



X6R-TP

ANALOGUE – SANE - AES/EBU INTERFACE AND NETWORK CONVERTER UNIT FOR OPTOCORE FIBER NETWORKS

12-in-1, the X6R-TP is a converter unit with the highest degree of flexibility with regard to the I/O configuration in a 64-channel SANE CAT5 network by OPTOCORE, which can be integrated in a OPTOCORE Fiber Network

OVERVIEW

12-in-1, the X6R-TP is a converter unit with the highest degree of flexibility with regard to the I/O configuration which can be directly integrated in a 64-channel SANE CAT5 network by Optocore. Six different card types enable the card slots on the rear of the device to be customised, whether the conversion of analogue signals – 16 inputs, 16 outputs, eight inputs and eight outputs, dual microphone inputs with two independent adjustable gains – to AES/EBU or a sample rate converter for AES3 input signals is required. 12 different versions are available.

The X6R-TP is especially designed for rack-mounted applications and permanent installation. All cards are equipped with Euroblock connectors. These common installation interfaces provide a simple and cost-efficient connection to other audio equipment.

The X6R-TP can be seamlessly integrated into the OPTOCORE OPTICAL DIGITAL NETWORK SYSTEM with the use of one of the FX devices and SANE ports or DD32R-FX and AES/EBU ports. All parameters of the converters can be remote controlled and monitored with the same software application as all the other OPTOCORE devices, the OPTOCORE CONTROL software. Furthermore, by connecting the –TP devices, the user can build a stand-alone CAT5 based network.

The X6R-TP with the dual microphone input card relieves all FOH and monitor engineers of the decision about the control of the microphone preamps. Every microphone input incorporates two independent microphone preamps and both can be adjusted individually. Therefore, analogue split boxes and two stage racks, to give FOH and monitor engineers the freedom to adjust their mic preamps directly at their own console, can be a thing of the past.

The X6R-TP with the sample rate converters enables the connection of audio devices operating the different sample rates.

The X6R-TP with AES/EBU I/O, analogue mic input, line input and line output cards allow a customised I/O configuration. Two card slots can be equipped with two different cards, so 10 combinations with 16 inputs, 16 outputs or eight inputs and eight outputs can be produced exactly according to the customer's requirements. Two additional fixed AES/EBU ports add more flexibility to the system, with 32 channels which can be configured as inputs or outputs.

The microphone inputs include microphone preamp, phantom power and selectable gains in analogue 1 dB steps from -4 dB to +66 dB.

The line inputs are equipped with selectable channel levels of -9 dB, -4 dB, +0 dB, +10 dB and the line output with a selectable channel level of +4dB, 0 dB, -6 dB, -10 dB round off the device. The high quality of the preamps, A/D and D/A converters make the X6R-TP units ideal for the incorporation into audio systems even if no OPTOCORE network is established. They provide a wide dynamic range with negligible distortion and extremely low noise.

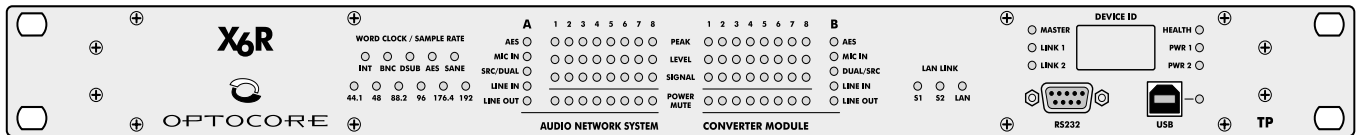
The channels of the SANE Ports and I/O Cards can be directly routed to Optocore fiber network and vice versa.

The Word Clock IN and OUT enable the synchronisation of the units to an external source and are used to pass on the word clock from one unit to the next. For stand-alone applications, the devices are equipped with an internal word clock.

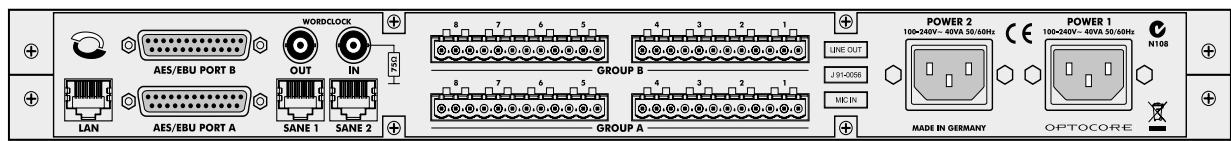
One X6R-TP can exchange up to 64 audio channels from the SANE network, 32 channels from two AES/EBU ports and 16 audio channels from the I/O Cards. The X6R-TP units can be operated and controlled via the Optocore network with Optocore Control, without the necessity of any external data cable. For control in stand-alone applications, USB, RS232 or LAN port on the front / rear panel can be used.

The FPGA (field programmable gate array) based concept of the internal logic circuitry permits updating of the firmware ensuring a continual state-of-the-art device.

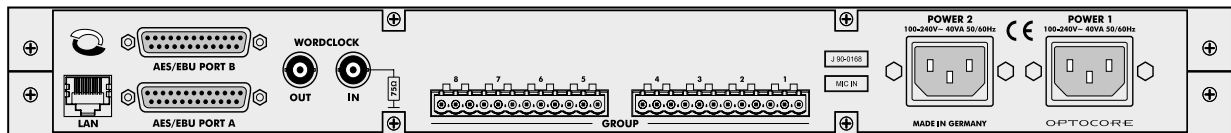
SCHEMATICS



Rear Panel X6R with Analogue Input - and Output Cards



Rear Panel X6R with Dual Microphone Card



FEATURES

- 16 channel converter unit in a 1 RU enclosure for OPTOCORE Fiber Network and SANE CAT5 Network by OPTOCORE
- Card slots for customised I/O configuration
- 6 types of cards with Euroblock connectors:
 - 8 mic inputs with two independent preamps each
 - 8 line inputs / 8 line outputs
 - 8 AES/EBU inputs with sample rate converters
- 8 AES/EBU in- or outputs switchable in groups of four
- Sample rates up to 192 kHz
- Full integration into SANE and OPTOCORE network
- Mic inputs with selectable gain (-4 dB to +66 dB in true analogue 1 dB steps) and 48 V phantom power
- 2 optical 2 Gbps LINK interface with duplex LC connectors
- 2 RJ45 SANE Network Ports
- 4 RS485/GPIO Ports
- Word clock IN and OUT
- Embedded internal word clock for stand-alone applications
- USB, RS232 and LAN port for configuration and control
- Full remote access with OPTOCORE Control Software
- Upgradeable internal logic
- Comprehensive status control via LED banks on the front

TECHNICAL SPECIFICATIONS

| | | | | |
|--|---|---|--|---|
| Analog Audio Mic Inputs | ADC | | | |
| Impedance, Gain / steps Maximum input level SNR THD+N @ -1 dBFS | Single and Dual @-4dBGain @-4dBGain @-4dBGain | 4.5k Ω +22 dBu 122.5 dB(A) ≤ -102 dB | -4 dB to +66 dB @ +66 dB Gain @ +66 dB Gain @ +66 dB Gain | 1 dB steps -48 dBu 81.5 dB(A) ≤ -100 dB |
| Analog Audio Line Inputs | ADC | | | |
| Impedance, Gain / steps Maximum input level SNR THD+N @ -1 dBFS | @-9dBGain @-9dBGain @-9dBGain | 10k Ω +27 dBu 127.5 dB(A) ≤ -102 dB | -9, -4, 0, +10 dB @ +10 dB Gain @ +10 dB Gain @ +10 dB Gain | 4 steps +8 dBu 108 dB(A) ≤ -102 dB |
| Analog Audio Line Outputs | ADC | | | |
| Impedance, Gain / steps Maximum input level SNR THD+N @ -1 dBFS | @+4dBGain @+4dBGain @+4dBGain | 22 Ω +22 dBu 123 dB(A) ≤ -100 dB | +4, 0, -6, -10 dB @ -10 dB Gain @ -10 dB Gain @ -10 dB Gain | 4 steps +8 dBu 108 dB(A) ≤ -103 dB |
| Digital AES3 audio in/out | 16 AES/EBU Digital Audio Pairs = 32 audio channels with or without Sample Rate Converter Card | | | |
| Audio ports | Connector: 4 x D-Sub25, Configuration: Software switchable I/O in 8-channel blocks; audio routing | | | |
| SANE Links | 2 RJ45 SANE links Protocol: SANE - 64 audio channels and 100Mbps LAN Transmission, data rate: Full duplex, 200 Mbps Cable length: CAT5, CAT5E, CAT6, CAT7 ≤ 100 m | | | |
| LAN Links | 1 RJ45 LAN links Protocol: FastEthernet, switch function across the entire OPTOCORE and Sane network Transmission, data rate: Full duplex, 10/100 Mbps Cable length: CAT5, CAT5E, CAT6, CAT7 ≤ 100 m | | | |
| Word Clock | 1 Input, 1 output Protocol: Word Clock; sample rate: 44,1 / 48 / 88,2 / 96 / 176,4* / 192* kHz Connector: BNC, 75 Ohm termination | | | |
| Power Supply | 2 independent power supplies with function check and automatic switch-over Type: Switch-mode, universal input Mains Voltage: 100-240 V Frequency: 50-60 Hz Power Consumption: 12 W typical | | | |
| Remote Control | LAN: any LAN or SANE port RS232: Convention EIA / TIA-232: Rx/D, Tx/D / 57.600 Baud USB: Interface to PC | | | |
| Dimensions (WxHxD) | 1 RU / 19": 483 x 44 x 200 mm 19.2 x 1.73 x 7.87 inch | | | |
| Weight | 2.7 kg 6.0 lb | | | |