cab 8n

MediaMatrix®
Peavey Electronics Corporation

Configurable Audio Bridge **Data Sheet**

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 dBr, 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: +24 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 (LVTTL) with reverse-voltage and transient protection
Logic level output mode: 3.3V high level (LVTTL)
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. W x 14.5 in. D x 1.75 in. H

Architect's & Engineer's Specifications

Audio Processing Node

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.

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