

MIC-5603

Advanced Mezzanine Card based on 3rd Generation Intel® Core™ Processors with ECC

NEW



Features

- Supports 3rd or 2nd Generation Intel® Core™ Processor family
- Intel® QM67 PCH chipset with KVM over LAN
- Up to 8 GB (DDR3 1066/1333/1600 MHz) soldered SDRAM with ECC
- Two Gigabit Ethernet (RJ-45), one USB 2.0 (or two for full-size sku), one console (micro-USB), and one HDMI Type D (or Type A for full-size sku) to front panel
- AMC connector routes Gigabit Ethernet (x2), SATA 3.0 (x2), PCIe x4
- Dual XAUI, SRIO, PCIe or custom fabrics on fat pipes with optional AMC fabric mezzanine
- Boot from network, onboard flash, CFast card or external devices
- Supports IPMI v1.5 and Serial-over-LAN function
- AMC.0, AMC.1, AMC.2, and AMC.3 compliant



Introduction

The Advantech MIC-5603 is a single-width mid-size or full-size general purpose processor AMC module for ATCA or MicroTCA applications. Its design is based on 3rd generation Intel® Core™ processors in a BGA package combined with the Intel® QM67 chipset. This AMC module supports processors with integrated memory and graphics controllers, and a maximum L3 cache of 4MB. It can support up to 8 GB, dual-channel, on-board DDR3 memory with ECC at 1600 MHz, making it ideal for mission critical applications requiring low latency and reliable memory access. For graphics or control applications the front panel HDMI port provides support for the processor's integrated Intel® HD 4000 graphics controller with DirectX v1.1, along with OpenGL v3.1 and OpenCL v1.1 capabilities.

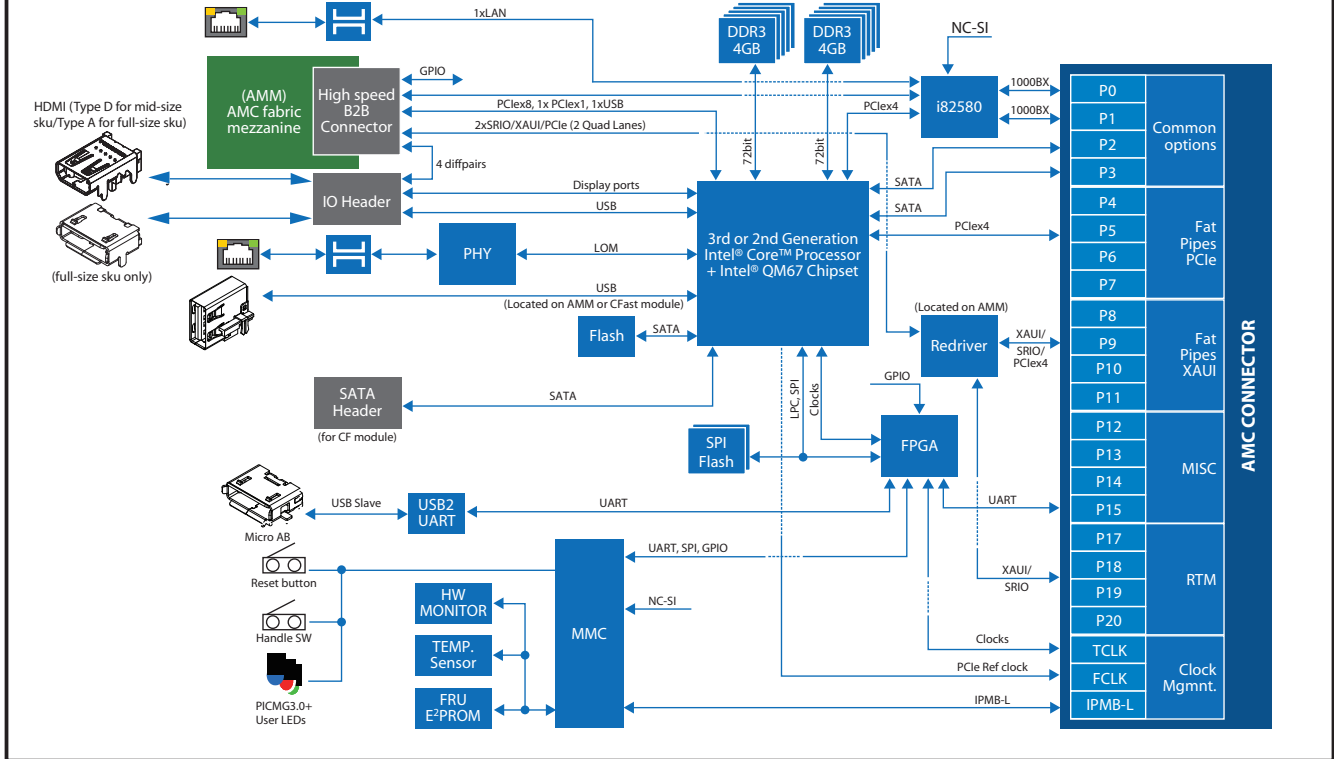
As standard feature, external Ethernet connectivity is provided on two dedicated GbE front panel ports, one each from the Intel® QM67 PCH and the onboard Intel® 82580 quad port LAN controller, which also provides two additional GbE ports to the AMC base fabric. The Intel® PCH brings new and enhanced remote management capabilities with KVM over LAN as well as introducing faster I/O than previous generation designs with SATA-III to AMC ports 2..3 and PCIe x4 gen.2 to ports 4..7. This module can also be configured to boot from the network, local CFast compact flash or flash disk, or external storage media such as HDD or USB drives.

To enable maximum application flexibility, the MIC-5603 is not only designed to support PICMG AMC sub-specifications such as AMC.1/2/3, it also has a fabric expansion mezzanine interface that allows the implementation of standard or customized mezzanine modules that offer enhanced fat pipe connectivity and I/O support. For example, the fabric expansion mezzanine can implement an Intel® 82599 controller offering dual 10 GbE to the fat pipes or a PCIe-to-SRIO bridge or any other type of PCIe device for tailored connectivity to ports 8..11 and 17..20. A dedicated Module Management Controller (MMC) monitors onboard conditions and manages hot swap operation, module replacement and field upgrades without the need to power down the carrier system.

Specifications

Processor System	CPU	Intel 3rd Generation Core i7 mobile processors up to 2.5 GHz (4 MB L3 cache)
	Max. Speed	3.2 GHz (turbo boost frequency with 1 core)
	PCH	Intel QM67
	BIOS	UEFI BIOS based on AMI (1. Redundant flash with HPM.1 update & rollback, 2. Configuration settings can be changed over IPMI)
Bus	DMI	5.0 GT/s point-to-point DMI interface to PCH
Memory	Technology	Dual channel DDR3 1066MT/s, 1333MT/s, and 1600MT/s SDRAM with ECC.
	Max. Capacity	8 GB RAM (soldered on-board memory)
Ethernet	Controllers	Intel 82580EB Quad-port Gigabit Ethernet controller
	Interface	Two GbE accessible on front panel via RJ-45 and two SerDes links to AMC ports 0 and 1
Front I/O Interface	Serial (COM)	One x86 Serial Port (USB slave connector through onboard USB to Serial converter)
	Ethernet	Two 10/100/1000BASE-T through PCIe based Intel 82580 & 82579 MAC/PHY
	USB 2.0	One port (Type A)
Mass Storage	CFast	Mezzanine Module with CFast socket (NOTE 1)
	Onboard	8 GB (standard) or 16 GB (optional) industrial grade internal SATA flash disk
SATA		
Interfaces	AMC edge connector	Two SATA interfaces (6Gbps) to common option ports 2..3
	Other	One SATA routed to CF daughter board (optional)
Operating System	Compatibility	WindRiver PNE-LE 3.0, RHEL, CentOS, Windows Server 2008, Windows 7 Enterprise
System Management	MMC	NXP LPC1768
	IPMI Compliancy	IPMI 1.5 with IPMI 2.0 features (e.g. RMCP, SOL) using Advantech IPMI Core
Watchdog Timer	Supervision	One MMC watchdog, One payload watchdog
	Interval	IPMI compliant
Miscellaneous	LEDs	x1 blue for hot swap, x1 red/amber for failure and OOS, x1 green for general purpose
Compliance	Standards	PICMG AMC.0, AMC.1, AMC.2, AMC.3, IPMI v1.5, HPM.1

Block Diagram



Specifications (Cont.)

Power Consumption	Configuration	Intel Core i7-3555LE + QM67 + 8GB on-board DDR-III memory	
	TDP (Estimated)	40W max.	
Physical Characteristics	Dimensions (W x D)	Mid-size (or Full-size), 180.6 x 73.5 mm	
Environment	Temperature	Operating	Non-operating
	Humidity	-5 ~ 55° C (23 ~ 131° F) (NOTE 2)	-40 ~ 70° C (-40 ~ 158° F)
	Vibration (5 ~ 500Hz)	IEC60068-2-78 (95%RH @ 40° C)	
	Shock	IEC60068-2-6 (0.002G2/Hz, 1Grms)	
	Altitude	4,000m above sea level	10,000m above sea level
Regulatory	Conformance	UL94V0, FCC Class B, CE, RoHS & WEEE Ready	
	NEBS Level 3	Designed for GR-63-Core and GR-1089-Core	

Ordering Information

Part Number (NOTE3, NOTE4)	Description
MIC-5603A2FZ-M4E	Full-size front panel, Intel i7-3555LE, 4GB DDR3 with ECC, AMC Mezzanine Module with 8 GB on-board flash
MIC-5603A2FZ-M8E	Full-size front panel, Intel i7-3555LE, 8GB DDR3 with ECC, AMC Mezzanine Module with 8 GB on-board flash
MIC-5603A2M-M4E	Mid-size front panel, Intel i7-3555LE, 4GB DDR3 with ECC, CFast module with 8 GB on-board flash
MIC-5603A2M-M8E	Mid-size front panel, Intel i7-3555LE, 8GB DDR3 with ECC, CFast module with 8 GB on-board flash
MIC-5603AFZ-M4E	Full-size front panel, Intel i7-2655LE, 4GB DDR3 with ECC, AMC Mezzanine Module with 8 GB on-board flash
MIC-5603AFZ-M8E	Full-size front panel, Intel i7-2655LE, 8GB DDR3 with ECC, AMC Mezzanine Module with 8 GB on-board flash
MIC-5603AM-M4E	Mid-size front panel, Intel i7-2655LE, 4GB DDR3 with ECC, CFast module with 8 GB on-board flash
MIC-5603AM-M8E	Mid-size front panel, Intel i7-2655LE, 8GB DDR3 with ECC, CFast module with 8 GB on-board flash

Where Z stands for fabric expansion mezzanine module option (Z = X for XAUU, Z = S for SRIO, Z = R for SAS RAID).

Note:

1. CFast module, available on the mid-size sku as default, and the AMC Mezzanine Module are mutually exclusive. For 16 GB on-board flash, please contact your local Advantech sales.
2. Operating Temperature: depending on the actual air flow through the AMC slot.
3. For lower or higher on-board memory support, please contact your local Advantech sales for options.
4. For the Intel Core i7-3517UE or i7-2610EU support, please contact your local Advantech sales.