DATA SHEET

LX4B – 96k

NETWORK UNIT WITH ANALOG INTERFACES

OPTICAL DIGITAL NETWORK DEVICE

Product Features

- **48 line outputs at multi-pin connectors**
- **16 return line inputs at multi-pin connectors**
- **2 RS485 interfaces for the exchange of control data. (e.g. RS422, RS485, DMX, MIDI)**
- **Composite video output**
- **2 optical 1 Gbps LINK interface with duplex SC-connectors**
- **Dual power supply with automatic switchover**
- **USB / RS232 port for configuration and control**
- **Full remote access with OPTOCORE CONTROL software**
- **Upgradeable internal logic**
- **Status LEDs on the front**

The LX4B – 96k is an OPTOCORE® OPTICAL DIGITAL NETWORK SYSTEM device with analog interfaces. The LX4B with 48 analog outputs and 16 line inputs is optimized to function as A/D and D/A converter FOH unit, as interface between an analog console and the Optocore network.

The LX4B is the perfect counterpart of the LX4AP when analog I/Os are needed at FOH and stage. The advantages of an optical fiber connection instead of an analog multi-conductor cable are magnificent. No losses due to resistance, capacitance or inductance can occur; nor disturbances inflicted by cables such as power lines or other devices will influence the audio signals. Galvanic isolation between the devices is given, thus ground loops do not exist. In addition, the fiber cables weight only a fraction of conventional copper-cored ones.

48 line level outputs are available at multi-pin connectors. The level can be adjusted (0 dB / -10 dB). 16 analog line level inputs with level adjustment (0 dB / +10 dB) provide the return path.

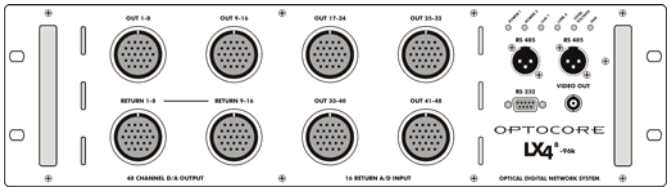
Redundant fiber connections can be established using the two optical LINK-interfaces. Depending on the fiber optic transceivers, distances from 700 m up to 70 km can be covered. The dual redundant ring structure provides maximum safety in a network with an outstanding low latency.

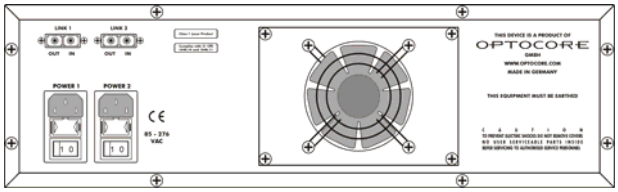
The LX4AB offers a composite video output as well as two RS485 interfaces usable for a wide range of data standards such as RS422, DMX and MIDI. In addition to the audio signals, video and data signals are transmitted by the fiber connection. The dual power supply unit, with automatic switchover, permits a redundant power supply and safeguards against malfunctions of the unit if one power supply fails to run.

OPTOCORE CONTROL software provides easy access to all configuration and control tools, including routing, naming, gain setting, storage and recall of configurations on the computer, off- and online mode, real-time level display of the individual channels in online mode.

Due to SMD production, the LX4B fulfills the demand of highest digital standards occupying only three rack unit of a 19" rack. The FPGA (field programmable gate array) based concept of the internal logic circuitry permits updating of the hardware by the use of the units remote ports, ensuring a continual state-of-the-art device.

Line Drawings





Technical Specifications

Analog Audio Outputs	DAC → Analog			
Line outputs				48
Gain / steps			0 dB, -10 dB	2 steps
Maximum output level	@ 0 dB Gain	18 dBu	@ -10 dB Gain	8 dBu
Frequency response (≤ -1 dB-drop)	@ 48 kHz	DC – 21 kHz	@ 96 kHz	DC – 42 kHz
Distortion THD+N	-		@ 0 dB Gain	≤ 0,002% ≡ -94 dB
Dynamics	@ 0 dB Gain	≥ 114 dB	@ -10 dB Gain	≥ 113 dB
Converter			24-bit @ 48 kHz	24-bit @ 96 kHz
Delay	ADC-channels	= 28 / F_S	@ 48 kHz: 0.59 ms	@ 96 kHz: 0.29 ms
Analog Audio Inputs	Analog → ADC			
Line inputs				16
Gain / steps			0 dB, +10 dB	2 steps
Maximum input level	@ 0 dB Gain	18 dBu	@ 10 dB Gain	8 dBu
Frequency response (≤ -1 dB-drop)	@ 48 kHz	15 Hz – 21 kHz	@ 96 kHz	15 Hz – 42 kHz
Input impedance				10 kΩ
Distortion THD+N			@ 0 dB Gain	≤ 0,002% ≡ -94 dB
Dynamics			@ 0 dB Gain	≥. 113 dB
CMR	@ 1 kHz	≥ 60 dB	@ 16 kHz	≥ 54 dB
Crosstalk	@ 1 kHz	≤ -112 dB	@ 16 kHz	≤ -92 dB
Converter			24-bit @ 48 kHz	24-bit @ 96 kHz
Delay	ADC-channels	= 39 / F_S	@ 48 kHz: 0.82 ms	@ 96 kHz: 0.41 ms
Auxiliary Ports	Convention EIA / TIA-485			
Data channels / rate	Digital control data		2 / up to 10 Mbps	
Impedance	Termination	330 Ω	Source	≤ 10 Ω
Video	Hardware standard 75 Ω / BNC		1 x output, Composite video	
Link	Input, Output, Dual – Full bandwidth			
Connection			Duplex SC	
Protocol			Optocore	
Transmission			Full duplex	
Data rate			2 x 1 Gbps	
Optical wave guide cable lengths	Multimode fiber 50 µm		≤ 700 m	
	Monomode fiber 9 µm		≤ 70 km (on request)	
Power supply	2 independent power supplies with function check and automatic switch-over			
Type	Switch-mode, universal input			
Mains voltage	100 ... 240 V, 400 V_{AC} tolerant, 50VA-idle, 90VA-peak			
Frequency	50 ... 60 Hz			
Remote Control				
RS232 / USB port	RS232: Convention EIA / TIA-232		R x D, T x D / 57 600 Baud	
Dimensions			3 RU / 19”	
W x H x D	483 x 132 x 240mm		19.2 x 10.4 x 9.5 inch	
Weight	8.4 kg		18.5 lbs	