

## RACEway Interface VIM-2R Module



One VIM-2R plus one VIM-2 module may be attached to a 4290 or 4291 processor boards.



### Features

- ❑ VIM-2R module for DSP processor boards such as the Models 4290 and 4291
- ❑ Supports 160 MB/sec peak RACEway transfers
- ❑ Dramatically reduces VMEbus congestion for high-speed real-time applications
- ❑ Routes RACEway data packets to and from the 'C6000 processors
- ❑ Compatible with VIM-2 modules to provide additional functions

### Ordering Information

Model	Description
6219	RACEway interface VIM-2R module

### General Information

The Model 6219 is a high-performance RACEway interface VIM-2R module which attaches directly to the Pentek Models 4290 and 4291 Quad 'C6000 DSP processor boards. These boards can hold two VIM-2 modules, or one VIM-2 plus a VIM-2R module within one VMEbus slot.

Model 6219 attaches to the lower VIM position, while the upper position may be used for additional I/O functions. The flexible configurations of the VIM standard provide customizable system solutions with a 160 MB/sec RACEway interface.

### RACEway Interface

RACEway is a high-speed synchronous backplane switching fabric capable of delivering 32-bit word transfers between VME boards at a peak rate of 160 MB/sec. It offers significant advantages for VMEbus systems by providing a high-speed data channel completely independent of the VMEbus. The interface utilizes the 64 user-defined pins of the VME P2 connector.

Data is typically transferred in packets of 2 kB. Each packet contains the necessary routing and delivery address information to steer it to a unique destination.

To join the RACEway buses of two or more boards, a circuit board containing RACEway data switches and sockets that mate with the 64 pins of the P2 must be installed. These assemblies, called RACEway

Interlink Modules (ILK), come in sizes that bridge 4, 8, 12 and 16 VMEbus slots, with combinations that can bridge up to 20 slots. ILKs can be purchased from Pentek as Model 8250, options -004 through -016.

The RACEway switches on the ILKs are called RACEway crossbar switches. Each crossbar switch connects six separate RACEway buses, automatically routing the data packets from one bus to any other, based on the routing header in the packet. The ILKs support multiple 160 MB/sec RACEway transfers simultaneously, depending on the number of slots and crossbar switches utilized.

### Front Panel Serial Ports

The serial ports of the two 'C6000 processors are brought to a front panel multiport connector to support interboard communications.

### Operation

Model 6219 allows master and slave access to the RACEway bus on P2. The mezzanine BI-FIFOs of the 'C6000 processors are used to buffer the data for efficient block transfers. Interrupt inputs can be enabled for each processor to signal the presence of input or output data in the FIFOs for easy implementation of 'C6000 DMA transfers. Peak data transfer rates of 160 MB/sec are supported by hardware routing of RACEway data packets to and from the 'C6000 processors.

### Block Diagram, Model 6219

