

## CAB™ 8n

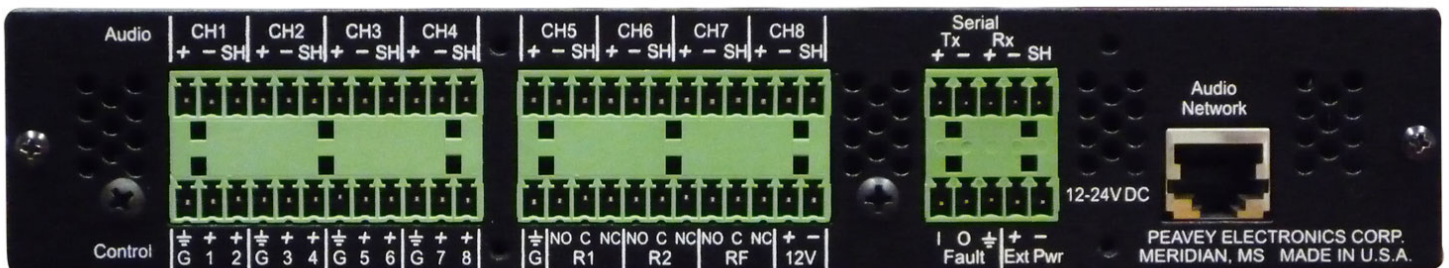


The MediaMatrix® CAB™ 8n is an 8x8 CobraNet® configurable digital audio bridge from MediaMatrix that provides an unparalleled eight individually configured audio channels for networked digital audio systems.

The CAB 8n is a compact, half-width, 1RU-tall device that allows convenient mounting in equipment racks and under tables. The unique I/O configuration means all the inputs and outputs required can be handled by a single box, and everything can be connected via a single Ethernet cable when used with any standard PoE (Power over Ethernet) network switch or standard power injector. A 12VDC power inlet is included for situations where PoE is not available.

The CAB 8n also includes GPIO and serial bridging, including eight programmable pins and two Form C relays. The serial bridging is capable of handling RS-232, EIA-422 and EIA-485.

- 8 analog audio channels, individually configurable as inputs or outputs
- Fault Relay featuring N/O and N/C connections
- 2 Form C relays
- All connections are made with mini-Euro connectors
- Power over Ethernet (PoE) or external 24VDC power supply (provided)
- Audio signal LEDs on the front panel
- Rackmountable, 1RU tall by half-rack width
- 8 programmable GPIO pins
- Serial Bridging support for RS-232, EIA-485 and EIA-422
- Phantom power: 48V, software-selectable per input channel
- Audio sample rate: 48kHz
- Frequency response, inputs and outputs: 20Hz - 20kHz, +0/-0.3dB, referenced at 1kHz, unity gain
- Input dynamic range: 110dB, A-weight filter
- Equivalent input noise: -126dBu
- Input CMRR: >70dB
- Input gain control: -3dB to +60dB in 0.25dB steps
- Maximum input level: +24dBu
- Input impedance, mic mode: 1.9kOhm
- Input impedance, line mode: 8.4kOhm
- Input THD+N: 0.01% 10Hz - 22kHz measurement bandwidth, +4dBu signal with 20dB headroom
- Output dynamic range: 110dB, A-weight filter measure
- Output level control: -96dBu to +22dBu full-scale, analog level control
- Maximum output level: +24dBu
- Output impedance: <600hms
- Output THD+N: 0.006%, 10Hz - 22kHz measurement bandwidth, +4dBu signal with 20dB headroom



Features and specifications subject to change without notice.



## CAB™ 4n-CM1



The CAB™ 4n continues in the tradition of high-end audio networking set forth by the time-tested CAB Series. In fact, the CAB 4n break-out box was designed specifically for NION®-based systems. The CAB 4n-CM1 (required for ControlMatrix® projects) features the MediaMatrix® Scalable I/O Architecture, with support for the popular line of MediaMatrix I/O modules (up to four modules configurable for 16x0, 0x16, 12x4, 4x12 or 8x8 operation, 1x0). All inputs can be configured in groups of four channels for microphone or line level in any of the available configurations. The CAB 4n features a versatile, performance-oriented GPIO port, which provides configurable contacts for analog, digital and dry contact use. All of the GPIO ports are configurable from

the NWare™ software and an easy DIN rail mounting system for efficient rack wiring and service is available as the GPIO-25.

- Four 16-position front panel rotary switches for unit ID
- Fault relay for hardware indication of unit status, NO and NC connections, contacts rated for 1A
- Buddy Link provides automatic redundancy
- Advanced audio routing when integrated with NION
- 4 "Form C" relays with NO and NC connections, contacts rated for 1A
- Scalable I/O Architecture
- Configurable for 16x0, 0x16, 12x4, 4x12 or 8x8 operation

- Inputs configurable in groups of four channels for microphone or line-level input and line-level output
- GPIO port
- GPIO-25 DIN rail breakout panel for external control terminations
- 8 Configurable GPIO pins
- Fan cooled 2RU package with NION cosmetics
- 48kHz sample-rate
- Front panel audio metering
- 24-bit quantization 64x oversampling
- Front panel network status and fault indicators
- Front panel level meter for each channel
- Universal power supply (100-240V 50-60Hz)



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## CAB™ 4n-CM2



The CAB™ 4n continues in the tradition of high-end audio networking set forth by the time-tested CAB Series. In fact, the CAB 4n break-out box was designed specifically for NION®-based systems. The CAB 4n features the MediaMatrix® Scalable I/O Architecture, with support for the popular line of MediaMatrix I/O modules (up to four modules configurable for 16x0, 0x16, 12x4, 4x12 or 8x8 operation, 1x0). All inputs can be configured in groups of four channels for microphone or line level in any of the available configurations. The CAB 4n features a versatile, performance-oriented GPIO port, which provides configurable contacts for analog, digital and dry contact use. All of the GPIO ports are configurable from the NWare™ software and include an easy DIN rail mounting system for efficient rack wiring and service.

- Four 16-position front panel rotary switches for unit ID
- Fault relay for hardware indication of unit status, NO and NC connections, contacts rated for 1A
- Buddy Link provides automatic redundancy
- Advanced audio routing when integrated with MediaMatrix
- Universal power supply (100-240V 50-60 Hz)
- 4 "Form C" relays with NO and NC connections, contacts rated for 1A
- Configurable for 16x0, 0x16, 12x4, 4x12 or 8x8 operation
- Inputs configurable in groups of four channels for microphone or line-level input and line-level output
- GPIO port
- GPIO-25 DIN rail breakout panel for external control terminations
- Fan cooled 2U package with NION cosmetics
- 8 Configurable GPIO pins
- Front panel audio metering
- 48kHz sample-rate
- Front panel network status and fault indicators
- 24-bit quantization 64x oversampling
- Front panel level meter for each channel
- Scalable I/O Architecture



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## CAB<sup>™</sup> 4n-Dante



The CAB<sup>™</sup> 4n continues in the tradition of high-end audio networking set forth by the time-tested CAB Series. In fact, the CAB 4n break-out box was designed specifically for NION<sup>®</sup>-based systems. The CAB 4n features the MediaMatrix<sup>®</sup> Scalable I/O Architecture, with support for the popular line of MediaMatrix I/O modules (up to four modules configurable for 16x0, 0x16, 12x4, 4x12 or 8x8 operation, 1x0). All inputs can be configured in groups of four channels for microphone or line level in any of the available configurations. The CAB 4n features a versatile, performance-oriented GPIO port, which provides configurable contacts for analog, digital and dry contact use. All of the GPIO ports are configurable from the

NWare<sup>™</sup> software and include an easy DIN rail mounting system for efficient rack wiring and service.

- Four 16-position front panel rotary switches for unit ID
- Front panel level meter for each channel
- 24-bit quantization 64x oversampling
- 48kHz sample-rate
- 8 Configurable GPIO pins
- 4 "Form C" relays with NO and NC connections, contacts rated for 1A
- Fault relay for hardware indication of unit status, NO and NC connections, contacts rated for 1A

- Universal power supply (100-240V 50-60Hz)
- Scalable I/O Architecture
- Configurable for 16x0, 0x16, 12x4, 4x12 or 8x8 operation
- Inputs configurable in groups of four channels for microphone or line-level input and line-level output
- GPIO port
- GPIO-25 DIN rail breakout panel for external control terminations
- Fan cooled 2U package with NION cosmetics
- Front panel audio metering
- Front panel network status and fault indicators



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## CAB™ 8i



The CAB™ 8i is an eight-channel, input only, digitally controlled preamp using 24-bit analog-to-digital converters. Includes mic preamps with software-controllable 48V phantom power, mic/line selection and analog gain.

- Four 16-position front panel rotary switches for unit ID
- Advanced audio routing when integrated with MediaMatrix
- Universal power supply (100-240V 50-60Hz)
- Eight mic/line inputs
- Eight studio grade mic preamps
- Word clock for system redundancy "buddy link"
- 48V phantom power (switchable)
- Four 16-position front panel switches for unit ID
- Front panel level meter for each channel
- Supports RS-485 bridging
- Eight N/O-N/C relay (CAB 8 Series)
- Eight 5V TTL outputs (CAB 8 Series)
- Eight 0-10 VDC control voltage inputs (CAB 8 Series)
- 48kHz sample-rate
- 24-bit quantization 64x oversampling
- Digitally controlled analog microphone preamplifier
- Front panel level meter for each channel
- Mic/line 20dB switchable pad

## CAB™ 16i



The CAB™ 16i is a 16-channel, line level, input only device using 24-bit analog-to-digital converters.

- Four 16-position front panel rotary switches for unit ID
- Word clock for system redundancy "buddy link"
- Advanced audio routing when integrated with MediaMatrix
- Universal power supply (100-240V 50-60Hz)
- Supports RS-485 bridging
- CobraNet protocol sampled at 48kHz
- A/D converters are 24-bit 64 times oversampling, using delta-sigma modulation
- 24-, 20-, or 16-bit transmission quantization at a 48kHz sampling rate
- Low noise/wide dynamic range 108dB typical
- A non-Ethernet RS-485 control port with two multi-drop connections
- 48kHz sample-rate
- Two word clock linking connectors that enable auto-switch-over to a second unit, should one unit fail
- 24-bit quantization 64x oversampling
- One rack-unit (1-3/4")
- Front panel level meter for each channel
- Fan-cooled chassis
- Sixteen channels of line-level audio transmitted onto an Ethernet network



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## CAB<sup>™</sup> 16o



The CAB<sup>™</sup> 16i and CAB<sup>™</sup> 16o, respectively, are sixteen line-level input and output MediaMatrix<sup>®</sup> gateways onto and off of a 100baseT Ethernet network employing CobraNet<sup>®</sup> proprietary protocol to ensure seamless, error-free transmission of high-quality real-time audio without dropouts or lossy compression. The CAB 16o downloads and reconstructs audio data from the CobraNet Ethernet network 16 line-level channel outputs. Maximum output levels of +6, +12, +18, and +24 dBu and volume from zero to full-scale in 1/2 dB steps are software controllable through the MediaMatrix.

- Four 16-position front panel rotary switches for unit ID
- Eight 5V TTL outputs (CAB 8 Series)
- Eight N/O-N/C relay (CAB 8 Series)
- Supports RS-485 bridging
- Eight 0-10 VDC control voltage inputs (CAB 8 Series)
- Advanced audio routing when integrated with MediaMatrix
- Sixteen channels of line-level audio transmitted from an Ethernet network using CobraNet protocol sampled at 48 kHz
- D/A converters are 24-bit, 128 times oversampling, using delta-sigma modulation
- Low noise/wide dynamic range 110dB typical (CAB 16o).
- A non-Ethernet RS-485 control port with two multi-drop connections
- 48kHz sample-rate
- Two word clock linking connectors that enable auto-switch-over to a second unit, should one unit fail
- 24-bit quantization 64x oversampling
- One rack-unit (1-3/4")
- Front panel level meter for each channel
- Fan-cooled chassis
- Word clock for system redundancy "buddy link"



## CAB<sup>™</sup> 16d



The CAB<sup>™</sup> 16d is a 16-channel input and 16-channel output device, which includes an RJ-45 100 BaseTX Ethernet port and an RS-485 port.

- Front panel level meter for each channel
- 48kHz sample-rate
- Supports RS-485 bridging
- Word clock for system redundancy "buddy link"
- Advanced audio routing when integrated with MediaMatrix
- 24-bit quantization 64x oversampling
- Four 16-position front panel rotary switches for unit ID
- Sixteen digital audio inputs and outputs
- AES3 and S/PDIF compatible
- Universal power supply (100-240V 50-60Hz)



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## DESCRIPTION

The CAB 8n Configurable Audio Bridge is a professional digital audio processor intended for fixed installation applications. It provides eight audio channels and a GPIO interface in a compact enclosure. The device is designed for use with MediaMatrix NION networked DSP systems in professional and commercial audio and communications applications. The cost-effective, 1U-high, 1/2U-wide unit can be powered directly from the Ethernet network using Power-over-Ethernet, or from a DC power supply. Each of the eight audio channels can function either as an analog audio input to the CobraNet audio network, or as an analog audio output from the CobraNet audio network. Audio inputs accept microphone or line-level audio signals, with phantom power, and allow fine-grained remote control of input gain. Audio outputs provide line-level audio signals with fine-grained remote level control, relay mute, and direct monitoring of the analog output signal.

The CAB 8n features a wide range of control interfaces to third-party systems, including eight channels of configurable GPIO, each of which may be independently configured as logic input, logic output, high-current voltage output or analog control voltage input. The unit also features two dual-pole user-controllable contact-closure circuits, a fault indicator contact-closure circuit, and a user-controllable RS-232, EIA-485 and EIA-422 full-duplex serial port.

## FEATURES

- 8 channels of quality balanced analog audio, independently selectable to be either mic/line input with phantom power, or line output
- Remote control of input mic/line mode, phantom power, input gain and output level
- 8 channels of GPIO, independently configurable as logic input, logic output, analog control voltage input or high-voltage output\*
- May be powered from Power-over-Ethernet, or DC power supply (included)
- CobraNet audio networking interface with 5.33ms latency, 48kHz sample rate.
- Two user-controllable contact closure circuits
- Fault contact closure circuit and front-panel LED
- User-selectable RS-232/EIA-485/EIA-422 serial port, for interfacing to third-party systems
- High-current (1A) DC power output\*
- All audio interface control and monitoring, audio metering, GPIO, contact closure, serial port data and hardware status remotely accessible via the Ethernet network from within MediaMatrix NWare software
- Compact 1/2U-wide, 1U high chassis
- Front panel LED audio level metering
- Front-panel LED network activity and power status indicators
- Concealed front-panel rotary controls for unit ID selection.

\* High-voltage output GPIO mode and high-current power output not available when using Power-over-Ethernet.

## Specifications

### Front Panel

5-element LED audio level meter for each audio channel, indicating -48dB, -12dB, -6dB, 0dB and overload

Link LED indicates CobraNet connection status  
Status/Data LED indicates Ethernet data activity  
Fault LED

Power LED

Four rotary encoders behind panel (removable without tools) for setting unit ID on network, to identify it uniquely to control software

### Rear Panel Connections

**LAN:** RJ-45 socket for CobraNet and control communications on 100Base-T Ethernet, and power via Power-over-Ethernet

**Audio:** 8 channels of balanced audio I/O with screen, each on 3-pin Mini Euro connector that may be independently selectable as input or output

**GPIO:** Mini Euro connector with 8 independent GPIO pins and 4 ground pins

**Contact closure:** Two user-controlled contact closure circuits and one fault indicator contact closure, each with normally-open and normally-closed connections, on three-pin Mini Euro connectors

**Serial port:** RS-232, EIA-485 and EIA-422 full-duplex serial port with screen, on five-pin Mini Euro connector

**External power in:** 24V DC 1.6A on two-pin Mini Euro connector

**DC power output:** 1A output at external power voltage, on two-pin Mini Euro connector

### Digital Audio Performance

**Audio channels:** 8, each software configurable as input or output

**Audio sample rate:** 48kHz

**Frequency response, inputs and outputs:** 20 Hz – 20 kHz, +0/-0.3 dB, referenced at 1kHz, unity gain

**Input THD+N:** 0.01% 10Hz – 22kHz measurement bandwidth, +4dBu signal with 20dB headroom

**Input dynamic range:** 110 dB, A-weight filter measure

**Equivalent input noise:** -126 dBu

**Input CMRR:** > 70 dB

**Input gain control:** -3 to +60 dB, 0.25dB steps, remote control

**Maximum input level:** +24 dBu

**Input impedance, mic mode:** 1.9kOhm

**Input impedance, line mode:** 8.4kOhm

**Phantom power:** 48V, software-selectable per input channel

**Output THD+N:** 0.006%, 10Hz – 22kHz measurement bandwidth, +4dBu signal with 20dB headroom

**Output dynamic range:** 110 dB A-weight filter measure

**Maximum output level:** +18 dBu

**Output level control:** -96dBu to +22dBu full-scale, analog level control

**Output impedance:** < 60 Ohms

### Notes:

All specifications are typical for any channel  
All measurements are made with an AC line of 240V RMS at 50 Hz

All measurements are made using 600 Ohm balanced load unless otherwise stated

All measurements are made in the analog domain with gain/attenuation set for unity unless otherwise stated

### CobraNet Performance

48 kHz sample rate, 5.33ms latency  
Four transmit bundles, eight receive bundles

### GPIO and Other Interfaces

**8 GPIO ports:** each independently software-configurable to be logic level input, logic level output, analog control voltage input, or high-voltage output

**Logic level input mode:** 3.3V high level (LVTTTL) with reverse-voltage and transient protection

**Logic level output mode:** 3.3V high level (LVTTTL)

**Analog control voltage input mode:** 10-bit resolution, 12V full-scale, reverse-voltage and transient protection

**High voltage output mode:** voltage as supplied by external DC power, current up to 1A on each GPIO port, subject to total power available from external DC power supply

**2 user-controllable contact-closure circuits:** max voltage 30V DC, max current 1A

**1 fault indicator contact closure circuit:** max voltage 30V DC, max current 1A

**Serial port interface:** selectable in software to be EIA-485 (half-duplex or full-duplex), EIA-422 or RS-232

**High-current power output:** voltage as supplied by external DC power, 1A current, subject to total power available from external DC power supply, additional ground pin

### Mechanical Specifications

**Chassis Style:** 1RU high, 1/2RU wide EIA rack package with mounting lugs available for installing either one or two CAB 8n units in a 1RU space.

**Dimensions:** 9.5 in. (24.13cm) W x 14.5 in. (36.83cm) D x 1.75 in. (4.45cm) H

## Architect's & Engineer's Specifications

### Configurable Audio Bridge

The audio network interface shall be a 1RU-high, 1/2RU-wide industrial package designed for fixed installation in engineered audio and communication systems. It shall provide eight analog audio channels, each independently configurable as either a line-level analog output from the audio network, or a mic/line analog audio input to the audio network. The audio network shall be CobraNet, operating on a 100Base-T Ethernet physical interface. The audio output signals shall be monitored in the analog domain, and this monitoring signal shall be capable of transmission on the CobraNet network. The analog audio inputs shall provide 48V phantom powering for microphones, and remote control of gain. The audio outputs shall provide remote control of level in the analog domain, and mute by physical disconnection of audio signal drivers from the external connectors. The audio network interface shall be capable of being powered from Power-over-Ethernet according to standard IEEE802.3-2008, or from 24V DC. The audio network interface shall feature front-panel meters to indicate audio signal level on each channel, and status indicators for the network connection, power and system fault condition. The audio network interface shall provide eight general-purpose I/O connections, each independently configurable as either a logic input, logic output, analog control voltage input, or high-voltage output. The audio network interface shall provide a serial port, configurable to operate on either RS-232, EIA-485 or EIA-422 physical protocols. All connections except for the Ethernet port shall be on Mini Euro connectors. Remote control and monitoring via Ethernet shall be possible for all functions and settings, including audio input and output interface settings, audio level metering, CobraNet settings, GPIO configuration and signals, contact closure circuits and serial port configuration and data. A software device to control and monitor the audio network interface shall be available for integration into the configuration file. The audio network interface shall be the MediaMatrix Cab 8n or approved equal.







## DESCRIPTION

The CAB 4n is an audio breakout box designed to enhance the versatility of MediaMatrix NION audio systems. It is fitted with four module bays that support a variety of optional I/O modules. The unit can be loaded with one, two, three or four modules to provide any combination of microphone, line and output connections, including 16x0, 0x16, 12x4, 4x12 and 8x8. Input channels can be managed in groups of four.

The CAB 4n features a versatile GPIO port, which provides analog, digital and dry contacts. All of the GPIO ports are configurable using the NWare™ software. A DIN rail mounting system, called the GPIO-25, is also available to give efficient rack wiring and service.

There are three variations of the unit, each fitted with a different audio networking module:

- CAB 4n CM-1 is a CobraNet model that features 8 and 9-bit serial bridging. This is required for legacy ControlMatrix projects.
- CAB 4n CM-2 is a CobraNet model that offers optional advanced CobraNet subchannel mapping.
- CAB 4n Dante interfaces with the Dante audio networking protocol through the use of Audinate's Dante Legacy Module (DLM).

## FEATURES

- Scalable I/O architecture
- Supports all MediaMatrix 4-channel I/O modules
- Supports one, two, three, or four modules in any combination of mic in, line in, and output.
- Supports both CobraNet and Dante audio network modules
- Front panel level meter for each channel
- Front panel network status and fault indicators
- 48 kHz sample-rate
- 24-bit quantization, 64x oversampling
- Buddy Link redundancy system (CobraNet models only)
- GPIO port with 8 configurable GPIO pins
- 4 "Form C" relays with NO and NC connections, contacts rated for 1A
- GPIO-25 DIN rail breakout panel for external control terminations (available separately)
- Integrated CobraNet serial bridging for EIA-485 (CobraNet models only)
- Universal power supply (100-240V 47-63Hz) with removable IEC power cable.

## Specifications

### Front Panel

#### Hardware base address indicators / Audio meters:

Before a CobraNet control connection has been established from a NION, base address (ID) is shown; afterwards, audio input/output levels are shown. With Dante, base address is shown at power up; afterwards, audio input/output levels are shown.

**Hardware base address switches:** 4-position rotary switches for setting hardware base address (ID). Located behind removable cover on the front of unit.

**Fault LED:** Indicates hardware fault or unexpected condition from the audio networking module.

**Conduct LED:** Indicates the CAB 4n is an active Conductor on the CobraNet network.

**Link LED:** Indicates that a physical layer connection has been established.

**RX and TX LEDs:** Indicate data reception and transmission via the audio networking module.

**Power LED:** Indicates that the CAB 4n is receiving power.

### Rear Panel Connections

**Mains power in:** 100-240v 47-63 Hz 50W A/C. Accepts removable IEC power cable. AC line current: 450 mA (rms), power consumption: 32W, power dissipation: 108 BTU (27 kcal).

**Buddy Link In & Out connector:** BNC connectors to transmit link data to another CAB 4n as part of Buddy Link process (CobraNet models only).

**Audio networking module bay:** Supports audio networking modules with the Cirrus Logic CM-1 footprint. Currently supported modules are the Cirrus Logic CM-1, Cirrus Logic CM-2 and Audinate Dante Legacy Module (DLM).

A network connection via one of these modules to a supporting device is required to pass audio.

**GPIO port:** Female DB-25 connector with 8 configurable, general purpose ports (supporting digital I/O, analog I/O or rotary encoder), plus 4 relays.

**EIA-485 ports:** Two two-wire, half duplex EIA-485 removable Euro connectors. Each is internally wired to support busing of communicating hardware via a serial connection.

**Audio connectors:** Support for balanced, three-wire connections on removable Euro connectors. These are available on audio input and output cards. The cards are color-coded: MM-Line4 (four channel line input) - black, MM-Mic4 (four channel mic input) - green, MM-Out4 (four channel line output) - blue.

### Digital Audio Performance

**Frequency response:** +0 / -0.3 dB, 20 ~ 20 kHz, referenced @ 1 kHz

**THD + Noise line level:** 0.006%, Mic Level: < 0.01%

**Dynamic range:** 106 dB

**Equivalent input noise (EIN) mic level:** < -126 dBu

**Common mode rejection ratio:** 55 dB

**Crosstalk:** 90 dB

**Full-scale line level:** +30, +24, +18, or +12 dBu

**Input sensitivity settings mic level:** -42 dBu at +63 dB gain

**Full-scale output settings:** +24, +18, +12, +6 dBu, Less than 0.5 dB error between settings

**Analog gain range:** line level -95.5 dB to +30.5 dB, mic Level 0 to 63 dB

**Input impedance line level:** 9.5 k Ohms, mic Level: 4 k Ohms

**Output Impedance:** 102 ohms

**Minimum Load Impedance:** 600 ohms

**Audio I/O:** 16 inputs/outputs, line or mic level modular inputs, configurable in groups of four.

**A/D, D/A Quantization:** 24 bit

**LED Metering:** 16 peak-reading headroom LED meters. Zero LED indicates level < 1 dB below full-scale.

### CobraNet Performance

**Audio transmission quantization:** 20 or 24-bit.

**Sample rate (Fs):** 48 kHz.

**Digital audio channels per unit:** 16 inputs/outputs at 24-bit.

**CobraNet I/O:** Primary and secondary 100 BaseT Ethernet network connections using standard 8P8C "RJ45" modular jacks. Only a single connection required for audio networking.

**Cable length:** Ethernet standards apply.

### Dante Performance

**Audio transmission quantization:** 24-bit.

**Sample rate (Fs):** 48 kHz.

**Digital audio channels per unit:** 16 inputs/outputs at 24-bit.

**Dante I/O:** Primary and secondary Gigabit Ethernet network connections using proprietary Dante protocol and standard 8P8C "RJ45" modular jacks. Only a single connection required for audio networking.

**Cable length:** Ethernet standards apply.

### Mechanical Specifications

**Dimensions:** 19" (483mm) W x 16-3/8" (416mm) D x 3-1/2" (88mm) H.

**Weight:** 9.5 lbs (4.3 kg).

**Mounting:** Double EIA space rack mount (2U).

## Architect's & Engineer's Specifications

### Configurable Audio Bridge

The CAB 4n shall provide four card slots, each accepting one of the following cards: MM-Mic4 (4-channel microphone input), MM-Line4 (4-channel line input), or MM-Out4 (4-channel line output), providing up to 16 channels of analog audio transmitted via an Ethernet network, in any configuration of card combinations. It shall provide full-bandwidth, high-quality audio transmission via Ethernet without lossy compression techniques, drop-outs or signal degradation by employing either CobraNet or Dante audio transmission protocols. The specific audio performance characteristics are dependant upon the I/O cards loaded into the unit. Control features shall include four relays with both normally open and normally closed contacts, and eight channels of configurable GPIO pins. The GPIO pins may be configured as Digital Input (3.0V TTL logic - Low:0VDC-0.8VDC; High:2.0VDC-24VDC), Digital Output (3.0V TTL logic - Low:0VDC-0.4VDC; High:2.4VDC-3.3VDC), Analog Input (0-24VDC), or as part of a Rotary Encoder circuit (Requires 2 GPIO pins and a common +24VDC source). All GPIO functions are software controllable via an Ethernet link. All GPIO functions can control (or be controlled by) software parameters via an Ethernet link. Front-panel indicators shall display the following status conditions: signal transmission, signal reception, transmission error, reception error, fault indication, link indication, conductor status, and power presence. It shall have sixteen peak reading headroom meters to monitor the analog level present at the I/O cards with the top-most red LED indicating A/D (or D/A) clipping. Rear panel features shall include a detachable AC power cord, an AC power switch, and an AC power receptacle with a built-in auto-resetting circuit breaker. External or internal fuses shall not be acceptable. It shall have two word-clock connectors that, when used with CobraNet, enable auto-switchover to a redundant unit. It shall employ detachable, euro-style, bare-wire capturing, screw-terminal connectors for ease of hook-up and troubleshooting. These connectors shall be used for all line-level, microphone-level, and EIA-485 connections. It shall employ a DB-25 connector for control voltage, TTL, relay, and fault relay connections. The unit shall use a standard eight-conductor RJ-45 I/O jack for Ethernet connection. Its dimensions shall be 19 inches (483 mm) wide, 16 3/8 inches (416 mm) deep, and 3 1/2 inches (88 mm) high without feet. Its net weight shall be 9.5 pounds (4.3 kg.), and its 2 rack-unit (3 1/2"), fan-cooled, steel chassis, shall be finished in black powder coat and silver trim bezel to match the styling cues of the MediaMatrix NION series Digital Signal Processors. It shall consume no more than 32 Watts of power and draw no more than 0.45 amps of current while dissipating no more than 108 BTUs of heat. It shall be supplied with a detachable AC cable. It shall be UL, CUL, and CE listed and comply with FCC part 15, A. The unit shall be Peavey Electronics Corporation model CAB 4n.





## MediaMatrix® CAB™ 16i and CAB™ 16o

### Description

The CAB™ 16i and CAB™ 16o, respectively, are sixteen line-level input and output MediaMatrix® gateways onto and off of a 100baseT Ethernet network employing CobraNet™ proprietary protocol to ensure seamless, error-free transmission of high-quality real-time audio without dropouts or lossy compression.

The CAB 16i digitizes line-level inputs and uploads audio data onto the Cobranet Ethernet network. Each CAB 16i channel has software controlled, continuously variable analog input gain in 1/2 dB steps. Up to 30 dB of input padding is available for each channel. Both are software controllable through the MediaMatrix.

The CAB 16o downloads and reconstructs audio data from the Cobranet Ethernet network 16 line-level channel outputs. Maximum output levels of +6, +12, +18, and +24 dBu and volume from zero to full-scale in 1/2 dB steps are software controllable through the MediaMatrix.

In addition to the input or output audio paths, both products incorporate an RS-485 port and two word-clock linking BNC connectors.

### Features

- Sixteen channels of line-level audio transmitted onto an Ethernet network using CobraNet protocol sampled at 48 kHz (CAB 16i).
- Sixteen channels of line-level audio transmitted from an Ethernet network using CobraNet protocol sampled at 48 kHz (CAB 16o).
- A/D converters are 24-bit 64 times oversampling, using delta-sigma modulation (CAB 16i).
- D/A converters are 24-bit, 128 times oversampling, using delta-sigma modulation (CAB 16o).
- 24, 20, or 16-bit transmission quantization at a 48 kHz sampling rate.
- Low noise/wide dynamic range 108 dB typical (CAB 16i).
- Low noise/wide dynamic range 110 dB typical (CAB 16o).
- A non-Ethernet RS-485 control port with two multi-drop connections.
- Two word clock linking connectors that enable auto-switch-over to a second unit, should one unit fail.
- One rack-unit (1-3/4"), fan-cooled chassis.

### Applications

- Stadiums
- Cruise ships
- Multi-purpose facilities
- Auditoriums
- Large-scale paging systems
- Schools
- Courts of law
- University campus buildings
- Theme parks
- Performing arts centers
- Distance learning
- Hotel meeting rooms
- Houses of worship
- Conference centers
- Teleconferencing
- Civic Centers
- Music clubs
- Theaters
- Arenas
- Critical listening/recording - high end audio
- Any facility requiring distribution of multiple line-level signals