



MM-6171

2GB or 8GB Buffer Memory XMC

Features

- ◆ XMC form factor memory card
- ◆ 2GB or 8GB DDR2 SDRAM
- ◆ SDRAM protected with ECC
- ◆ DMA engines to offload CPU
- ◆ Serial RapidIO® (SRIO) interface option per VITA 42.2
- ◆ SRIO supported on CHAMP-FX2, VPX6-185, and MFC700 products
- ◆ Linux® and VxWorks® host drivers`
- ◆ Rugged air-cooled and conduction-cooled versions



The MM-6171 XMC is a buffer memory module with support for Serial RapidIO (SRIO) host interfaces. Equipped with 2GB or 8GB of DDR2 SDRAM, the card provides high-speed storage for applications that need to rate-buffer incoming data streams, or applications that need the write-endurance or instant memory clearing inherent in SDRAM, where Flash storage is not appropriate.

The host interface, SDRAM memory controllers and DMA engine are implemented in a Xilinx® Virtex®-5 LX110T FPGA. Two separate 64-bit wide (plus ECC bits) memory arrays are connected to the FPGA. The total memory bandwidth is over 3GB/s between the memory and the FPGA. The memory is protected with ECC circuitry where single-bit errors are corrected and double-bit errors are detected through the memory controller logic.

The SRIO interface is 4-lane, operating at 3.125Gbps.

The MM-6171 features a local DMA engine, which can be programmed by the host to perform the data movement, alleviating the host CPU of this overhead.

Software drivers are available for use with the MM-6171 supporting Linux and VxWorks.



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Flexible Architecture

The MM-6171 has a flexible architecture to support future product enhancements. The Xilinx FPGA also provides (unused in standard product) 8 bi-directional RocketIO signals to the J6 connector and 32 single-ended I/O signals to the P4 connector. The LX110T memory controller has unused logic resources available to support custom functions. A PCI Express version (PCIe) of the MM-6171 is planned. Contact the factory for more information.

Table 1: Specifications

Capacity	2GB, 8GB
Interface	SRIO x4 at 3.125GHz
Power	+5V, 6A
Weight	<ul style="list-style-type: none"> ♦ Air-cooled 150g ♦ Conduction-cooled 240g

Figure 1: MM-6171 Block Diagram

