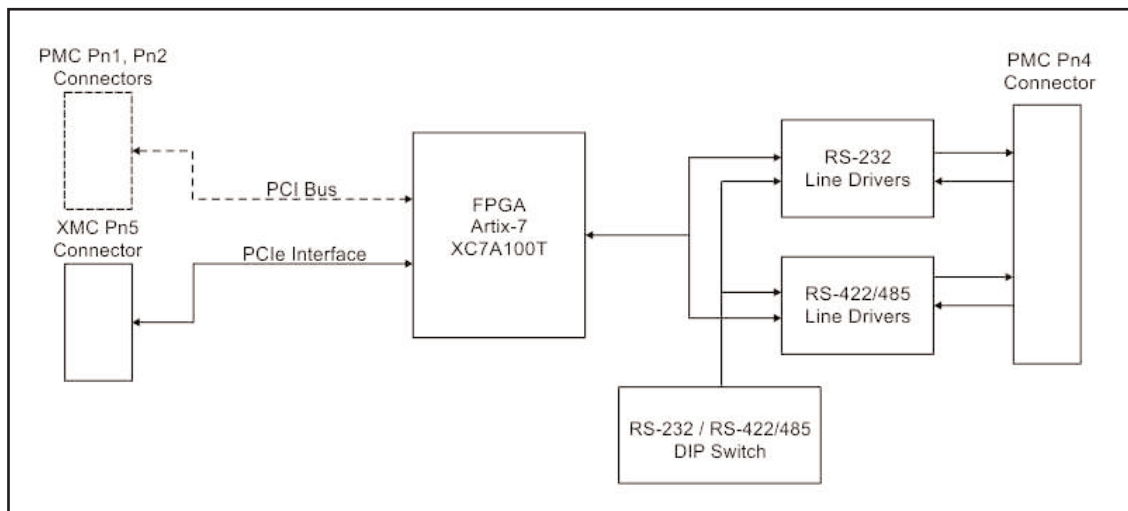


## ► 8-Channel and 4-Channel High-Speed Serial I/O XMC Adapter

The 8-Channel High-Speed Serial I/O XMC Adapter provides eight channels of simultaneous, high-speed (>20 Mbit/s), bi-directional serial communications. All channels are jumper configurable as RS232/422/485. This adapter also supports a number of UART (Universal Asynchronous Receiver/Transmitter) (<1 Mbit/s) channels.

The 4-Channel High-Speed Serial I/O XMC Adapter is a reduced cost version of the 8-Channel adapter with only half the line drivers fitted.

The adapter design complies with the XMC specification (ANSI/VITA 42.3-2006) and the Conduction-Cooled PMC (CCPMC) specification (ANSI/VITA 20-2001) and is available in ruggedised, industrial and commercial versions. A version with front panel I/O is available as an option.



**8-Channel HSS XMC Adapter Block Diagram**

### Architecture

The 8-Channel High-Speed Serial I/O XMC Adapter are intelligent adapters designed with Xilinx Artix-7 Field-Programmable Gate Array (FPGA). The Xilinx Artix-7 FPGA can easily be configured to implement different serial protocols, thus allowing the adapters to keep up with technological advances. All high-speed serial I/O channels are implemented using the Artix-7 FPGA.

### Features

- Cost-effective and flexible option for systems that require both high-speed, real-time communication links as well as some low-speed serial links
- Offers independent I/O processing offboard the host

### Conduction-Cooling

The conduction-cooled 8-Channel and 4-Channel High-Speed Serial I/O XMC Adapter conforms to the CCPMC (Conduction-Cooled PCI Mezzanine Card) Standard, namely ANSI/VITA 20-2001.

### Applications

- Distributed real-time applications in harsh environments
- Mission-critical applications
- Avionics
- Vetronics
- High-speed sensor integration



► **8-Channel and 4-Channel High-Speed Serial I/O XMC Adapter**

Specifications			
<b>Host Interface</b>	4-Lane; 2,5 GHz PCIe Electrically : PCI Express Rev. 2.0		
<b>High-Speed Channels</b>	8 or 4		
<b>High-Speed Channel Protocols</b>	SDLC, HDLC, BiSync, Asynchronous UART, custom		
<b>High-Speed Channel Data Rate</b>	RS-422/485 : 20 Mbit/s per channel maximum RS-232 : 1 Mbit/s per channel maximum		
<b>High-Speed Channel I/O Interface</b>	RS-422/485 : TxD, RxD, CLK_IN, CLK_OUT RS-232 : TxD, RxD, RTS, CTS, CD, CLK_IN, CLK_OUT		
<b>High-Speed Channel Termination</b>	100 ohm, individually selectable for each RS-422/485 channel		
<b>Asynchronous UART-only Channels</b>	4 or 2, 1 Mbit/s per channel maximum, RS-232 only, TxD, RxD, RTS, CTS		
<b>FPGA</b>	Xilinx Artix-7 100T		
<b>Power</b>	10 Watt maximum, 3,3 V		
<b>Reliability</b>	Figures according to MIL-HDBK-217F, Parts Stress Method		
	Commercial and Industrial Grades 4-Channel Adapter	Ground Benign, Controlled, 25 C	790 000 hours
	Commercial and Industrial Grades 8-Channel Adapter	Ground Benign, Controlled, 25 C	570 000 hours
	Ruggedised and Conduction-Cooled Grades 4-Channel Adapter	Ground, Mobile, 45 C	80 000 hours
		Naval, Sheltered, 40 C	190 000 hours
		Airborne, Inhabited Cargo 55 C	86 000 hours
Ruggedised and Conduction-Cooled Grades 8-Channel Adapter	Ground, Mobile, 45 C	52 000 hours	
	Naval, Sheltered, 40 C	126 000 hours	
	Airborne, Inhabited Cargo 55 C	56 000 hours	
<b>Software Drivers</b>	Software driver support for Linux. VxWorks is a costed option		



► **8-Channel and 4-Channel High-Speed Serial I/O XMC Adapter**

Physical Characteristics		
Formfactor	Dimensions	Mass
<b>XMC (ANSI/VITA 42.0-2016)</b>	143,75 mm x 74,00 mm (+ 0,0 / -0,5 mm), conforming to VITA 42 height envelope	80 g +/- 10 g
<b>CCXMC (ANSI/VITA 42.0-2016)</b>	143,75 mm x 74,00 mm (+ 0,0 / -0,5 mm), conforming to VITA 42 height envelope	80 g +/- 10 g

Environmental Specifications			
Grade	Commercial	Industrial	Ruggedised
Temperature - Operating - Storage	0 C to +55 C -40 C to +85 C	-15 C to +75 C -40 C to +85 C	-40 C to + 85 C -55 C to +125 C
Humidity	0% - 90%	0% - 95%	0% - 95%
Shock	N/A	30 g peak for 11 ms	40 g peak for 11 ms
Vibration - Sine - Random	2 g (peak) at 10 Hz to 100 Hz 0,04 g²/Hz at 15 Hz to 2 kHz	10 g (peak) at 5 Hz to 2 kHz 0,1 g²/Hz at 15 Hz to 2 kHz	10 g (peak) at 5 Hz to 2 kHz 0,1 g²/Hz at 15 Hz to 2 kHz

Part Selector			
Part Number	Formfactor	Grade	Number of Channels
CCII/HSS/XMC/8P/FP/COM	XMC	Commercial	8 x RS-232/422/485 4 x RS-232
CCII/HSS/XMC/8P/FP/IND	XMC	Industrial	8 x RS-232/422/485 4 x RS-232
CCII/HSS/XMC/8P/FP/RGD	XMC	Ruggedised	8 x RS-232/422/485 4 x RS-232
CCII/HSS/XMC/8P/BP/CC	XMC	Conduction-Cooled	8 x RS-232/422/485
CCII/HSS/XMC/4P/FP/COM	XMC	Commercial	4 x RS-232/422/485 2 x RS-232
CCII/HSS/XMC/4P/FP/IND	XMC	Industrial	4 x RS-232/422/485 2 x RS-232
CCII/HSS/XMC/4P/FP/RGD	XMC	Ruggedised	4 x RS-232/422/485 2 x RS-232
CCII/HSS/XMC/4P/BP/CC	XMC	Conduction-Cooled	4 x RS-232/422/485

8 & 4-Channel HSS XMC Adapter  
Board-Level