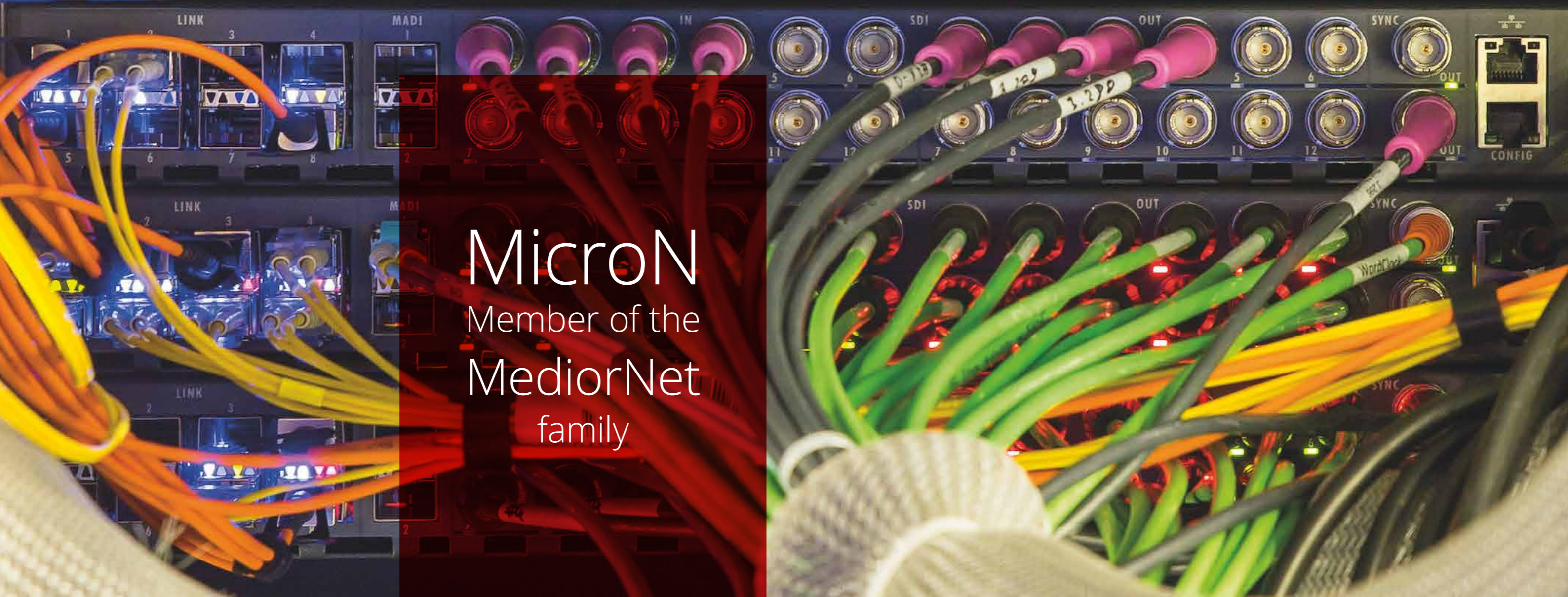




MEDIORNET MICRON



MicroN

Member of the
MediorNet
family

MediorNet MicroN is software-enabled, app-based hardware that can be many different things: It can be a throw-down signal processor, a simple point-to-point link for up to 12 bi-directional HD signals, or part of a large de-centralized router – but it can even serve as a MultiViewer or a bridge between MediorNet networks and IP networks!

As an 80G media distribution network device for Riedel's MediorNet line of media transport and management solutions, MicroN works seamlessly with the MediorNet MetroN core fiber router. MicroN is a high-density signal interface with a complete array of audio, video, and data inputs and outputs, including 24 SD/HD/3G-SDI I/Os, two MADI optical digital audio ports, a Gigabit Ethernet port, two sync reference I/Os, and eight 10G SFP+ high-speed ports. MicroN is available as a fully networked MediorNet device, as well as a point-to-point edition at a very competitive price point.

In just 1RU, MicroN offers a highly versatile signal interface that can be used in productions of every size and complexity. For the largest media networks built on MediorNet transport devices, MicroN can serve as a breakout box for a MetroN router and extend connectivity beyond the fiber I/Os to any type of video and audio I/O required. Furthermore, MicroN can simply work with a MetroN router, with other MicroN units, or in a standalone point-to-point configuration to provide an economical solution for small- to medium-sized productions. And, like the other MediorNet devices, MicroN has powerful built-in signal processing features that eliminate the need for many external devices.

One hardware - many options

MicroN provides a high degree of flexibility in addressing current and future demands of broadcast and live event productions. Offering a wide range of powerful apps, MicroN gives you greater freedom in building sophisticated media infrastructures, from signal transport to full video router functionality and signal processing.

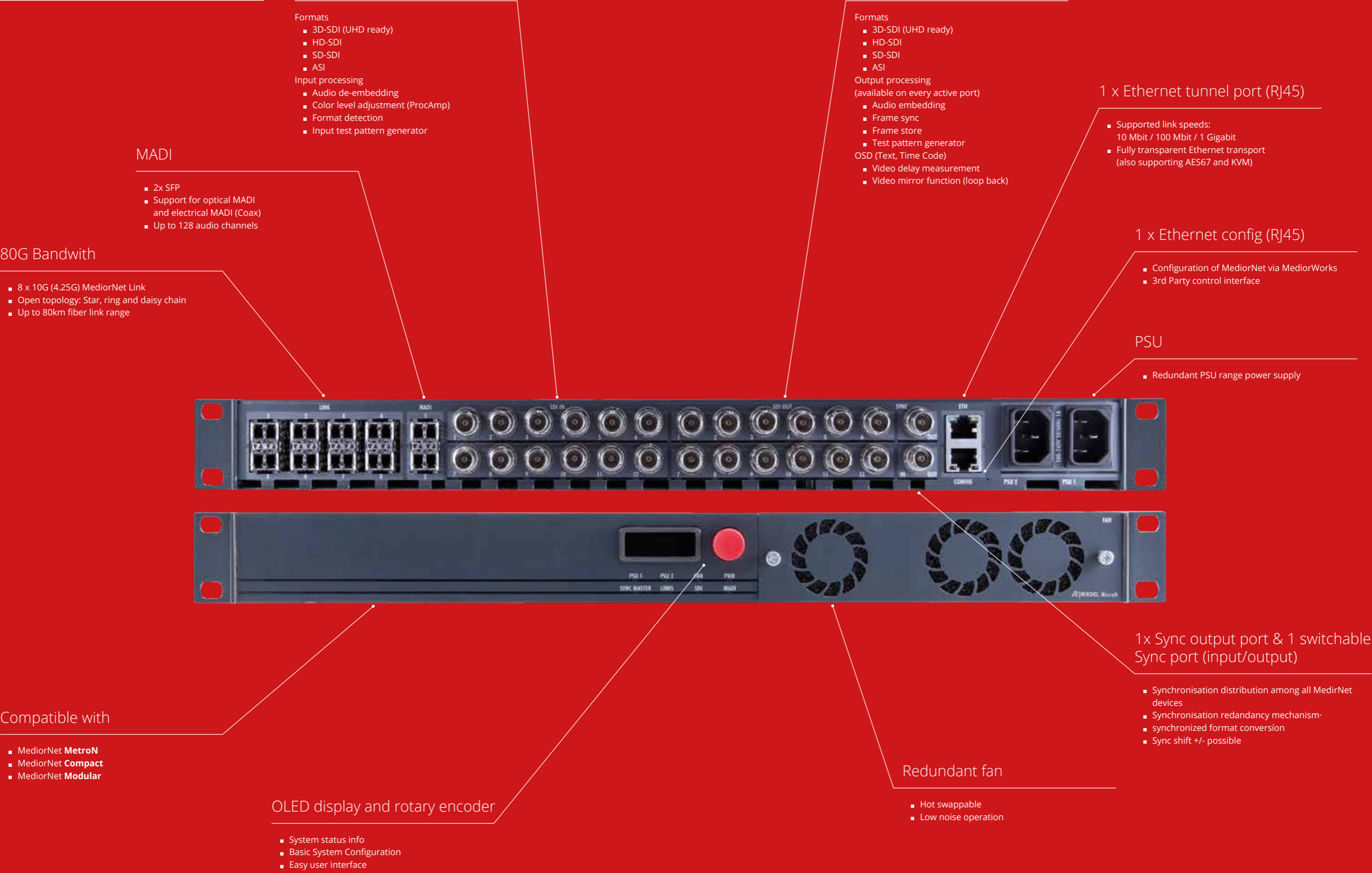
Features

- 10G (4,25G) Link bandwidth
- 3G-/HD-/SD-SDI
- 2x MADI audio
- Gigabit Ethernet Tunnel
- Synchronization (Black Burst, Tri-level, Word Clock)
- Redundant, wide-range AC power supply

Integrated signal processing

- Automatic format detection
- Frame Store / Frame Synchronizer
- Audio Embedder / De-Embedder
- Test Pattern Generator
- On-screen and system VITC displays
- Integrated Sample-Rate Converter
- Audio/video Delay Lines

MicroN Overview

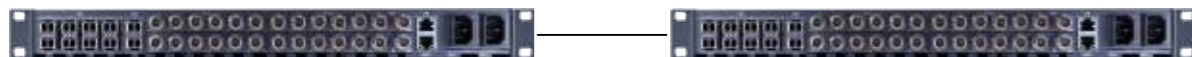




MediorNet MicroN Apps

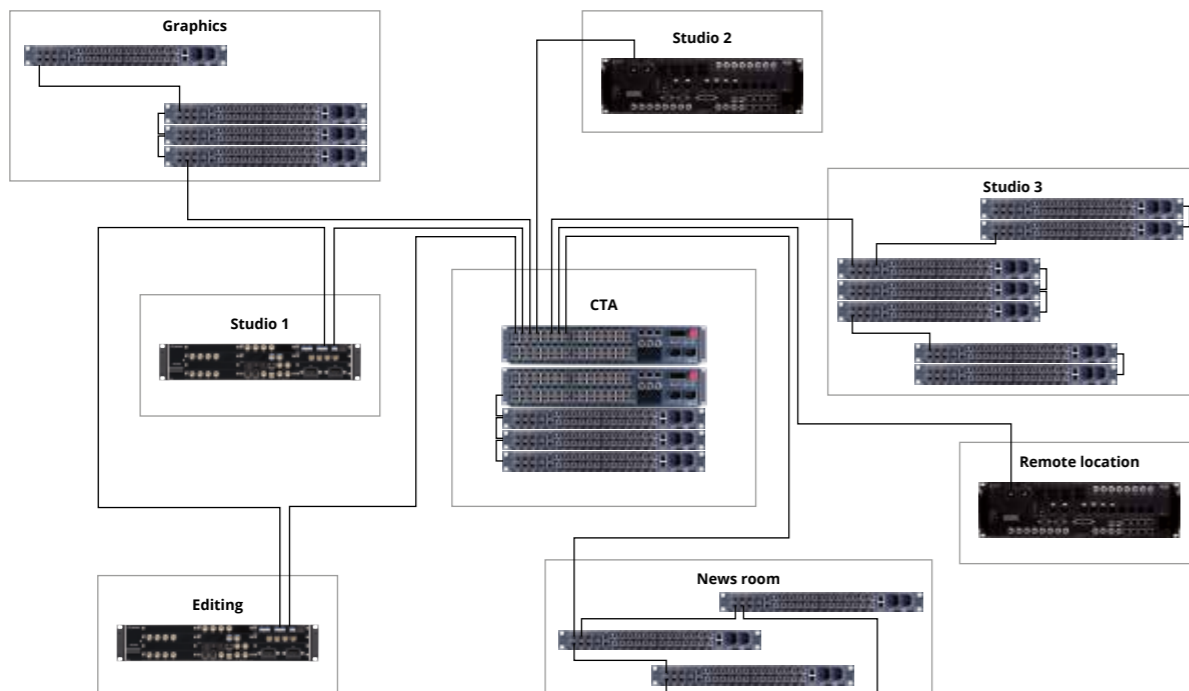
Point-to-Point App for MicroN

The Point-to-Point App for MicroN enables all hardware ports on the device. The size of the network is limited to one or two devices in one net to use MicroN in point-to-point mode or standalone mode. The app provides all of MicroN's customary capabilities plus support for up to 12 bidirectional SDI I/Os, two MADI I/Os, and a Gigabit Ethernet link. Not only does the app enable the hardware to operate standalone, but a single MicroN can act as 12x12 router and audio embedder / de-embedder with MADI and sync delay, while also providing video frame sync and delay.



Standard App for MicroN

The Standard app for MicroN enables all hardware ports and provides unlimited network capabilities. It allows to interconnect MicroN nodes in a meshed fashion, making it a very scalable, decentralized video routing application. This approach can be used as a replacement for small to medium sized routers and offers a very flexible system design, allowing you to extend the router capacity in both signal capacity and distributed system locations by adding MicroN nodes to the network. Multiple MicroNs can be integrated as a single central video router for redundant processing of up to 192x192 HD-SDI signals, or can be deployed in a distributed fashion as a decentralized video router.



MediorNet MultiViewer configuration tool

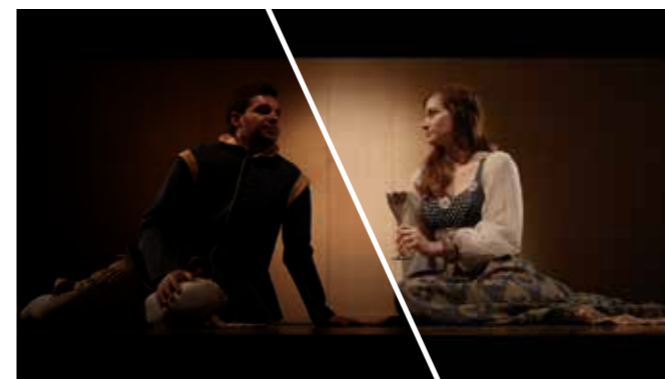
MultiViewer App for MicroN

The MultiViewer App adds de-centralized multiviewing capabilities to the MediorNet Ecosystem. The virtual MultiViewer App is based on the MediorNet MicroN high-density media distribution hardware and is designed to work within MediorNet networks. Each single MediorNet MultiViewer engine can access any MediorNet input signal and process up to 18 signals. These can be flexibly placed on four virtual screens, which can be routed to any destination within the MediorNet system and output at alternative locations. The MultiViewer device provides local signal inputs and outputs to offer further connectivity options like playing out the virtual MultiViewer screens locally on the device.

MediorNet MultiViewer has powerful processing features including flexible scaling, positioning, and the ability to incorporate graphics (like logos and background images), and special "widgets". Widgets include tallies, under-monitor-displays, audio level meters, and several clocks and counters. Clocks can be analog or digital and can reference system time or timecode, with the timecode derived manually or from LTC or NTP. Finally, up to 20 distributed system counters can be established within a single network, and any counter widget can reference any one of the system counters. All of these functions are controllable via the Ember+ control protocol. In addition, tallies and under-monitor displays can be controlled via TSL 5.0.

MediorNet – MultiViewer

- 18 channel processing (full flexible scaling and positioning)
- Flexible access to any MediorNet input signal
- 4 virtual screens to be routed to any MediorNet output
- Numerous graphical widgets available
 - Video display (PiP)
 - Audio level meter
 - Under monitor display
 - Tally markers (frame, field)
 - Network synchronized clocks (analog, digital) and counters
 - Images
- Easy and intuitive configuration via drag-and-drop editor
- 3rd party control via TSL 5.0 and Ember+
- Netwide configuration storage concept



Color correction (for RGB and YCbCr)

MediorNet Processing App for MicroN

The MediorNet Processing App adds de-centralized and powerful processing capabilities to every MediorNet infrastructure. Built on the 80G media distribution hardware, Riedel's new app is a virtual resource for signal processing and is designed to work within MediorNet networks, enabling on-board signal-processing including frame synchronization, embedding/ de-embedding, and delays. Each input signal can be routed to this virtual resource to be processed and played out at any output within the system.

The MediorNet Processing App delivers the benefits of a decentralized signal network by enabling processing hardware to be placed anywhere it's needed, leveraging the network for sources and removing the extra layer of gear and complexity.



Up-down-cross-conversion

MediorNet goes IP

Technical Specifications

IP App for MicroN

The MediorNet MicroN IP App includes support for up to 4 SMPTE ST 2110-20 inputs and outputs plus 4 baseband 3G-SDI signals and 8 3G-SDI outputs, with 4 of those dedicated to monitoring the ST 2110-20 streams. Also supported are 4 MediorNet HighSpeed Links, AES67 audio, 2 optical MADI ports, and sync I/O. MediorNet MicroN IP also supports NMOS device discovery/registration and connection management or manual configuration for non-NMOS installations.

MediorNet MicroN IP is fully PTPv2 compliant and allows to synchronize MediorNet to either PTP or traditional sync signals (like BlackBurst).

The MediorNet MicroN IP App is the next step for the MediorNet ecosystem. With several I/O options and complete flexibility in placement, MediorNet

MicroN IP can create IP endpoints anywhere in an installation to create a truly hybrid signal-transport and processing environment.

MediorNet

Full MediorNet Integration IP Video and Audio Streams are treated like native MediorNet signals
Flexible MicroN App Switching Hybrid migration from baseband centric to IP centric workflows
Full Standard compliant implementation of SMPTE ST2110 (AES67)
Supports latest specifications of NMOS IS-04 and IS-05

Bi-Directional Ports

2x MADI Ports	Multi Channel Digital Audio as per AES 10-2003 48 / 96 kHz
	Channel Modes 56/64 ch @ 48 kHz, 28/32 ch @ 96 kHz
	Resolution 24 Bit

1x Port (application dependent)	1000BASE-T, 100BASE-T (full duplex only), 10BASE-T (full duplex only)
	RFC 2544 Compliant
	Jumbo Packet Support

Inputs

12x SDI Inputs (application dependent)	75 Ω SD/HD/3G Serial Digital with embedded Audio (4 groups)
Input Standards	1.5 Gbps HD-SDI SMPTE292M, 3 Gbps 3G-SDI SMPTE424M/425M Level A – mapping structure 1, SMPTE425M Level B 270 Mbps SD-SDI SMPTE259M, DVB-ASI SMPTE259M/EN50083
Cable Equalization	> 230m @ 1,5Gbps, > 140m @ 3Gbps, >250m @ 270Mbps (Belden 1694A)
Sync Reference Formats	Blackburst NTSC/PAL (incl. VITC), Tri-Level 720p 50/59/60, Tri-Level 1080i 50/59/60, Tri-Level 1080p 23/24/25/29/30, Wordclock 48/96/192kHz

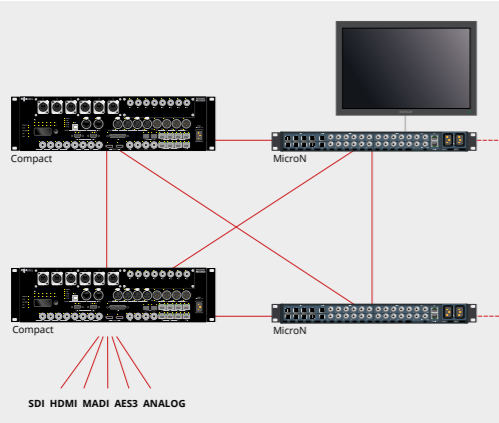
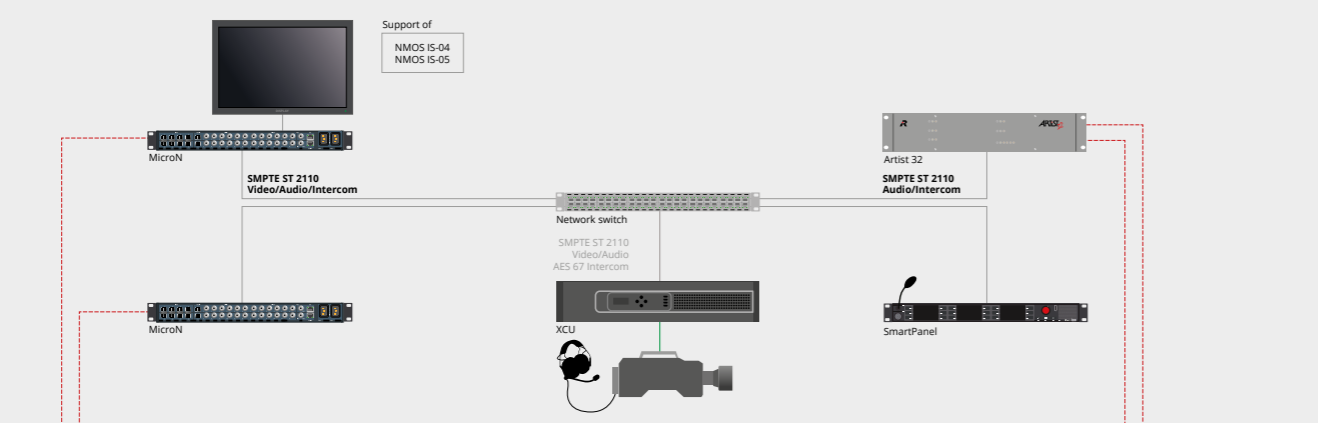
Outputs

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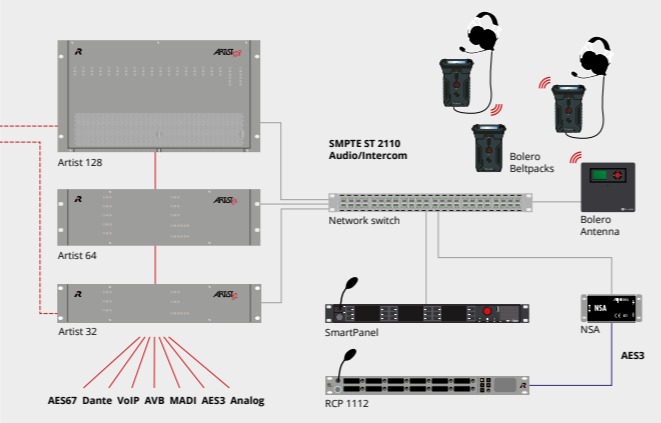
Overall

Environmental Temperature	-5 °C to +45 °C (Non-condensing)
Supply Voltage	100 ... 240 VAC, 50 / 60 Hz
Power Consumption	50 W
Cooling	6 Redundant Speed Controlled Fans, Front to Rear Airflow
Dimensions (w×h×d)	483 mm (19") × 44 mm (1 RU) × 241 mm
Weight	5.1 kg

IP interoperability



MediorNet network



Intercom network

MediorWorks

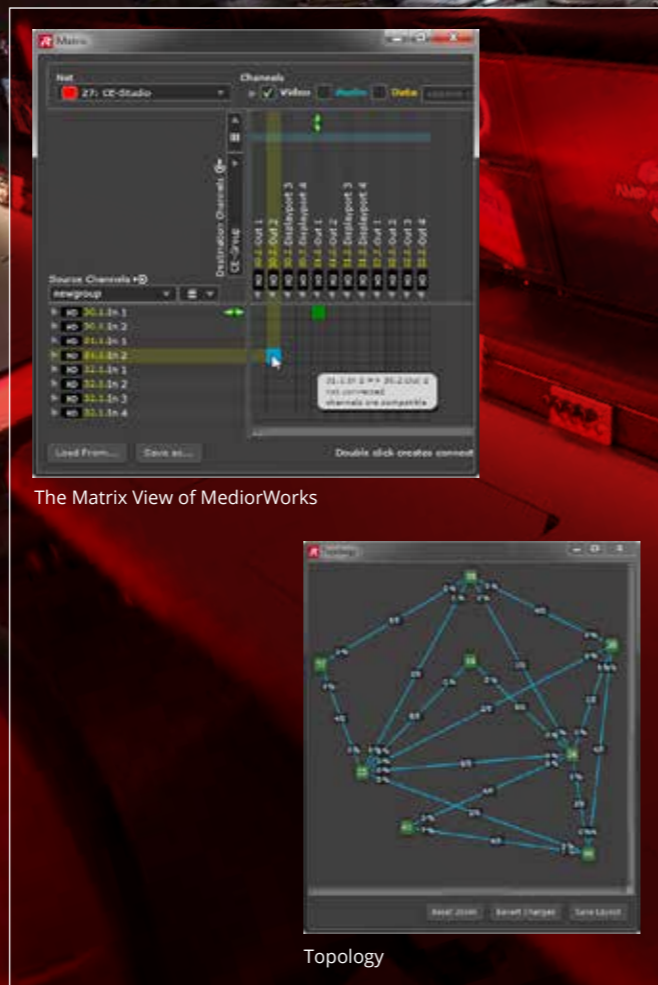
Intuitive Real-Time Configuration,
Control & Monitoring

The intuitive configuration, control and monitoring software MediorWorks can be downloaded from any MediorNet mainframe via the Configuration Port of the Processing Card. This way you always have access to the correct software version of a specific installation. The software is a Java™ based application, allowing any computer with a Java™ Runtime environment such as Windows, Mac OS X or Linux to serve as the host for the application.

MediorWorks auto senses the configuration and status of the system it is connected to. Five windows give easy access to any aspect of the MediorNet installation. All windows are visible at the same time. Alternatively, they can be easily accessed via one mouse click on the **“Views”**-window, which is floating above all other windows. The **“Device Browser”** shows all available nodes, the cards installed in the node and each connector of the specific media card. If a connector is selected, the **“Connections”**-window shows the active connections and how the signal is routed to the destination(s). A **“Matrix View”** allows for a quick overview of all connections including matrix-style programming. Looking into the **“Parameters”**-window of a link card gives access to the fiber usage of a specific fiber link. In the “Parameters”-view of a media card you can see and adjust the signal format, force the input or output to a certain format and configure the processing and conversion features available within MediorNet. Detailed **“Logging”** and **“Alarm”** views complete the software’s feature set. Detailed user rights management and user specific view modes allow for easy and secure operation.

MediorWorks at a Glance

- Java™ Runtime application downloadable from any MediorNet frame
- Auto sensing – no need for manual configuration
- Real-time monitoring and control of the complete network
- Intuitive, clearly managed windows with quick access to any information via list filters
- Manual und automatic routing
- Multi-user support
- Matrix view
- User templates
- Graphical Network Topology View



The world of
MediorNet

Outside Broadcast



Live events

Studio production

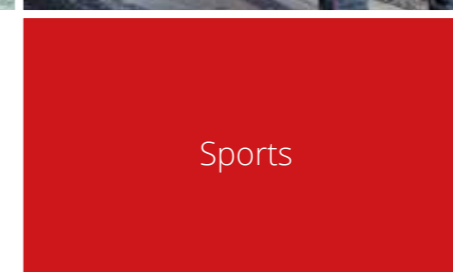


Stadiums



Conference center

Cruise ships



Sports





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