

Description

The NM 48 Network Preamplifier allows one to send four channels and receive eight channels of high quality audio over a single, low cost computer network cable. The NM 48 provides a cost effective solution for audio routing problems in venues such as Arenas, Convention Centers, Churches, Schools and Theme Parks. Unlike point-to-point distribution systems, the NM 48 features a highly flexible network protocol, allowing full control of audio destination and source. It is possible to build flexible audio networks on a large or small scale by using multiple NM 48s or by combining NM 48s with Rane NM 84 Network Mic Preamplifiers.

The NM 48 Network Preamplifier features Peak Audio 100Base-T CobraNet™ technology. CobraNet technology allows deterministic (fixed propagation delay), transport of up to 64 channels of audio on a single computer network cable. Each Bundle can contain up to eight, 20-bit Cobranet Audio Channels.

The NM 48 can put four 24-bit audio channels on to the network and get eight 24-bit audio channels from the network. Network control is possible using the rear panel Memory Recall Port (MRP), SNMP or ActiveX controls provided by Rane. All NM 48 parameters may be controlled from the front panel interface.

The NM 48 provides four balanced line-level inputs. 24-bit A/D converters provide the digital audio signal for 100Base-T transport. Audio may be transmitted in 20- or 24-bit mode. All four input channels may be transmitted on a single Bundle (the term formerly known as Network Channel). The NM 48 may transmit up to 4 bundles. (the NM 48 can identify the addresses of 999 Bundles).

The NM 48 also provides eight high-quality monitor output channels. Each output may be assigned to monitor any one of the eight Cobranet Audio Channels (the term formally known as Sub-channel) contained in one of four Bundles or any one of the four Local channels.

The NM 48 can transmit and receive one channel of RS-232 data over the network. The user may set the baud rate as well as Tx and Rx network channels.

A Memory Recall Port (MRP) allows up to 16 pre-set Memories to be recalled with simple switch closures to ground. In addition to Local MRP, the NM 48 may be set to respond to Network MRP. It may also transmit Local MRP over the network for monitoring by other NM 48s or NM 84s.

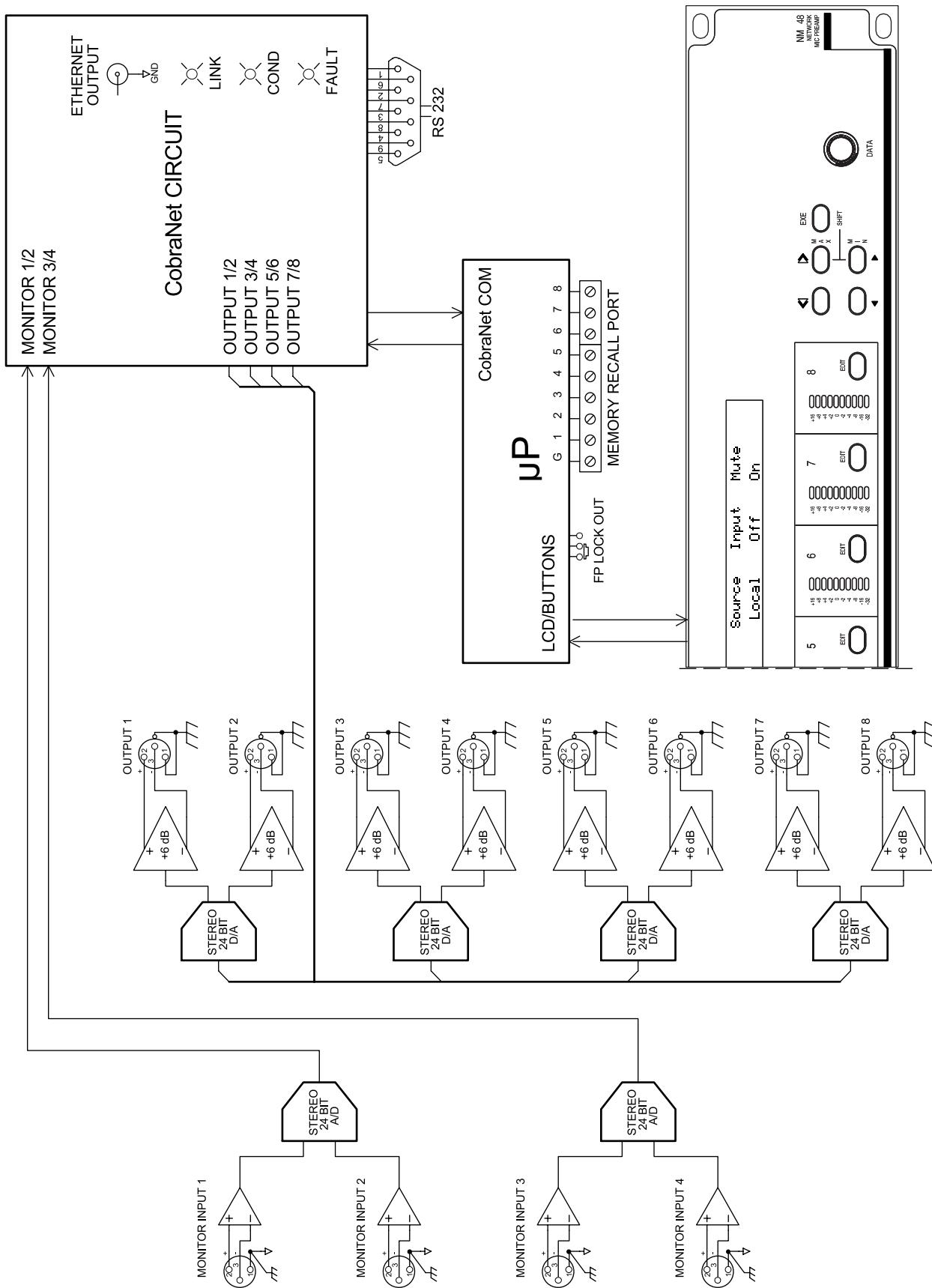
The NM 48 is fully compatible with other existing CobraNet products using current Cobranet Firmware.

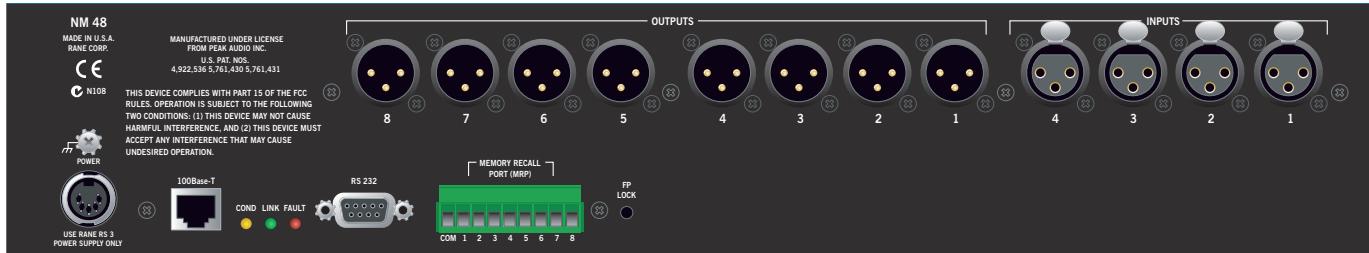
Features

- Four Balanced Line-level Inputs with 24-bit A/D Converters
- 24-bit Transmit Mode
- Eight Balanced Monitor Outputs with 24-bit D/A Converters
- 10-Segment Metering for Each Output
- 100Base-T Network Transmission/Monitoring
- SNMP or ActiveX control of Parameters
- Front Panel Control of All Parameters
- Front Panel Lock-Out Switch
- Programmable Memory Recall Port
- RS-232 and MRP Network Transport

Features and Specifications

Parameter	Specification	Limit	Units	Conditions/Comments
Inputs: Type	Active Balanced			
Line Mode:				
.....Input Impedance	27.14k	1%	Ω	@ 1 kHz, 13.57 kΩ each leg
.....Maximum Input	20	min	dBu	
.....THD+N	0.005	typ	%	+4 dBu, 1 kHz, 20 kHz bandwidth
A/D Converters: Type	Delta-Sigma			
.....Dynamic Range	106	typ	dB	A-weighted
.....Sample Rate	48k		Hz	
.....Conversion	24-bit			
Monitor Outputs: Type	Active Balanced			
.....Connectors	XLR			
.....Maximum Output	+20	min	dBu	@ 1 kHz, 2 kΩ load
D/A: Dynamic Range	104	typ	dB	A-weighted
.....Sample Rate	48k		Hz	
.....Conversion	24-bit			
Metering: Type	Peak Detecting		dBFS	Meters monitor output level
.....Accuracy	1		dB	
.....Attack	1	typ	ms	
.....Decay	60	typ	ms	2 ms per dB
Channel Separation	100	min	dB	@ 1 kHz, source resistance 150 Ω
Transmit Format	20/24-bit			
Network Receive	24-bit			Accepts 16- or 20-bit words
A/D Propagation Delay	666.7		μs	32 samples at 48 kHz
D/A Propagation Delay	520.8		μs	25 samples at 48 kHz
Network Propagation Delay	5.333		ms	256 sample at 48 kHz
Communications:				
.....100Base-T Ethernet	RJ-45 Connector			100 meters max using CAT-5 UTP cable;
.....RS-232	DB-9			Maximum cable length 50'
Power Supply: Agency Listing	RS 3 (see data sheet)			Class 2 Equipment
.....120 VAC model	UL			File No. E132267
	CSA			File No. LR57450-99
.....230 VAC model	CE-EMC			EMC Directive 89/336/EEC
	CE-Safety			LVD 73/23/EEC
Power Supply Input	85 to 265		VAC	IEC line cord jack
Unit: Construction	All Steel			
.....Size	3.5" H x 19" W x 8.5" D (2U)			(8.9 cm x 48.3 cm x 21.6 cm)
.....Weight	9 lb (w/o power supply)			(4.1 kg)
Shipping: Size	4.5" x 20.3" x 13.75"			(11.5 cm x 52 cm x 35 cm)
.....Weight	13 lb			(5.9 kg)
<i>Note: 0 dBu=0.775 Vrms</i>				



NM 48 Rear Panel**Applications**

- Arenas
- Convention Centers
- Churches
- Schools
- Theme Parks

Anywhere multiple channels of deterministic, high-quality digital audio transport is required with the full flexibility of CobraNet 100Base-T network technology.

Further Information

RaneNote: Controlling Audio Systems with ActiveX
available at www.rane.com