



Tsi578 MicroTCA Switching Module

MSM Features

- AMC form factor switching card
 - AMC.0 Revision 2.0 compliant
- RapidIO® Fatpipe for switching function of a MicroTCA Carrier Hub
- One 10-Gbps RapidIO port to the backplane for each of the twelve AMC slots within a MicroTCA chassis
- 4x mode, 3.125 Gbaud RapidIO ports operating up to 10 Gbps
- Two 4x RapidIO interfaces accessible by the front panel
 - Enables communication with other switch cards or external equipment, for cascading or stacking of systems
- I²C Interface
 - Boot from EEPROM using the I²C Interface
- JTAG Interface, 1149.1 and 1149.6 support
- Hardware-enabled multicast

Tsi578 Features

- Industry's lowest power per 10-Gbps port switch
- Low latency with cut-through capability
- High performance hardware multicast
- Receive equalization and transmit pre-emphasis for high signal integrity
- Programmable per port buffer management to ensure dedicated bandwidth for high priority packets
- Traffic shaping per port using first-come, first-serve, SP1 and SP2 scheduling algorithms
- Performance monitoring on individual ports
- Supports packet routing tables for 64,000 endpoints
- *RapidIO Interconnect Specification (Revision 1.3)* compliant

The Tsi578™ MicroTCA Switching Module (MSM)™ partners the technology of Ericsson, the leading wireless infrastructure provider, with IDT's industry-proven Tsi578 16/8 RapidIO switch to provide switching functionality for a MicroTCA system. The Tsi578 MSM broadens the scope of the RapidIO-based MicroTCA ecosystem.

IDT has licensed the Switching Module component of Ericsson's MicroTCA Carrier Hub (MCH) card, which includes two of IDT's Tsi578 RapidIO switches. IDT is sub-licensing the design as the Tsi578 MSM, broadening both the MicroTCA and the RapidIO ecosystem.

The MicroTCA architecture and the Tsi578 MSM are ideal for applications that have size and cost constraints, such as wireless and wireline communications, storage, and military hardware.

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About Tsi578

The Tsi578 is IDT's third-generation RapidIO switch. Supporting 80 Gbps aggregate bandwidth, the Tsi578 enables customers to develop high-performance RapidIO systems at low cost.

The Tsi578 flexible port configurations can be selected through multiple port width and speed options. The device can be configured as a 16-port 1x switch or an 8-port 4x switch (or various combinations of 1x mode and 4x mode). Each port can operate at 1.25, 2.5, or 3.125 Gbaud.

Benefits of the Tsi578 MSM

- Twelve 10-Gbps RapidIO ports for high-speed AMC connectivity in data intensive applications, such as 3G LTE and WiMAX
- Two 10-Gbps RapidIO front panel ports for system scaling or debug
- Fast time to market by using Tsi578 MSM and off-the-shelf AMC cards to develop system-level hardware and software
- Leverages field-proven design of Tsi578 16/8 port RapidIO switch for best-in-class switching performance with RIOLAB certified DIL-3 interoperability test conformance
- High signal integrity features such as transmit pre-emphasis and receive equalization ensure high performance over backplane, or across cable connections
- Enables traffic management across system by using IDT's programmable buffers and traffic shaping features
- Leverages high-performance multicast functionality to build scalable multiprocessor systems

Sub-Licensing Information

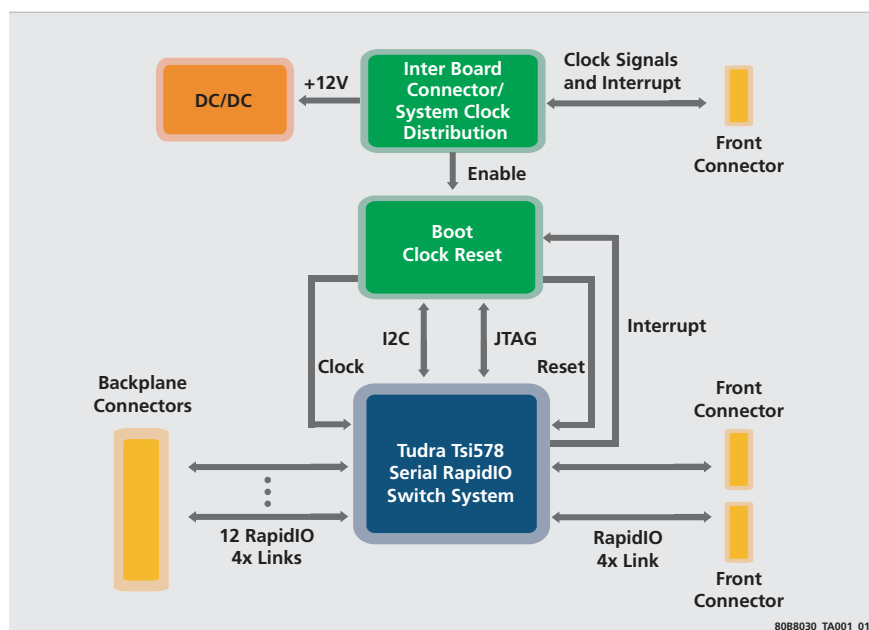
For sub-licensing information on the Tsi578 MSM (part number Tsi578-MSM), please contact IDT.

About MicroTCA

Building on the technology of AdvancedTCA™ (ATCA), the MicroTCA architecture reduces size and cost by eliminating the ATCA carrier and providing a 4U x 19-inch chassis that directly accepts AdvancedMC modules. Equally important, the MicroTCA chassis is only 300 mm deep, including cabling; a key requirement for many applications.

The MicroTCA chassis can accept any standard AdvancedMC module. The modules operate from a 12 V supply. The power budget ranges from 20 watts for half-height/single-wide modules to 60 watts for full-height/double-wide modules.

Tsi578 MSM Block Diagram



MSM Physical Characteristics

- Differential AC-coupled 156.25 MHz reference clock for the serial transmit and internal switching fabric domains
- Optimal routing with 14-layer PCB
- Powered through an AMC connector from MicroTCA chassis
- 12 V DC power supply from AMC connector
 - Generates 3.3 V and 1.2 V DC power for the Tsi578
- Single-width AMC (28.96 mm x 73.81 mm x 208.53 mm)
- 100-MHz clock signal, common for the Tsi578 internal register bus and I²C interface

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Document: 80B8030_FB001_02