

Fiber optic based open network platform
for professional audio, data and video
transmission applications within
the broadcast, live performance and
fixed installation markets

Product Overview August 2011

NEW YGDAI module

**NEW "R" series devices
MADI, AES/EBU and
INTERCOM**

OPTOCORE



Outstanding OPTOCORE Features

- Open Standard

OPTOCORE is an open platform, which is able to transparently send MADI, AES/EBU, Ethernet and Serial data such as DMX, MIDI, RS485/422 and CAN BUS seamlessly through the network.

- Open Platform

Offering a complete system solution, we openly co-operate with different manufacturers to ensure OPTOCORE devices are fully compatible with all consoles and pro-audio devices. Our technical partners include: AVID, DiGiCo, Lawo, Soundcraft, Studer, SSL, Neumann, Clear-Com, RTS-Telex, Yamaha and many others.

- Resilient and Scalable

OPTOCORE's solution is flexible, scalable, and future proof with redundancy included as standard. The CAT5 synchronous network SANE can be used as a stand alone ring or it is possible to build a unique system with a fiber optic based high channel count core and smaller CAT5 based breakouts. As your requirements grow simply add devices for new functions and features or a higher channel count.

- Cost Efficient

OPTOCORE utilises the most up to date electronics technology to ensure we provide the most up to date progressive, innovative solutions at a very competitive price regardless of system complexity and scale.

- "R" series.

"R" series devices now offer increased features, efficiencies, a reduced carbon footprint and a substantial decrease in cost while consequently providing a much more energy efficient option by reducing power consumption up to 40%.

"R" Series devices provide 100% more fiber bandwidth by offering 2GBits of bandwidth, providing for an astonishing 1024 input channels per ring plus unlimited number of output channels. This means single as well as stacked rings have even more capacity.

All "R" series devices will operate down to minus 20 degrees Celsius and feature 50µ hard gold plated connectors for premium quality and long life.

- SANE

SANE protocol, creating the first fully synchronous 24 ID CAT5 network solution for streaming and transmitting data in real time. Offering a unique non proprietary open standard transport platform, SANE is the perfect medium for transporting AES/EBU, MADI as well as Ethernet in full scale.

Via the SANE port the network designer can become highly creative enabling him to add analogue channels, further Ethernet and MADI devices to the network.

- Synchronous Transmission

OPTOCORE uses synchronous transmission which means, it is possible to transport extremely low-jitter Word Clock together with audio and video.

- Lowest Latency

OPTOCORE is known for its extremely low latency – 41,6 µs, this value is fixed regardless of bandwidth and number of devices in the network.

- Modular Options

Due to a modular approach, the system has unrivalled and peerless flexibility. Options such as, X6R-FX/V3R-FX/DD32R-FX or MADI-FX fiber versions, containing both OPTOCORE fiber, as well as SANE ports (CAT5/RJ45), in addition to X6R-TP/V3R-TP (CAT5) are possible.

- Independent Gain Control from Different Consoles

With our Multiple Emulation Mode, OPTOCORE's high sonic performance microphone preamps, can be directly controlled from up to four digital consoles provided by different manufacturers. OPTOCORE currently supports preamp control from 90% of digital consoles on the market.

- Dual Microphone Pre Amps

OPTOCORE Dual Mic devices provide two independent microphone preamps for each input, each preamp can be individually controlled from different consoles with true analogue 1db gain steps.

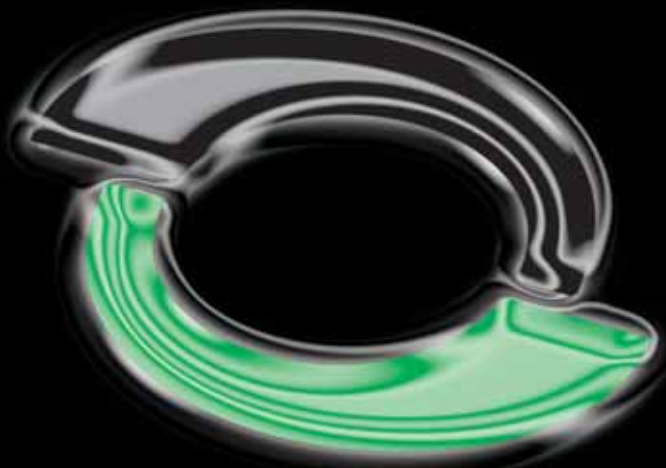
- Unique Portfolio

The product portfolio is unique, wide and complete as OPTOCORE designs, manufactures and distributes analogue converters, digital devices, multimedia transceivers, Ethernet devices, MADI devices, return systems, YGDAL cards and OEM devices (Clear-ComCom & RTS-Telex).

- 19 Years Experience – Made in Germany

We are proud to be the pioneers of audio networking, offering the world's first and only synchronous fiber optic and CAT5 network for audio, video and data. You can buy a lot – but not experience.

OPTOCORE products are designed and manufactured in Germany.



About OPTOCORE

OPTOCORE is the concept of Marc Brunke, who conceived of and began development of the system in 1993. Having worked in the field of communications systems and electronics engineering since 1988, Marc Brunke formed OPTOCORE GmbH in 2003 to develop and market the OPTOCORE fiber optic digital network system, as well as develop and supply a complete systematic range of complementary inter-connectable devices.

Due to the initial success a system patent was filed in 1994, marking the start of a decade of audio innovation. OPTOCORE modules were first presented at the Pro Light & Sound trade show in Frankfurt, Germany, in 1996, and released later that same year. Initially came the launch of the first LX4 stage box to be followed by FOH AD/DA units, two years later in 2000 the DD32 was introduced, which provided integration of AES/EBU digital audio signals into the OPTOCORE system.

Ongoing expansion of interfacing options for the OPTOCORE system continued in 2005 with the release of the X6 series of standalone audio AD/DA converters with true 1 dB-step microphone preamplifiers.

Synchronization of the entire OPTOCORE network to an external clock was also realized in 2005 when the DD32E was issued sporting an external word clock input. Innovations continued quickly and strongly in 2006 a year in which the DD6NE Ethernet distribution switch, DD4ME MADI interface, DD8RP repeater/media converter, and YG2 mini-YGDAI module for Yamaha products were all introduced.

Released in 2008 the DD2FE optical MADI interface, was a perfect addition to the OPTOCORE product portfolio, SC multimode fiber optic MADI input and output ports enable transmission of up to 256 channels of digital audio (128 input and 128 output channels), making it the perfect complement to Soundcraft and Studer digital consoles.

2009 OPTOCORE introduced the revolutionary "R" generation series of converters. Contained in a 1RU enclosure the X6R and V3R are signal converter devices, which include either the TP (Twisted Pair) or FX (Fiber Port) feature. Both the TP and FX versions contain the essential components which enable OPTOCORE's new SANE protocol, creating the first fully synchronous CAT5 network solution for streaming and

transmitting data in real time. Offering a unique non proprietary open standard transport platform, SANE is the perfect medium for transporting AES/EBU, MADI as well as Ethernet in full scale. Due to a modular approach, options such as, X6R-FX / V3R-FX fiber versions, containing both OPTOCORE fiber ports, as well as SANE ports (CAT5 / RJ45), in addition to X6R-TP / V3R-TP (CAT5 twisted pair alternatives), the system now has unrivalled and peerless flexibility. Following on from the success of these units, OPTOCORE then improved their established digital interface products, and introduced the DD32R-FX, DD4MR-FX and DD2FR-FX units, which doubled not only the channel capacity of the devices, but also doubled the bandwidth of the system to 2Gbps, while at the same time offering a substantial reduction in the cost of ownership.

Developed and introduced 2004, and extended in 2010, OPTOCORE's "Multiple Emulation Mode" is a unique function which enables multiple third party proprietary digital desks to control the gain and phantom power on OPTOCORE's mic preamps. This is achieved by making that desk recognizable when it is running in Emulation Mode, this functionality is provided for Lawo, Soundcraft, Studer, Yamaha, Digico and SSL consoles.

Continuously growing, the OPTOCORE community expands as an ever-increasing number of licensees choose to share in the many benefits offered by the OPTOCORE network, concept and system architecture. Many of the world's most high-profile events and facilities embrace the reliability, scalability, flexibility of the products, as well as the responsive customer support that are at the heart of the OPTOCORE concept and system. Most recently co-operation with the worlds leading innovative intercom manufacturers "Clear-Com and RTS-Telex" has resulted in a new series of OPTOCORE devices, X6R-FX-INTERCOM and V3R-FX-INTERCOM . These devices now give the ability to seamlessly integrate audio with intercom on the OPTOCORE fiber network. Presently OPTOCORE continues to enjoy widespread recognition as the most innovative and outstanding premier name in the fields of modern professional audio, video and data transmission.

The OPTOCORE Network System

OPTOCORE is a patented fiber optic network system specifically designed to meet the requirements of the professional sound reinforcement, lighting, broadcast, studio, installation, and video production industries. Developed and designed to satisfy the demands of mission critical applications which require wide dynamic range, negligible distortion, and extremely low noise.

OPTOCORE offers a unique, dual redundant, synchronous ring structure that is both flexible and scalable, yet intuitive and easy to configure

and use. The OPTOCORE system offers numerous powerful advantages, including: high reliability in even the most complex large-scale applications, a fixed and exceptionally low latency, capability for very long optical fiber cable runs, malleable channel routing, low-jitter word clock generation and distribution through the entire network, and efficient configurations requiring the smallest possible number of optical fiber connections. Routing and network control are easily achieved from any point within the network using a personal computer or media control device.

OPTOCORE's state-of-the-art technology carries all formats of professional audio and video signals, including a wide range of computer data types, over high-performance, high-bandwidth fiber optic cables.

The system's robust architecture, rigorous manufacturing and quality control make OPTOCORE the preferred choice anywhere rock-solid network performance and reliability are required.

Flexibility and Scalability

OPTOCORE was developed for the highest performance professional audio and video applications requiring a wide dynamic range, negligible distortion and extremely low noise. Due to its multiple advantages, it can be used

everywhere where high-performance, high-security networks are required.

OPTOCORE is conceived to transmit all pro-audio and video signal types, including a wide range of computer data types, in compliance with the

highest quality standards and state-of-the-art technology via high-performance, high-bandwidth optical fiber cables.

The Network

X6R-FX-INTERCOM
16 Clear-Com Intercom Channels
for OPTOCORE and SANE, Ethernet

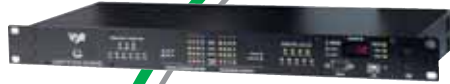


YG2/YS2
Modules for **YAMAHA**
Mini-YGDAI Slots



Preamp Control

V3R-FX
Network Converter Unit
with Ethernet for
OPTOCORE and SANE



OPTOCORE

SYNCHRONOUS FIBER NETWORK DISTRIBUTED MATRIX FORMAT CONVERTER

24 Devices in one network

DD8RP
Multi Media Repeater for
Mono and Multi Mode



DD32R-FX
32 Port AES/EBU Device for
64 Audio Channels, Ethernet,
OPTOCORE and SANE



DD4MR-FX
4 Port Electrical MADI Device
for 256 Audio Channels,
Ethernet, OPTOCORE and SANE



X6R-FX Network Converter Unit with
Ethernet for OPTOCORE and SANE



X6R-TP
Converter Unit with SANE
and Ethernet



SANE
SYNCHRONOUS
CAT5 NETWORK
24 Devices in one network

V3R-TP
Converter Unit
with SANE and Ethernet



Y3R-TP
Modules for **YAMAHA**
Mini-YGDAI Slots for SANE



V3R-TP
Converter Unit
with SANE and Ethernet



- Fiber Network
- Redundancy
- CAT5 Network



TELEX RTS

V3R-FX-INTERCOM
8 Clear-Com Intercom Channels for OPTOCORE and SANE, Ethernet



DD2FR-FX
2 Port Optical MADI Device for 256 Audio Channels, Ethernet, OPTOCORE and SANE



Preamp Control

DD6NE
Fast Ethernet Network Device with 6 Ethernet Ports and External Word Clock



SD7, SD8, SD10
DiGiCo – Preamp Control



High-quality Optical Fiber Network System

OPTOCORE is a synchronous optical ring network with built-in redundancy, capable of transporting audio, video, computer data and word clock over extremely long distances. All the various OPTOCORE modules can be combined to offer maximum flexibility in terms of set up/layout, number of channels and type of signals.

Latency

Thanks to the synchronous design, overall latency is constant and extremely low: about 41µs (!) between any point in the network, regardless of the number of nodes.

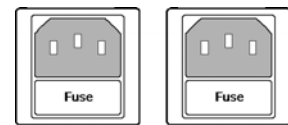
Dependability

OPTOCORE knows that failure is not an option in mission critical applications. The OPTOCORE system incorporates three levels of redundancy to ensure continuous operation even under adverse circumstances. Should a problem occur, the network will make an extremely fast and inaudible switchover to the appropriate redundant system.

- Redundant optical ring: When an OPTOCORE network ring is fully closed, a second fiber optic ring is formed



- Every network device contains dual power supplies



- Every network device is capable of acting as a master clock generator for the network

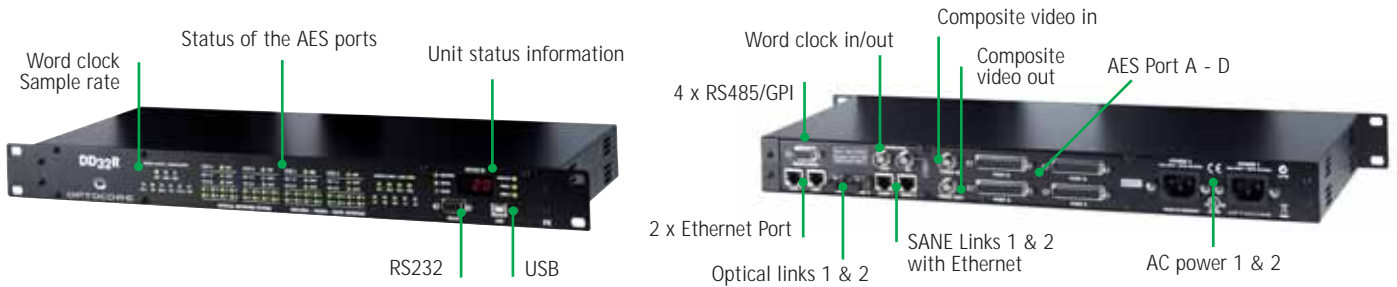


Upgrading

All OPTOCORE devices feature fully re-programmable FPGAs, DSPs and micro-processors. Firmware and software update releases can be downloaded from the website at no charge, and transferred to the devices in a matter of a few mouse clicks.

Digital Network Devices

DD32R-FX – 32 AES/EBU device with Ethernet for OPTOCORE and SANE



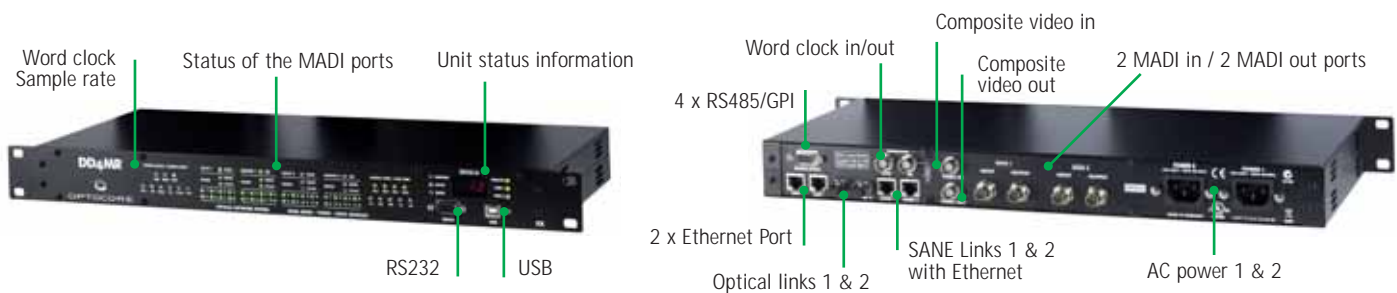
Features:

- 64 audio channels (32 AES/EBU) on four SUB-D25 connectors. Audio channels can be configured as input or output in groups of eight
- Four RS485 for remote control, DMX, MIDI, computer data etc.
- RS232 and USB ports for network and device control
- Word clock output
- External word clock input
- Composite video in and out
- Two optical links
- Two SANE and Ethernet links
- Two 100 Mbit Ethernet links
- Dual universal voltage AC power supplies
- Power consumption: 12 W typical
- Each ring carries up to 1024 audio channels
- Distance between two devices of up to 700 m/2300 ft standard, with the option of distances up to 120 km/75 miles
- Built-in network redundancy due to the two optical fiber ports

Dimensions:

- 1U (rack unit):
483 mm (19") width x
44 mm (1.73") height x
200 mm (7.87") depth
- Weight: 2.7 kg (4.41 lbs)

DD4MR-FX – 2 port coaxial MADI device with Ethernet for OPTOCORE and SANE



Features:

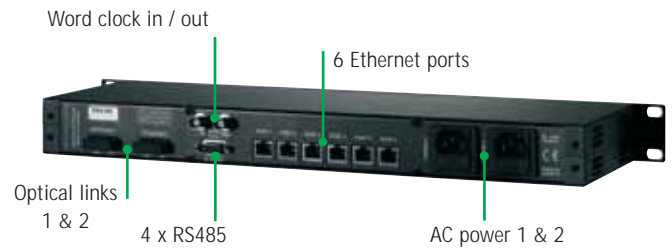
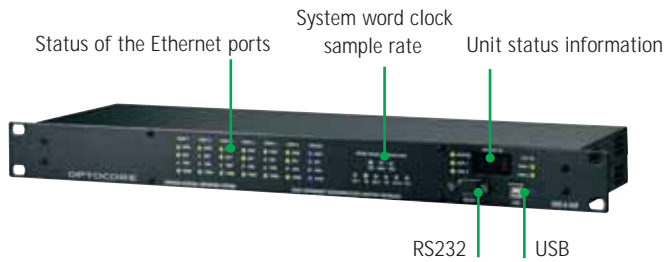
- Four MADI ports on BNC connectors provide up to 128 input and 128 output audio channels
- Four RS485 for remote control, DMX, MIDI, computer data etc.
- RS232 and USB ports for network and device control
- Word clock output
- External word clock input
- Composite video in and out
- Two optical links
- Two SANE and Ethernet links
- Two 100 Mbit Ethernet links
- Dual universal voltage AC power supplies
- Power consumption: 10 W typical
- Each ring carries up to 1024 audio channels
- Distance between two devices of up to 700 m/2300 ft standard, with the option of distances up to 120 km/75 miles
- Built-in network redundancy due to the two optical fiber ports

Dimensions:

- 1U (rack unit):
483 mm (19") width x
44 mm (1.73") height x
200 mm (7.87") depth
- Weight: 2.7 kg (4.41 lbs)

Digital Network Devices

DD6NE – Ethernet distribution switch device



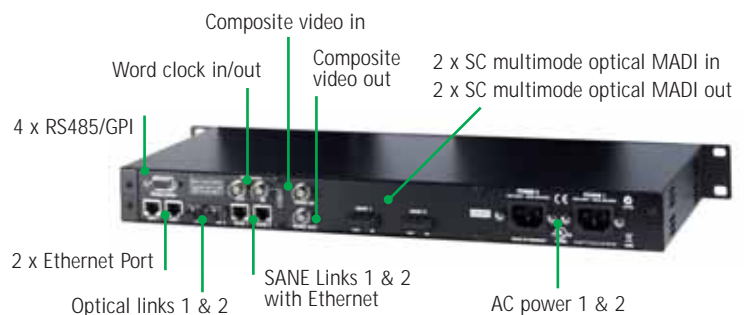
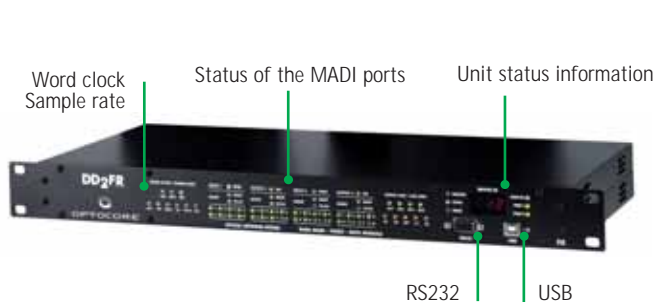
Features:

- Six Fast Ethernet ports (100/10 Mbps) provide both distributed network and local switching
- Four RS485 for remote control, DMX, MIDI, computer data etc.
- RS232 and USB ports for network and device control
- Word clock output
- External word clock input
- Two optical links
- Dual universal AC power supplies
- Power consumption: 16 W idle, 22 W peak
- Each ring carries up to 512 audio channels.
- Distance between two devices of up to 700 m/2300 ft standard, with the option of distances up to 70 km/43.5 miles
- Built-in network redundancy due to the two optical fiber ports

Dimensions:

- 1U (rack unit):
483 mm (19") width x
44 mm (1.73") height x
136 mm (5.35") depth
- Weight: 2.1 kg (4.6 lbs)

DD2FR-FX – 2 port optical MADI device with Ethernet for OPTOCORE and SANE



Features:

- Two optical MADI ports provide up to 128 input and 128 output audio channels
- Four RS485 for remote control, DMX, MIDI, computer data etc.
- RS232 and USB ports for network and device control
- Word clock output
- External word clock input
- Composite video in and out
- Two optical links
- Two SANE and Ethernet links
- Two 100 Mbit Ethernet links
- Dual universal voltage AC power supplies
- Power consumption: 10 W typical
- Each ring carries up to 1024 audio channels
- Distance between two devices of up to 700 m/2300 ft standard, with the option of distances up to 120 km/75 miles
- Built-in network redundancy due to the two optical fiber ports

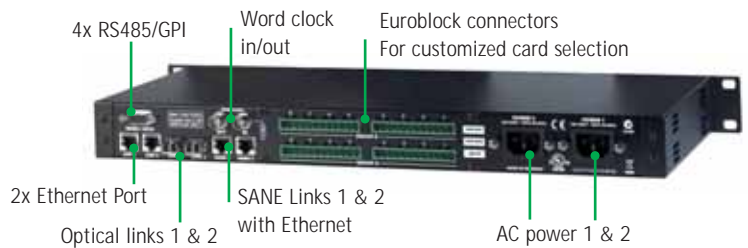
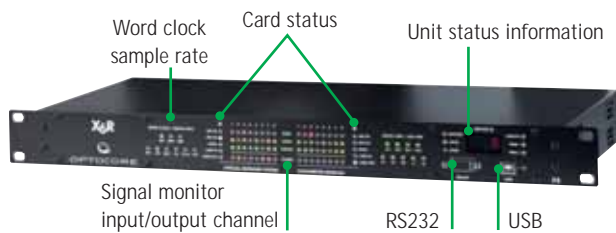
Dimensions:

- 1U (rack unit):
483 mm (19") width x
44 mm (1.73") height x
200 mm (7.87") depth
- Weight: 2.7 kg (4.41 lbs)

X6R – 16 Channel Converter Modules

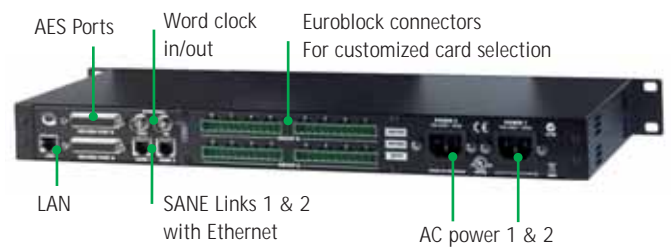
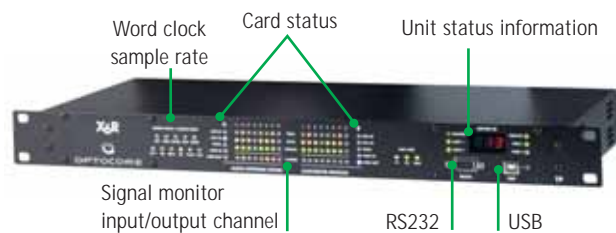
X6R-FX – Network Converter Unit with Ethernet for OPTOCORE and SANE

16 balanced analogue channels with state-of-the-art conversion, configurable via two 8 channel Euroblock card slots. Mixed channel routing between analogue, OPTOCORE and SANE.



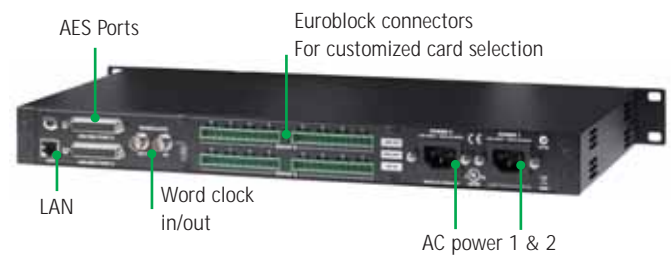
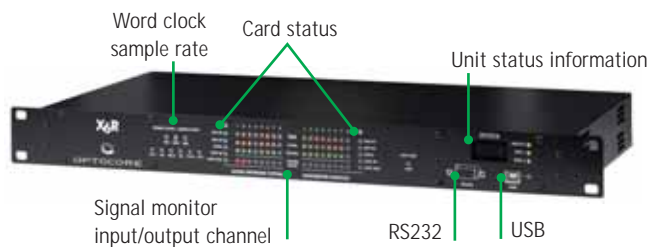
X6R-TP – Converter Unit with SANE and Ethernet

16 balanced analogue channels with state-of-the-art conversion, configurable via two 8 channel Euroblock card slots. Mixed channel routing between analogue, AES/EBU and SANE.



X6R – Converter Unit

16 balanced analogue channels with state-of-the-art conversion, configurable via two 8 channel Euroblock card slots.



Features:

- 16 balanced analogue channels
- Five different 8 channel cards for customized I/O configuration
- 1 dB gain step control on inputs. Gain step control is done in the analogue preamplifier for maximum performance
- RS485, RS232, USB and LAN ports enable multiple control options
- Four X6R units (64 analogue channels total) can be served by a single DD32E
- Up to 192kHz sample rate, 24-bit resolution
- Special Cards: Dualmic with two independent preamps for each channel and AES/EBU IN with sample rate converter
- Two different network interfaces are available: SANE (CAT5) and OPTOCORE (fiber)

- Two D-Sub 25 ports, each carrying eight AES/EBU signals
- Word clock in/out
- Power consumption: 25 W idle, 30 W peak
- Can be used as high-performance standalone converters
- All settings can be controlled over an OPTOCORE or SANE network

Dimensions:

- 1U (rack unit): 483 mm (19") width x 44 mm (1.73") height x 200 mm (7.87") depth
- Weight: 2.7 kg (6.0 lbs)

X6R: 16 Channel Converter Unit

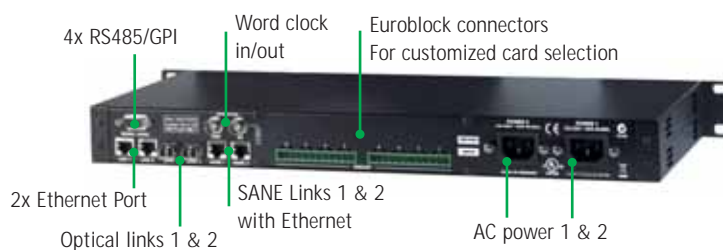
X6R-16MI	2 x 8 channel Microphone Inputs, 1 dB analogue step (0-70dB), +22dBu max. Input level, Euroblock connectors, up to 192kHz Sample Rate
X6R-16LI	2 x 8 channel Line Inputs, selectable max. Input level +27dBu, +22dBu, +18dBu, +8dBu, Euroblock connectors, up to 192kHz Sample Rate
X6R-16LO	2 x 8 channel Line Outputs, selectable max. Output level +22dBu, +18dBu, +12dBu, +8dBu, Euroblock connectors, up to 192kHz Sample Rate
X6R-DualMI	1 x 8 channel Microphone Inputs with dual preamps and converters, 1 dB analogue step (0-70dB), +22dBu max, Euroblock connectors, up to 192kHz Sample Rate

X6R-8MI/8LI	1 x 8 channel Microphone Inputs, 1 dB analogue step (0-70dB), +22dBu max. Input level, 1 x 8 channel Line Inputs, selectable max. Input level +27dBu, +22dBu, +18dBu, +8dBu, Euroblock connectors, up to 192kHz Sample Rate
X6R-8MI/8LO	1 x 8 channel Microphone Inputs, 1 dB analogue step (0-70dB), +22dBu max. Input level 1 x 8 channel Line Outputs, selectable max. Output level +22dBu, +18dBu, +12dBu, +8dBu, Euroblock connectors, up to 192kHz Sample Rate
X6R-8LI/8LO	1 x 8 channel Line Inputs, selectable max. Input level +27dBu, +22dBu, +18dBu, +8dBu 1 x 8 channel Line Outputs, selectable max. Output level +22dBu, +18dBu, +12dBu, +8dBu, Euroblock connectors, up to 192kHz Sample Rate

V3R – 8 Channel Converter Modules

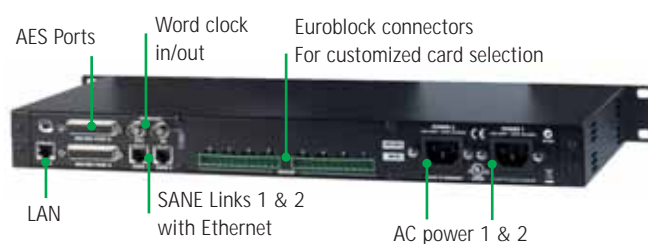
V3R-FX – Network Converter Unit with Ethernet for OPTOCORE and SANE

8 balanced analogue channels with state-of-the-art conversion, configurable via one 8 channel Euroblock card slot. Mixed channel routing between analogue, AES/EBU and SANE.



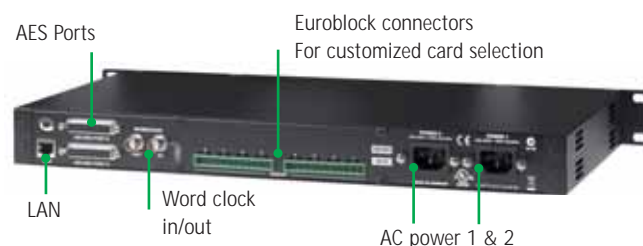
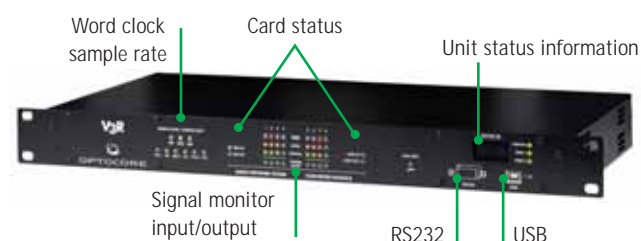
V3R-TP – Converter Unit with SANE and Ethernet

8 balanced analogue channels with state-of-the-art conversion, configurable via one 8 channel Euroblock card slot. Mixed channel routing between analogue, AES/EBU and SANE.



V3R – Converter Unit

8 balanced analogue channels with state-of-the-art conversion, configurable via one 8 channel Euroblock card slot.



Features:

- 8 balanced analogue channels
- Three different 8 channel cards for customized I/O configuration
- 1 dB gain step control on inputs. Gain step control is done in the analogue preamplifier for maximum performance
- RS485, RS232, USB and LAN ports enable multiple control options
- Eight X6R units (64 analogue channels total) can be served by a single DD32E
- Up to 192kHz sample rate, 24-bit resolution
- Special Cards: Dualmic with two independent preamps for each channel and AES/EBU IN with sample rate converter
- Two different network interfaces are available: SANE (CAT5) and OPTOCORE (fiber)

- Two D-Sub 25 ports, each carrying eight AES/EBU signals
- Word clock in/out
- Power consumption: 25 W idle, 32 W peak
- Can be used as high-performance standalone converters
- All settings can be controlled over an OPTOCORE or SANE network

Dimensions:

- 1U (rack unit): 483 mm (19") width x 44 mm (1.73") height x 200 mm (7.87") depth
- Weight: 2.6 kg (5.7 lbs)

V3R: 8 Channel Converter Unit

V3R-8MI 1 x 8 channel Microphone Inputs, 1 dB analogue step (0-70dB), +22dBu max. Input level Euroblock connectors, up to 192kHz Sample Rate

V3R-8LI 1 x 8 channel Line Inputs, selectable max. Input level +27dBu, +22dBu, +18dBu, +8dBu, Euroblock connectors, up to 192kHz Sample Rate

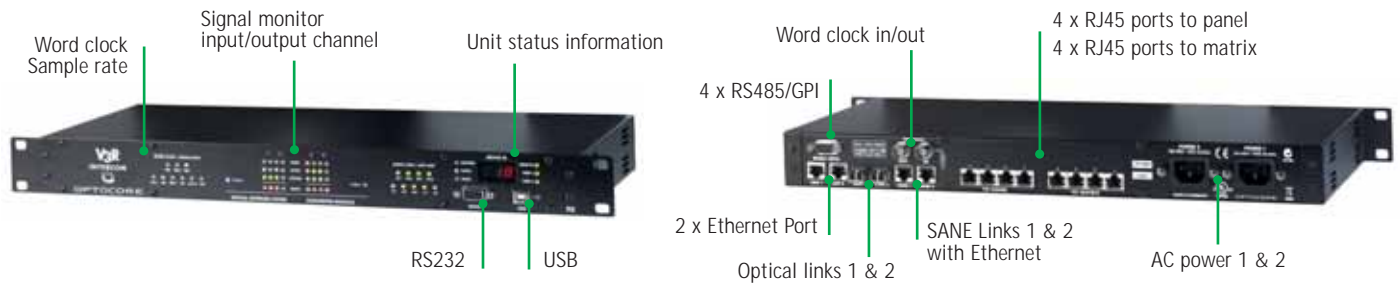
V3R-8LO 1 x 8 channel Line Outputs, selectable max. Output level +22dBu, +18dBu, +12dBu, +8dBu, Euroblock connectors, up to 192kHz Sample Rate

Additional equipment for R series

POWER SUPPLY Optional 2nd Power Supply for R series
XLR PANEL Optional 1 Rack Unit 16x XLR Panel for R series

Intercom Devices

V3R-FX-INTERCOM – 4 I/O Channel Clear-Com & RTS-Telex Interface for OPTOCORE and SANE 8 channels of Intercom and data, which can be routed through OPTOCORE and SANE network.



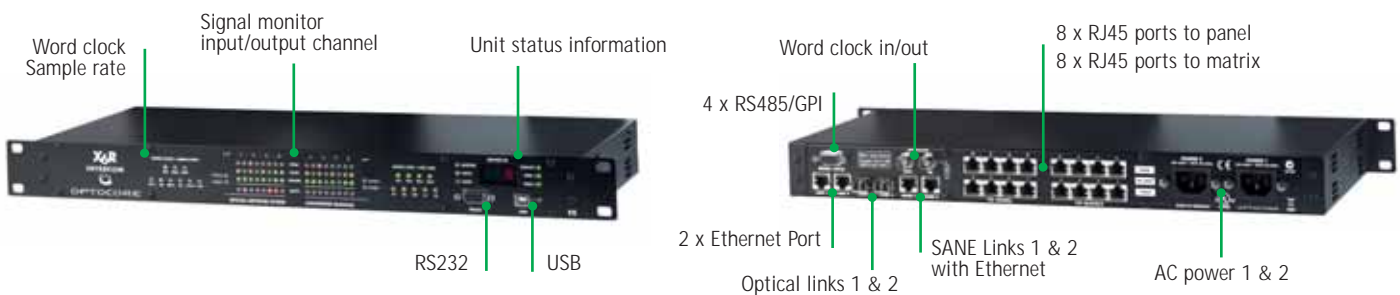
Features:

- 4 x RJ45 intercom matrix ports & 4 x RJ45 intercom panel ports connecting Clear-Com & RTS-Telex intercom panels and/or matrices
- Four RS485 for remote control, DMX, MIDI, computer data etc.
- RS232 and USB ports for network and device control
- Word clock output
- External word clock input
- Two optical links
- Two SANE and Ethernet links
- Two 100 Mbit Ethernet links
- Dual universal voltage AC power supplies
- Power consumption: 10 W typical
- Each ring carries up to 1024 audio channels
- Distance between two devices of up to 700 m/2300 ft standard, with the option of distances up to 120 km/75 miles
- Built-in network redundancy due to the two optical fiber ports

Dimensions:

- 1U (rack unit):
483 mm (19") width x
44 mm (1.73") height x
200 mm (7.87") depth
- Weight: 2.7 kg (4.41 lbs)

X6R-FX-INTERCOM – 8 I/O Channel Clear-Com & RTS-Telex Interface for OPTOCORE and SANE 16 channels of Intercom and data, which can be routed through OPTOCORE and SANE network.



Features:

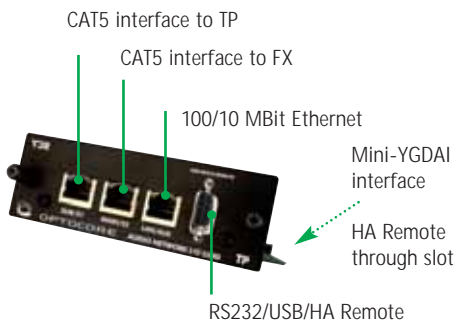
- 8 x RJ45 intercom matrix ports & 8 x RJ45 intercom panel ports connecting Clear-Com & RTS-Telex panels and/or matrices
- Four RS485 for remote control, DMX, MIDI, computer data etc.
- RS232 and USB ports for network and device control
- Word clock output
- External word clock input
- Two optical links
- Two SANE and Ethernet links
- Two 100 Mbit Ethernet links
- Dual universal voltage AC power supplies
- Power consumption: 15 W typical
- Each ring carries up to 1024 audio channels
- Distance between two devices of up to 700 m/2300 ft standard, with the option of distances up to 120 km/75 miles
- Built-in network redundancy due to the two optical fiber ports

Dimensions:

- 1U (rack unit):
483 mm (19") width x
44 mm (1.73") height x
200 mm (7.87") depth
- Weight: 2.7 kg (4.41 lbs)

Modules

Y3R-TP Module for YAMAHA mini-YGDAI slots



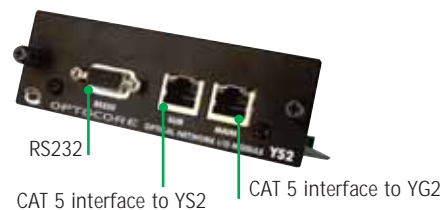
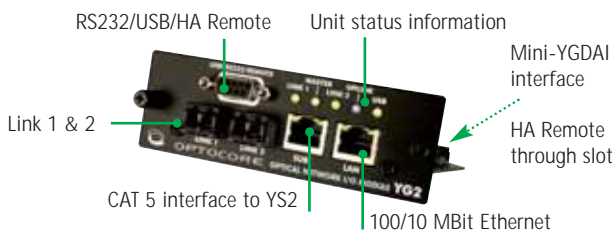
Y3R-TP

- 16 input and 16 output audio channels through console Mini-YGDAI slot
- Word clock from/to YGDAI slot, from/to network and word clock transport to any device in the network
- 10/100 Mbit Ethernet virtual switch to any Ethernet-enabled OPTOCORE device
- Two RS422 ports for direct transport of Yamaha HA Remote protocol via OPTOCORE
- Two SANE ports enable to connect multiple Y3R cards and to interface SANE network
- RS232 and USB ports for OPTOCORE CONTROL software
- Firmware easily upgraded via RS232 port

Dimensions:

- 120 mm (4.73") width x 40 mm (1.57") height x 160 mm (6.3") depth (Mini-YGDAI module)
- Weight Y3R-TP 245 g (7.87 oz)

YG2/YS2 Module for YAMAHA mini-YGDAI slots



YG2

- 16 input and 16 output audio channels through console Mini-YGDAI slot
- Word clock from/to YGDAI slot, from/to network and word clock transport to any device in the network
- 10/100 Mbit Ethernet virtual switch to any Ethernet-enabled OPTOCORE device
- Two RS422 ports for direct transport of Yamaha HA Remote protocol via OPTOCORE
- SUB port connects to one or more YS2 modules for expansion up to 64 input and 64 output audio channels (32 in/32 out @ 96kHz sample rate)
- Two optical LINK ports accept user-changeable single and multimode LC transceivers
- RS232 and USB ports for OPTOCORE CONTROL software
- Firmware easily upgraded through RS232 port

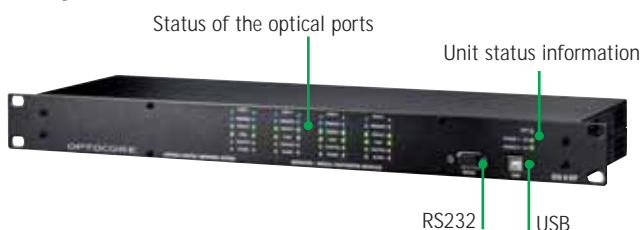
YS2

- 16 input and 16 output audio channels through console Mini-YGDAI slot
- MAIN port for connection to YG2 module or cascade to another YS2 module
- SUB port enables cascading additional YS2 modules for expansion up to 64 input and 64 output audio channels (32 in/32 out @ 96kHz sample rate)
- Firmware easily upgraded through RS232 port

Dimensions:

- 120 mm (4.73") width x 40 mm (1.57") height x 160 mm (6.3") depth (Mini-YGDAI module)
- Weight YG2 365 g (12.88 oz)
- Weight YS2 175 g (6.17 oz)

Repeater – DD8RP – Repeater / Single-Multimode converter



Features:

- Eight optical link ports for linking, prolonging, or changing media in four OPTOCORE networks
- Protocol independent repeater function, can also be used for non-OPTOCORE products
- RS232 and USB ports for device control and monitoring
- Built-in fiber diagnostic features
- Universal AC power supply
- 12 VDC power supply for redundancy or powering from a battery pack
- Power consumption: 0.6 W idle, plus 0.45 W multimode/0.6 W monomode per SFP installed
- Distance between two devices of up to 700 m/2300 ft standard, with the option of distances up to 120 km/75 miles
- Fiber transceivers easily swappable by user

Dimensions:

- 1U (rack unit):
483 mm (19") width x
44 mm (1.73") height x
136 mm (5.35") depth
- Weight: 2.1 kg (4.6 lbs)

OPTOCORE 24-ID Control Software

The software enables complete control over a 24-ID OPTOCORE or 24-ID SANE network. It enables access to the patching matrix of all devices in the entire networks and let you remotely control and monitor connected devices, such as converter modules (gain setting, phantom power, input and output level readings).

OPTOCORE Control

The software allows the configuration of and access to the complete network, audio, data and video MATRIX, the naming and gainsetting of all inputs, the configuration of the word clock settings, the provision of phantom power for all mic inputs, the modification of options, the storage and recall of the configuration set-up to/from PC hard disk, as well as the real-time level display of the individual channels.

Supervising the Network

Working in ON-LINE mode, it is possible to have the complete 24-ID fiber, 24-ID CAT5 or combined network under control, the software advises the system manager after every significant event, such as input over range, fiber/CAT5 disconnection, RS232/USB status. A log window will automatically pop up on event, if desired.

Input-output, Matrix and Patch

Any input of the system can be routed to any output by means of the Matrix tab. One input can be routed to more than one output.

RS485 and Video Settings

RS485 and video patch is confirmed by the local setting window, locally or via the network.

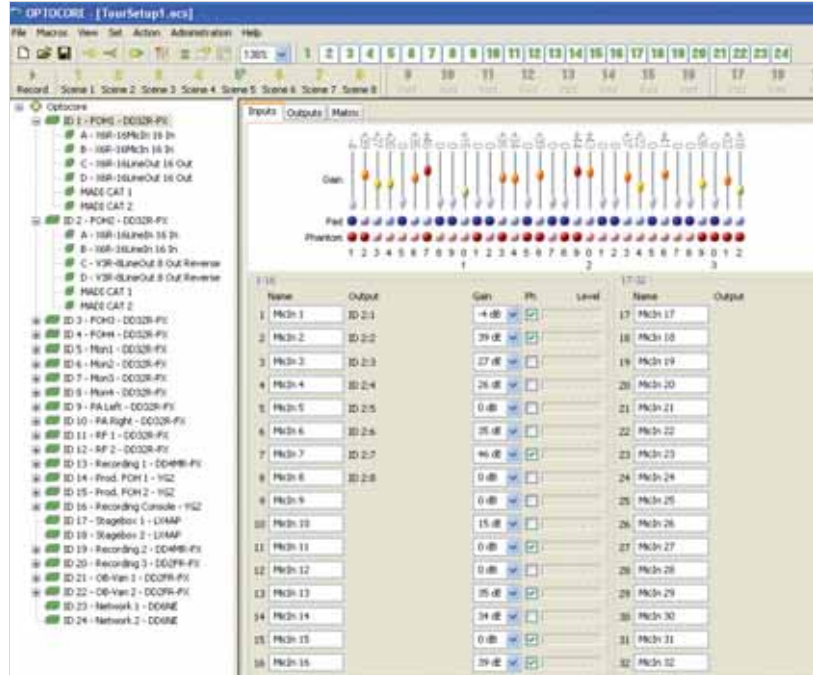
Specials

The OPTOCORE control protocol can be used by interested manufacturers or customers to control OPTOCORE devices directly from hardware other than a computer (mixing desks, media controller, control boxes, etc.). This is currently being implemented by various manufacturers, including DiGiCo®, Soundcraft, LAWO, Solid State Logic and Yamaha®, allowing gain/phantom control of analog OPTOCORE devices (LX4, X6, X6R) directly from their digital consoles.

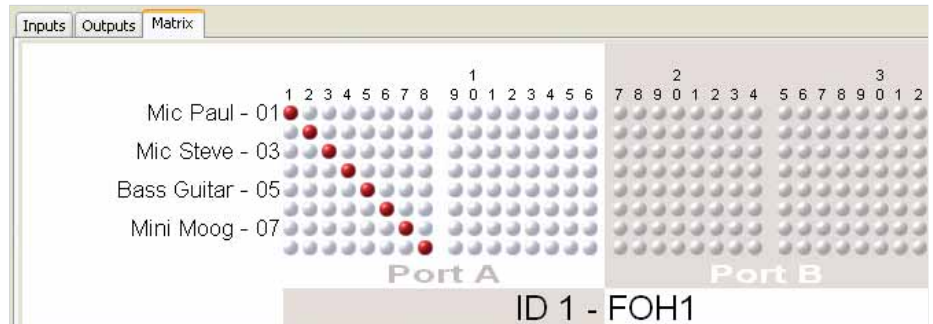
Log Window



OPTOCORE Control Software – Input Tab



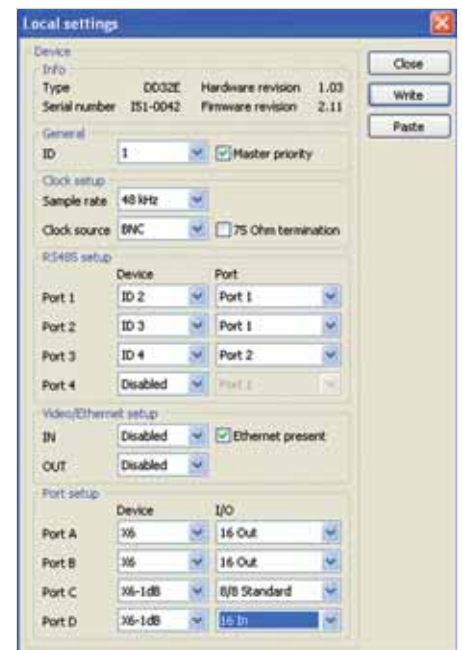
Patching Matrix



Output Tab



Local Settings



Accessories

OptoCon4/1



Features:

- Expanded beam bulkhead with two lenses (four available on request) mounted on a 1U front panel.

Dimensions:

- 483 mm (19") width x 44 mm (1.73") height x 20 mm (0.9") depth
- Weight: 0.55 kg (1.2 lbs)

OptoCon4/2



Features:

- Two expanded beam bulkheads with two lenses each (four available on request) mounted on a 1U front panel.

Dimensions:

- 483 mm (19") width x 44 mm (1.73") height x 20 mm (0.9") depth
- Weight: 0.7 kg (1.5 lbs)

OptoCable 4/150



Features:

- 150m rugged environment cable mounted to expanded beam plugs on a special rubber cable drum OCD-R.

Dimensions:

- 310 mm (12.2") width x 360 mm (14.2") height x 230 mm (9") depth
- Diameter 310 mm (12.2")
- Weight: 3.5 kg (7.7 lbs)

Fiber Cables

OMC4

One expanded beam plug, terminated to OFC. Bulkhead is equipped with two lenses (four available on request).

OFC

Tactical cable for use in rugged environments. Available in any length up to 700 m. Single mode cable also available.

OCD-M

Metal cable drum holds up to 300 m of optical fiber.

OCD-R

Special rubber cable drum holds up to 180 m of optical fiber.

Additional accessories, such as connecting cables, special length for fiber optic cables, or drums, are available on request.

Copper Cables

TRI-A

D-sub 25 "Y" cable from an OPTOCORE AES port set to 16 output channels to third-party AES equipment (usually consoles) having two D-sub 25 connectors wired for eight channels each.

TRI-B

D-sub 25 "Y" cable from third-party AES equipment (usually A/D converters) having two D-sub 25 connectors wired for eight channels each to an OPTOCORE AES port set to 16 input channels.

BI-B

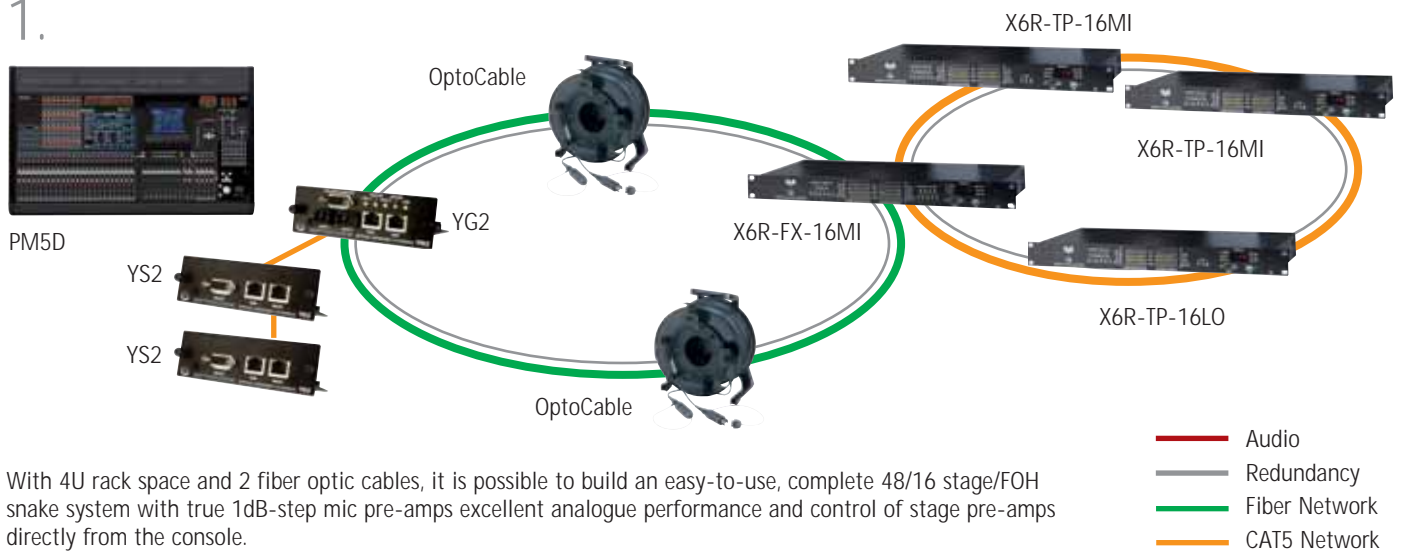
D-sub 25 cable for connecting an OPTOCORE AES port (such as the principal port of a DD32E) configured to provide 8 output channels and 8 input channels to third-party AES equipment having 8 inputs and 8 outputs.

BI-C

9-pin cable from the remote port of Yamaha consoles or A/Ds to an OPTOCORE RS485 port.

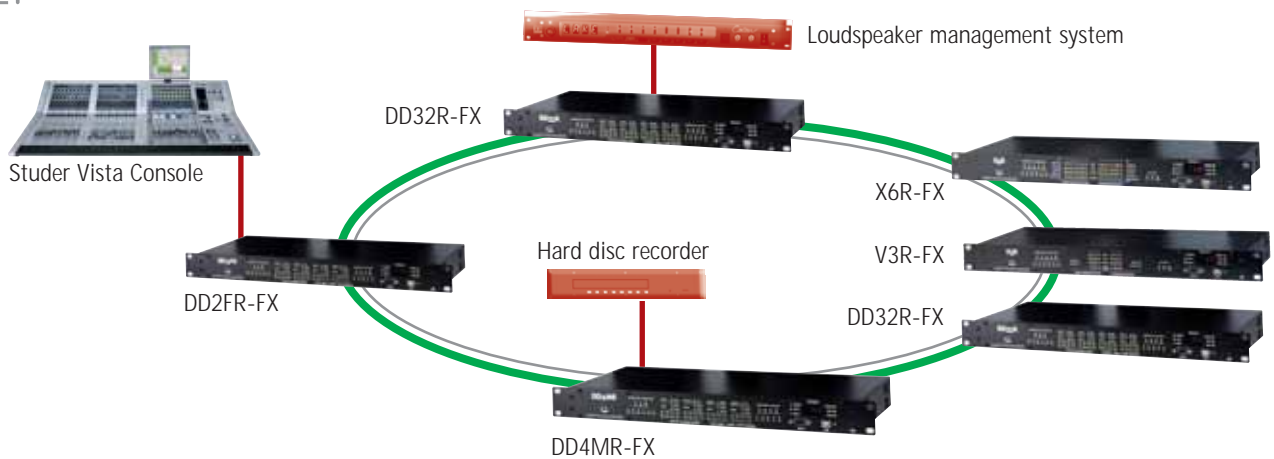
Network Examples

1.



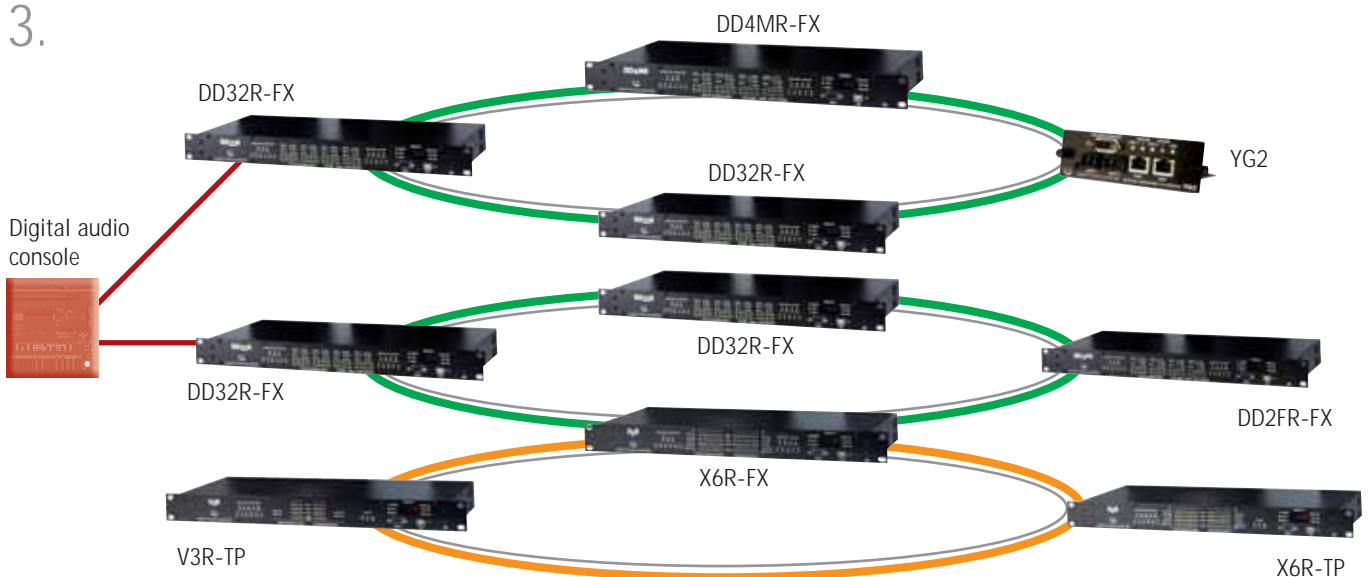
With 4U rack space and 2 fiber optic cables, it is possible to build an easy-to-use, complete 48/16 stage/FOH snake system with true 1dB-step mic pre-amps excellent analogue performance and control of stage pre-amps directly from the console.

2.



System example for a theatre application. Ethernet and remote gain control for the X6R/V3R units are transported along with the audio.

3.



A large mixed OPTOCORE/SANE application employing multiple synchronised rings. Synchronisation can be done at any point via word clock.

Selected List of OPTOCORE Users



Events and tours

- 2010 Winter Olympic Games, Opening and Closing Ceremonies – Vancouver, BC, Canada
- 2008 Summer Olympic Games, Opening and Closing Ceremonies – Beijing, China
- 2004 Summer Olympic Games, Opening and Closing Ceremonies – Athens, Greece
- 20th World Youth Day – Cologne, Germany
- 32nd America's Cup – Valencia, Spain
- 53rd Annual Grammy Awards – Los Angeles, California, USA
- ATP Tennis Masters Series – USA
- Barbra Streisand European Tour
- Billy Joel & Elton John "Face 2 Face" Tour
- Britney Spears "The Circus" Tour
- Coldplay "Viva la Vida" Tour
- Commonwealth Games – Delhi, India
- European Song Contest – Belgrade, Serbia
- Glastonbury Festival – Pilton, Somerset, UK
- Green Day "21st Century Breakdown" Tour
- Leona Lewis "The Labyrinth" Tour
- New Years Eve in Times Square – New York, USA
- Pet Shop Boys "Pandemonium" Tour
- Robbie Williams "Close Encounters" Tour
- Royal Horse Gala – Qatar
- Take That "Progress" Tour
- Le Mans Grand Prix – France

Fixed installations

- America Gardens Theatre at Epcot, Walt Disney World – Orlando, Florida, USA
- Bastille Opera – Paris, France
- Cirque du Soleil, MGM City Center – Las Vegas, Nevada, USA
- Deltion College – Zwolle, The Netherlands
- Düsseldorfer Schauspielhaus – Germany
- First Christian Church – Akron, Ohio, USA
- Hard Rock Live, Hard Rock Hotel & Casino – Biloxi, Mississippi, USA
- Henan Arts Center – Zhengzhou, Henan, China
- Hong Kong Cultural Center – China
- Kaufman Concert Hall at The 92nd. St. Y – New York, New York, USA
- Kings Place – London, UK
- Kölner Philharmonie – Cologne, Germany
- Kulturpalast Dresden – Dresden, Germany
- New Zealand Parliament – Wellington, New Zealand
- Norwegian EPIC Cruise Line – Norway, France, UK, USA
- Olympic Stadium – Berlin, Germany
- Pittsburgh Hockey Arena, Consol Energy Center – Pittsburgh, Pennsylvania, USA
- Porto Coliseum – Porto, Portugal
- Seacoast Grace Church – Cypress, California, USA
- Swedish Theater Helsinki – Finland
- The Phoenix Hall – Kyoto, Japan
- Würzburg Main-Franconia Theatre – Würzburg, Germany
- Wroclaw Opera House – Wroclaw, Poland

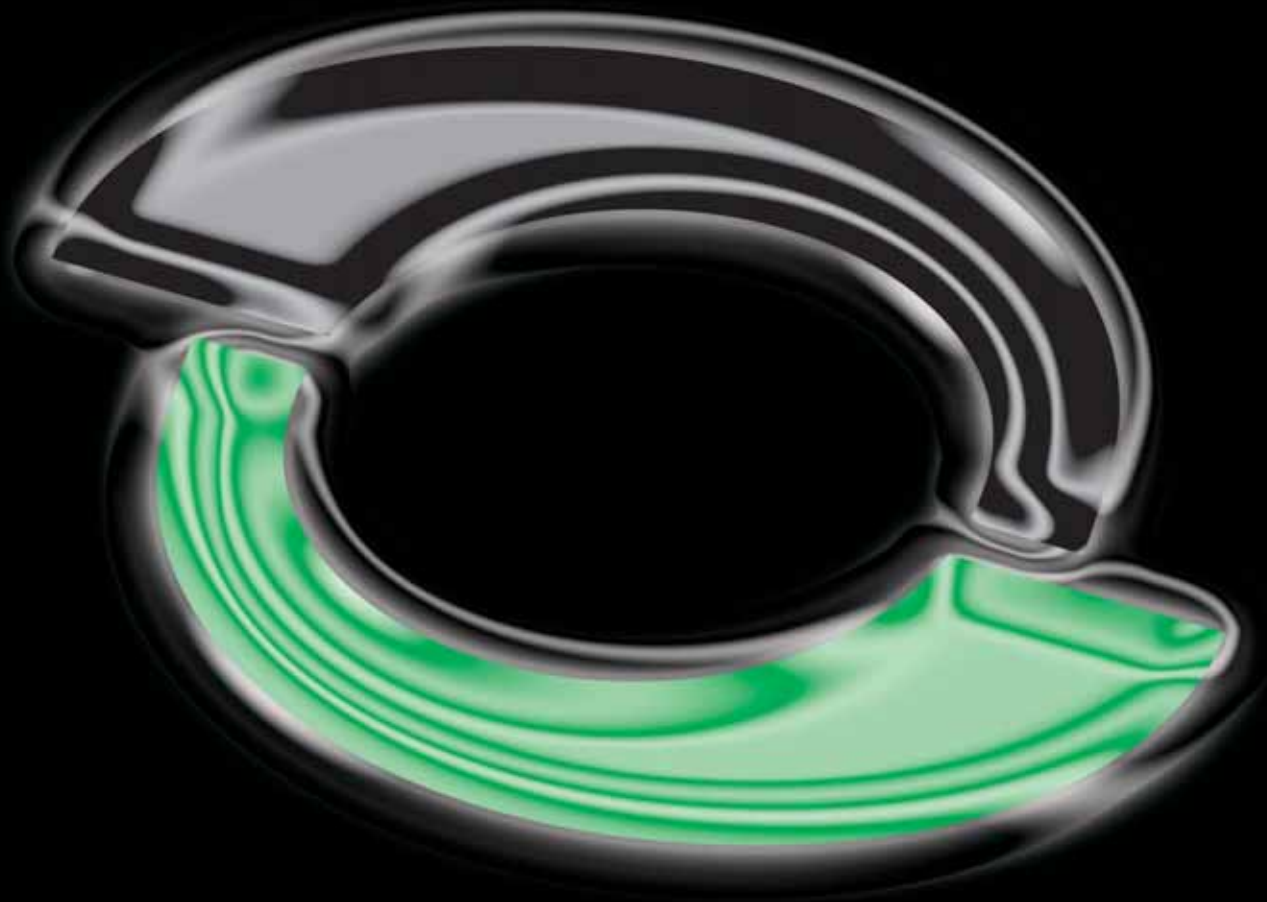
Broadcast

- Amek & Vanis – Italy
- Arena TV – UK
- Austrian Broadcasting (ORF), OB Van and recording Van – Austria
- British Broadcasting Corporation (BBC) "Type B" van – UK
- Berlin-Brandenburg Broadcast (RBB) – Germany
- Canadian Broadcasting Corporation (CBC) Radio OB Van – Canada
- Canal 9, Valencia Television (RTVV) – Spain
- CTV Canada – Canada
- DRS Radio recording Van – Switzerland
- Hessian Broadcasting (HR) – Germany
- Hunan TV – Changsha, China
- Jiaxiang TV – China
- Media Burst – Portugal
- Mediaset OB Van 27 – Italy
- NBC Studios – USA
- Polish Radio – Poland
- Rai 3 Studios – Italy
- Saarland Broadcasting (SR) – Germany
- Southwest Broadcasting (SWR) – Germany
- TeleBaern – Switzerland
- The Audio Truck Inc. – Canada
- VRT S3 radio van (Flemish radio) – Belgium
- Zhejiang Television (ZJTV) OB Van – China

Technical partners

- Avid Audio
- Clear-Com
- DiGiCo
- LAWO
- Neumann.Berlin
- RTS-Telex
- Solid State Logic
- Soundcraft
- Studer Professional Audio
- Yamaha Commercial Audio

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