

MSC8156 Evaluation Module

For evaluation of the MSC815x or MSC825x family of StarCore DSPs

Overview

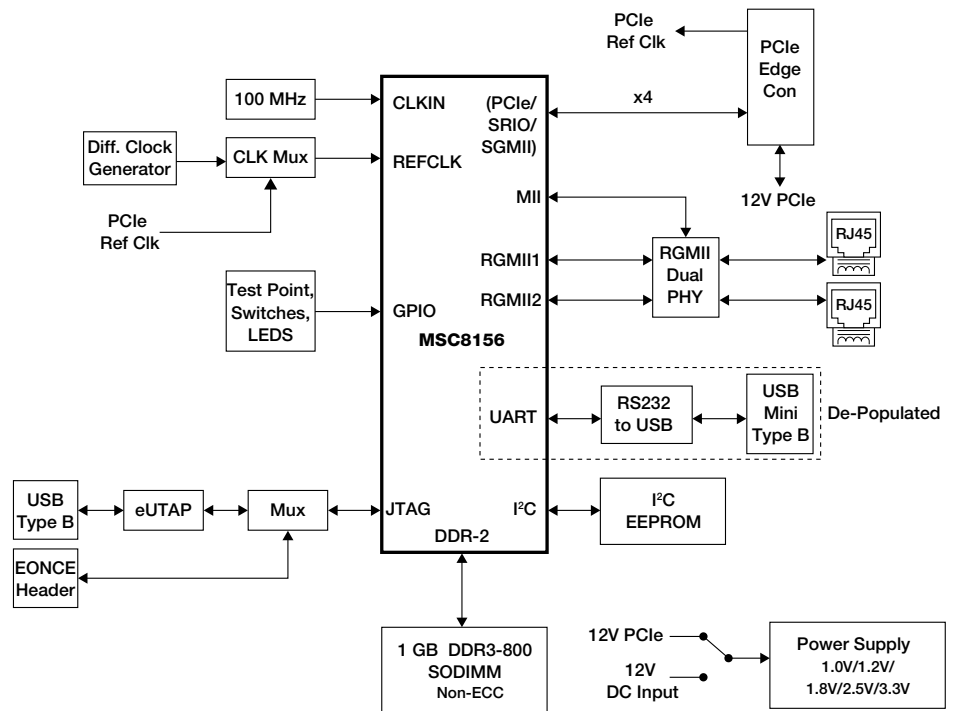
The MSC8156 evaluation module (MSC8156EVM) is a cost-effective tool intended for engineers evaluating the MSC815x and MSC825x family of Freescale digital signal processors (DSPs). The MSC815x and MSC825x family of DSPs are highly integrated DSP processors that contain one, two, four or six StarCore SC3850 cores. The family supports raw programmable DSP performance values ranging from 8 GMACs to 48 GMACs, with each DSP core running at 1 GHz. These devices target high-bandwidth, highly computational DSP applications such as 3GPP, TD-SCDMA, 3G-LTE and WiMAX base station applications as well as aerospace and defense, medical imaging, video, voice and test and measurement applications. The MSC8156EVM is intended to serve as a platform for evaluating the capabilities of the MSC815X and MSC825x family of DSPs. On-board resources and the associated CodeWarrior tools enable a variety of tasks, including:

- Download and run code
- Set breakpoints
- Display memory and registers

The MSC8156EVM supports two working configurations:

- Stand-alone mode: The MSC8156EVM can run in stand-alone mode with direct connections to a development system for debug, power supply and other external connections.
- PCI Express® mode: With the MSC8156EVM plugged into a PCI Express connector as provided, for instance, on Freescale's QorIQ enabled COM single board computer (SBC) environment. The EVM allows testing of PCI Express and Serial RapidIO® interconnects and is designed to be compatible with a standard PCI Express interconnect.

MSC8156EVM Block Diagram



Features

- Supports the MSC815x and MSC825x DSPs at 1 GHz
- A single DDR controller (DDRC2) configured in DDR3 mode: 204-pin SODIMM, 64-bit @ 800 Mbps, no ECC, 1 GB of memory
- The DSP RGMII (at ports GE1 and GE2) connects to a Marvell 88E1121 dual GETH PHY for regular board configuration
- Two available debug interfaces, including on-board USB TAP controller (eUTAP) or on-chip emulation 14-pin header for any external TAP controller
- 100 MHz clock oscillator for the DSP clock in
- Can function in two main supply configurations (configurable via switch S1)
 - Stand-alone mode with external 12V DC
 - PCI Express mode powered from edge connector
- Push buttons: main power-on-reset (SW8), hard reset (SW7), IRQ0 (SW5), NMI (SW6)

Development Support

Freescale supplies CodeWarrior, a robust and full-featured set of DSP development tools. The CodeWarrior tool suite is an Eclipse-based integrated development environment supporting the evaluation of many of the features of the Freescale MSC815x and MSC825x family of single- and multicore DSPs. With applications ranging from base stations to medical imaging, aerospace to advanced test and measurement, the development environment gives designers everything they need to exploit the advanced capabilities of the MSC815x and MSC825x architecture. In summary the CodeWarrior tool suite provides:

- An Eclipse-based integrated development environment
- C and C++ compiler with in-line assembly
- Librarian
- Multicore debugger
- Royalty-free RTOS
- Software simulator
- Profiler
- High-speed run control
- Host platform support

Contact your local sales office or representative for availability.



Learn More:

For current information about Freescale products and documentation, please visit freescale.com/DSP.