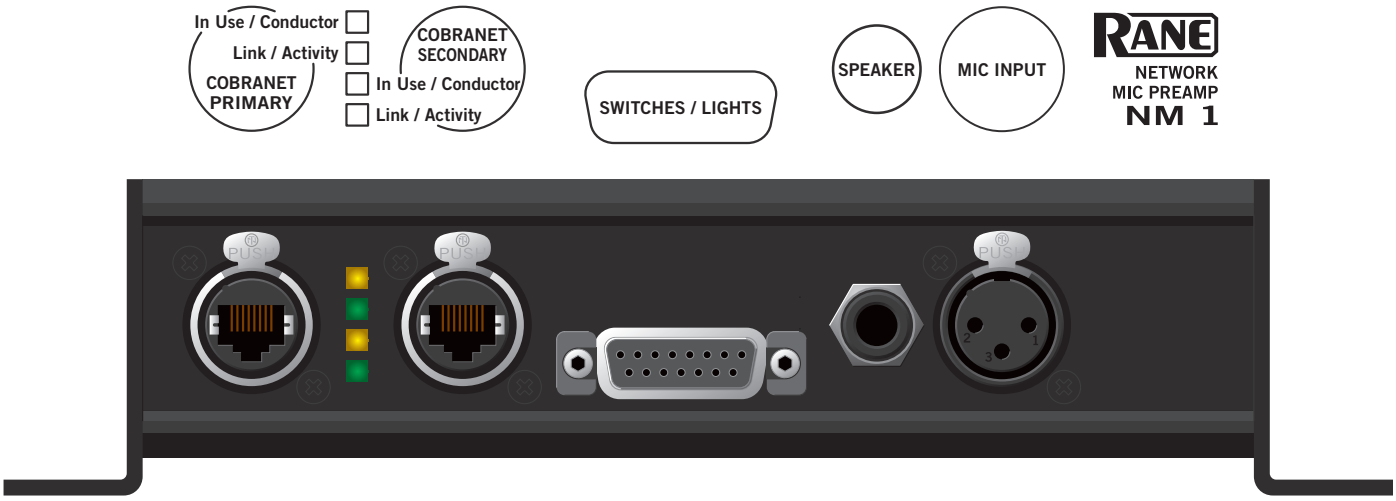


Connections

COBRANET PRIMARY Connector
COBRANET SECONDARY Connector

These Neutrik Ethercon connectors accept CAT 5e Ethernet cables terminated with the standard RJ-45 plug. They are used as the Primary and Secondary connections to a LAN carrying CobraNet data. The Ethercon connectors also accept a Neutrik-designed housing for RJ-45 plugs (Neutrik NE8MC series) that is similar to the industry standard XLR connector. This Ethercon plug is much more rugged than the standard RJ-45; a version of the housing is available to retrofit over CAT 5e cables that are already terminated. (Note that certain cables such as Belden MediaTwist require special strain-reliefs to work with the Ethercon shell.)

The cabling used to connect the NM 1 to other Ethernet equipment must be CAT 5e minimum. CAT 6 is also acceptable. For more information about CobraNet network design, redundancy, and Primary and Secondary ports, please refer to CobraNet documentation from Peak Audio (*www.peakaudio.com*).

Both the Primary and the Secondary ports fully support PoE (IEEE 802.3af). For the NM 1 to operate, at least one of the two Ethernet ports must be connected to a device that is an IEEE 802.3af compliant Power Source Equipment (PSE). Power can be supplied to the NM 1 through either the unused pairs of the CAT 5 cable, or in a "phantom power" scheme using the data pairs. This allows the use of PSE devices from manufacturers that support either scheme. The NM 1 requests the maximum power, approximately 13W, on both ports (see data sheet for more details on power requirements). The PSE must be chosen carefully to ensure that it can provide full power to every port that is connected to a NM 1.

Power can be supplied to the NM 1 through either port; it automatically switches between the ports to support fully redundant system designs. If power is available on both ports, the NM 1 chooses one as the active power port. PoE supports equipment hot-plugging, so a PSE senses when a load is disconnected and stops delivering power on that port. To allow the fastest possible switch-over from the active port, the stand-by port always draws a minimum current from its PSE so the PSE is awake and ready to deliver power as soon as the NM 1 needs it. This allows seamless redundancy in the power supply to the NM 1.

Note the port the NM 1 chooses to power from is independent from the port that is being used for CobraNet data.

In Use / Conductor LEDs

There is one yellow LED for each CobraNet port. This indicator lights on the port in use and blinks if the device is also the Conductor. (More documentation is at *www.peakaudio.com*)

Link / Activity LEDs

There is one green LED for each CobraNet port. This indicator lights when Link is established and blinks when CobraNet network activity is detected. (See additional documentation at *www.peakaudio.com*)

SWITCHES / LIGHTS Connector

This female DB-15 connector allows an external switch and lamp panel to be attached for push-to-talk, cough mute, and other similar functions. It is provided with lugs so that any DB-15 plug with mounting ears and spring-latches can be used (e.g. Amp part numbers for the spring latch are 745779-3 (bulk), 745779-2 (two/bag), 745255-3 (bulk) or 745255-2 (two/bag))

Switches / Lights Connector Pinout	
Pin 1	Talk button
Pin 2	Cough button
Pin 3	NC
Pin 4	Override button
Pin 5	Private button
Pin 6	Ground
Pin 7	Ground
Pin 8	Ground
Pin 9	Ground
Pin 10	Ground
Pin 11	Talk LED
Pin 12	Cough LED
Pin 13	NC
Pin 14	Override LED
Pin 15	Private LED

The LED output pins provide +12 VDC through 160Ω current limiting resistors when they are turned on. When turned off, they are floating. LED indicators should be connected between these pins and ground pins on this connector.

The switch inputs have internal pull-ups to +3.3 VDC and are ESD protected. When a pushbutton input is needed, normally-open switches should be connected between one of these inputs and a ground pin.

SPEAKER Connector

This amplifier output is a standard ¼" TRS phone connector. It is used to connect a 4Ω minimum loudspeaker to the NM 1 for monitoring the selected CobraNet audio channel. The NM 1 power amplifier can deliver 1 watt continuously into an 8Ω load with a pink noise signal that has a 15 dB crest factor (see data sheet for detailed specifications). The output configuration requires that the positive and negative signals must remain isolated from the chassis and from ground. The plug used ***must*** be TRS; use of a TS (i.e. mono) phone plug shorts the power amplifier and causes a malfunction.

The threaded metal bushing allows use of a ¼" phone plug with a threaded locking ring (e.g., Switchcraft Number 298).

The connector sleeve is connected directly to chassis ground; the tip is the positive signal; the ring is the negative signal.

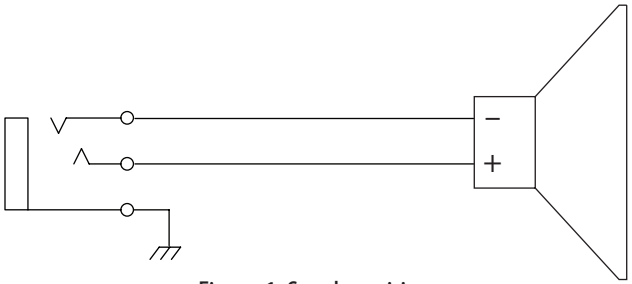


Figure 1. Speaker wiring

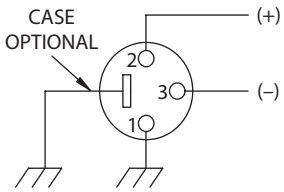


Figure 2. Mic wiring

MIC INPUT Connector

The balanced microphone input is an industry standard XLR-3 type connector (see Data Sheet for specifications). Gain is adjusted via SNMP control. IEC 61938 P48 compliant 48V phantom power is provided.

Connect pins 2 and 3 to the balanced output of the microphone. Pin 1 is directly connected to the chassis; for best noise immunity, the microphone cable should have a braid or double wound shield. If a cable such as Belden 1800F is used that has both a wire shield and a drain wire, then all the shield wires and not just the drain wire should be connected to pin 1 of the XLR connector.

SysName Switches

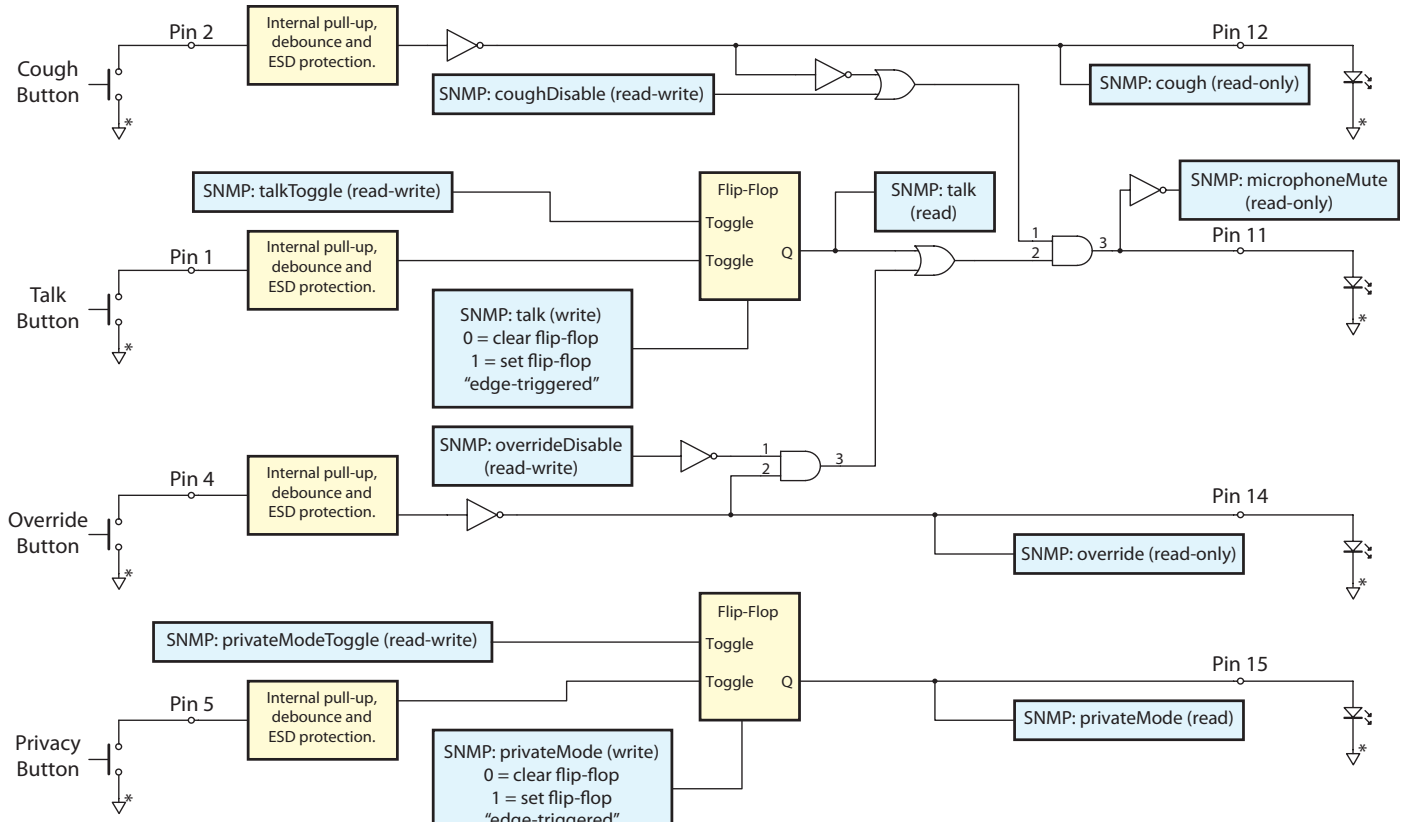
On the rear panel are four rotary switches that are used to create a four digit identifier that becomes part of the SNMP variable, sysName. sysName is then used to uniquely identify a CobraNet device on the network. The condition of being unique requires that each device on the network have a different setting. Looking at the unit with the switches facing you, as in the above diagram, the identifier reads from left to right.

Thus, setting the switches to 1, A, 3, 7, respectively, sets the sysname variable to "NM1-Sw1A37."

Mounting

The NM 1 is equipped with mounting ears to solidly attach it to a surface if needed. Rubber feet are also included for tabletop use.

Appendix 1. Switches / Lights Connector Logic



*Ground pins on the DB-15 connector are 6, 7, 8, 9, &10.

Pins 3 & 13 on the DB-15 connector are no-connects.

See the NM 1 MIB for explanation of variables.

Appendix 2. NM 1 MIB

```
--
-- RANE-NM1-MIB-V1.my
-- MIB generated by MG-SOFT Visual MIB Builder Version 4.0 Build 341
-- Thursday, May 20, 2004 at 17:53:02
--

        RANE-NM1-MIB-V1 DEFINITIONS ::= BEGIN

                IMPORTS
                        mfgExtensions
                                FROM PEAKAUDIO-MIB
                        OBJECT-TYPE
                                FROM RFC-1212
                        Counter
                                FROM RFC1155-SMI;

--
-- Node definitions
--

-- Node definitions
--
                -- 1.3.6.1.4.1.2680.1.2.7
                rane OBJECT IDENTIFIER ::= { mfgExtensions 7 }

                -- 1.3.6.1.4.1.2680.1.2.7.3
                NM1 OBJECT IDENTIFIER ::= { rane 3 }

                -- 1.3.6.1.4.1.2680.1.2.7.3.1
                micPreampGain OBJECT-TYPE
                        SYNTAX INTEGER (10..65)
                        ACCESS read-write
                        STATUS mandatory
                        DESCRIPTION
                                "Gain through the mic pre-
                                amplifier stage. Gain can be
                                adjusted in 1 db increments
                                in the range 10dB through
                                65dB."
                        DEFVAL { 10 }
                        ::= { NM1 1 }

                -- 1.3.6.1.4.1.2680.1.2.7.3.2
                microphoneMute OBJECT-TYPE
                        SYNTAX INTEGER
                        ACCESS read-only
                        STATUS mandatory
                        DESCRIPTION
                                "State of the microphone
                                mute.
                                0 - unmuted
                                1 - muted"
                        ::= { NM1 2 }
```

```
-- 1.3.6.1.4.1.2680.1.2.7.3.3
talk OBJECT-TYPE
        SYNTAX INTEGER
        ACCESS read-write
        STATUS mandatory
        DESCRIPTION
                "Present state of the talk
                button flip flop.
                0 - off
                1 - on"
        ::= { NM1 3 }

-- 1.3.6.1.4.1.2680.1.2.7.3.4
talkToggle OBJECT-TYPE
        SYNTAX Counter
        ACCESS read-write
        STATUS mandatory
        DESCRIPTION
                "Toggle the talk button flip
                flop. Set this variable to any
                value other than its current
                value to cause the flip flop to
                change state."
        ::= { NM1 4 }

-- 1.3.6.1.4.1.2680.1.2.7.3.5
cough OBJECT-TYPE
        SYNTAX INTEGER
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
                "Present state of the cough
                momentary button.
                0 - not depressed
                1 - depressed"
        ::= { NM1 5 }


-- 1.3.6.1.4.1.2680.1.2.7.3.6
coughDisable OBJECT-TYPE
        SYNTAX INTEGER
        ACCESS read-write
        STATUS mandatory
        DESCRIPTION
                "Control for disabling cough
                button from the audio
                muting logic. Cough
                indicator will continue to
                function normally but audio
                will not be affected.
                0 - cough function enabled
                - default
                1 - cough function disabled"
        ::= { NM1 6 }

-- 1.3.6.1.4.1.2680.1.2.7.3.7
override OBJECT-TYPE
        SYNTAX INTEGER
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
                "Present state of the override
                momemtary button.
                0 - not depressed
                1 - depressed"
        ::= { NM1 7 }

-- 1.3.6.1.4.1.2680.1.2.7.3.8
overrideDisable OBJECT-TYPE
        SYNTAX INTEGER
        ACCESS read-write
        STATUS mandatory
        DESCRIPTION
                "Control for disabling
                override button from the
                audio muting logic. Override
                indicator will continue to
                function normally but audio
                will not be affected.

                0 - override function enabled
                - default
                1 - override function disabled"
        ::= { NM1 8 }

-- 1.3.6.1.4.1.2680.1.2.7.3.9
privateMode OBJECT-TYPE
        SYNTAX INTEGER
        ACCESS read-write
        STATUS mandatory
        DESCRIPTION
                "Present state of the private
                mode button flip flop.
                0 - off
                1 - on"
        ::= { NM1 9 }

-- 1.3.6.1.4.1.2680.1.2.7.3.10
privateModeToggle OBJECT-TYPE
        SYNTAX Counter
        ACCESS read-write
        STATUS mandatory
        DESCRIPTION
                "Toggle the private mode
                button flip flop.  Set  this
                variable to any value other
                than its current value to
                cause the flip flop to change
                state."
        ::= { NM1 10 }

    END

--
-- RANE-NM1-MIB-V1.my
--
```