P512 – Reflective Memory PMC
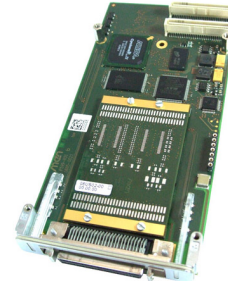
- **32-bit/33-MHz PMC**
- **1 LVDS channel**
- **Usable in a fully connected mesh**
- **Multi-mode up to 2 meters**
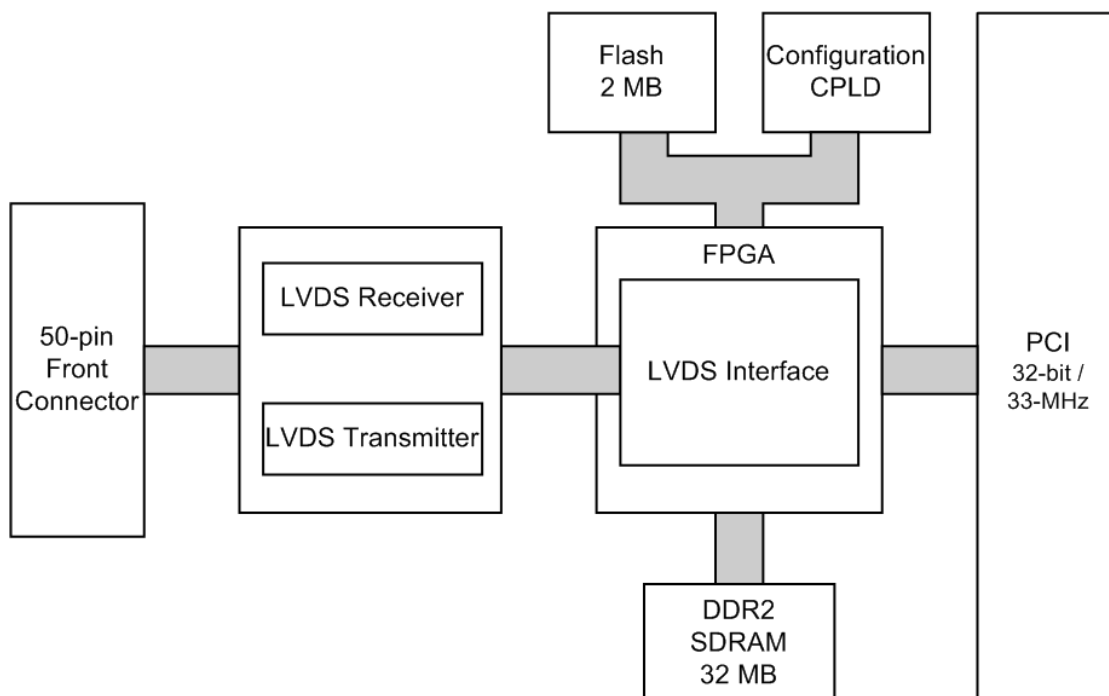- **32 MB DDR2 SDRAM**
- **-40 to +85°C with qualified components**

The P512 offers Reflective Memory functionality, for example for redundant computer structures in safety-critical applications. Reflective memory is a memory bus technology from Encore Computer that allows simultaneous reads and writes to multiple memories. It can be used to share memory among multiple CPUs. The advantage of reflective memory is the possibility to set up deterministic real-time communication networks across computer systems and operating systems. Each P512 module offers one LVDS channel. The modules can be interconnected in a fully connected

mesh and support multi-mode up to two meters. Each computer in a system needs one PMC for each connection to another computer (2 computers: 1 PMC each, 3 computers: 2 PMCs each etc).
The module is equipped with 32 MB DDR2 DRAM.
The P512 is a PMC mezzanine card suitable for any PMC compliant host carrier board in any type of bus system, i.e. CPCI, VME or on any type of stand-alone SBC in telecommunication, industrial, medical, transportation or aerospace applications. It supports 32 bits/33 MHz. Appropriate PMC carrier cards in 3U, 6U and other formats are available from MEN or other manufacturers.

Diagram

Technical Data

Reflective memory	■ 1 LVDS channel
	■ Usable in fully connected mesh
	■ Multi-mode up to 2 meters
	■ Connection speed 230 MHz
	  □ PCI to LVDS TX write performance (burst): 28.52 MB/s
	  □ PCI to LVDS TX write performance (longword single): 15.89 MB/s
	  □ DMA from PCI to LVDS TX performance (burst): 20.81 MB/s

Memory	■ 32MB SDRAM memory
	  □ Soldered
	  □ DDR2
	  □ 132MHz memory bus frequency
	  □ FPGA-controlled
	■ 2MB non-volatile Flash
	  □ For FPGA data
	  □ FPGA-controlled
	■ Access to LVDS RX/TX memory
	  □ PCI to RX/TX memory write performance (burst): 107.43 MB/s
	  □ PCI to RX/TX memory read performance (burst): 99.16 MB/s
	  □ PCI to RX/TX memory write performance (longword): 15.89 MB/s
	  □ PCI to RX/TX memory read performance (longword): 5.37 MB/s

PMC Characteristics (PCI)	■ Compliant with PCI Specification 2.2 ■ 32-bit/33-MHz, 3.3V V(I/O) ■ Target
Peripheral Connections	■ Via front panel on a shielded 50-pin HP D-Sub SCSI 2 receptacle connector

Electrical Specifications	■ Supply voltage/power consumption:
	  □ +5V (-3%/+5%), 109mA
	  □ +3.3V (-5%/+5%), 143mA

Mechanical Specifications	■ Dimensions: conforming to IEEE 1386.1 ■ Weight: 78g

Environmental Specifications	■ Temperature range (operation):
	  □ -40..+85°C (qualified components)
	  □ Airflow: min. 1.0m/s
	■ Temperature range (storage): -40..+85°C
	■ Relative humidity (operation): max. 95% non-condensing
	■ Relative humidity (storage): max. 95% non-condensing
	■ Altitude: -300m to + 3,000m
	■ Shock: 15g/11ms
	■ Bump: 10g/16ms
	■ Vibration (sinusoidal): 1g/10..150Hz
	■ Conformal coating on request

MTBF	■ 1 434 674 h @ 40°C according to IEC/TR 62380 (RDF 2000)
Safety	■ PCB manufactured with a flammability rating of 94V-0 by UL recognized manufacturers
EMC	■ Conforming to EN 55022 (radio disturbance), IEC1000-4-2 (ESD) and IEC1000-4-4 (burst)
Software Support	■ MDIS driver

Ordering Information

Standard P512 Models	**15P512**-00	1 channel (TX/RX) reflective memory usable with 2nd P512 and special crossed cable, -40..+85°C with qualified components
Miscellaneous Accessories	**05P000**-01	25 mounting screw sets to fix PMC/XMC modules on carrier boards
	05P512-00	Crossed cable (TX/RX) for connection of two P512 reflective memory PMCs , -40..+85°C
Software: Linux		This product is designed to work under Linux. See below for potentially available separate software packages from MEN.
	13P512-06	MDIS5 low-level driver sources (MEN) for P512
Software: Windows®		This product is designed to work under Windows®. See below for potentially available separate software packages from MEN.
	13P512-70	MDIS4/2004 Windows® driver (MEN) for P512
Software: VxWorks®		This product is designed to work under VxWorks®. For details regarding supported/unsupported board functions please refer to the corresponding software data sheets.
	13P512-06	MDIS5 low-level driver sources (MEN) for P512
Software: QNX®		This product is designed to work under QNX®. For details regarding supported/unsupported board functions please refer to the corresponding software data sheets.
	13P512-06	MDIS5 low-level driver sources (MEN) for P512

For operating systems not mentioned here contact MEN sales.

Documentation	Compare Chart mezzanine functions on PMC/XMC and PC-MIP® » Download	
	20P512-00	P512 User Manual

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