Key Features:

- **Full IRIS-Net Software Support**

- **32-Channel Digital Matrix Bus**

- **115 dB Dynamic Range**

- **Full CobraNet Audio Transport Support**

- **Supports Ethernet, RS-232, USB, and CAN Communications Protocols**

- **Up to 1000 MIPS of Processing Power Available Per Unit**

- **Extensive Range of DSP Functions**

- **Modular Hardware Chassis**

- **Integrated Supervision, Scheduling and Command Macro Capability**

- **Fully Programmable Analog GPIO Support**

General Description:

The Electro-Voice® NetMax N8000 is an all-purpose digital audio system controller with outstanding performance features. A high quality system design provides excellent audio quality and clear sound, which is achieved by the application of high-end 24 Bit A/D and D/A converters with 120 dB volume range, high-quality input and output circuits in the analog domain and digital signal processing with optimized 48 bit double-precision algorithms. Hence, the N8000 is even particularly suitable for demanding applications in theatres, concert halls, big churches etc.

NetMax N8000 is highly flexible due to the modular hardware design, which renders many other applications possible. Four slots with 8-channel audio modules at the rear of the device offer up to 32 local audio channels. Each slot can be equipped either with an audio input module or an audio output module. So, various configurations (e.g. 8-in/8-out, 8-in/16-out, 8-in/24-out, 16-in/ 16-out, 24-in/8-out) can be realized in only one single device. In addition, N8000 can be equipped with a CobraNet™ network module. Several N8000 units can be integrated in a network and be connected to a large, sophisticated system.

The signal processing in the N8000 is affected on powerful audio signal processors where, depending on the stage of expansion, - up to 8 DSPs are available. The software contains a multitude of freely programmable signal processing components. Among other things, these are filters with all possible characteristics, parametric and graphic equalizer, matrix router and matrix mixer, delays, dynamic functions, etc. Diverse configurations can be created by combining and connecting these DSP blocks.

The powerful signal processing allows complex configurations for the adjustment and control of the sound system, depending on the application or type of event. Thus, the sonic quality of PA speakers, monitor speakers, front fill systems as well as of the sound reinforcement of adjoining rooms, lobbies, areas for the staff etc. can be optimized and tuned individually. In other words, the N8000 copes with every application - even with large and complex systems absolutely exactly and reliably.

In addition to the audio processing, the NetMax N8000 is equipped with diverse control functions. The scheduling with calendar function makes it possible to program one-time or recurring events. The recurrence can occur annually, monthly, weekly, daily, hourly or even within smaller time intervals. Furthermore, daily programs can be set up and can also be combined to weekly operations. With the event control, reactions to certain events or system states can be configured, e.g. in case of overstepping or undershooting of threshold values. Faults in the device or in the complete NetMax system are detected automatically and can be displayed on the PC screen or transmitted to external sites if necessary.

Faults and other events are recorded in an internal log file with date and time. Furthermore, it can be defined which types of errors or events should be recorded. The log can be read out and displayed on the screen at any time. In the NetMax N8000 individual functions can be integrated into complex operations. For example, several parameters can be set with various values or states in a scene and can be changed manually or automatically at any time.

EV Electro-Voice®

Technical Specifications:

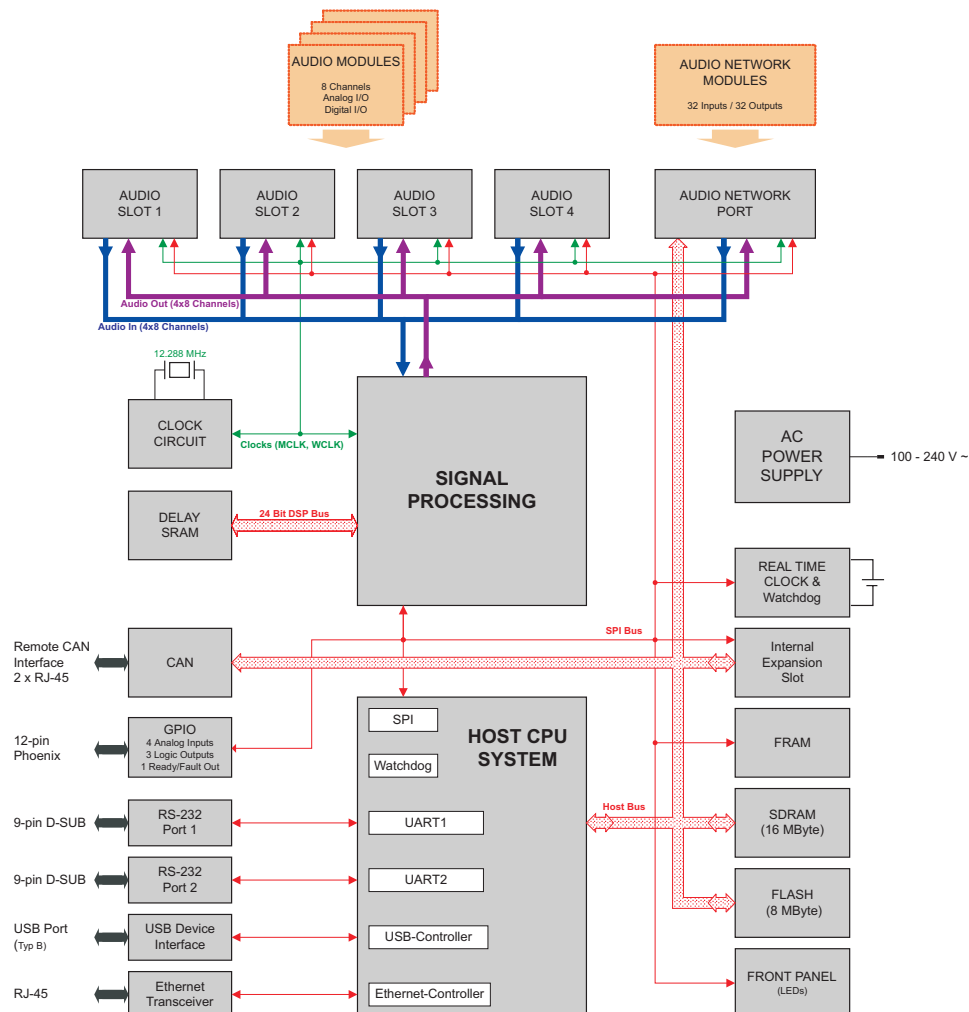| AUDIO SPECIFICATIONS	
Audio Inputs - Analog Input Module AI-1	8 analog audio inputs per module, line level, electronically balanced
Connectors	8 x 3-pole Euro block connectors
Input Level (nominal)	+6 dBu / 1.55 V
Input Level (max. before clip)	+21 dBu / 8.7 V
Input Impedance	20 kOhms
Common Mode Rejection	> 70 dB
A/D Conversion	24 Bit, Sigma-Delta, 128 times oversampling
Audio Outputs - Analog Output Module AO-1	8 analog audio outputs per module, line level, electronically balanced
Connectors	8 x 3-pole Euro block connectors
Output Level (nominal)	+6 dBu / 1.55 V
Output Level (max. before clip)	+21 dBu / 8.7 V
Output Impedance	100 Ohms
Min. Load Impedance	600 Ohms
D/A Conversion	24 Bit, Sigma-Delta, 128 times oversampling
Frequency Response	20 Hz...20 kHz (-0.5 dB)
Signal to Noise Ratio (A-weighted)	AI-1: 117 dB typical AO-1: 118 dB typical N8000 analog In to analog Out: 115 dB typical
THD+N	< 0.005 %
Signal Delay	AI-1: 1.3958 ms AO-1: 0.646 ms N8000 analog In to analog Out: 2.2917 ms
Crosstalk	< -110 dB @ 1 kHz
INTERFACES	
Ethernet	10 / 100 MBit/s, RJ-45 (PC Control)
CAN	10... 500 kbit/s, 2 x RJ-45 (Remote Amp Control)
RS-232	2 Ports, 9pin D-Sub female (Remote Control)
USB	USB Type B on Front Panel (PC Control)
GPIO Control Port	2 x 6-pole Euro block 4 Control Inputs (analog 0 - 10 V / logic control) 3 Control Outputs (Relay contact to ground) 1 Fault Output (NC Relay contact) 3 Reference Outputs (+5 V / +10 V/ GND)
N8000 GENERAL SPECS	
Power Supply	100 - 240 V AC, 50/60 Hz
Power Consumption	90 W max. (incl. 2 x AI-1, 2 x AO-1, 1 x CM-1 modules)
Cooling	Left-to-right, 3-stage fan
Operating Temperature Range	0 °C ... 40 °C
Dimensions (W x H x D)	483mm x 88.1mm x 381mm (19", 2 HU) 19" x 3.5" x 15"
Weight	N8000 (without optional modules): 7.35 kg (16.18 lbs)

Architectural Specifications:

The NetMax N8000 Digital Matrix Processor shall be a modular, network-compatible and freely configurable audio system with which complete system solutions can be constructed. The unit shall integrate all components ranging from the matrix to the speakers including system control and system monitoring in a common audio platform. The configuration, operation and monitoring of the system shall be controlled through the IRISNet control software protocol. The central unit shall have up to 32 audio channels, mixer and matrix functions, signal processing and extensive control and monitoring functions. The unit must be able to be networked together via a CobraNet™ audio and control network so that a large, decentralized audio system can be assembled.
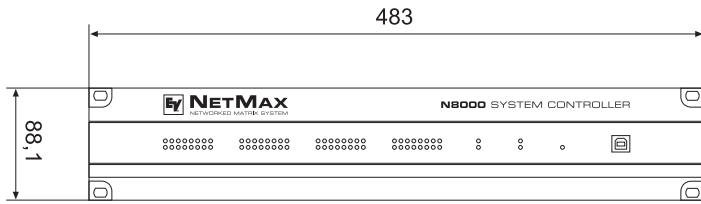
The system shall have comprehensive built in supervision functions to monitor and report failures in all aspects of the systems functions. In addition with the support of compatible IRISNet enabled power amplifiers, the unit shall be able to run and measure full impedance frequency sweeps on any speaker line connected to the unit and indicate if the measurement is out of range of a pre-selected tolerance. The system processor shall also be able to control IRISNet compatible amplifiers and distribute DSP functions to the remote amplifiers if necessary.

A NetMax system meets all relevant safety requirements. All audio connections, interfaces and processor systems are monitored and displayed in case of fault. By using CobraNet™ redundant networks can be assembled.
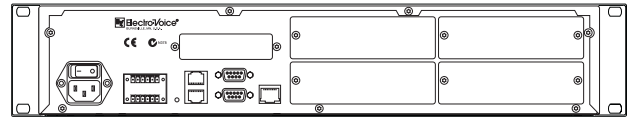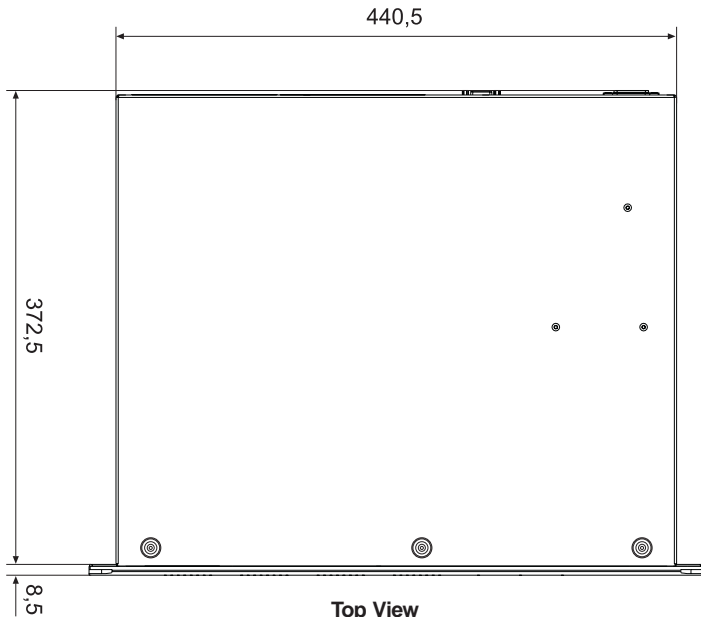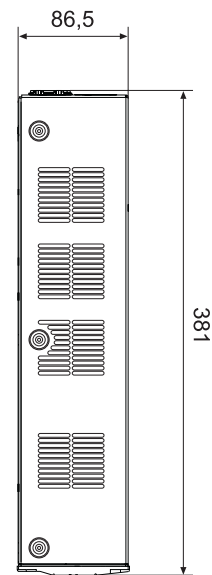
Block Diagram:

Dimension Drawings:

483

88,1

NETMAX
NETWORKED MATRIX SYSTEM

N8000 SYSTEM CONTROLLER

Front View

ElectroVoice

Rear View

All Dimensions in Millimeters

440,5

372,5

8,5

Top View

86,5

381

Side View

N8000 Modules		
DI-1	D170366	Digital Input Module
DO-1	D170367	Digital Output Module
N8000	D170350	NetMax System Controller
AI-1	D170324	Analog input module - 8 inputs - 3 pin phoenix connectors
MI-1	D170325	Microphone Input Module
AO-1	D170326	Analog output module - 8 outputs - 3 pin phoenix connectors
CM-1	D170327	CobraNet module - ALL CHANNELS FULLY LICENSED
DSP-1	D170328	DSP extension module - 300 mips additional processing power

N8000 Part Numbers:

N8000, 120V -- D170350
N8000, 240V -- D170323

Rear View:

AUDIO SLOT 3   AUDIO SLOT 1
AUDIO SLOT 4   AUDIO SLOT 2

U.S.A. and Canada only. For customer orders, contact Customer Service at:
800/392-3497 Fax: 800/955-6831
Europe, Africa, and Middle East only. For customer orders, contact Customer Service at:
+ 49 9421-706 0   Fax: + 49 9421-706 265
Other International locations. For customer orders, contact Customer Service at:
+ 1 952 884-4051   Fax: + 1 952 736-4212
For warranty repair or service information, contact the Service Repair department at:
800/685-2606
For technical assistance, contact Technical Support at: **866/78AUDIO**

Specifications subject to change without notice.