

AMC-2C6678L

DATASHEET

A high performance AMC card featuring two TMS320C6678 DSPs with high speed, flexible I/O

16 floating and fixed point DSP cores, ideal for a wide range of high performance DSP applications

High bandwidth, flexible backplane communications plus front panel Gigabit Ethernet

A total of 4GB DDR3 SDRAM as standard, 2GB per DSP



KEY FEATURES

- Two TMS320C6678 octal-core DSPs
- DDR3 SDRAM for each DSP
- Flash memory
- PCI Express backplane interface and switch
- Backplane Serial RapidIO
- Broadcom BCM5389 Ethernet switch
- Single width mid-size PICMG AMC.0 R2.0 Advanced Mezzanine Card

RESULTING BENEFITS

- ⇒ The latest high performance TI SoC DSPs with a total of 16 floating-point cores
- ⇒ Latest external memory technology with multiple high bandwidth buses
- ⇒ Stores DSP boot code
- ⇒ High bandwidth data transfers between all DSPs and other AMC cards
- ⇒ High bandwidth data transfers in a RapidIO system
- ⇒ Gigabit Ethernet to all main devices, backplane and front panel
- ⇒ Works with industry standard MicroTCA chassis, as well as AdvancedTCA carrier cards; can also run standalone

The AMC-2C6678L is a new high performance DSP card in the mid-size Advanced Mezzanine Card form factor. It is powered by two of the latest Texas Instruments TMS320C6678 fixed and floating point octal core DSPs running at 1.25 GHz core speed, giving a total performance of 320 GFLOPS and 640 GMACS, and is ideal for a range of high performance applications including image sensor processing, telecoms and stepper control. In addition it can be used for DSP based acceleration and voice/video applications on AdvancedTCA cards.

The card features a wide range of connectivity to the backplane and front panel. The PCI Express and Gigabit Ethernet connectivity use on-board switches for maximum flexibility and access to all DSPs on the card, while the SRIO link is directly connected to one DSP and shared using Hyperlink.

Additional debug support is provided via on-board serial port connectors, plus RS-232 and JTAG debug via the CommAgility AMC-BB Debug Breakout Board.

CommAgility Ltd
sales@commagility.com
www.commagility.com
Tel: +44 1509 228866

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HARDWARE SPECIFICATIONS

DSP: 2x TMS320C6678 DSPs, each with:

- 8x C66x DSP cores
- 1.25 GHz clock speed
- 2 Gbyte x64 DDR3-1600 SDRAM
- Hyperlink50 bus (to other DSP)
- Single Gigabit Ethernet link to switch
- 8 Gbit/s, 2x PCI Express link to switch
- 16 Gbit/s, 4x SRIO link (DSP0 only)
- JTAG debug and RS-232 ports
- 128 Mbyte of x16 FLASH (DSP0 only)

Backplane I/O:

- AMC.2 compliant Gigabit Ethernet to AMC Ports 0 and 1 using Broadcom BCM5389 switch
- AMC.1 compliant 4x PCI Express Gen 3 link to AMC ports 4-7, up to 31.5Gbit/s, using PLX PEX8713 switch
- AMC.4 compliant 4x SRIO Gen 2 link to AMC ports 8-11, up to 16Gbit/s, direct from DSP
- Volume build option for SRIO instead of PCIe to AMC ports 4-7
- AMC TCLKs routed to DSPs via glue logic

Front panel I/O:

- RJ-45 port for Gigabit Ethernet
- RS-232, I²C and SPI go to a header allowing for front panel expansion
- Bi-colour DSP LEDs

Form Factor:

- Single-width mid-size AMC (Advanced Mezzanine Card)
- AMC.0 Rev 2.0 compliant

Debug:

- Breakout board for JTAG debug and DSP/MMC RS-232 ports
- RS-232 connections for DSPs, via headers or breakout board

Module Management Controller:

- AMC.0 IPMB_L, FRU EEPROM data
- Power & reset, health monitoring
- Full hot swap and e-keying support

ENVIRONMENT/EMC/SAFETY

- Operating temp: 0-40°C ambient
- Power consumption: up to 30W max
- Designed for NEBS/ETSI compliance when used in appropriate chassis
- 2004/108/EC and FCC EMC compliant
- 2011/65/EU RoHS, 2012/19/EU WEEE and 2006/95/EC LVD compliant

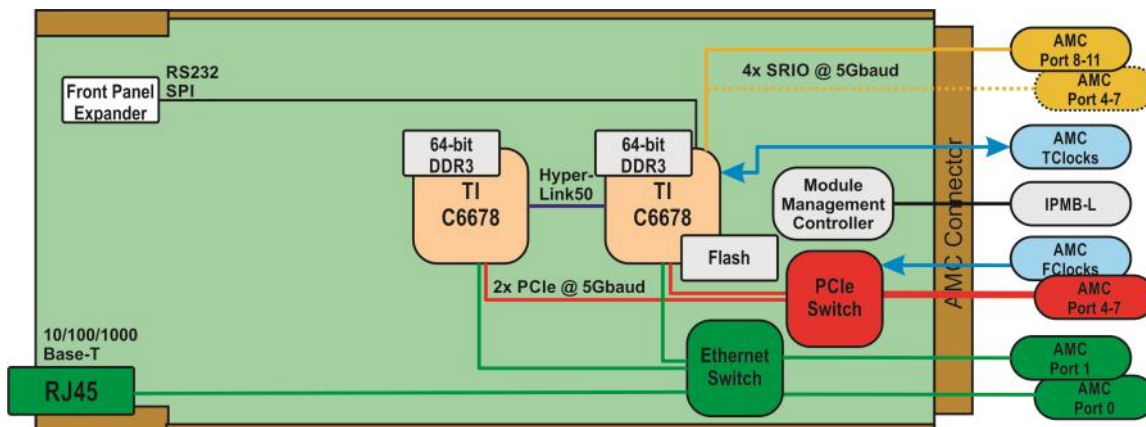
SOFTWARE

DSP:

- Full Board Support Libraries; IP stack with Telnet/TFTP for Ethernet based board control and upgrade.
- 3L Diamond available for additional control and management of multiple tasks across all 16 DSP cores

Management: Full embedded suite based on Pigeon Point™ Software.

Contact CommAgility for further details of software partners.



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OEM PARTNERSHIP SERVICES:

IN DEVELOPMENT: Support and training; hardware customisation; software and FPGA development.

IN PRODUCTION: lead-time reduction; extended warranty; and repair; quick turn repairs and/or spares stocking.

EXTENDED LIFE: obsolescence management; guaranteed lifecycle; Escrow.

LICENSING is offered for high volume projects.



AdvancedMC™ μTCA® AdvancedTCA®

CommAgility Ltd, Loughborough, UK
Tel: +44 1509 228866

sales@commagility.com
www.commagility.com



Datasheet describes products in development; Information subject to change AMC-2C6678L P1/0913