

RACEway Interface VIM-4R Module

General Information

The Model 6220 is a high-performance RACEway interface VIM-4R module which attaches directly to the Pentek Models 4290 and 4291 Quad 'C6000 DSP processor boards.

The Model 6220 provides a RACEway interface while occupying only one VMEbus slot. No other VIM modules may be attached to the processor board at the same time.

Model 6220 features RACEway status indicators for each processor and two front panel connectors for 'C6000 serial ports.

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, which are normally unconnected in most backplane designs.

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 RACE-

way 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.

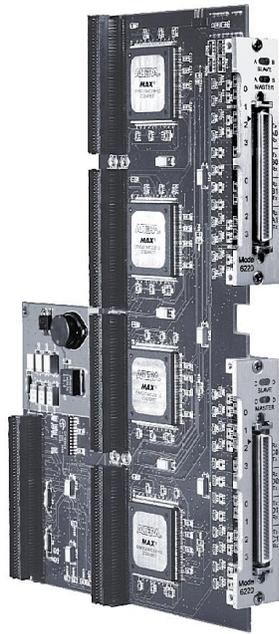
The RACEway switches on the ILKs are called RACEway crossbar switches. Each crossbar switch connects six separate RACEway buses, automatically routing the data packets from one bus to any other, based on the routing header in the packet. The ILKs support multiple 160 MB/sec RACEway transfers simultaneously,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

Front Panel Serial Ports

The serial ports of all four 'C6000 processors are brought to front panel multiport connectors to support interboard communications.

Operation

Model 6220 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.



One VIM-4R module may be attached to a 4290 or 4291 processor boards.



Features

- ❑ VIM-4R 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

Ordering Information

| Model | Description |
|-------|---------------------------------|
| 6220 | RACEway Interface VIM-4R module |

Block Diagram, Model 6220

