, 200 ohms
Max. output level:	+20 dBu
Frequency response:	20 Hz-20kHz, \pm .5 dB
THD:	<0.01% @1 kHz, +20 dBu
Dynamic range:	>110 dB (20 Hz-20 kHz) unweighted
Output noise:	<-90 dBu unweighted
Processor	
Input A/D:	24 bit Output D/A: 24 bit
Processors:	24 bit signal, 48 bit filters, 56 bit accumulator
Sample Rate:	48 kHz Propagation Delay: 1.46 ms
Other	
Shipping weight:	14lbs (4.24GS); 9lbs (2.24GS)
Dimensions:	19" L x 3.5" H x 8" D (4.24GS) 19" L x 1.75" H x 8" D (2.24GS)
Power requirements:	(4.24GS), (2.24GS) 90-125VAC, 50-60Hz 180-250VAC
Power:	27W, 20 W

PROTEA SOFTWARE SUITE

The Protea Software Suite is a fully functional, Windows™ Vista, 2000/XP, ME and NT based software control for Ashly's Protea Series Digital Signal Processors and PE-Series amplifiers and option modules.

Protea Software Suite is a self-extracting file that gives you the option to install all Protea platforms or only install the ones that suit your applications. It contains the setup files for Protea^{ne} Software, Protea^{ne} Mobile Software and Protea System Software. A series of setup screen walks you through the different options.



Ashly Audio is dedicated to conducting its business in a manner designed to protect the environment, our customers, and our employees. As of July 1, 2006, Ashly completed a redesign of our product line and our production facility to meet the requirements of the RoHS Directive. All products meet the RoHS Directive and are marked accordingly.