

# Performance Audio Networks

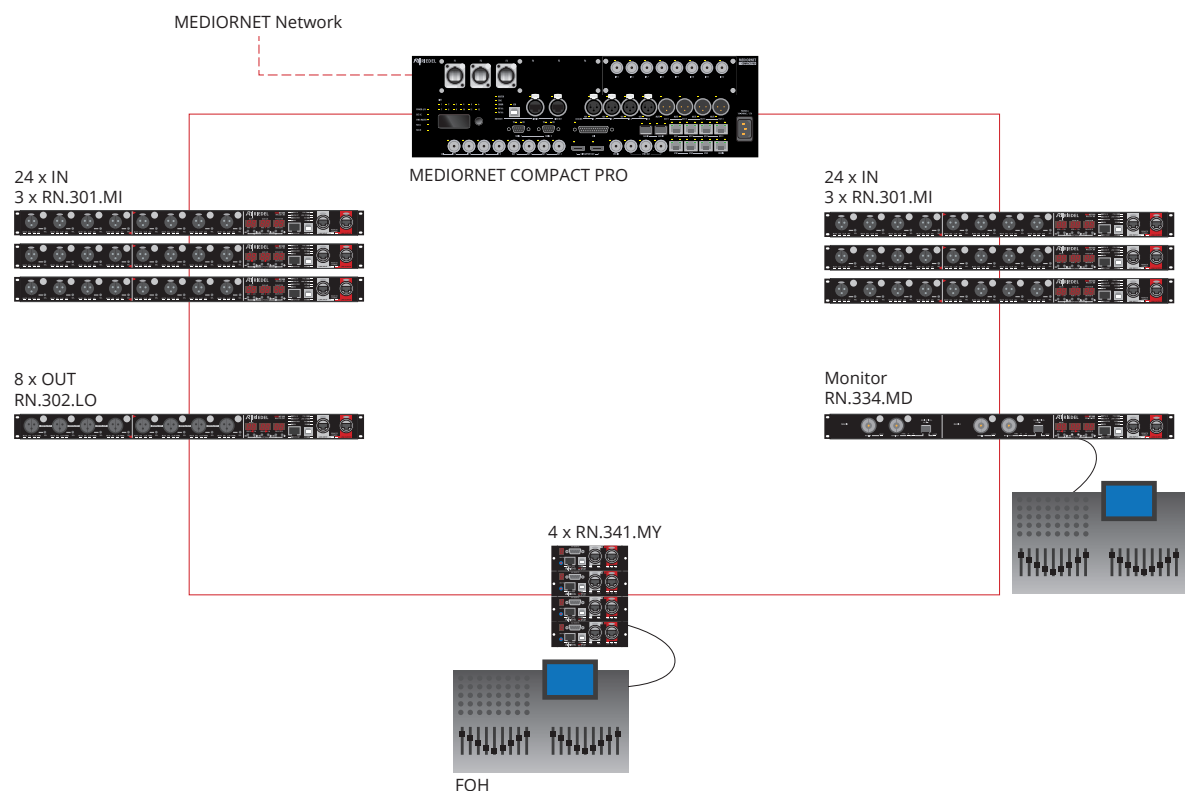
RockNet is a real-time, low latency audio distribution network tailored to tour and installed sound applications. RockNet provides a universal solution to almost any imaginable audio distribution challenge and behaves very much like a traditional analog split system. It conveys up to 160 24 bit/48 kHz audio channels counter-rotating on a single CAT5 cable. RockNet products are designed for heavy-duty road use. Their ruggedized steel enclosures resemble the look and feel of a modular stagebox. All devices feature locking IEC connectors for the redundant power supplies. All other connectors are entirely gold-plated and the circuit design is streamlined for ultra low noise and minimum distortion to meet the highest demands in audio quality.

RockNet is a genuine audio network platform designed purposely for live sound applications. It is a cost-effective, integrated networking product invented, designed, and optimized for audio contribution and distribution. RockNet provides ultra low latency and very high audio quality. It is an integrated system that does not require any third party products. Only two types of cables are necessary to hook up a network: microphone cable with XLR (male/female) and CAT5 with RJ45 (Ethercon®). RockNet devices do not require breakout panels or any special cables and connectors. Up to 99 devices can be easily added to the network. All devices can be configured intuitively by front panel push buttons. No particular IT or computer networking know-how is needed to set up and operate RockNet. Even a system check can be performed within a few seconds at each device even without using a computer.

RockNet incorporates a streamlined redundancy concept on the device and network levels. The network interface of each device features two interconnections for fail-safe transmission of audio signals on CAT5 infrastructure. Based on a redundant ring topology, RockNet forms a self-healing network with no loss of audio in case of a connection fault between two devices. All devices feature dual power supplies with locking IEC connectors.

## ROCKNET – Features

- » 160 channels (RockNet 300)  
80 channels (RockNet 100)
- » Up to 99 devices in one network
- » CAT-5 redundant network interface
- » Independent Gain
- » Front panel operation
- » Redundant power supplies (RockNet 300 only)
- » 48 kHz or 96 kHz sample rate (96 kHz RockNet 300 only)
- » Status indicators (LEDs)
- » Remote Control



# User Concept

## Control Section

The control section of all 19" RockNet products provides the controls to set up and configure the unit without a computer. It incorporates three two-digit displays and six push buttons that are used for intuitive operation of a three level menu: Default mode, Channel mode, Options mode.

**Default mode** displays the status of the device when the system is in normal operation and shows:

- Channel assignment for first channel block
- Channel assignment for second channel block
- Device ID [1 to 99]

The 160 available channels can be routed as single channels or as blocks of four sequential channels (Quads). This efficient concept allows the user to easily route audio to units on the same ring.

**Channel mode** displays and controls each channel parameter. By pushing the select button beside the XLR connector of the respective channel, the parameter values are displayed and can be adjusted.

## Network Interface

The network interface incorporates Riedel's proprietary core technologies. Lateral™ ultra-low latency asynchronous transmission enables RockNet to support various redundant network topologies and to provide real-time, isochronous data transport in conjunction with packetized data such as TCP/IP. The data rate is 400 Mbits/s on a CAT5 cable and the number of nodes is limited to 99.

Concrete™ clock recovery and jitter rejection utilizes a unique digital PLL structure. Jitter magnitude, spectrum and probability distribution are de-randomized by a sophisticated digital modulation scheme, resulting in an extremely high jitter rejection and zero jitter build-up through the network.

Two Ethercon® RJ45 network connectors link to an upstream and a downstream neighbor in a redundant ring topology. These two connectors can also be used to provide a parallel link in case of point-to-point network scenarios.



**Options mode** accesses general device setup:

- select primary / secondary master
- select sync source  
[internal / external wordclock / digital input #]
- select sample rate [48kHz / 96kHz]
- lock-out front panel operation
- switch off display
- display device temperature

LED indicators are provided for the redundant power supply and network connectivity status, master selection, external sync and sample rate.



# Independent Gain

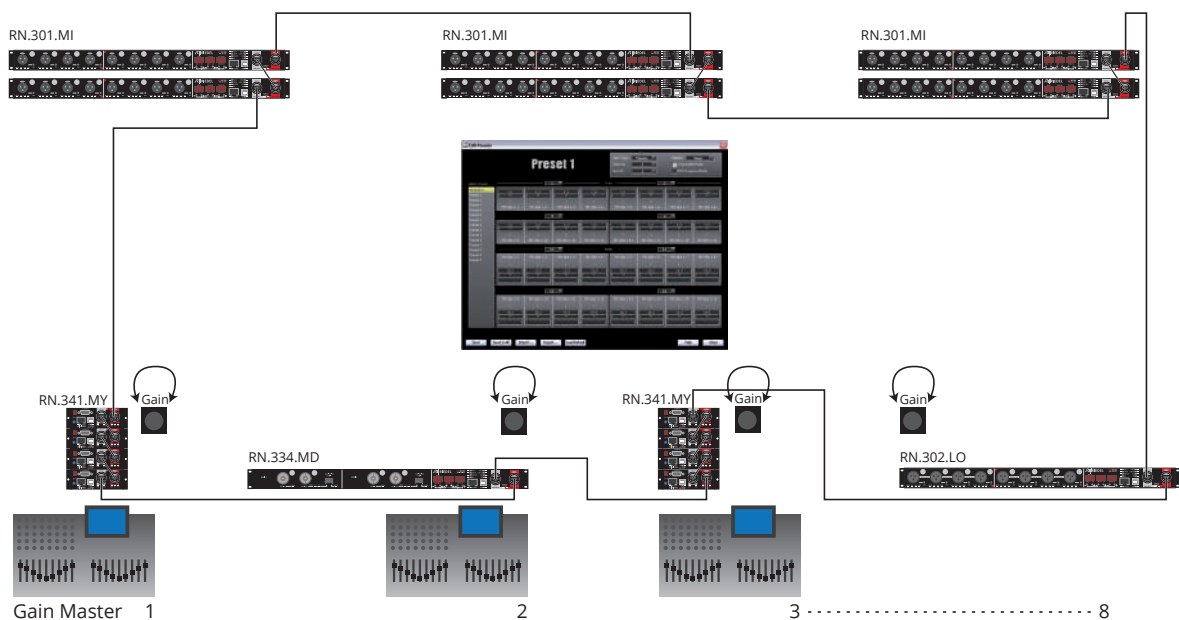
Independent gain as an integrated solution, i.e. without using an additional passive splitter, is a highly desired feature in digital live sound environments (digital mixing consoles in combination with digital audio networks).

Where more than one console is required in analog setups and even with digital mixing consoles, a passive splitter is the most common solution to enable the monitor mixer and the FOH mixer to independently set the gain according to their respective requirements.

In RockNet audio networks the Independent Gain of all devices is a fully integrated solution. The RockNet Independent Gain function can be used in conjunction with digital mixing consoles equipped with RockNet interface cards or any other supported mixing console integrated via the RN.334.MD MADI-Interface.

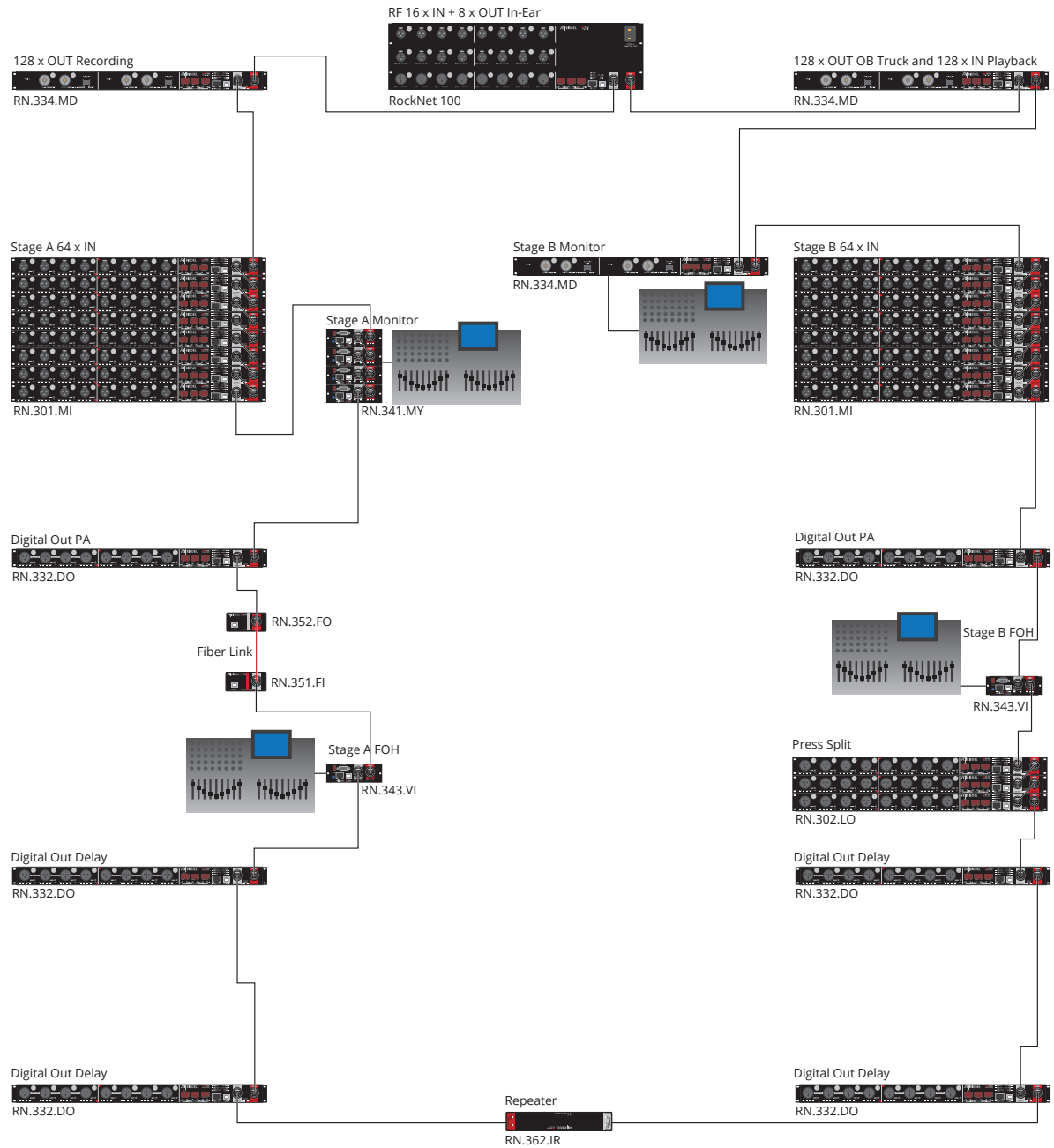
Independent Gain allows individual gain control for up to 8 mixing consoles in a single RockNet audio network. One of the mixing desks is defined as being the Gain Master Console. This console has access to the analog gain of the RockNet microphone pre-amps on stage via the embedded console remote control protocol. Any other console is a slave to this master console.

A change of the gain setting on any console of the network will be automatically compensated for by all other consoles no matter if the change is done at the Gain Master Console or a slave console. Independent Gain can be activated via RockWorks, the remote control software for RockNet. The function is implemented into the Edit Preset menu of RockWorks. The Edit Preset menu provides a group selection field where up to eight groups can be assigned to the respective RockNet interface cards or MADI ports.



# Applications

## RockNet 300 Application: Live Recording Event with two Stages



# RockNet 100 Application: Live Concert

