

## ► MPC744x 3U or 6U CompactPCI Host Computer

The MPC744x CompactPCI Host Computer is a powerful, compact single board computer based on reliable PowerPC technology. With an MPC7447A or MPC7448 host processor clocked at up to 1,7 GHz and having up to 2 GByte of DDR SDRAM, this single board computer is ideal for computationally intensive applications such as the execution of real-time video processing algorithms and advanced flight control software.

The CompactPCI formfactor is a proven, rugged and scalable framework that provides maximal versatility to system integrators. A choice of 3U and 6U Air-Cooled and Conduction-Cooled variants are available, qualified for operation from 0 C to +55 C up to -40 C to +85 C. Apart from system expansion options via the CompactPCI backplane, this single board computer also features a PCI Express (PCIe) XMC / PMC site and (in 6U formfactor) an additional PMC-only site.

### Features

- Freescale MPC7447A or MPC7448 host processor at up to 1,7 GHz
- Marvell Discovery VI (MV64660) system Controller
- Up to 2 GByte DDR SDRAM
- Up to 64 MByte Flash Memory
- 8 KByte EEPROM Memory
- One XMC (PCIe x4) site
- One or two PMC (PCI-X) site(s) (depending on formfactor)
- 32-bit / 66 MHz CompactPCI
- Two Asynchronous RS-232/485 serial I/O channels (configurable)
- Three Gigabit Ethernet interfaces
- Two USB 2.0 High Speed host interfaces
- One SATA or CompactFlash interface (configurable)
- Available in 3U and 6U CompactPCI formfactors
- Air-Cooled and Conduction-Cooled, -40 C to +85 C operation
- VxWorks 5.5 and 6.x BSPs with DO-178B Level C certification
- Linux support

### Architecture

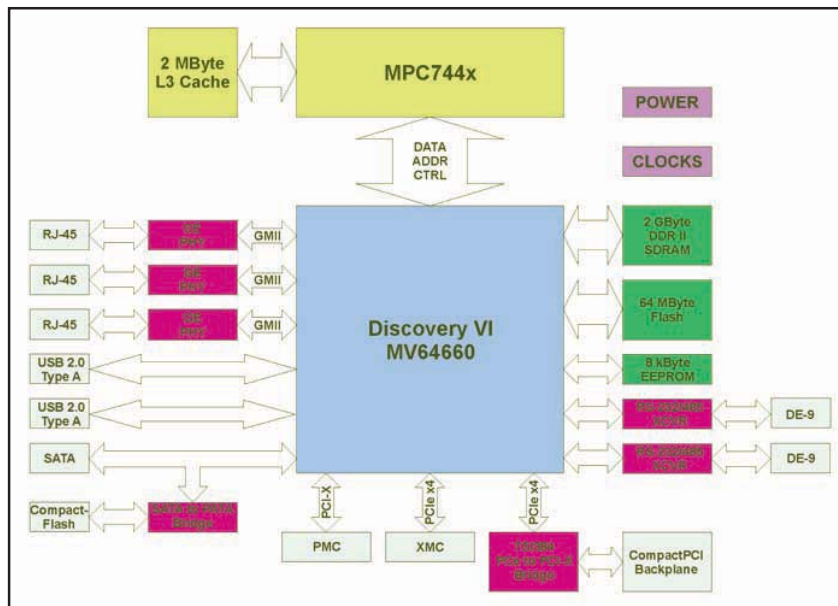


Figure 1 : MPC744x CompactPCI Host Computer Block Diagram



► **MPC744x 3U or 6U CompactPCI Host Computer**

Specifications	
<b>Processor</b>	Freescall MPC7447A or MPC7448 host processor at up to 1,7 GHz
<b>DDR-SDRAM</b>	Up to 2 GByte DDR SDRAM
<b>Flash Memory</b>	Up to 64 MByte Flash Memory
<b>EEPROM Memory</b>	8 KByte EEPROM Memory
<b>XMC Interface</b>	One PCIe x4 site Compliant to PCI Express Base Specification 1.0a
<b>PMC Interface</b>	One (3U) or two (6U) PCI-X (64-bit / 133 MHz, 3,3 V or 5,0 V signalling) Compliant to both PCI Specification Rev. 2.2 and PCI-X Specification Rev. 1.0
<b>CompactPCI Interface</b>	One CompactPCI System Slot (32-bit / 66 MHz, 3,3 V or 5,0 V signalling) Compliant to PICMG 2.0 R3.0
<b>Ethernet Interface</b>	Three Gigabit Ethernet interfaces
<b>Serial I/O Interface</b>	Two UART serial I/O channels, configurable for either RS-232 or RS-485 operation
<b>USB Host Interface</b>	Dual USB 2.0 High Speed host interfaces, with a maximum bit rate of 480 Mbit/s

Characteristics		
	Dimensions	Mass
<b>Physical - 3U</b>	176 mm x 100 mm	450 g
<b>Physical - 6U</b>	176 mm x 233 mm	740 g
<b>Power</b>	5,0 V DC @ 5,0 A	
<b>Software</b>	User defined, running on either VxWorks or Linux operating systems	

Reliability			
<b>MTBF</b>	Figures according to MIL-HDBK-217F, Parts Stress Method		
<b>Commercial Grade</b>	Ground, Mobile	T <sub>a</sub> = 25 C	110 000 hrs
<b>Industrial Grade</b>	Ground, Mobile	T <sub>a</sub> = 45 C	20 000 hrs
	Naval, Sheltered	T <sub>a</sub> = 40 C	40 000 hrs
	Airborne, Inhabited Cargo	T <sub>a</sub> = 55 C	25 000 hrs
<b>Ruggedised / Conduction-Cooled Grade</b>	Ground, Mobile	T <sub>a</sub> = 45 C	30 000 hrs
	Naval, Sheltered	T <sub>a</sub> = 40 C	50 000 hrs
	Airborne, Inhabited Cargo	T <sub>a</sub> = 55 C	35 000 hrs

MPC744x 3U / 6U

Board-Level



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Environmental Specifications			
	Commercial Grade	Industrial Grade	Ruggedised/Conduction-Cooled Grade
<b>Temperature</b> - Operating - Storage	0 C to +55 C -40 C to +85 C	-15 C to +75 C -50 C to +85 C	-40 C to +85 C -60 C to +125 C
<b>Humidity</b>	0% to 90%	0% to 95%	0% to 95%
<b>Shock</b>	N/A	30 g peak for 11 ms	40 g peak for 11 ms
<b>Vibration</b> - Sine - Random	2 g (peak) 10 Hz to 100 Hz 0,04 g²/Hz at 15 Hz to 2 kHz	10 g (peak) 5 Hz to 2 kHz 0,1 g²/Hz at 15 Hz to 2 kHz	10 g (peak) 5 Hz to 2 kHz 0,1 g²/Hz at 15 Hz to 2 kHz

Part Selector		
Part Designation	Configuration	Grade
CCII/744X/CPCI/3U/COM	3U CompactPCI	Commercial
CCII/744X/CPCI/3U/IND	3U CompactPCI	Industrial
CCII/744X/CPCI/3U/RGD	3U CompactPCI	Ruggedised
CCII/744X/CPCI/3U/CC	3U CompactPCI	Conduction-Cooled
CCII/744X/CPCI/6U/COM	6U CompactPCI	Commercial
CCII/744X/CPCI/6U/IND	6U CompactPCI	Industrial
CCII/744X/CPCI/6U/RGD	6U CompactPCI	Ruggedised
CCII/744X/CPCI/6U/CC	6U CompactPCI	Conduction-Cooled