

Audio Interface Quick start guide



netConcert

GENERAL SAFETY NOTE

DANGER



SHOCK HAZARD

Dangerous voltages are present inside the equipment described in this guide. The equipment must be connected to a three wire grounded mains outlet. Never operate with covers removed. No user serviceable parts inside. Refer servicing to qualified personnel. Unplug equipment from mains power supply before removing covers and/or replacing fuses. Replace fuses only with same type and rating.

1. GENERAL DESCRIPTION.

netConcert incorporates the latest digital audio networking technology, to provide a turnkey, high quality, affordable, low latency solution for a studio to transmitter link capable of delivering high quality uncompressed digital and analog audio.

netConcert's audio interface offers two bi-directional analog audio channels featuring high quality 24bit 48 or 96 KHz (factory selected) sampling rate A/D & D/A converters & one bi-directional stereo AES/EBU channel supporting 32, 44.1, 48 or 96 KHz sampling rates.

The system offers also a bi-directional RS232 connection which can be used for ancillary data etc.

2. SPECIFICATIONS.

ANALOG INPUT/OUTPUT	
Type	Balanced
Input connectors	XLR female shielded
Input Impedance	30 Kohms
A/D converter	24bit over sampling
Input Level (0dBFs)	+18dBu
Input sample rate	48/ 96 KHz
Output connectors	XLR male shielded
Output Impedance	200 ohms
D/A converter	24bit over sampling
Output Level (0dBFs, 10 Kohms)	+18dBu
Sample rate	48/ 96 KHz
THD+N	<-106 dB input or output
Frequency Response	20Hz to 20KHz +/-0.25dB (48 KHz sample rate) 20Hz to 40KHz +/-0.25dB (96 KHz sample rate)
Dynamic Range	> 112 dB, 48kHz and 96k sample rates
AES/EBU INPUT/OUTPUT	
Input connector	XLR female shielded
Output connector	XLR male shielded
Input sample rate	32/44.1/48/ 96 KHz (sample rate converted to 48/96 KHz)
Output sample rate	48/ 96 KHz
THD+N	<-135 dB
Dynamic Range	140dB input or output
RS232 Bridge	
Baud rate	Factory configurable up to 57600 bits/sec.
Format	All 8-bit formats, no handshaking.
POWER SUPPLY	
Input Voltage	100-240 VAC 50-60 Hz
Power consumption	25 W
MECHANICAL	
Dimensions	Audio interface: 1 RU, 270mm deep

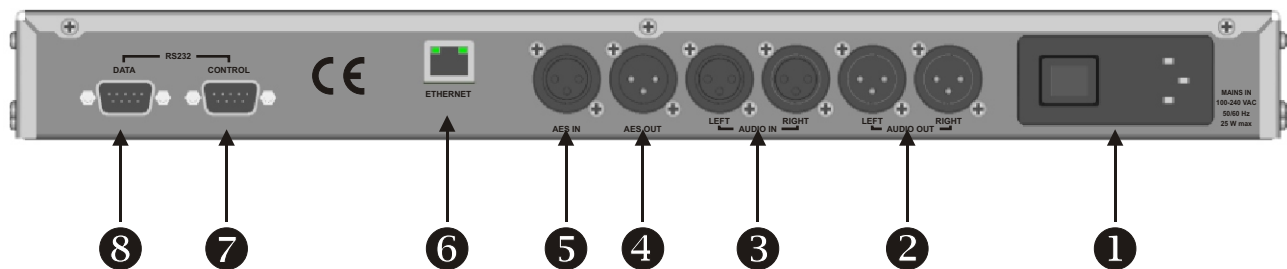
3. INSTALLATION & OPERATION

Audio Interface front panel overview.



- 1 **POWER ON LED**.....Lights when the equipment is turned ON.
- 2 **AES UNLOCK LED**.....Lights when the AES input stream has excessive errors or when there is no AES input stream present.
- 3 **A/D OVERFLOW**.....Lights when there is an overflow condition (ie level>0dbFs) at the audio Analog to Digital converter.

Audio Interface rear panel overview.



- 1 **MAINS INPUT & SWITCH**.....100-240 VAC 50/60Hz 25 W max. fused.
- 2 **ANALOG AUDIO OUTPUT**.....Balanced audio output 200 Ohms, +18dbu max.
- 3 **ANALOG AUDIO INPUT**.....Balanced audio input 30 KOhms,, +18dbu max.
- 4 **AES DIGITAL AUDIO OUT**.....Digital, AES standard audio output, balanced 110 Ohms transformer isolated.
- 5 **AES DIGITAL AUDIO INPUT**.....Digital, AES standard audio input, balanced 110 Ohms transformer isolated.
- 6 **ETHERNET CONNECTION**.....RJ45 connector for connection to Radio Link. Ethernet 100BaseTx standard
- 7 **RS232 CONTROL PORT**.....RS232 interface for firmware updates and diagnostics (factory use only).
- 8 **RS232 DATA PORT**.....RS232 general purpose interface. Can be used for ancillary data etc.

Connecting the Interfaces to the AC Supply

The supply voltage must be in the range 100 V to 240 V 50 Hz to 60 Hz. The mains connector is located at the rear panel. The interfaces must only be connected to an outlet that has a ground contact.

Power ON and OFF.

The mains switch is located at the rear panel. To turn the power on or off, press the AC power switch to position I (On) or 0 (Off).

Replacing Fuses

The interfaces are protected by a fuse (0.5 A / 250 V) located on the rear panel at the right side of the AC power switch. For continued protection, replace only with same type fuse.

DANGER



Shock hazard

For fuse replacement, ensure that the interfaces are switched off and disconnected from the power supply by removing the plug from the AC power connector.

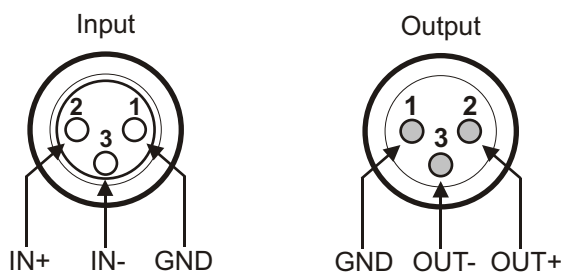
Audio connections.

Audio connections are made using standard XLR connectors. All inputs and outputs are balanced. Refer to specifications table for input and output impedances and levels.

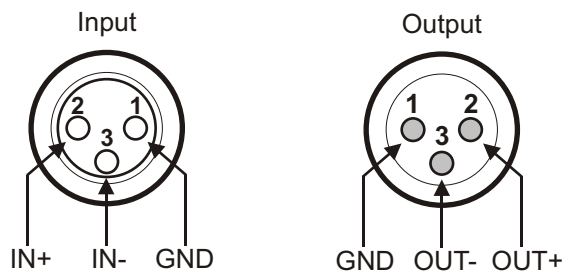
Audio applied to the analog input of an interface, will be transmitted to the analog output of the other interface with approximately 1:1 level ratio. When the input audio level exceeds the 0dBfs level of the system (~18dBu) the **A/D OVERFLOW** Led will light.

When a valid AES audio stream is applied to the AES input of an interface, its sample rate will be automatically detected and converted to the systems internal sample rate (48 or 96 KHz). The stream is then transparently transmitted to the AES output of the other interface at this rate. When there is no AES input stream or the input AES stream has excessive errors the **AES UNLOCK** Led will light.

Note that for full duplex (bidirectional) transmission between audio interfaces, a bidirectional ethernet radio link is required.



Analog audio connector pinout



AES audio connector pinout

Network connection.

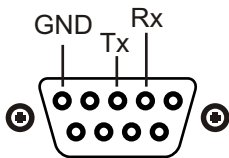
Audio interface's ethernet port must be connected to the ethernet port of the radio link with a CAT-5 network cable, up to 100m in length.

netConcert uses the Data Layer (MAC Layer) of Ethernet. netConcert **does not** utilize Internet Protocol (IP) for audio or data transport so **no IP settings are required.**

RS232 connection.

The RS232 connection provided by netConcert is a transparent serial connection, which can be used for transmission of control, metadata etc. The connection supports 8-bit no-handshaking formats with up to 57600 baud rate (factory configured).

Note that for full duplex (bidirectional) RS232 connection between audio interfaces, a bidirectional ethernet radio link is required.



RS232 connector pinout

