

Nion[®] Series

Digital Signal & Control Processors

MediaMatrix[®]

nE | nX | n3 | n6



Description

Engineered for longevity and flexibility, the MediaMatrix[®] NION[®] proves that a well designed platform will serve installations for decades to come. Constantly renewed by new releases of Nware[™], the NION still leads the market in audio quality, depth of processing, versatility and scalability.

Designed for stable, efficient and robust performance, NION features a 448-channel audio bus for seamless expandability. Low-latency audio makes NION perfect for performance audio projects, in addition to applications where a massive amount of audio processing is required. A new floating point- based DSP engine, coupled with the world's most efficient and high performance audio algorithms makes NION the most powerful configurable DSP core ever built for the commercial, engineered systems marketplace.

NWare programming software includes advanced configuration and control tools (including an optional nControl[™] software/hardware package), support for SNMP and a new vector-based graphical user interface. Intuitive network-centric role assignments and extensive transport options make NION an unbeatable product for large and small projects alike. NION will change the way you design forever!

Features

- Floating point DSP Engine with 6 DSP chips
- World-famous MediaMatrix audio algorithms
- Up to 128 channels total audio I/O; 32 bit processing engine
- 24 bit conversion
- Scalable I/O architecture with four NIO-card bays
- Low latency audio performance
- Integrated CobraNet or Dante I/O
- Network-centric architecture
- Supports centralized, distributed or hybrid processing; Integrated serial support
- X-DAB bus supports up to 448 bi-directional audio channels
- Front panel interface with intuitive user input controls
- Robust Linux embedded system controller
- Integrated flash-based storage
- Windows configuration and control client
- Full support for SNMP network management tools
- Universal mini-ATX industrial-grade power supply
- Software support for large-scale multi-node systems
- Advanced DSP compiler
- Configurable GPIO (compatible DIN rail package available separately)
- Transparent control grouping across physical nodes
- Supports redundant, self-healing configurations
- Supports a range of sample rates from 22.05KHz to 96KHz
- Stand alone or combined operation



Features and specifications subject to change without notice.

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Commercial Audio

Nion® Series - DSP processors

Specifications

MODEL:	NION® nE	NION® nX	NION® n3	NION® n6
REAR PANEL CONNECTIONS				
MAINS POWER:	100v > 240v 50/60 Hz 300W A/C			
LAN:	Female RJ-45 - transports control and communications via Ethernet on Category 5e (CAT5) cabling.			
XDAB:	N/A	N/A	Dual Female RJ-45 Connector - proprietary LVDS signaling via shielded Category 6 (CAT6) cable terminated with shielded male RJ-45 jacks.	
EIA-422/485 SERIAL:	Female DB-9 - supports bidirectional EIA-422/485 multi-dropped serial communications.			
RS 232 SERIAL:	Female DB-9 - supports general purpose RS-232 communications.			
COBRANET*:	Optional CM-1 Module with 2 Female RJ-45 connectors for redundancy - transports digital audio via CobraNet audio network on CAT-5 cabling terminated with male RJ-45 jacks	CM-1 Module with 2 Female RJ-45 connectors - transports digital audio via CobraNet audio network on CAT-5 cabling terminated with male RJ-45 jacks		
DANTE*:	Optional Dante Module with 2 Female RJ-45 connectors for redundancy - transports digital audio via Dante audio network on CAT-5 or better cabling terminated with male RJ-45 jacks	Optional Dante Module with 2 Female RJ-45 connectors for redundancy - transports digital audio via Dante audio network on CAT-5 or better cabling terminated with male RJ-45 plugs		
GPIO:	Female DB-25 - breaks out configurable general purpose logic and status connections to external DIN terminating block (available separately).			
I/O BAYS:	4x Proprietary I/O Card Slots - supports proprietary audio and interface cards (available separately).			
DIGITAL AUDIO PERFORMANCE				
DATA FORMAT:	32-bit floating point audio.			
PROCESSING:	PowerPC Host (Linux OS) with 3 ADI SHARC Hammerhead digital signal processors.			
DSP MFLOPS:	1200 sustained, 1800 peak.			
SAMPLE RATE:	Configurable, 22.05KHz, 24KHz, 32KHz, 44.1KHz, 48KHz, 64KHz, 88.1KHz, 96KHz., supports multi-rate processing.			
LATENCY:	Configurable, minimum latency (analog in to analog out @ 48kHz sample rate, 8 samplevector) 1.8msec. Total latency varies with audio configuration.			
STORAGE:	2GB Compact Flash, supports OS, configuration, control and .wav audio.			
XDAB PERFORMANCE				
DATA FORMAT:	NA		32-bit floating point audio.	
PROTOCOL:	NA		Proprietary	
CHANNELS:	NA		448 channels at 48kHz, 224 channels cat 96kHz.	
MAXIMUM XDAB LATENCY:	NA		3 sample vectors.	
SYNCHRONIZATION:	NA		+/-20ns box-to-box word clock sync.	
RREDUNDANCY:	NA		Dual counter-rotating rings.	
CABLE LENGTH:	NA		3 meters maximum cable length.	
COBRANET PERFORMANCE				
DATA FORMAT:	20-bit audio.			
PROTOCOL:	Fast Ethernet w/ Proprietary CobraNet protocol.			
CHANNELS:	32x32 channels at 48kHz.			
MAXIMUM COBRANET LATENCY	3 sample vectors.			
CABLE LENGTH:	328 foot (100m) maximum.			
DANTE PERFORMANCE				
DATA FORMAT:	24-bit audio.			
PROTOCOL:	Gigabit Ethernet w/ IP with proprietary Dante Protocol.			
CHANNELS:	32x32 channels at 48kHz.			
CABLE LENGTH	328 foot (100m) maximum.			
GPIO				
CONNECTIONS:	25 pin D-sub connector with 16 individually programmable pins, 4 switchable high current outputs, plus a form C fault relay.			
CONFIGURATIONS:	Digital Input / Analog Input / Digital Output software selectable.			
DIGITAL INPUT:	Vin < 0.8v = logic 0; Vin > 2.0v = logic 1 (1.2v hysteresis) 24V max.			
ANALOG INPUT:	0.0v < Vin < 24.0v; 12-bit analog converter precision 24V max.			
DIGITAL OUTPUT:	logic 0 Vout = 0.0v, Isink <= 2mA; logic 1 Vout = 3.3v, Isource <= 2mA.			
HIGH CURRENT OUTPUTS:	4 pins, each with a 500mA self-resetting fuse and protection diodes for driving inductive loads. Vout = 11.5v nominal @ Isource = 500mA Direct short protection from ground to +36v.			
RELAY CONTACTS:	Form C contacts rated at 0.3A @ 125VAC or 110VDC, or 1A @ 30VDC.			
MECHANICAL SPECIFICATIONS				
CHASSIS STYLE:	2RU EIA rack package.			
DIMENSIONS:	(HxWxD) 3.5" x 19" x 16.8" x / 482mm x 426.72mm x 88.9mm			
WEIGHT:	32 lbs. / 14.5kg.			

*NOTE: NION® is available with either CobraNet® or Dante™