







NE 24.24M

NETWORK-ENABLED MATRIX PROCESSING WITH PROTEA™ DSP

Whether you are designing or installing a system for corporate boardrooms, restaurants, courtrooms, houses of worship, left/center/right high output speaker systems in performance spaces, auditoriums or conference centers, our widely-popular *Protea™* ne24.24M Matrix Processor will more than satisfy your requirements for any zoned system. When your install requires input/output matrixing with signal processing it doesn't get much easier than programming your channels using Protea™ ne Software on your PC.

The ne24.24M uses modular expansion cards to provide up to 24-channels of audio matrixing and processing. The base unit offers a 4-input/4-output configuration. Each input and output expansion card has an individual DSP processor allowing you to expand the total input or output 4 channels of DSP processing 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.

An optional GPO Logic Card allows the ne24.24M to trigger projection screens, curtains or lights. The logic card is installed in place of a 4-input or 4-output card and occupies one of the four expansion slots.

ne24.24M Features:

- 10/100 Ethernet & RS-232 computer interface standard
- Extensive DSP available
- Easy and intuitive user interface
- Mic/line inputs
- 24-bit A/D-D/A audio resolution
- 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
- 31 preset locations
- Remote controls for level, preset recall and programmable functions
- Third-party control-friendly
- Input and output metering viewable in dBu
- Multi-level security
- Safety/Compliance: cTUVus, FCC, CE, RoHS

Specifications	Note: 0dBu = 0.775 VRMS	
Input	Active Balanced, 18k Ohms	
Input Gain Range	-50dB – +12dB, Selectable Polarity	
Output	Active Servo Balanced, 112 Ohms	
Input/Output Level	+20dBu (Max)	
Output Gain Range	-50dB – +12dB, Selectable Polarity	
Frequency Response	20Hz–20kHz, ±0.25 dB	
THD	<0.01% @ 1kHz, +20 dBu	
Dynamic Range	>110dB (20Hz–20kHz) Unweighted	
Output Noise	<-90 dBu Unweighted	
Environmental	40–120 deg. F, (4-49 deg, C) noncondensing	
Rear Panel		
Controls	Remote level control, Data In/Out ports, Preset Recall, Logic Inputs, On/Off switch	
Connections	10/100 Ethernet port, RS-232, Euroblock In/Out	
Power Cord	3-Prong, Detachable	
Weight, Dimensions & Power		
Dimensions	19"L x 3.5"H x 8.5"D (483mm x 89mm x 216mm)	
Unit Weight	8.9lbs (4.04kg)	
Shipping Weight	12lbs (6kg)	
Power Requirements	90 – 240VAC, 50/60Hz, 40W	

Internal Modules		
4-Channel, Input Module		
4-Channel, Output Module		
GPO Logic Output Option Module		
External Remotes		
WR-1	2-Channel Level Control	
WR 1.5	Preset Recall and Level Control	
WR-2	Four-Position Preset Recall Switch	
WR-5	Programmable Button Controller	
RD/RW8	8-Channel Fader Remote	
neWR-5	Programmable Network Button Controller	
FR-8	8-Channel Network Fader Remote	
FR-16	16-Channel Network Fader Remote	
Ashly Remote	Remote Application for Apple® iPad®	





Protea

DIGITAL SIGNAL PROCESSING FOR THE NE24.24M

Protea is compatible with Microsoft® Windows 8, 7 (Vista/XP) 32 & 64 bit systems.

Audio professionals find our *Protea™ DSP* to be very intuitive and easy to navigate—and you will too. No need to attend a one-week training class away from home to learn our software. Common sense layout of controls and features, on-line help, or a visit to the Technical Support page on our website provides answers to all of your questions.



Protēa™ DSP Specifications			
•	All DSP functions can be linked to 1 of 16 link groups		
Compressor			
Threshold	-20dBu to +20dBu		
Ratio	1.2:1-∞		
Attack	0.2 to 50ms		
Release	5ms/dB to 1000ms/dB		
Detector	Peak/Average		
Attenuation Bus	1 available		
Metering	In, Out, Attenuation, Graphical		
Autoleveler Controls			
Target Level	-40dBu to +20dBu		
Action	Gentle, normal, aggressive, user defined		
Maximum Gain	0dB to +27dB		
Metering	Attenuation		
Ratio	1.2:1 to 10:1		
Threshold Below Target	-30dB to 0dB		
Gain Increase/Decrease Rate	5ms/dB to 1000ms/dB		
Hold Time	0-6 sec		
Ducking: High/Low Priority, Trigger, Filibuster, Ducked Program			
Trigger Threshold	-80dBu to +20 dBu		
Ducking Release	5ms/dB to 1000ms/dB		
Ducking Depth	0dB to -30dB, -∞		
Enable Ducking at Matrix Mixer	Yes		
Metering	Input		
Gate			
Threshold	-80dBu to +20dBu		
Range	off, 100dB to 0dB		
Attack	0.2ms/dB to 50 ms/dB		
Release	5ms/dB to 1000ms/dB		
Metering	Gate LED, Graphical		

0dB to +12dB, off, polarity invert available, 0dB to -∞ nable per channel, 0dB to -∞ to -50dB, Mute 0-20kHz 0dB to +15dB 016 to 3.995 Octave		
nable per channel, 0dB to -∞ to -50dB, Mute 0-20kHz 0dB to +15dB		
to -50dB, Mute 0-20kHz 0dB to +15dB		
0-20kHz 0-0dB to +15dB		
0dB to +15dB		
0dB to +15dB		

016 to 3.995 Octave		
OHz–20kHz		
5dB to +15dB		
EQ: All Pass		
)Hz–20kHz		
EQ: Variable Q HP/LP		
)Hz–20kHz		
047 to 0.267		
EQ: Notch/Bandpass		
)Hz–20kHz		
2.436 to 0.267		
Crossover: 2 Way, 3 Way, 4 Way Crossover & High Pass/Low Pass Filters		
2/18/24/48 dB/oct		
2/24/48 dB/oct		
ff, 20Hz–20KHz		
Delay: @ 48kHz Sampling Rate (Input Time, Distance & Temperature)		
-21ms		
-682ms		
i i		

Delay: @ 96kHz Sampling Rate (I	nput Time, Distance & Temperature)	
Speaker Delay	0–10.6ms	
Delay	0-341ms	
Audio Metering Tool		
Range	-60dBu to +20dBu	
Increments	1dB	
Peak Hold Indicator	Yes	
Signal Generator Tool: Pink noise, White noise, Sine wave		
Signal Level	Off, -50dBu to +20dBu	
Sine Wave Frequency	20Hz–12kHz	
Matrix Mixer		
Gain (0.5dB increments)	Off, -50 to +12dB	
Mute	Per channel	
Enable Ducking at Mixer	Yes	
Ducking LED	Per channel if enabled	
Processors		
Input A/D, Output D/A	24-bit	
DSP Processors	24-bit signal, 48-bit filters, 56-bit accumulator	
Sample Rate	48kHz	
Propagation Delay @ 48kHz:	1.46ms	



E 24.24M ARCHITECT & ENGINEERING SPECS

ne24.24M

The digital signal processor base unit shall consist of four inputs and four outputs and shall use modular expansion cards to provide up to twenty-four channels of input / output audio matrixing and processing. Each expansion card shall have an individual DSP processor allowing for expansion of the base unit's total inputs or outputs four channels at a time. Expansion cards shall be factory installed or easily installed in the field without the need to reprogram. The processor shall use fixed path architecture to reduce set-up time. The processor control and programming shall be accomplished using a PC platform through a standard Ethernet connection. An RS-232 jack shall be provided for control and monitoring by a third-party controller. Multi-level security and no front panel controls shall insure tamper-resistant operation. Input channel processing blocks shall include a Mic/Line Preamp with 48V Phantom Power, Gain, Pink Noise Generator, Delay, fifteen EQ Filters, Gate, Autoleveler and Ducker, Output channel processing blocks shall include a Cross-Point Mixer, HPF/LPF, Delay, fifteen EQ Filters, Gain, and Limiter. The cross point mixer shall allow any input to be routed to any output at any level and mute any input at any output without affecting the true input configuration. Rear panel Euroblock connectors shall include eight preset recall contact closures plus eight remote potentiometer level controls. The DSP processor shall mount in a standard 19" rack using 2 spaces (3.5" high).

The digital signal processor shall be an Ashly DSP Matrix Mixer model ne24.24M