

XTI DATA-FORWARDING BOARD

4-CHANNEL DUPLEX BOARD FOR TRANSPARENT FORWARDING OF EXTERNAL SERIAL DATA

- Forwards RS 232, RS 422, RS 485, MIDI, DMX, and LTC data
- Level and format conversion
- Galvanic isolation of inputs and outputs

The XTI board is designed for transparent forwarding of external serial data of the following formats over the NEXUS system, and makes all the necessary interface standards available:

- RS 232
- RS 422, RS 485
- MIDI
- DMX (RS 422/485)
- Timecode, LTC
- Dolby MetaDaten (RS 232 or RS 422)

FUNCTION

A virtual cable through the NEXUS audio network is configured for free routing of external serial data on the system. The data is exchanged between two or more XTI boards and remains unchanged. I.e. the data is neither edited nor evaluated or otherwise modified.

In addition, the XTI serves as an interface for forwarding serial data from other boards (e.g. metadata from the XDED and XDEE Dolby boards or an XHDI board) to external devices. The board can also distribute timecode and MIDI on the system, and make them available to other boards.

The XTI board supports four duplex channels with independently configurable data formats. Each channel is galvanically isolated from both the NEXUS and other channels. Freely configurable routing between different outputs makes level conversion possible (for example, for routing an RS 232 input signal to an RS 422 output).

For higher data rates the software offers the option of doubling the transmission bandwidth. In this mode, twice the NEXUS bandwidth is allocated to each channel, thus doubling the data rate.

Each of the four electronically fused serial ports can be switched on or off independently. Two XTI versions are available: a 4-HP front panel with two serial ports, or an 8-HP version providing the maximum of four ports.

MIDI-, LTC- AND DMX DATA

Data complying with the MIDI specification can also be transmitted; however, for reasons of space, the physical connections are not implemented as standard 5-pole DIN jacks but as 9-pin D-Sub connectors. An isolated MIDI Thru signal is generated on the board.

The same applies to LTC timecode; here, too, the inputs and outputs are made available via 9-pin D-Sub connectors. For transmission of DMX serial data, the XTI should be run in double-speed mode due to the high data rate.

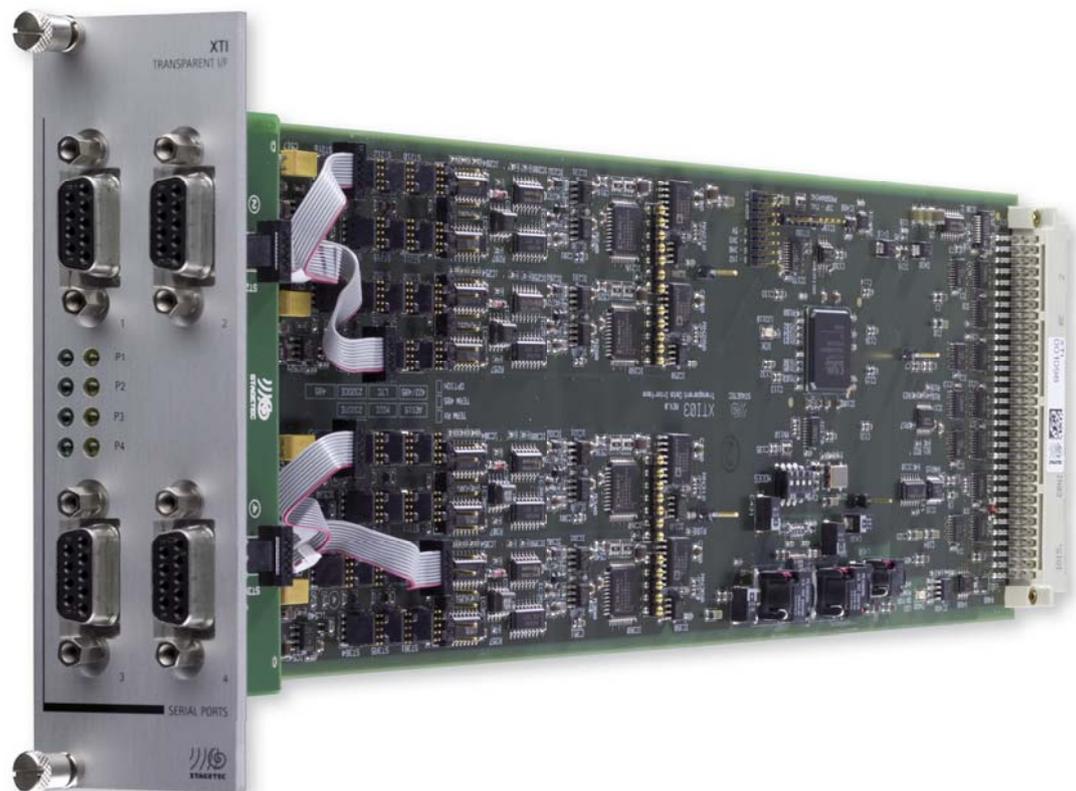
CONNECTORS

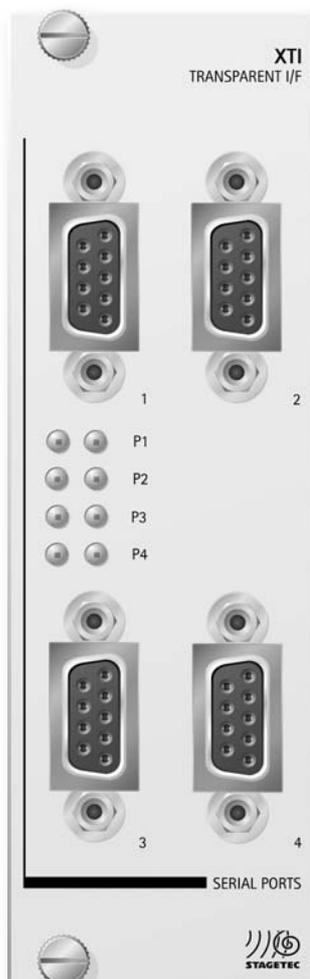
The four channels are made available on 9-pin D-Sub connectors. The pin-out depends on the application. (There are a total of seven configuration options.)

INDICATORS

The front panel features 8 LEDs for indicating the channel status:

- 1 green LED per channel indicating the RX traffic
- 1 yellow LED per channel indicating the TX traffic





XTI 03 SPECIFICATIONS		
Data formats	RS 232, RS 422, MIDI, DMX, LTC	
I/O ports	4 I/O ports (standard version)	
	2 I/O ports (compact version)	
Pinout	9-pin D-Sub, female, proprietary or standard configurations	
Dielectric strength	RS 232	±25 V
	RS 422	±12 V
	MIDI	±10 V
	LTC	±5 V
Latency	< 1 ms (dependent on the overall system)	
Note	The number and length of optical lines between two end points of a connection on the NEXUS system affect latency. A maximum data rate of 115.2 Kbps is recommended. (The double-speed mode should be enabled where higher rates are required.)	
Data rate	125 kBaud (max.) @ $f_{\text{sample}} = 48 \text{ kHz}$	
	250 kBaud (max.) @ $f_{\text{sample}} = 48 \text{ kHz}$, double speed mode	
RS 232	Output voltage	±5.4 V, $R_L = 3 \text{ k}\Omega$
	Input voltage	-25 to 25 V (max., recommended)
	Input impedance	5 k Ω
	Cable length	10 metres (max.) recommended
RS 422/485	Output voltage	3.1 V, $R_L = 100 \Omega$
	Input voltage	-7 to 12 V (max., recommended)
	Input impedance	120 or 5 k Ω , jumper-adjustable
	Cable length	100 metres (max.) recommended @ $Z_0 = 110 \Omega \pm 20\%$
MIDI	Output voltage	4 V @ 5 mA
	Input voltage	-10 to 10 V
	ON input current	5 to 15 mA (max., recommended)
	OFF input current	0.25 mA (max.)
LTC	Output voltage	1.5 V _{pp} , $R_L = 1 \text{ k}\Omega$
	Input voltage	0.5 to 5 V _{pp}
	Input stability	10 k Ω
Power supply	Voltage	+4.75 to 5.25 V
Operating conditions	Temperature range	0 °C to +70 °C
	Humidity	90% (max.), non-condensing
Storage conditions	Temperature range	-35 °C to +70 °C
	Humidity	90% (max.), non-condensing
Physical Properties	General	Board for 19" module frame; 3U, 340 mm
	Front panel	4 HP (20.02 mm × 128.5 mm), 8 HP (40.02 mm × 128.5 mm)
	Slot requirements	1
	Weight	28 kg