IDT is the industry leader in SRIO, VME, and EHB switching and bridging technology. Our chips set the standard in Military, Aerospace, Communication, and Industrial segments for each of these product lines. With strong technical support, established products and long term proven technology, IDT is the pre-eminent company in SRIO, VME and EHB switching and bridging.

RapidIO Switches and Bridges – With performance up to 20Gbps per-port throughput and the ability to scale to thousands of processors over any topology, open-standard RapidIO is the embedded fabric of choice. IDT offers RapidIO Gen1 and Gen2 switch families. This sub-microsecond interconnect (100ns switch latency), with its specification-standard backplane support, enables high performance computing and carrier-class wireless infrastructure. Military, aerospace, and industrial control systems benefit from RapidIO’s hot-swap support and fault tolerance in these mission critical systems. Green microserver and storage systems leverage RapidIO’s best power efficiency (as low as 300mW / 10Gbps) and hardware-based RDMA and Messaging. In datacenter-class systems, any processor can be supported. Even x86 can take advantage of the RapidIO network when connected via IDT’s PCIe-to-SRIO bridge devices.

VME Interconnect – IDT is the market leader in VME Interconnect technology with more than twenty years experience in providing VME solutions and technical support to the embedded systems industry. The VME System Interconnect products, such as IDT TSI148, dominate the VME market and enhance the performance of traditional VME-based applications for military, communications, industrial automation, and medical imaging. IDT’s VME bridges provide a high performance, direct connect interface between the VMEbus backplane and the local PCI bus. The VME bridges are ideally suited for processor and peripheral I/O boards that function as both a master and slave in the VMEbus system.

EHB – Embedded Host Bridges (EHB) by IDT play a critical system role acting as a hub between the host processor, the system memory, and the system input/output (I/O). Through the host bridge, the host processor is able to configure and effectively manage the system I/O resources. The host processor and the system I/O peripherals both use the host bridge to access common system memory.
HOST BRIDGES (EHB) – The IDT Host Bridge product family support the PowerQUICC and PowerPC processor families. The host bridge is the central component that interconnects the processor with the system memory (DRAM and FLASH) and a wide range of I/O peripheral devices that reside on the PCI/X Bus. They also contain integrated DMA controllers so the task of moving data within the system can be offloaded from the processor.

VME INTERCONNECT – The Universe II (CA91C142D) is fully compliant with the VME64, VME64 Extension, and 2eSST standards, enabling data transfer rates up to 120MB/s. The Universe II provides high performance on the PCI bus and easy development of VMEbus systems by providing direct connection to a local PCI bus. The device is ideally suited for CPU or peripheral boards functioning as both master and slave in the VMEbus system. Bridging is accomplished through a decoupled architecture with independent FIFOs for inbound, outbound, and DMA traffic. System performance is enhanced by our efficient architecture, and throughput is maximized.

The Universe II provides high performance on the PCI bus and eases development of VMEbus systems ensuring the optimal VME bus performance.

The TSI148 increases a system’s usable bus bandwidth because its local bus interface is designed for implementing system level software to enable single board computers to be used in any slot within the VME system. Architecture allows you to take advantage of the higher performance VME protocols, while preserving your existing investment in VME boards that implement legacy protocols.

The TSI384 alongside the TSI148 provides an easy and straightforward solution to bridge VMEbus system controller functionality (VMEbus, VMEbus to PCI, and DMA) exist in your existing system.

VME FEATURES AND BENEFITS

- VMEbus bridge products support the VME64, VME64 Extension, and 2eSST standards, enabling data transfer rates up to 120MB/s.
- Local bus, support exists for a 33MHz, 32-bit PCI bus up to a 133MHz, 64-bit PCI-X bus.
- Use of a companion bridge such as IDT’s TSI384 alongside the TSI148 provides an easy and straightforward solution to bridge the latest generation of PCI Express enabled processors to the VMEbus.
- Three independent data paths (PCI to VMEbus, VMEbus to PCI, and DMA) exist in each bridging solution to enable effective, high-performance data transfers to occur within the VME bus system.
- The VME bridges also contain complete VMEbus system controller functionality enabling single board computers to be used within any slot in the VME system.

VME INTERCONNECT

<table>
<thead>
<tr>
<th>VME bus</th>
<th>VME bus</th>
<th>PCI bus</th>
<th>Temp. Range</th>
<th>Power Max (W)</th>
<th>Pin Count</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>VME64, VME64 Extension, 2eSST</td>
<td>33MHz/64-bit PCI, 150MHz</td>
<td>-50 to 125°C, 48 to 65°C, 0 to 70°C</td>
<td>3.2</td>
<td>100</td>
<td>BG0313, BG0313</td>
<td></td>
</tr>
<tr>
<td>46MHz/64-bit PCI</td>
<td>27.0 x 27.0 x 2.35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| VME64, 2eSST, PCI-X | 150MHz/64-bit PCI, 33MHz/64-bit PCI | -40 to 85°C, 0 to 70°C | 1.8 | 100 | BB486, BRB486 |

HOST BRIDGES (EHB) – The IDT Host Bridge product family support the PowerQUICC and PowerPC processor families. The host bridge is the central component that interconnects the processor with the system memory (DRAM and FLASH) and a wide range of I/O peripheral devices that reside on the PCI/X Bus. They also contain integrated DMA controllers so the task of moving data within the system can be offloaded from the processor.

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The IDT Tsi148 device is the next-generation component in our industry leading, high performance VME bus system interconnect product family and is fully compliant with the 2eSST and VME64 Extension standards. This enables you to take advantage of the higher performance VME protocols, while preserving your existing investment in VME boards that implement legacy protocols.

The Tsi148 increases a system’s usable bus bandwidth because its local bus interface is designed for implementing system level software to enable single board computers to be used in any slot within the VME system. Architecture allows you to take advantage of the higher performance VME protocols, while preserving your existing investment in VME boards that implement legacy protocols.

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VME INTERCONNECT — The Universe II (CA91C142D) is fully compliant with the VME64 bus standard, and is tailored to support advanced PCI processors and peripherals. With a zero-wait state implementation for write transactions, and the capability to support prefetch reads and multi-beat transactions, the Universe II provides high performance on the PCI bus and ensures the VMEbus system by providing direct connection to a local PCI bus. The device is ideally suited for CPU or peripheral board functions as both master and slave in the VMEbus system. Bridging is accomplished through a decoupled architecture with independent FIFOs for inbound, outbound, and DMA traffic. System performance is enhanced by our efficient architecture, and throughput is maximized.

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VME FEATURES AND BENEFITS
- VMEbus bridges support the VME64, VME64 Extension, and 2eSST standards, enabling data transfer rates up to 320Mbytes/s.
- Local bus, support exists for a 33MHz, 32-bit PCI bus up to a 133MHz, 64-bit PCI-X bus.
- Use of a companion bridge such as IDT’s TSI148 alongside the TSI148 provides an easy and straightforward solution to bridge the latest generation of PCI Express enabled processors to the VME bus.
- Three independent data paths (PCI to VMEbus, VMEbus to PCI, and DMA) exist in each bridging solution to enable effective, high-performance data transfers to occur within the VME bus system.
- The VME bridges also contain complete VMEbus system controller functionality enabling single board computers to be used within any slot in the VME system.
- Architecture allows customer flexibility implementing system level software to ensure the optimal VME bus performance.

HOST BRIDGES (EHB) — The IDT Host Bridge product family support the PowerQUICC and PowerPC processor families. The host bridge is the central component that interconnects the processor with the system memory (DRAM and FLASH) and a wide range of I/O peripheral devices that reside on the PCI/X Bus. They also contain integrated DMA controllers so the task of moving data within the system can be offloaded from the processor.

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RapidIO® Switches and Bridges

- Serial RapidIO® Error Management Extension support
- Time-to-Live enables fault tolerant systems
- VITA 41, OpenVPX, and ATCA fabric mappings enable rapid development of modular, standards-based systems
- True peer-to-peer networking allows scaling of arbitrary topology and simplifies hot swap software implementation
- Per-port filter feature allows blocking errant packets or malicious attack (for example, denial of service, system memory reads and writes)

**ECOSYSTEM AND TOOLS**

A variety of software tools, and hardware platforms are available from third party companies which support IDT RapidIO Switches.

**SOFTWARE AND HARDWARE ECOSYSTEM**

- Serial RapidIO® Development Platform Gen2 (SRDP2)
- RapidPET® JTAG edition software support
- Serial RapidIO Gen2 Endpoint Intellectual Property for ASIC, CPU, DSP, and FPGAs
- RapidIO Linux support
- Power Calculator tool
- IBIS-AMI and IBIS models
- System Modeling Tool

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IDT SRIO/VME/EHB OVERVIEW

IDT is the pre-eminent company in SRIO, VME and EHB switching and bridging in SRIO, VME, and EHB. IDT is the industry leader in SRIO, VME, and EHB. With strong technical support, each of these product lines.

**IDT SRIO/VME/EHB OVERVIEW**

IDT is the pre-eminent company in SRIO, VME and EHB switching and bridging in SRIO, VME, and EHB. IDT is the industry leader in SRIO, VME, and EHB.

**IDT SRIO/VME/EHB OVERVIEW**

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