

MIC-5301

AdvancedTCA® Dual-Core Low Voltage Intel® Xeon® Processor Board with Two AMC Slots



AdvancedTCA®

Features

- Two Dual-Core Intel® Xeon® processors LV 2.0 GHz
- Intel E7520® chipset supports 667 MHz FSB
- Dual channel DDR2 400 MHz ECC Registered SDRAM, configurable up to 16 GB
- Four 1000Base-BX ports on Fabric interface
- Two 1000Base-Tx ports on Base interface
- Two PCI Express x4 (PCIe) AMC slots with style B/B+ connector
- Supports optional Serial Attached SCSI (SAS) module
- SAS ports module to Rear-Transition Module (RTM)
- One serial port for IPMI on front panel
- Two USB 2.0 ports in front and in RTM; One 2.5" SATA/SAS HDD on RTM

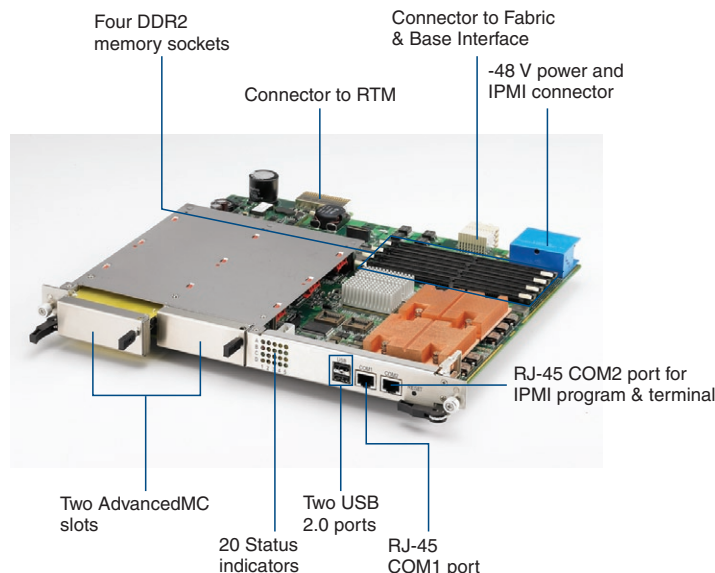
Introduction

Advantech's MIC-5301 single-slot AdvancedTCA® processor blade combines computing performance with I/O flexibility in a power efficient quad core, dual AMC design. Featuring two high performance Dual-Core Intel® Xeon® LV processors, the MIC-5301 facilitates the consolidation of multiple single core designs and frees up valuable system slots for increased processing power or I/O connectivity.

The MIC-5301's overall design flexibility positions it for use as a common processing blade for multiple applications. As architecture re-use means gains in economies of scale, the MIC-5301 is ideally suited for a wide range of application processing needs. Two single full-size AMC sites support the use of a variety of AMC modules such as coprocessors, TCP/IP offload engines, physical disks, LAN or WAN adapters. Packet throughput is increased by enhanced fabric connectivity with four Gigabit Ethernet ports to the fabric interface in addition to the two Gigabit Ethernet ports to the base interface.

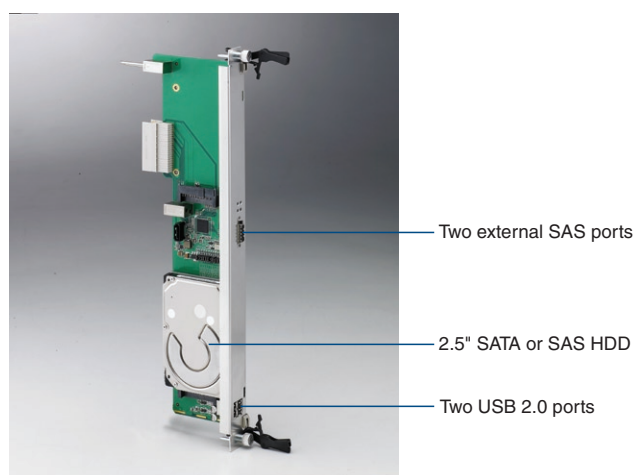
An Intel E7520 Memory Controller Hub MCH and Intel 6300ESB I/O Controller Hub provide high-end server class support for the two dual-core processors. The E7520 addresses up to 16 GB of dual channel DDR2 ECC Registered SDRAM in 4 DIMM sockets. Further connectivity is supported via an optional Serial Attached SCSI (SAS) module with SAS ports connected to a Rear Transition Module mounted SAS drive. IPMI 1.5 support is assured by a PigeonPoint System® (PPS) Solution on a Renesas H8S/2167.

Advantech offers a range of innovative ATCA customization services specifically targeted at Telecommunications Equipment Manufacturers (TEMs). Advantech's Design To Order Services (DTOS) team partners with TEMs to evaluate project requirements and develop TEM-specific solutions in order to improve overall operating costs. The MIC-5301 is an example where proven core engineering IP can be re-used as a base for a TEM specific design.



Specifications

Processor System	CPU	Two Dual-Core Intel Xeon LV processors	
	Max. Speed	2.0 GHz	
	Chipset	Intel E7520 MCH	
	BIOS	Dual 4Mbit FWs with AMI embedded BIOS	
Bus	Front Side Bus	667 MHz	
Memory	Technology	Dual channel DDR2 400 MHz SDRAM (72-bit ECC Registered)	
	Max. Capacity	Configurable up to 16 GB	
	Socket	4	
Ethernet	Interface	Two 10/100/1000Base-TX ports for base interface; Four 1000Base-BX ports for fabric interface (compliant with PICMG 3.1 option 2)	
	Controller	BCM5715S (PCIe x4) and BCM5715C (PCIe x4)	
Front I/O Interface	Serial (COM)	1 (RS-232, RJ-45 connector)	
	Serial (BMC)	1 (RS-232, RJ-45 connector)	
	USB 2.0	2	
Operating System	Compatibility	Windows 2000; Windows 2003; Linux	
IPMC	BMC Controller	Renesas H8S/2167	
	IPMI	Compliant with IPMI 1.5 using Pigeon Point System® (PPS) Solution	
	Hardware Monitor	LM93	
Watchdog Timer	Output	System reset; system power down	
	Interval	Set in BIOS menu for 10 sec, 30 sec, 1 min and 5 min	
AMC	Site	2	
	Interface	PCI Express x4	
	Power limit	30 watts	
Miscellaneous	Solid State Disk	One CompactFlash socket	
	LED Indicator	20	
	Storage module	SAS daughter module with four ports up to 3 Gb/s for each	
	Real Time Clock	Built-in	
RTM	Real I/O interface	Two external SAS ports Two USB 2.0 port	
	Storage Site	One 2.5" SATA/SAS HDD (HDD not included)	
Physical Characteristics	Dimensions (W x D)	Node blade: 294.56 x 322.25 mm (11.60" x 12.69") RTM: 94 x 322.25 mm (3.7" x 12.69")	
	Weight	Node blade: 2 kg (4.41 lb) RTM: 0.275 kg (0.61 lb)	
Environment		Operating	Non-operating
	Temperature	0 ~ 65° C (32 ~ 149° F)	- 40 ~ 70° C (-40 ~ 158° F)
	Humidity	NA	95% @ 60° C (non-condensing)
	Shock	20 G	50 G
	Vibration (5 ~ 500 Hz)	1.5 Grms	2 G
Compliance	PICMG 3.0 R2.0 AdvancedTCA Base Specification PICMG 3.1 R1.0 Ethernet/Fibre Channel for ATCA Systems PICMG AMC.0 R1.0 Advanced Mezzanine Card Base Specification PICMG AMC.1 R1.0 PCI Express and Advanced Switching		



MIC-5301 Rear Transition Module (RTM)

MIC-5602

Advanced Mezzanine Card Intel® Core™ 2 Duo Processor AMC

NEW



Features

- Supports Intel Core 2 Duo processor Low Voltage and Ultra Low Voltage
- Intel® 3100 chipset 400/533 MHz FSB
- Up to 2 GB DDR2 400 MHz SDRAM with ECC
- One Gigabit Ethernet (RJ-45), one USB 2.0 port, and one console port (mini-USB) to front panel
- AMC connector routes dual Gigabit Ethernet SerDes (x2), SATA (x2), USB (x2), dual PCIe x4, or single PCIe x8
- Boot from network, CompactFlash, SATA, USB or onboard flash disk
- Supports IPMI v1.5 and Serial-over-LAN function
- AMC.0, AMC.1, AMC.2 and AMC.3 compliant



Introduction

The MIC-5602 is a highly integrated single-width, mid-size, processor AMC. Its design is based on the low-power, high-performance Intel Core 2 Duo LV and ULV processors combined with the high-performance Intel 3100 chipset. The board includes 1 or 2 GB of soldered DDR2 400 MHz memory with ECC for higher MTBF and optimum cooling. To facilitate development, test and integration whilst offering typical network connectivity once deployed, the front panel provides a gigabit Ethernet connector, a serial port and a USB 2.0 host port.

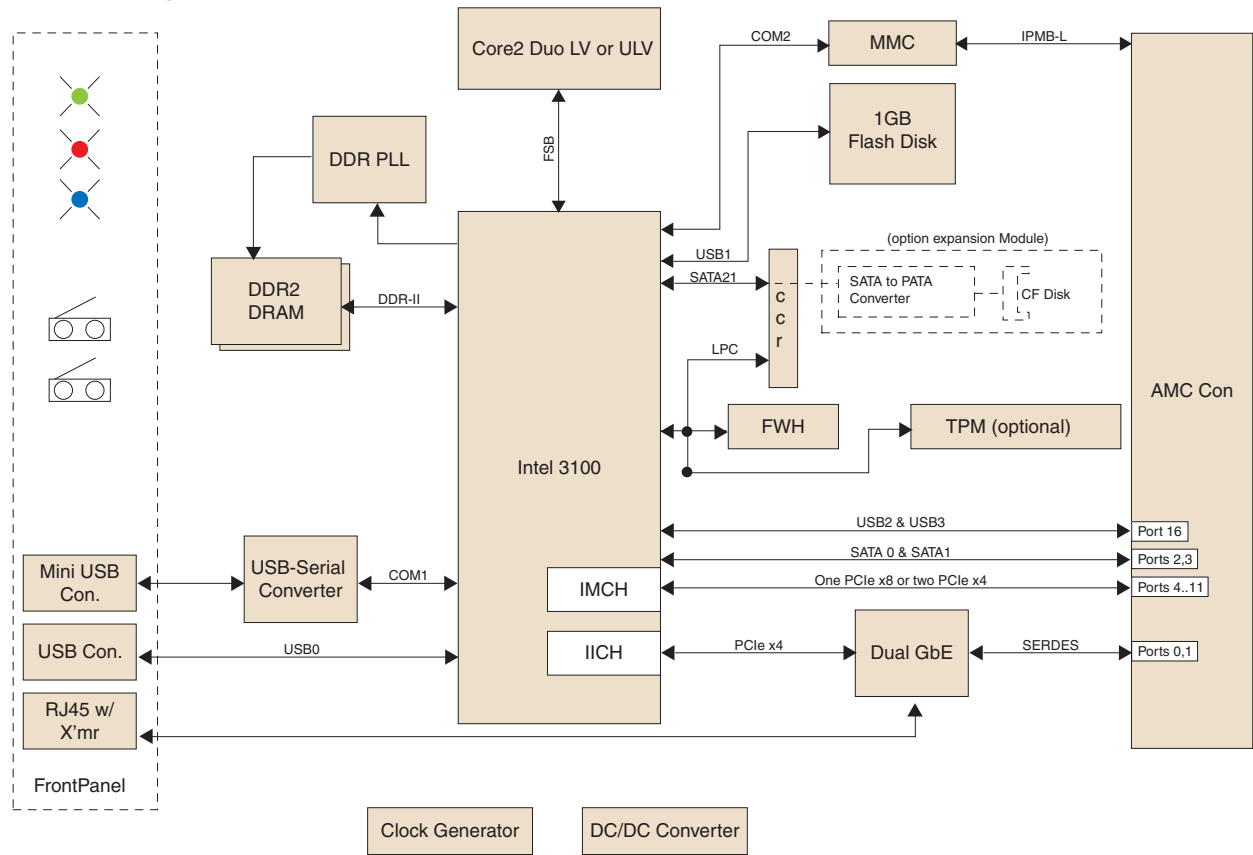
The MIC-5602 maximizes AMC edge connector connectivity for the best design flexibility. When redundancy or two separate interconnects are required, the board can be configured with two PCI Express x4 ports or with a single PCI Express x8 port when throughput is essential. Two gigabit Ethernet ports provide AMC.2 compliance and offer control and data plane connectivity to facilitate the migration of existing applications. Both ports connect to the 3100 chipset via PCI Express for maximum data throughput. Dual SATA interfaces provide AMC.3-compliant storage and two USB ports offer further connectivity opportunities.

A dedicated Module Management Controller (MMC) monitors onboard conditions and manages hot swap operation for field upgrades or module replacement without the need to power down the underlying system.

Specifications

Processor System	CPU	Intel Core 2 Duo ULV (U7500) and LV (L7400) up to 1.5 GHz
	Chipset	Intel 3100
	BIOS	AMI (1. Dual images with update rollback, 2. CMOS settings can be changed over IPMI, and 3. CMOS backup works without battery)
Bus	Front Side Bus	400/533 MHz
	PCI Express	PCI Express rev1.0a : one x8 and two x4 routed to AMC connector
Memory	Technology	DDRII 400 with ECC
	Max. Capacity	2 GB
Ethernet	Controller	Intel 82571EB dual-port Gigabit Ethernet controller (support 802.3d compliant link aggregation)
	Interface	One GbE accessible on front panel via RJ-45 and two SerDes links to AMC common options region ports 0 and 1
Mass Storage	CompactFlash	Optional expansion board with CF type-1 B socket
	Onboard	1GB industrial grade internal flash disk (used as NV storage, emergency boot disk or diagnostics boot media)
SATA Interface	AMC edge connector	Two SATA interfaces to common ports region 2-3
	Other	One SATA routed to CF daughter board
Serial Interface	I/O	Routed to front panel as USB Slave interface through onboard USB to Serial converter
USB Interface	I/O	One USB 2.0 compliant host port (standard USB Connector) on front panel
	AMC edge connector	Two USB 2.0 ports connect to rear AMC edge connector
Watchdog Timer		AMC compliant watchdog
Hardware Monitor	Controller	IPMI v1.5 compatible MMC
	Source Code	Pigeon Point System-based
Firmware	Update Standard	HPM.1 compliant
	Compatibility	Carrier Grade Linux (Wind River Platform for Network Equipment, Linux Edition 2.0)
Form Factor	AMC	Mid-size, single width
	Interface	AMC.0 compliant
Miscellaneous	LEDs	x1 blue for hot swap, x1 red/amber for failure and OOS, x1 green for general purpose
Power Requirement	Configuration	Core™ 2 Duo L7400 + 3100 + 1 GB on-board DDR2 SDRAM
	Consumption	38.5 watts

Block Diagram



Physical	Dimension	180.6 mm x 73.5 mm	
Environment		Operating	Non-operating
	Temperature	-5 ~ 55° C (23 ~ 122° F)	-40 ~ 70° C (-40 ~ 140° F)
	Humidity	IEC60068-2-78 (95%RH @ 40° C)	
	Vibration (5 ~ 500 Hz)	IEC60068-2-6 (0.002 G ² /Hz, 1 Grms)	
	Shock	IEC60068-2-27 (10 G, 11 ms)	
	Altitude	300 m below sea level to 4,000 m above sea level	10,000 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	
Compliance	Standards	PICMG AMC.0, AMC.1, AMC.2, AMC.3, IPMI v1.5, HPM.1	

Ordering Information

Model Number	On-Board Option	
	CPU	Memory
MIC-5602A-M1E	Core2 Duo LV 1.5 GHz (L7400)	1 GB DDR2 with ECC
MIC-5602A-M2E	Core2 Duo LV 1.5 GHz (L7400)	2 GB DDR2 with ECC
MIC-5602B-M1E	Core2 Duo ULV 1.06 GHz (U7500)	1 GB DDR2 with ECC
MIC-5602B-M2E	Core2 Duo ULV 1.06 GHz (U7500)	2 GB DDR2 with ECC

Notes:

1. TPM support will be available as an option.
2. Full size front panel design will be available upon request.
3. CF module available as an option.
4. Low cost Celeron M ULV 1.06 GHz (423) on request.

MIC-5601

Advanced Mezzanine Card Intel® Pentium® M Processor AMC

NEW



Features

- Supports Intel® Pentium® M processor Low Voltage or Celeron® M processor Ultra Low Voltage
- Intel® 3100 chipset 400/533 MHz FSB
- Up to 2 GB DDR2 400 MHz SDRAM with ECC
- One Gigabit Ethernet (RJ-45), one USB 2.0 port, and one console port (mini-USB) to front panel
- AMC connector routes dual Gigabit Ethernet SerDes (x2), SATA (x2), USB (x2), dual PCIe x4, or single PCIe x8
- Boot from network, CompactFlash, SATA, USB or onboard flash disk
- Supports IPMI v1.5 and Serial-over-LAN function
- AMC.0, AMC.1, AMC.2 and AMC.3 compliant



Introduction

The MIC-5601 is a highly integrated single-width, mid-size, processor AMC. Its design is based on the low-power, high-performance Intel Celeron M ULV and Pentium M LV processors combined with the high-performance Intel 3100 chipset. The board includes 1 or 2 GB of soldered DDR2 400 MHz memory with ECC for higher MTBF and optimum cooling. To facilitate development, test and integration whilst offering typical network connectivity once deployed, the front panel provides a gigabit Ethernet connector, a serial port and a USB 2.0 host port.

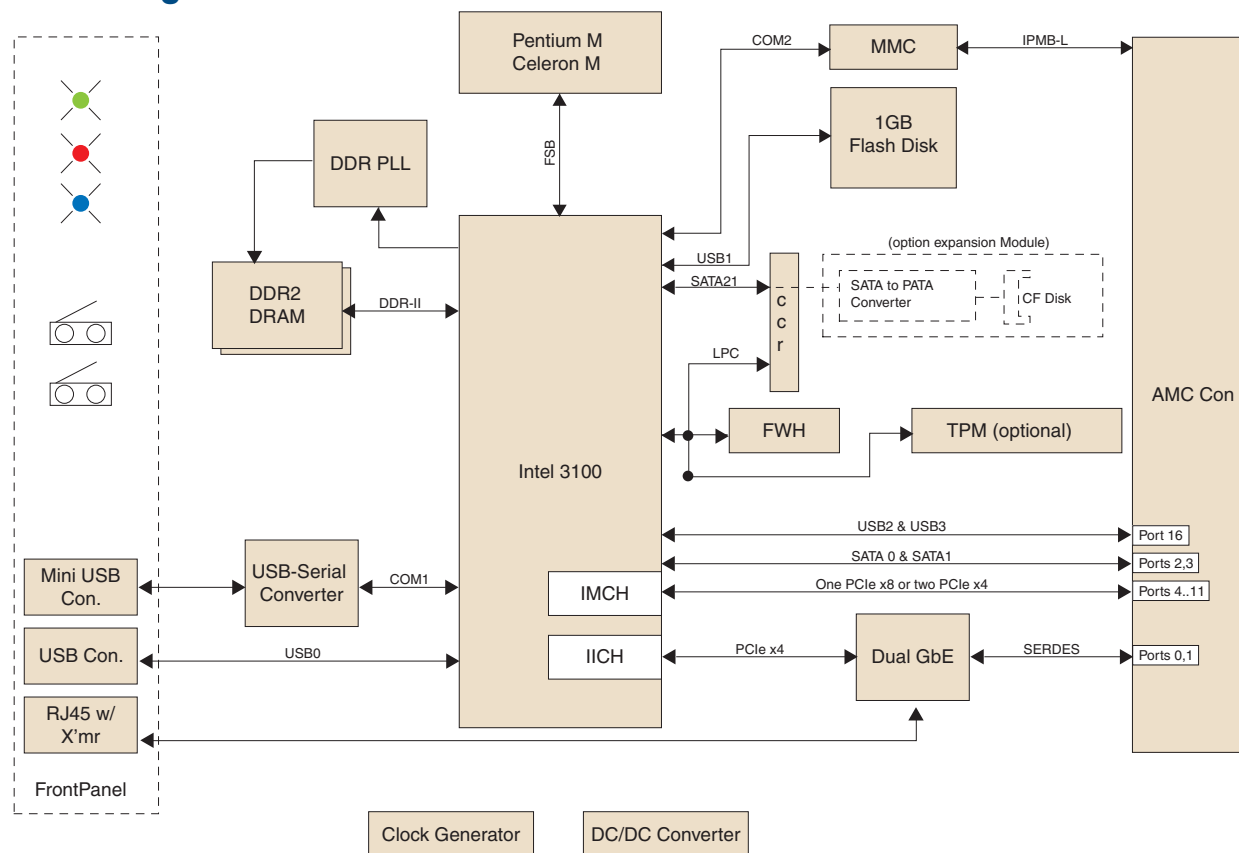
The MIC-5601 maximizes AMC edge connector connectivity for the best design flexibility. When redundancy or two separate interconnects are required, the board can be configured with two PCI Express x4 ports or with a single PCI Express x8 port when throughput is essential. Two gigabit Ethernet ports provide AMC.2 compliance and offer control and data plane connectivity to facilitate the migration of existing applications. Both ports connect to the 3100 chipset via PCI Express for maximum data throughput. Dual SATA interfaces provide AMC.3-compliant storage and two USB ports offer further connectivity opportunities.

A dedicated Module Management Controller (MMC) monitors onboard conditions and manages hot swap operation for field upgrades or module replacement without the need to power down the underlying system.

Specifications

Processor System	CPU	Intel Celeron M ULV (373) or Pentium M LV (738) up to 1.4 GHz
	Chipset	Intel 3100
	BIOS	AMI (1. Dual images with update rollback, 2. CMOS settings can be changed over IPMI, and 3. CMOS backup works without battery)
Bus	Front Side Bus	400/533 MHz
	PCI Express	PCI Express rev1.0a : one x8 and two x4 routed to AMC connector
Memory	Technology	DDR2 400 with ECC
	Max. Capacity	2 GB
Ethernet	Controller	Intel 82571EB dual-port Gigabit Ethernet controller (support 802.3d compliant link aggregation)
	Interface	One GbE accessible on front panel via RJ-45 and two SerDes links to AMC common options region ports 0 and 1
Mass Storage	CompactFlash	Optional expansion board with CF type-1 B socket
	Onboard	1GB industrial grade internal flash disk (used as NV storage, emergency boot disk or diagnostics boot media)
SATA Interface	AMC edge connector	Two SATA interfaces to common ports region 2-3
	Other	One SATA routed to CF daughter board
Serial Interface	I/O	Routed to front panel as USB Slave interface through onboard USB to Serial converter
USB Interface	I/O	One USB 2.0 compliant host port (standard USB Connector) on front panel
	AMC edge connector	Two USB 2.0 ports connect to rear AMC edge connector
Watchdog Timer		AMC compliant watchdog
Hardware Monitor	Controller	IPMI v1.5 compatible MMC
	Source Code	Pigeon Point System-based
Firmware	Update Standard	HPM.1 compliant
	Compatibility	Carrier Grade Linux (Wind River Platform for Network Equipment, Linux Edition 2.0)
Form Factor	AMC	Mid-size, single width
	Interface	AMC.0 compliant
Miscellaneous	LEDs	x1 blue for hot swap, x1 red/amber for failure and OOS, x1 green for general purpose
Power Requirement	Configuration	Pentium M 738 LV + 3100 + 1 GB on-board DDR2 SDRAM
	Consumption	31.2 watts

Block Diagram



Physical	Dimension	180.6 mm x 73.5 mm
Environment	Operating	Non-operating
	Temperature	-5 ~ 55° C (23 ~ 122° F) -40 ~ 70° C (-40 ~ 140° F)
	Humidity	IEC60068-2-78 (95%RH @ 40° C)
	Vibration (5 ~ 500 Hz)	IEC60068-2-6 (0.002 G ² /Hz, 1 Grms)
	Shock	IEC60068-2-27 (10 G, 11 ms)
Regulatory	Altitude	300 m below sea level to 4,000 m above sea level 10,000 above sea level
	Conformance	UL94V0, FCC Class B, CE, RoHS & WEEE Ready
	NEBS Level 3	Designed for GR-63-CORE and GR-1089-CORE
Compliance	Standards	PICMG AMC.0, AMC.1, AMC.2, AMC.3, IPMI v1.5, HPM.1

Ordering Information

Model Number	On-Board Option	
	CPU	Memory
MIC-5601A-M1E	Pentium M LV 1.4 GHz (738)	1 GB DDR2 with ECC
MIC-5601A-M2E	Pentium M LV 1.4 GHz (738)	2 GB DDR2 with ECC
MIC-5601B-M1E	Celeron M ULV 1 GHz (373)	1 GB DDR2 with ECC

Notes:

1. TPM support will be available as an option.
2. Full size front panel design will be available upon request.
3. CF module available as an option.

MIC-5401

Advanced Mezzanine Card SAS/SATA Storage AMC

NEW



Features

- Single-width mid-size AMC form factor
- SAS or SATA 2.5" hard disk drive compatible
- Hot-swap capable
- AdvancedTCA and MicroTCA compatible
- Dual port SAS drive support
- 3.0 Gb/s interface speed support
- Two thermal sensors to monitor on-board temperatures
- System management compliant to PICMG3.0 R2.0, AMC.0 R2.0, AMC.3 R1.0, and IPMI1.5
- Power-on hour counter
- HPM.1 compliant firmware upgrade and rollback support through IPMB

AdvancedMC™



FCC CE



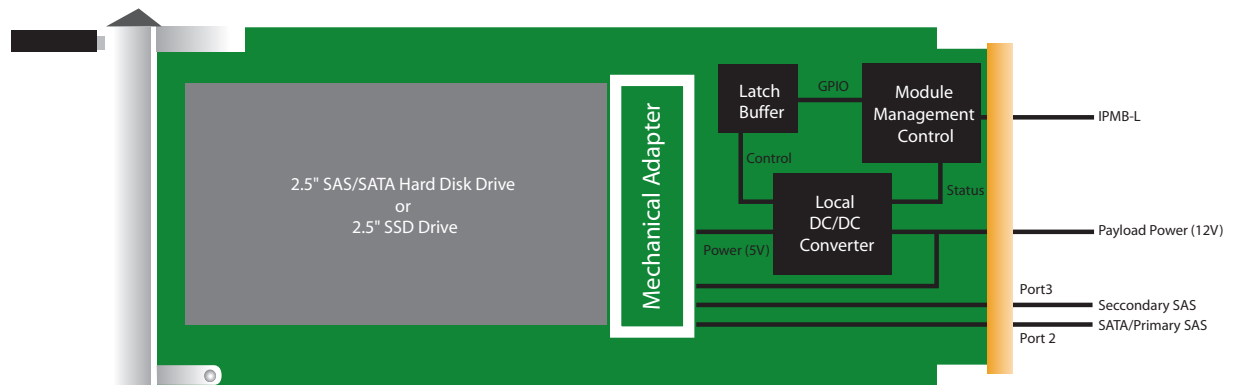
Introduction

The Advantech MIC-5401 is a single-width/mid-size Advanced Mezzanine Card (AMC) designed to support a 2.5" SAS or SATA hard disk drive to work as an enterprise storage module on an ATCA platform or in a MicroTCA shelf. The 2.5" hard disk drive is connected to the AMC port 2 (SAS and SATA) and port 3 (SAS only) according to the AMC.3 specifications. Dual port SAS drives may be used on the MIC-5401 to increase the interface bandwidth of failover support between dual hosts in fault tolerant environments. Like all other standard AMC modules, an IPMI-based module management controller (MMC) is also implemented on the MIC-5401 to serve as a communication interface to the Carrier Management Controller on an ATCA platform, or to the MicroTCA Carrier Management Controller on the MicroTCA Carrier Hub in a MicroTCA shelf. As a local IPMI controller on the AMC, it manages all hot-swap activities, E-keying, and hardware health monitoring such as voltages (12V, 5V, and management power 3.3V) and on-board temperatures (including hard disk drive's ambient temperature). The MIC-5401's mechanical design is optimized for a maximum of shock and vibration durability combined with a user- and service friendly mounting process for the disk drive.

Specifications

AMC Module	Single width, mid-size form factor (full-size front panel available as an option)	
Storage Device Supported	2.5" SAS or SATA hard disk drives, or 2.5" SATA SSD (solid state drive)	
System Management	PICMG 3.0 R2.0, AMC.0 R2.0, and IPMI 1.5 compliant	
	Redundant firmware images based on Pigeon Point Systems' solution supporting HPM.1 compliant upgrades and manual/automatic rollback	
Monitor	Power-on hour counter	
	Voltage: 12 V, 5 V, and 3.3 V management power	
Watchdog	Temperature: two on-board locations	
	AMC compliant watchdog	
Thermal Sensor	LM75/DS75 (x2)	
Environmental Conditions	Temperature and humidity (operating)	GR-63-CORE, Issue 3, R4-7 (-5° C ~ 55° C; 5% ~ 95%RH)
	Temperature and humidity (non-operating)	GR-63-CORE, Issue 3, R4-7 (-40° C ~ 70° C; 95%RH)
	Altitude	GR-63-CORE, Issue 3, R4-8, R4-9, R4-10, R4-11, R4-12 (-60 m ~ 4000 m)
	Vibration (operating)	IEC 60068-2-64 (0.002G ² /Hz, 1 Grms, 5 ~ 500 Hz)
	Vibration (non-operating)	IEC 60068-2-6 (2 G, 5 ~ 500 Hz, 1 Octave/min)
	Shock (operating)	IEC 60068-2-27 (half-Sine, 10 G, 11 ms)
	Shock (non-operating)	IEC 60068-2-27 (half-Sine, 30 G, 11 ms)
Regulatory	Conformance	UL94V0, FCC Class B, CE, RoHS & WEEE compliant
	NEBS Level 3	Designed for GR-63-CORE and GR-1089-CORE
Compliance	Standards	PICMG 3.0 R2.0, AMC.0 R2.0, AMC.3 R1.0, IPMI1.5, and SCOPE AdvancedMC Hardware Profile V1.0

Block Diagram



Ordering Information

Model Number	Front Panel
MIC-5401-0000E	Mid-Size

Note:

1. AMC modules with pre-installed hard disk or solid state disk drives are available on request. Please contact Advantech sales representative for further detail.
2. Full size front panel is available on request.

UTCA-5503

MicroTCA™ Carrier Hub: Layer 2 GbE switch with MCMC



Features

- Layer 2 GbE switch for up to 12 AdvancedMC™ modules on Common Options Fabric A
- MCH Update channel for Carrier Hub redundancy
- Front panel GbE uplink over RJ-45 or SFP
- Pigeon Point based MCMC with direct or switched 10/100 Management LAN port available on front panel
- IPMB-0 / IPMB-L for complete carrier management
- Built-in expandability for future pluggable enhancements
- Switch Management and Extended Fabric switching
- Customizable clock module and front panel I/O
- Compliant with PICMG MTCA.0 R1.0 specification

Introduction

The Advantech MicroTCA™ Carrier Hub UTCA-5503 combines into a single AdvancedMC Module that controls and manages infrastructure and the interconnect fabric resources necessary to support up to twelve AdvancedMCs in a MicroTCA shelf:

- A Primary Gigabit Ethernet fabric on Common Options Fabric A
- MicroTCA Carrier Management Controller (MCMC) functions to configure and control the elements

Where redundancy is required, two MCHs permit the creation of highly reliable systems.

Basic Interconnect Fabric, Control and Management Infrastructure

MicroTCA Carrier Management Controller (MCMC)

The first element on the MCH is the MicroTCA Carrier Management Controller (MCMC). It is the central authority in a MicroTCA Shelf and has the ability to monitor and control the constituent AdvancedMCs. This control function makes use of IPMI Links to each AdvancedMC, as well as presence detect, enable, and Geographic Address signals. When redundant MCHs are installed, failures in the management circuitry on one MCH can be handled by a failover to the other MCH. The MCMC LAN interface is available for optional remote management via the front panel RJ-45 connector or for optional routing to the Base Fabric switch.

E-Keying

Electronic keying (E-Keying) is the responsibility of the Carrier Manager and ensures that all AdvancedMCs and MCHs installed in a Shelf are compatible before they are permitted to power-up and enable their fabric links.

Basic Interconnect Fabric

In its basic configuration, the MCH acts as the Gigabit Ethernet hub of a star network, providing centralized switching and high-speed connectivity to each AdvancedMC. The Gigabit Ethernet Switch on the MCH provides an unmanaged layer 2, non-blocking, low-latency Gigabit Ethernet Switch.

Two MCHs can be used to implement a dual-star topology required for reliability. This is further enhanced by a Gigabit Ethernet Update Channel Port between the two MCHs. A front panel RJ-45 or SFP provides further network expandability with Gigabit Ethernet uplink ports for external interconnects.

This basic configuration provides a solid solution to the most cost sensitive application requirements.

Enhanced Options

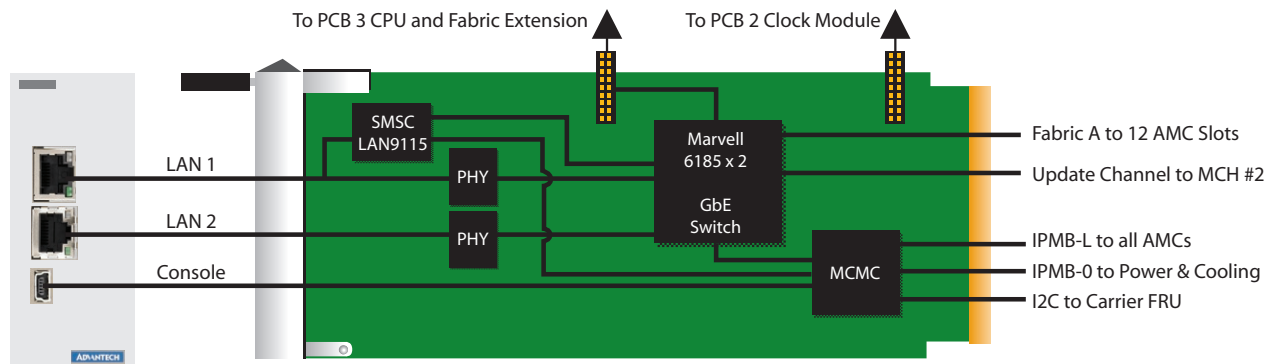
Switch Management and Fat Pipe Fabrics

The UTCA-5503 provides extension connectors between PCB1, 2 and 3 for clocks and enhanced processing functions such as Level 2/3 switch management, authentication and encryption; TPM facilities for server/cluster security; or HPI-over-IP remote management. It can also provide PCB3 switching for fat pipe PCI Express, SRIO, GbE or 10 GbE. A PCB2 module can be added for clock distribution and external clock connectivity. The front panel design offers flexibility for clock, I/O and alarm panel requirements.

Clocks and Alarms

An additional PCB2 module can be added to the MCH for enhanced clock distribution and external clock connectivity depending on customer specific requirements. Flexibility has been built into the Front PCB2 module design in order to meet a wide range of current and future Clock, I/O and Alarm panel requirements.

Block Diagram



Ordering Information

Model Number	MCMC	LAN1 RJ-45	LAN2 RJ-45	LAN2 SFP	Fabric A GbE Switch	Comments
UTCA-5503-1000E	Yes	Yes	Yes	-	Yes	Management and Switch
UTCA-5503-2000E	Yes	Yes	-	Yes	Yes	Management and Switch

Note: Model with management only (no switch) will be available upon request. Please contact local sales representative for details.

Expansion Options

Several options are currently under definition and planning for PCB 2 Clock modules, PCB 3 Processing and Switch management as well as Fat Pipe Fabric switching. Please contact your local sales representative for further details.

UTCA-5533

MicroTCA Carrier Hub: Optional PCIe Switching on UTCA-5503

NEW



Features

- Fat pipe switching capabilities for PCI-Express protocol on MCH PCB Level 3 with tongue 3 and 4 plug connectors
- Low power and high performance PCIe switch silicones
- PCI-Express x4 links to up to 12 AdvancedMCs on Fat Pipe Fabric
- On-board spread spectrum clock generator
- Optional clock input/output from/to PCB Level 2
- Reliable mezzanine mounting design to minimize the induced stresses in the PCBs and the board-to-board connectors during the MCH insertion to the backplane
- Benefits of all the features on UTCA-5503
- Compliant with PICMG MTCA.0 R1.0 specification and PCI Express Base Specification r1.1



Introduction

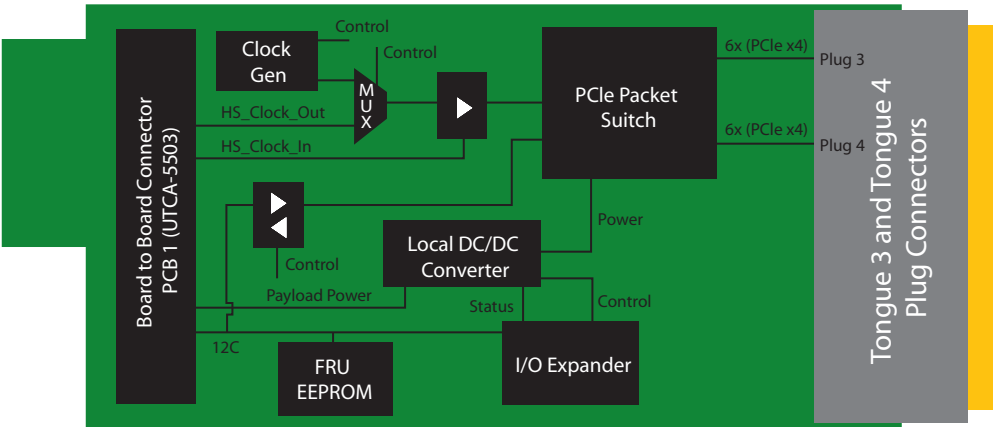
The Advantech UTCA-5533 is a PCI-Express fabric extension module implemented on the PCB Level 3 of the MicroTCA Carrier Hub. It is to be bundled with the UTCA-5503 to provide the control and management infrastructure and the interconnection to support up to twelve AdvancedMCs in a MicroTCA shelf:

- A Primary Gigabit Ethernet fabric on common Options Fabric A
- MicroTCA Carrier Management Controller (MCMC) functions to configure and control the element
- PCIe switching capabilities on Fat Pipe Fabric

Specifications

MCH Module	Standard MCH module (PCB Level 1+ PCB Level 3), single width, full size	
Application	Fat pipe switching for PCIe protocol	
Bus Interface	COM1 exposed to front panel as USB Slave interface through onboard USB/Serial converter, USB1.1 compliant	
Ethernet	10/100BT Management LAN on Front panel (RJ45, labeled as LAN1, which may also be 10/100/1000BT Fabric LAN when MLAN is routed through base fabric switch)	
	10/100/1000BT Fabric LAN on Front panel (RJ45 or SFP, labeled as LAN2)	
	1000BX GBE base fabric interface to backplane (12x)	
	1000BX GBE update channel to other MCH	
	Management LAN may be routed through base fabric switch (option)	
System Management	SGMII Interface from PCB Level 3 into base fabric switch	
	Pigeon Point System based firmware solution	
	Carrier manager	
Watchdog	Shelf manager (by default); optional to exclude uShM	
PCIe Switching	A programmable watchdog is implemented in MCMC	
Thermal Sensor	PCIe x4 links to up to 12 AMCs	
Environmental Conditions	LM75/DS75 (x2)	
	Temperature and humidity (operating)	GR-63-CORE, Issue 3, R4-7 (-5° C ~ 55° C; 5% ~ 95%RH)
	Temperature and humidity (non-operating)	GR-63-CORE, Issue 3, R4-7 (-40° C ~ 70° C; 95%RH)
	Altitude	GR-63-CORE, Issue 3, R4-8, R4-9, R4-10, R4-11, R4-12 (-60 m ~ 4000 m)
	Vibration (operating)	IEC 60068-2-64 (0.002 G ² /Hz, 1 Grms, 5 ~ 500 Hz)
	Vibration (non-operating)	IEC 60068-2-6 (2 G, 5 ~ 500 Hz, 1 Octave/min)
	Shock (operating)	IEC 60068-2-27 (half-Sine, 10 G, 11 ms)
Regulatory	Shock (non-operating)	IEC 60068-2-27 (half-Sine, 30 G, 11 ms)
	Conformance	UL94V0, FCC Class B, CE, RoHS & WEEE compliant
Compliance	NEBS Level 3	Designed for GR-63-CORE and GR-1089-CORE
	Standards	PICMG MicroTCA.0 R1.0, PCI-Express R1.1

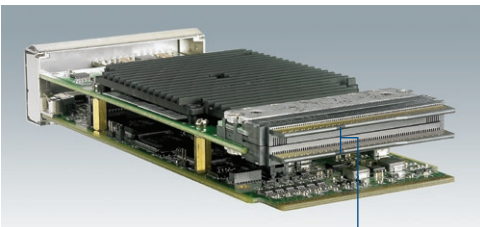
Block Diagram



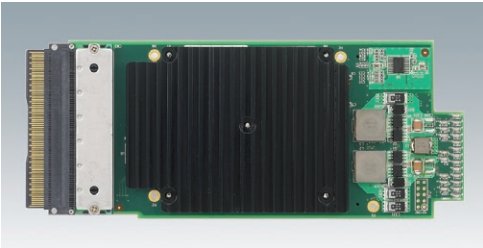
Ordering Information

Model Number	PCIe Switches	MCMC	LAN1 RJ-45	LAN2 RJ-45	LAN2 SFP	Fabric A GbE Switch	Comment
UTCA-5533-1000E	Yes	Yes	Yes	Yes	-	Yes	Management and switch
UTCA-5533-2000E	Yes	Yes	Yes	-	Yes	Yes	Management and switch

Note: Model with management only (no switch) will be available upon request. Please contact local sales representative for details.



Tongue 3 and Tongue 4 Plug Connectors



UTCA-5533 PCB Level 3

6U CompactPCI Boards

Selection Guide

Specifications		MIC-3392MILS (Standard CompactPCI)	MIC-3392MILC (Conduction Cooled)
Slot Width		1	1
PICMG 2.16 Compliant		Yes	Yes
Chipset		Intel 945GME	Intel 945GME
CPU	CPU (Not Included)	Intel LV Core Duo Intel ULV Core 2 Duo	Intel ULV Core 2 Duo
	No. of CPUs	1	1
	CPU Front Side Bus	533/667 MHz	533/667 MHz
	Max. CPU Speed	1.66 GHz	1.06 GHz
Memory	L2 Cache	2 MB	2 MB
	Technology	DDR2 533/667 MHz non-ECC SDRAM	DDR2 533/667 MHz non-ECC SDRAM
	Max. Capacity	3 GB	2 GB
	On-board	2 GB	2 GB
PCI-to-PCI Bridge	Socket	Optional 2 GB	-
	Bus Speed	64-bit/66 MHz	64-bit/66 MHz
	Controller	PLX PCI 6540	PLX PCI 6540
	Mode	Universal (System/Peripheral)	Universal (System/Peripheral)
Graphic	Controller	Intel 945GME Integrated	Intel 945 GME Integrated
	VRAM	Dynamic	Dynamic
Ethernet	Controller	Intel 82571EB/Intel 82546GB	Intel 82571EB/Intel 82546 GB
	Interface	10/100/1000Base-TX	10/100/1000Base-TX
	No. of Ports	2/2	2/2
	PCI Bus Speed	PCI-Express x4 / PCI 32-bit/33 MHz	PCI-Express x4 / PCI 32-bit/33 MHz
Watchdog Timer	LAN3	-	-
	Output	System Reset	System Reset
	Interval	Programmable 0 ~ 255 sec.	Programmable 0 ~ 255 sec
EIDE	Mode	SATA/PATA	SATA/PATA
	Channel	1 (SATA) 1 (PATA)	1 (SATA) 1 (PATA)
	CompactFlash Socket	1	1
	2.5" Drive Bay	1 (SATA)	-
Front Panel I/O	VGA	1	-
	LAN	-	-
	PMC Site	-	-
	Serial	-	-
	Parallel	-	-
	USB	2 (USB 2.0)	-
	PS/2	-	-
	SCSI	-	-
	Audio Interface	-	-
	Controller	Winbond W83627HG	Winbond W83627HG
Hardware Monitor	Monitor	CPU temperature	CPU temperature
	Rugged Conduction Cooling	-	Yes
Pre-heating		-	Yes
SODIMM Gluing Service		Optional (on SODIMM purchased from Advantech)	-
SCSI Controller Option		-	-
Miscellaneous	LED Indicator	HDD, BMC heartbeat, power, system/peripheral	-
	USB Channel	2 on RTM panel / 2 on RTM board	2 on RTM panel / 2 on RTM board
	Real Time Clock	Built-in	Built-in
	Audio Output	Reserved	Reserved
Compliant Standard	PICMG 2.0 R3.0 cPCI Spec.	Yes	Yes
	PICMG 2.1 R2.0 cPCI Hot Swap Spec.	Yes	Yes
	PICMG 2.9 R1.0 cPCI SystemManagement Spec.	Yes (IPMI 1.5)	-
	PICMG 2.16 R1.0 cPCI Packet Switching Backplane Spec.	Yes	Yes
	ANSI/VITA30.1-2002	-	Yes
	MIL-I-46058C and MIL-STD-810B	-	Yes
Rear Transition Board		RIO-3392MIL-A1E (No Coating)	RIO-3392MIL-A1E (No Coating)
		RIO-3392MIL-A2E (Conformal Coating)	RIO-3392MIL-A2E (Conformal Coating)
Enclosure		MIC-3039-BE	-
		MIC-3056A/4-2RE	-
		MIC-3042AE	-
		MIC-3042A-xE	-
		MIC-3042BE	-
		MIC-3042B-xE	-
		MIC-3043AE	-
		MIC-3043BE	-
		MIC-3043CE	-
		MIC-3043DE	-
PMC Module		MIC-3081B/8-10AE MIC-3081B/8-10RE	-
Note		-	Used on customized conduction cool enclosure
Reference Page		1-14	1-14

Yes: Supported, -: Unsupported

MIC-3392A Rev.2	MIC-3392B Rev.2	MIC-3390	MIC-3369C
1	1	1	1
Yes	Yes	Yes	Yes
Intel 945GME	Intel 945GME	Intel 915GME	Intel E7501 + ICH4
Intel Core 2 Duo, Core Duo	Intel Core 2 Duo, Core Duo	Intel Pentium M	Intel Pentium M
Intel ULV Core 2 Duo, LV Core Duo	Intel ULV Core 2 Duo, LV Core Duo		
1	1	1	1
533/667 MHz	533/667 MHz	400/533 MHz	400/533 MHz
2.16 GHz	2.16 GHz	2.0 GHz	1.6/2.0 GHz (400/533 MHz FSB)
4 MB	4 MB	1 MB/ 2 MB	1 MB/ 2 MB
DDR2 533/667 MHz SDRAM	DDR2 533/667 MHz SDRAM	DDR2 400/533 MHz SDRAM	DDR 266 MHz SDRAM with ECC support
3 GB	3 GB	2 GB	2 GB
1GB/2GB	1 GB/2 GB	-	512 MB/1 GB/2 GB
Optional 2 GB	Optional 2 GB	Optional 2 GB	-
64-bit/66 MHz	64-bit/66 MHz	64-bit/66 MHz	64-bit/66 MHz
PLX PCI 6540	PLX PCI 6540	PLX6254	PLX6254
Universal (System/Peripheral)	Universal (System/Peripheral)	Universal (System/Peripheral)	Universal (System/Peripheral)
Intel 945GME Integrated	Intel 945GME Integrated	Intel 915GME Integrated	ATI RageXL
Dynamic	Dynamic	Dynamic	8 MB dedicated
Intel 82573E x 2	Intel 82573E x 2	Intel 82573E x 2	Intel 82546 GB
10/100/1000Base-TX	10/100/1000Base-TX	10/100/1000Base-TX	10/100/1000Base-TX
2	1	2	1
PCI Express x1	PCI Express x1	PCI Express x1	64-bit/133 MHz
Yes (FE, Intel 82562GT)	Yes (FE, Intel 82562GT)	Yes (FE, Intel 82562GT)	Yes (FE, Intel 82562GT)
System reset	System reset	System reset	System reset
Programmable 0 ~ 255 sec.	Programmable 0 ~ 255 sec.	Programmable 0 ~ 255 sec.	Programmable 0 ~ 255 sec.
SATA/PATA	SATA/PATA	SATA/PATA	ATA 33/66/100
1 (SATA)	1 (SATA)	1 (SATA)	2
1 (PATA)	1 (PATA)	1 (PATA)	
1	1	1	1
1 (SATA)	-	1 (SATA)	1
1	-	1	1
2	1	2	1
1	2	1	1
1	1	1	1
-	-	-	-
2 (USB 2.0)	-	2 (USB 2.0)	2 (USB 2.0)
-	-	-	-
-	-	-	-
-	-	-	-
Winbond W83627DHG	Winbond W83627DHG	Winbond W83782D	Winbond W83782D
CPU temp. +3.3/+5/+12 V	CPU temp. +3.3/+5/+12 V	CPU temp. +3.3/+5/+12 V	CPU temp. +3.3/+5/+12 V
-	-	-	-
-	-	-	-
-	-	-	-
Rear I/O	Rear I/O	Rear I/O	Rear I/O
HDD, BMC heartbeat, power, hot swap, system/peripheral	HDD, BMC heartbeat, power, hot swap, system/peripheral	HDD, power, hot swap, system/peripheral	HDD, power, hot swap
2 (USB 2.0)	Rear I/O	2 (USB 2.0)	2 (USB 2.0)
Built-in	Built-in	Built-in	Built-in
-	-	-	-
Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes
Yes	Yes	Yes	-
Yes	Yes	Yes	Yes
-	-	-	-
-	-	-	-
RIO-3310S-A1E	RIO-3310S-A1E	RIO-3310S-A1E	RIO-3309C-AE
RIO-3310S-A2E	RIO-3310S-A2E	RIO-3310S-A2E	RIO-3309S-A1E
RIO-3310AE	RIO-3310AE	RIO-3310AE	RIO-3309S-A2E
MIC-3039-BE	MIC-3039-BE	MIC-3039-BE	MIC-3039-BE
MIC-3056A/4-2RE	MIC-3056A/4-2RE	MIC-3056A/4-2RE	MIC-3056A/4-2RE
MIC-3042AE	MIC-3042AE	MIC-3042AE	MIC-3042AE
MIC-3042A-xE	MIC-3042A-xE	MIC-3042A-xE	MIC-3042A-xE
MIC-3042BE	MIC-3042BE	MIC-3042BE	MIC-3042BE
MIC-3042B-xE	MIC-3042B-xE	MIC-3042B-xE	MIC-3042B-xE
MIC-3043AE	MIC-3043AE	MIC-3043AE	MIC-3043AE
MIC-3043BE	MIC-3043BE	MIC-3043BE	MIC-3043BE
MIC-3043CE	MIC-3043CE	MIC-3043CE	MIC-3043CE
MIC-3043DE	MIC-3043DE	MIC-3043DE	MIC-3043DE
MIC-3043x-BE	MIC-3043x-BE	MIC-3043x-BE	MIC-3043x-BE
MIC-3081B/8-10AE	MIC-3081B/8-10AE	MIC-3081B/8-10AE	MIC-3081B/8-10AE
MIC-3081B/8-10RE	MIC-3081B/8-10RE	MIC-3081B/8-10RE	MIC-3081B/8-10RE
MIC-3665-AE	MIC-3665-AE	MIC-3665-AE	MIC-3665-AE
MIC-3665-BE	MIC-3665-BE	MIC-3665-BE	MIC-3665-BE
1-16	1-16	1-18	1-20

MIC-3392MIL

6U CompactPCI Intel® Core™ 2 Duo Rugged Processor Blade

NEW



Features

- Supports Intel® Core™ Duo Low Voltage or Core™2 Duo Ultra Low Voltage mobile processor
- Intel® 945GME chipset supports 533/667 MHz FSB
- Up to 3GB (DDR2 533/667) memory with SODIMM expansion
- Conduction cooled with ANSI/VITA30.1-2002 compliancy
- Pre-heat circuitry for reliable cold-booting in low temperature environment, or optional support for IPMI v1.5 without pre-heat
- Boot from network, Compact Flash, or local 2.5" SATA HDD
- Four GbE ports, two USB 2.0 ports, two DVI-I ports, one P/S2 port, and one COM interface to the Rear Transition Module
- Optional one VGA port and two USB 2.0 ports to front panel
- Optional conformal coating and SODIMM gluing service
- PICMG 2.16 R1.0, PICMG 2.1 R2.0, PICMG 2.6 R1.0 compliant

Introduction

MIC-3392MIL, a CompactPCI PICMG 2.16 compliant single slot 6 U CPU board, comes with three different configurations that meet a wide range of environmental requirements from ruggedized applications. Based on the Intel Core Duo LV or Core 2 Duo ULV processor, it offers a low power dissipation design without the need of on-board forced ventilation. Ruggedized requirements are addressed by a conduction cooled design and extended operating temperature range (-40° C ~ 70° C). Shock and vibration resistances of the board are increased by using wedge locks and a single-piece CNC-milled aluminum alloy plate that conforms to the major IC packages. With highly integrated functional capabilities, the MIC-3392MIL fully utilizes the I/O features of the Intel chipsets. It supports up to 3 GB of 667 MHz DDR2 RAM, an onboard 2.5" Serial ATA HDD, a CompactFlash slot, and a set of I/O functions brought through the backplane to a unique rear transition module, which contains four LAN ports, two DVI-I ports, two USB 2.0 ports, one P/S2 port, and one RS232 port on the panel.

Specifications

Processor System	CPU	Intel Core 2 Duo ULV or Core Duo LV up to 1.6 GHz (2 MB L2 cache)
	Chipset	Intel945GME/ICH7M
	BIOS	Award 4Mb flash
CompactPCI Interface	J1 Connector	32-bit PCI local bus
	J2 Connector	64-bit PCI local bus
	J3~J5 Connectors	PICMG2.16 + RTM area
PCI-X to cPCI Bridge	Controller	PLX PCI 6540CB
	Interface	Master/Drone
Bus	Front Side Bus	533/667 MHz
	PCI	Up to 64-bit/66 MHz
Memory	Technology	DDR2 533/667 MHz
	Max. Capacity	3 GB
	Socket	SODIMM x1 2 GB memory integrated on board
Graphic	Controller	Intel 945GME integrated
	VRAM	Dynamic
	Resolution	Up to 2048 x 1536, 64k color at 75 Hz
Ethernet	Controller	Intel 82571EB dual-port Gigabit Ethernet controller
	Interface	10/100/1000Base-TX Ethernet (on PCIe x4 channel)
	I/O Connector	PICMG2.16 and RJ-45 x2 (RTM rear panel)
	Controller	Intel 82546GB dual-port Gigabit Ethernet controller
	Interface	10/100/1000Base-TX Ethernet (on PCI 32bits/33Mhz)
	I/O Connector	RJ-45 x2 (RTM rear panel)
Storage	Mode	SATA
	Channel	2 interfaces to CompactPCI connector
	Storage Site	1 SATA connector and space reserved for a 2.5" HDD on one of the two channels (optional for non-conduction cooled product configuration)
	Mode	IDE
	Channel	1 interface to CompactPCI connector
	Storage Site	1 on-board CompactFlash socket on the same channel

Specifications

Expansion I/O	USB 2.0	2 host ports (std. USB connectors) on front panel and 4 host interfaces to cPCI connectors
	DVI-I	2 interfaces to CompactPCI connector
	Serial	3 interfaces to CompactPCI connector (1 reserved for BMC IPMI F/W update)
	Parallel, FDD, PS2	Each with 1 interface to CompactPCI connector
Watchdog Timer	Output	Local Reset and Interrupt
	Interval	Programmable 1s ~ 255s
Hardware Monitor	Controller	Winbond 83627HG
BMC	Controller	Renesas H8S 2167, IPMIv1.5 compliant for standard CompactPCI SKU/Pre-heat F/W for conduction-cool SKU, mutually exclusive
Operating System	Compatibility	Windows® XP/2000, Linux, VxWorks 6.4 (on request)
Miscellaneous	Front Panel LEDs (standard cPCI SKU only)	x1 blue/yellow for Hot Swap/HDD, x1 green for Master/Drone, x1 yellow BMC Heartbeat, and x1 green for Power
Power Requirement	Configuration	Conduction cooled SKU (with Intel U7500 processor)
	TDP	37 watts (thermal model available on request)
Physical	Dimension	160.0 mm x 233.35 mm
Environment		Operating Non-operating
	Temperature	0 ~ 70° C (std CompactPCI SKU) -40 ~ 70° C (conduction-cool with pre-heat)
	Humidity	5 ~ 85 % @ 45° C, non-condensing 10 ~ 95 % @ 45° C, non-condensing
	Vibration (5-500 Hz)	1.5 Grms (without on-board 2.5" SATA HDD) 2 G
	Shock	20G (without on-board 2.5" SATA HDD) 50 G
	Altitude	300m below sea level to 4,000m above sea level (without conformal coating) 10,000m above sea level
Regulatory	Conformance	FCC Class A, CE, RoHS
	NEBS Level 3	Designed for GR-63-CORE and GR-1089-CORE
Compliance	Standards	PICMG 2.0 R3.0, PICMG 2.1 R.0, PICMG 2.9 R1.0 (std cPCI SKU), PICMG 2.16 R1.0, ANSI/VITA 30.1-2002

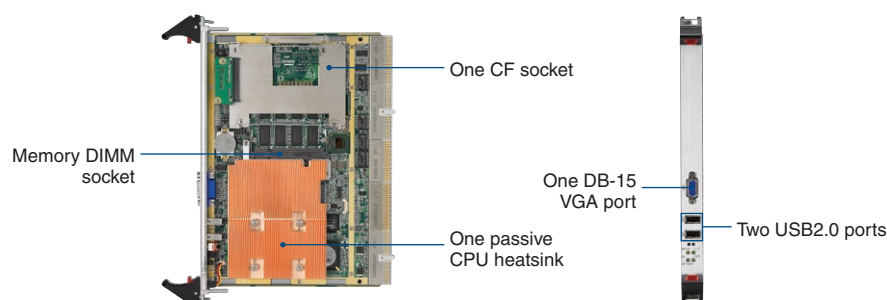
Recommended Configurations

CPU Board	Rear I/O Board	Enclosure
MIC-3392MILS-PxE Series	RIO-3392MIL-AxE Series	MIC-3039-BE, MIC-3042A/B, MIC-3043A/B/C/D, MIC-3056A, MIC-3081B
MIC-3392MILC-P1E	RIO-3392MIL-AxE Series	Customized conduction cool enclosure

Ordering Information

System Board Model Number	Front Panel				Conduction Cool	Main On-board Features					Conformal Coating
	VGA	USB2.0	BMC Reset	System Reset		CPU	Memory	CF Socket	Storage Channel	SODIMM Socket	
MIC-3392MILS-P1E	1	2	Yes	Yes	-	Intel U7500	2 GB	1	1	1	-
MIC-3392MILS-P2E	1	2	Yes	Yes	-	Intel L2400	2 GB	1	1	1	-
MIC-3392MILC-P1E	-	-	-	-	Yes	Intel U7500	2 GB	1	-	-	Yes

RTM Model Number	Rear Panel					On-board Header/Socket/Connector							Conformal Coating
	LAN	COM	DVI-I	PS2	USB	IDE	FDD	LPT	SATA	COM Interface	Console Interface	USB Interface	
RIO-3392MIL-A1E	4	1	2	1	2	1	1	1	2	1	1	2	J3 ~ J5 -
RIO-3392MIL-A2E	4	1	2	1	2	1	1	1	2	1	1	2	J3 ~ J5 Yes



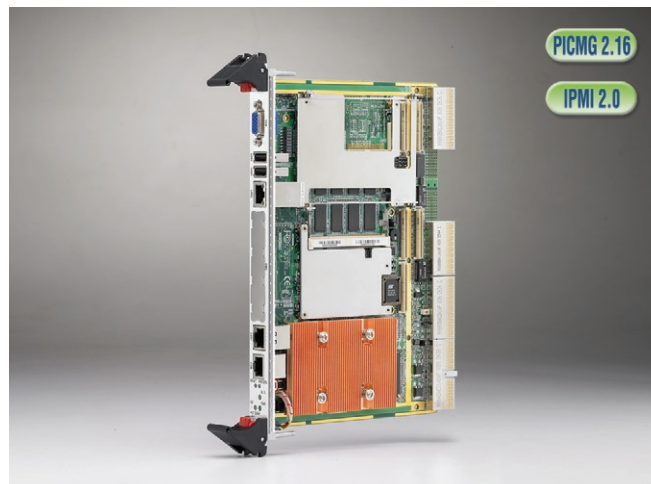
MIC-3392MILS-PxE Series



MIC-3392MILC-P1E

MIC-3392 Rev.2

**6U CompactPCI Intel® Core™2 Duo
Processor-based Board with Dual
PCIe GbE/DDR2/SATA/PMC**



Features

- Supports Intel® Core™2 Duo processor
- Intel 945GME chipset supports 533/667 MHz FSB
- Up to 3 GB (DDR2 533/667) memory with SODIMM expansion
- Comprehensive I/O capability, dual Gigabit Ethernet, SATA, CompactFlash
- One 64-bit/66 MHz PMC expansion slot, and optional second 64-bit/66 MHz PMC expansion slot
- PICMG 2.16, R1.0 Packet Switching Backplane Specification compliant
- PICMG 2.9, R1.0 IPMI Specification compliant
- PICMG 2.1, R2.0 Hot-Swap Specification compliant
- Selectable System/Peripheral mode

Introduction

The MIC-3392 is a high performance, power efficient CompactPCI single board computer based on the Intel Core 2 Duo processor. It combines the benefits of two execution cores with intelligent power management features to deliver significantly greater performance per watt over previous Intel processors. The two execution cores share a power-optimized 667 MHz front side bus to access the same system memory. To save power, address and data buffers are turned off when there is no activity.

The MIC-3392 uses PCI Express (PCIe) technology to maximize I/O throughput. It supports up to 3 GB of 667 MHz DDR2 RAM (6.4 GB/s throughput), an onboard 2.5" Serial ATA HDD and a CompactFlash slot. Two front-accessible PCI Express (PCIe) Gigabit Ethernet (GbE) ports provide a bidirectional bandwidth of 2 Gb/s. In addition, the MIC-3392 supports Rear Transition Boards and PCI Mezzanine Cards for further expansion options.

Specifications

Processor System	CPU (Not Included)	Intel Core Duo T2500/L2500 or Intel Core 2 Duo T7400/L7400 processor (Enclosure with forced air cooling is required)
	Max. Speed	2.16 GHz (2 MB up to 4 MB L2 cache)
	Chipset	Intel 945GME
	BIOS	AMI 8 Mbit flash
Bus	Front Side Bus	533/667 MHz
	PCI	Up to 64-bit/100 MHz
Memory	Technology	DDR2 533/667 SDRAM
	Max. Capacity	3 GB
	Socket	SODIMM x 1 1 GB/ 2 GB memory integrated on board
Graphic	Controller	Intel 945GME integrated
	VRAM	Dynamic
	Resolution	Up to 2048 x 1536, 64k color at 75 Hz
Ethernet	Interface	10/100/1000Base-TX Ethernet
	Controller	Intel 82573E x 2
	I/O Connector	RJ-45 x 2 (front)
Storage	Mode	SATA
	Channels	2
	Storage Site	One SATA connector and space reserved for embedded 2.5" HDD
Bridge	Bus	PCI 64-bit/66 MHz
	Interface	Universal (System/Peripheral mode capability)
I/O Interface	Serial (COM1)	RJ-45 x 1 (front)
Operating System	Compatibility	Windows® Vista/XP/2000, Linux Fedora Core 5
Hardware Monitor	Controller	Winbond W83627DHG
	Monitor	CPU temperature, +3.3 V, +5 V, +12 V
Watchdog Timer	Output	System reset
	Interval	Programmable, 0 ~ 255 sec.
	Site	1 or 2
PMC	Interface	IEEE1386.1 64-bit/66 MHz on A version PMC1 and PMC2 are 64-bit/66 MHz on B version
	Signal	+5 V/+3.3 V compliant

Specifications Cont.

Miscellaneous	Solid State Disk	One CompactFlash socket			
	LEDs	HDD, Power, Hot Swap, system/peripheral			
	USB 2.0	2 channels			
	Real Time Clock	Built-in to the South Bridge			
Power Requirement (Intel Core 2 Duo 2 GHz with 2 GB memory)	Voltage	+3.3 V	+5 V	+12 V	- 12V
	Typical	2.66 A	3.04 A	0.39 A	0 A
	Maximum	3.17 A	7.16 A	0.40 A	0 A
Physical	Dimensions	233.35 x 160 mm (9.19" x 6.3"), 1-slot width			
	Weight	0.8 kg (1.76 lb)			
Environment	Operating Temperature *	0 ~ 55° C (32 ~ 122° F)			
	Non-Operating Temperature	-20 ~ 60° C (-4 ~ -140° F)			
	Humidity	95% @ 60° C (non-condensing)			
	Shock	20 G			
	Vibration(5 ~ 500 Hz)	1.5 Grms			
Regulatory	Altitude	60 m below sea level to 4000 m above sea level			
	Conformance	FCC Class A, CE			
Compliance	Standard	Design for GR-63-core & GR-1089-core			
		PICMG 2.0, R3.0 CompactPCI Specification			
		PICMG 2.1, R2.0 Hot-Swap Specification			
		PICMG 2.9, R1.0 IPMI Specification			
Compliance	Standard	PICMG 2.16, R1.0 Packet Switching Backplane Specification			

* Optional large heatsink available but only adapted to single PMC model. Please contact your local distributor for ordering information.

Recommended Configurations

CPU Board	PMC Module	Rear I/O Board	Enclosure
MIC-3392A2-MxE, MIC-3392B2-MxE	MIC-3665-AE, MIC-3665-BE	RIO-3310AE, RIO-3310S-A1E, RIO-3310S-A2E	MIC-3039-B, MIC-3042, MIC-3043, MIC-3081B, MIC-3056

Rear Transition Board

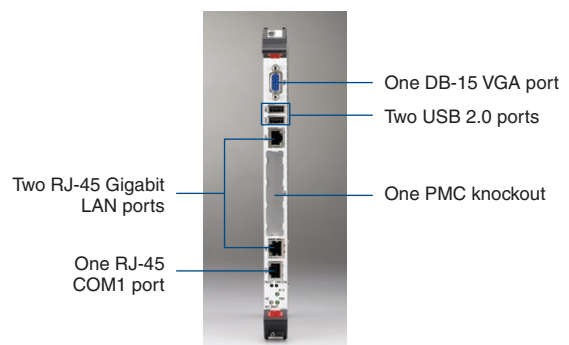
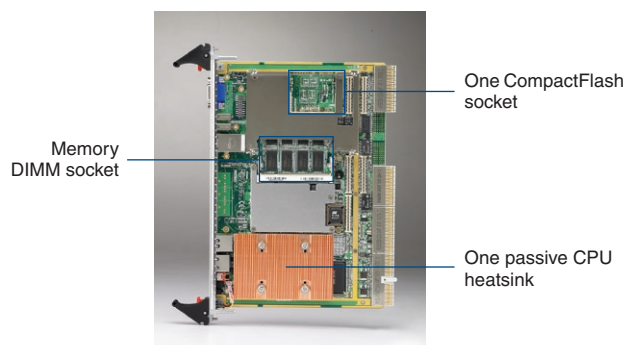
Model	Rear Panel							Onboard Header/Socket/Connector							
	KB & Mouse	COM2 *	GbE LAN	VGA	USB	10/100Base-T LAN	SCSI **	IDE	SATA	FDD	SCSI**	PRT	USB	Slot Width	Conn.
RIO-3310S-A1E	1	1	2	1	1	1	-	1	1	1	1	1	1	1	J3/J5
RIO-3310S-A2E	1	1	2	1	1	1	1	1	1	1	1	1	1	1	J3/J5
RIO-3310AE	1	1	2	1	1	1	-	1	1	1	-	1	1	1	J3/J5

* Optional 3rd LAN port occupies the rear COM2 port

** Internal Ultra 320 SCSI port with optional external rear I/O port

Ordering Information

Model Number	Front Panel I/O					Main Onboard Features				
	LAN	COM	PMC	USB	VGA	CPU	Memory	CF Socket	Storage Channel	Slot Width
MIC-3392A2-M1E	2	1	1	2	1	-	1 GB	1	1	1
MIC-3392A2-M2E	2	1	1	2	1	-	2 GB	1	1	1
MIC-3392B2-M1E	1	1	2	-	-	-	1 GB	1	1	1
MIC-3392B2-M2E	1	1	2	-	-	-	2 GB	1	1	1



MIC-3390

6U CompactPCI® Intel® Pentium® M Processor-based Board with Dual PCIe GbE/DDR2/SATA/PMC



Features

- Supports low-power Intel® Pentium® M processor at up to 2.0 GHz in a 479-pin Micro-FCPGA socket
- PCI Express dual Gigabit Ethernet on board
- Dual channel DDR2 400/533 MHz SDRAM up to 2 GB
- PICMG 2.16 R1.0 CompactPCI® Packet Switching Backplane Specification compliant
- PICMG 2.9 R1.0 CompactPCI System Management Specification compliant
- PICMG 2.1 R2.0 CompactPCI Hot Swap Specification compliant
- Onboard SATA 2.5" HDD bay, PMC connector and CompactFlash socket

Introduction

The MIC-3390 single board computer is designed to offer embedded system builders the best value in low-power Intel Pentium M computing. The Intel Pentium M processor, Mobile Intel 915GME Express chipset and Intel I/O Controller Hub ICH6M, enables the MIC-3390 to deliver great computing performance, connectivity and throughput without compromising system thermal design. The MIC-3390 Graphic Memory Controller Hub and ICH6M provide an optimized integrated memory, graphics and I/O solution. The MIC-3390 is validated for all Intel Pentium M processors, and supports up to 2 GB of 400/533 MHz DDR2 memory in dual-channel SODIMMs.

The MIC-3390 maximizes I/O throughput with the ICH6-M's PCI Express (PCIe) ports. The two Intel 82573E Ethernet controllers are linked directly using PCIe connectivity for a total bidirectional peak bandwidth of 2 Gb/s. Another PCIe lane connects to a PCIe to PCI-X Bridge to provide a 64-bit / 100 MHz data path for the PMC and a 64-bit / 66 MHz data path for the CompactPCI Bridge. The flexibility of the bridge allows the MIC-3390 to be used in a system slot or a peripheral slot as an intelligent I/O processor or as an application blade in a multi-processor or clustered architecture. In addition to a full array of industry standard I/O features, ICH6M provides two Serial ATA ports for high speed data transfers up to 150 MB/s. One port is routed to rear I/O and the other port is routed to both the onboard 2.5" SATA drive and rear I/O for a greater choice of connectivity. With an optional mezzanine card, the MIC-3390 provides a fully compatible IPMI 2.0 interface with LAN and serial port support for out-of-band management.

Specifications

Processor System	CPU (Not Included)	Intel Pentium M Processor (Socket 479)
	Max. Speed	2.0 GHz (2 MB L2 cache)
	Chipset	Intel 915GME
	BIOS	Award™ 8 Mbit flash
Bus	Front Side Bus	400/533 MHz
	PCI	Up to 64-bit/100 MHz (PCI-X support)
Memory	Technology	DDR2 400/533 MHz SDRAM
	Max. Capacity	2 GB
	Socket	SODIMM x 2
Graphic	Controller	Integrated in Intel 915GME
	VRAM	Dynamic
	Resolution	Up to 2048 x 1536, 64k color at 75 Hz
Ethernet	Interface	10/100/1000Base-TX Ethernet
	Controller	Intel 82573E x 2
	I/O Connector	RJ-45 x 2 (front)
Storage	Mode	SATA
	Channels	2
	Storage Site	One SATA connector and space reserved for embedded 2.5" HDD
Bridge	Bus	PCI 64-bit/66 MHz
	Interface	Universal (System/Peripheral mode capability)
I/O Interface	Serial (COM1)	RJ-45 x 1 (front)
Operating System	Compatibility	Windows® XP/2000/NT 4.0, Red Hat Fedora Core 3
Hardware Monitor	Controller	Winbond W83782D
	Monitor	CPU temperature, +3.3 V, +5 V, +12 V
Watchdog Timer	Output	System reset
	Interval	Programmable, 0 ~ 255 sec.
PMC	Site	1
	Interface	PCI Mezzanine (IEEE1386.1 compliant)
	Signal	+5 V/+3.3 V compliant

Specifications Cont.

Miscellaneous	Solid State Disk	One CompactFlash socket			
	LED Indicator	HDD, Power, Hot swap, system/peripheral			
	USB 2.0	2 channels			
	Real Time Clock	Built-in			
Power Requirement (Intel 1.8 GHz with 1 GB memory)	Voltage	+3.3 V	+5 V	+12 V	-12 V
	Typical	4 A	4 A	< 12 mA	< 65 mA
	Maximum	4.2 A	6.2 A	< 20 mA	< 57 mA
Physical Characteristics	Dimensions (W x D)	233.35 x 160 mm (9.19" x 6.3"), 1-slot width			
	Weight	0.8 kg (1.76 lb)			
Environment		Operating		Non-Operating	
	Temperature	0 ~ 65° C (32 ~ 149° F)		-40 ~ 70° C (-40 ~ 140° F)	
	Humidity	-		95% @ 60° C (non-condensing)	
	Shock	20 G		50 G	
	Vibration (5 ~ 500 Hz)	1.5 Grms		2.0 G	
	Altitude	60 m below sea level to 4000 m above sea level			
	Airflow	300 LFM=1.54 m/s			
Regulatory	Conformance	FCC Class A, CE			
	NEBS Level 3	Design for GR-63-core & GR-1089-core			
Compliance	PICMG 2.0 R3.0 CompactPCI Specification				
	PICMG 2.1 R2.0 CompactPCI Hot Swap Specification				
	PICMG 2.9 R1.0 CompactPCI System Management Specification				
	PICMG 2.16 R1.0 CompactPCI Packet Switching Backplane Specification				

Recommended Configurations

CPU Board	PMC Module	Rear I/O Board	Enclosure
MIC-3390E, MIC-3390-AE	MIC-3665-AE, MIC-3665-BE	RIO-3310AE, RIO-3310S-A1E, RIO-3310S-A2E	MIC-3039-B, MIC-3042, MIC-3043, MIC-3081B, MIC-3056

Rear Transition Board

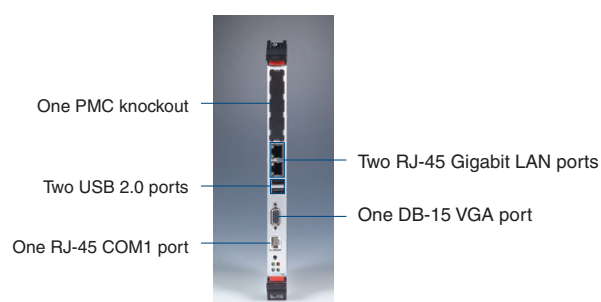
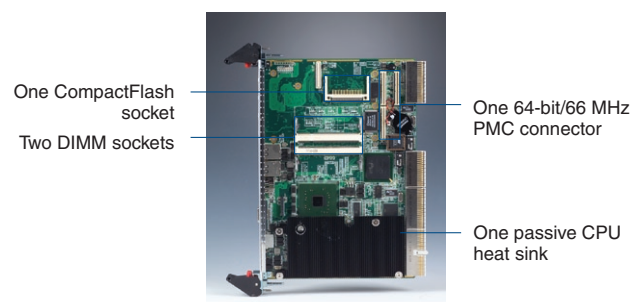
Part Number	KB & Mouse	Rear Panel						Onboard Header/Socket/Connector								Slot Width
		COM2*	GbE LAN	VGA	USB	10/100Base-T LAN	SCSI**	IDE	SATA	FDD	COM1	SCSI**	PRT	USB	Conn.	
RIO-3310AE	1	1	2	1	1	1	-	1	1	1	1	-	1	1	J3/J5	1
RIO-3310S-A1E	1	1	2	1	1	1	-	1	1	1	1	1	1	1	J3/J5	1
RIO-3310S-A2E	1	1	2	1	1	1	1	1	1	1	1	1	1	1	J3/J5	1

* Optional 3rd LAN port occupies the rear COM2 port

** Internal Ultra 320 SCSI port with optional external rear I/O port

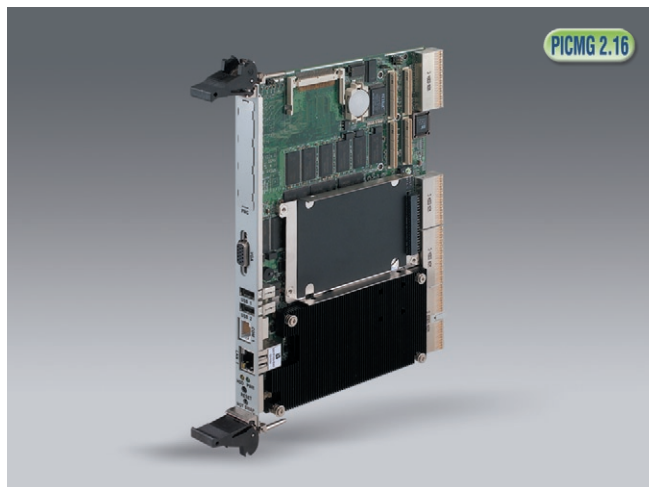
Ordering Information

Part Number	Front Panel I/O					Main Onboard Features					
	LAN	COM	PMC	USB	VGA	CPU	Memory	CF Socket	IDE Channel	Slot Width	IPMI BMC Module
MIC-3390E	2	1	1	2	1	-	-	1	2.5" SATA HDD	1	-
MIC-3390-AE	2	1	1	2	1	-	-	1	2.5" SATA HDD	1	1



MIC-3369C

6U CompactPCI® Intel® Pentium® M Processor-based Board with VGA/Dual PCI GbE/PMC (PICMG 2.16)



Features

- Supports Intel® Pentium® M 760 processor (2.0 GHz, 2 MB L2 cache)
- Supports 400/533 MHz FSB
- Supports dual Gigabit LAN ports on the rear
- Up to 2 GB (DDR 200/266 MHz) onboard memory with ECC
- PICMG 2.16 R1.0 CompactPCI Packet Switching Backplane Specification compliant
- PICMG 2.1 R2.0 CompactPCI Hot Swap Specification compliant
- Onboard 2.5" HDD bay, PMC connector and CompactFlash socket

Introduction

The MIC-3369C is a highly integrated and cost effective CompactPCI single board computer based on the Intel Pentium M processor. It is an ideal application blade for integration into products where performance and low power consumption are key requirements. The Intel E7501 chipset delivers 4.3 GB/s bandwidth across a 400/533 MHz front side bus. The Pentium M processor has 32 KB of level 1 cache, 1 MB/2 MB of level 2 advanced transfer cache and up to 4.3 GB/s of bandwidth across dual data rate memory channels. The MIC-3369C supports up to 2 GB of ECC DDR 266 onboard memory.

The MIC-3369C uses Intel's I/O controller hub technology to provide 64-bit data buses. The onboard dual Gigabit Ethernet controller is connected via a 64-bit / 133 MHz PCI-X bus for maximum sustained packet throughput. A full array of industry standard I/O features, onboard 2.5" hard disk drive bay and a 64-bit/66 MHz PMC site enables the MIC-3369C to meet the most flexible and demanding I/O processing needs. The MIC-3369C can be used in either a system slot or peripheral slot, making it an ideal choice for applications requiring PICMG 2.16 CompactPCI Packet Switching Backplane support for Gigabit switched-fabric interconnection between blades. The MIC-3369C is perfect for mission critical telecom and data communication applications such as 3G wireless infrastructure, Voice-over-IP, media gateways, soft switches and triple-play server clusters.

Specifications

Processor System	CPU (Not Included)	Intel Pentium M processor (Socket 479)
	Speed	Up to 2.0 GHz
	L2 Cache	1 MB on 1.6 GHz CPU or 2 MB on 2.0 GHz CPU
	Chipset	Intel E7501 + ICH4
	BIOS	Award™ 4 Mbit flash (network booting/console redirection on request)
Bus	Front Side Bus	400/533 MHz
	PCI	64-bit/133 MHz (PCI-X support)
Memory	Technology	DDR 200/266 MHz SDRAM with ECC support
	Max. Capacity	2 GB
	Integrated	512 MB / 1 GB / 2 GB memory on board (no DIMM socket)
Graphic	Controller	ATI RageXL™
	VRAM	8 MB dedicated
Ethernet	Interface	10/100/1000Base-TX Ethernet
	Controller	Intel 82546GB (Dual GbE ports)
	I/O Connector	RJ-45 x 1 (front)
	Mode	ATA 33/66/100
EIDE	Channel	2
	Connector	One IDE connector and space reserved for embedded 2.5" HDD
	Interface	Universal (System/Peripheral mode capability)
PCI-to-PCI Bridge	Controller	PLX6254
	Bus	64-bit / 66 MHz
Front I/O Interface	PMC	1
	VGA	1
	USB	2 (USB 2.0)
	Serial (COM1)	1 (RS-232, RJ-45 connector)
	LAN	1
Operating System	Compatibility	Windows® XP/2000/NT 4.0, Red Hat Linux 9.0, VxWorks
Hardware Monitor	Controller	Winbond® W83782D
	Monitor	CPU temperature, +3.3 V, +5 V, +12 V
Watchdog Timer	Output	System reset
	Interval	Programmable, 0 ~ 255 sec.
PMC	Site	1
	Interface	64-bit/66 MHz PCI Mezzanine (IEEE1386.1)
	Signal	+5 V/+3.3 V compliant

Specifications Cont.

Miscellaneous	Solid State Disk	CompactFlash socket			
	LED Indicator	HDD, Power, Hot Swap			
	USB 2.0	2 channels			
	Real Time Clock	Built-in			
Power Requirement (Intel Pentium M 1.6 GHz)	Voltage	+3.3 V	+5 V	+12 V	-12 V
	Maximum	5.18 A	4.19 A	38 mA	< 25 mA
Environment		Operating			Non-Operating
	Temperature	0 ~ 65° C (32 ~ 149° F)			-40 ~ 70° C (-40 ~ 158° F)
	Humidity	-			95% @ 60° C (non-condensing)
	Shock	20 G			50 G
	Vibration (5 ~ 500 Hz)	1.5 Grms			2.0 G
	Altitude	60 m below sea level to 4000 m above			
Physical Characteristics	Dimensions (W x D)	233.35 x 160 mm (9.2" x 6.3"), 1-slot width			
	Weight	0.8 kg (1.76 lb)			
Compliance	PICMG 2.0 R3.0 CompactPCI Specification				
	PICMG 2.1 R2.0 CompactPCI Hot Swap Specification				
	PICMG 2.16 R1.0 CompactPCI Packet Switching Backplane Specification				

Recommended Configurations

CPU Board	PMC Module	Rear I/O Board	Enclosure
MIC-3369C-MxE	MIC-3665-AE, MIC-3665-BE	RIO-3309C-AE, RIO-3309S-AxE	MIC-3039-B, MIC-3056, MIC-3042, MIC-3043, MIC-3081B

Rear Transition Board

Part Number	KB & Mouse	COM2*	Rear Panel					Onboard Header/Socket/Connector							Slot Width
			GbE LAN	VGA	USB	10/100 LAN**	SCSI	IDE	FDD	SCSI	COM1	USB	PRT	Conn.	
RIO-3309C-AE	1	1	2	1	1	1	-	1	1	-	1	1	1	J3/J5	1
RIO-3309S-A1E	1	1	2	1	1	1	-	1	1	1	1	1	1	J1/J2/ J3/J5	1
RIO-3309S-A2E	1	1	2	1	1	1	1	1	1	-	1	1	1	J1/J2/ J3/J5	1

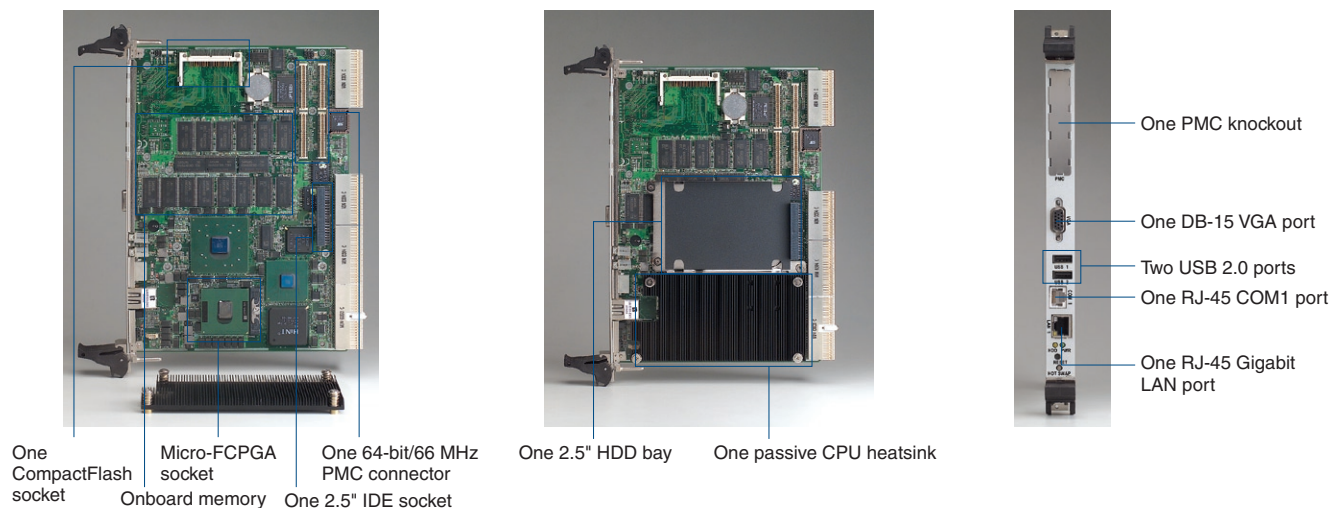
* RS-232/422/485 selectable

** Optional 3rd LAN port occupies the rear COM2 port

Ordering Information

Part Number	Front Panel I/O					Onboard Header/Socket/Connector			
	LAN	COM	PMC	USB	VGA	Memory	IDE Channel	CF Socket	Slot Width
MIC-3369C-M0E	1	1	1	2	1	512 MB	2.5" HDD	1	1
MIC-3369C-M1E	1	1	1	2	1	1 GB	2.5" HDD	1	1
MIC-3369C-M2E	1	1	1	2	1	2 GB	2.5" HDD	1	1

Note: The above part numbers do not include the CPU, please order separately.



6U CompactPCI Enclosures



MIC-3043 Series

Selection Guide

Specifications		4U Enclosure	
Model Name		MIC-3043B/MIC-3043B-BE	MIC-3043C/MIC-3043C-BE
Height (1U = 1.75")		4U	4U
Backplane	6U Slot	6	6
	PCI Bus	32-bit/33 MHz	32-bit/33 MHz
		64-bit/66 MHz	64-bit/66 MHz
	H.110 CT Bus	Yes	-
	PICMG 2.16	-	-
	VI/O Voltage	3.3 V/5 V	3.3 V/5 V
Drive Bay	5.25"	-	-
	3.5" HDD Bracket	2 IDE removable	2 SCSI hot-swappable
	Slim FDD	-	-
	Slim CD-ROM	1 USB	1 USB
Cooling	No. of Fans	2	2
	Fan Air Flow Rate	193 CFM, 61.3 CFM	193 CFM, 61.3 CFM
Max. Power Supply	AC (100 ~ 240 V)	Hot-swap AC cPCI 500 W + 250 W (2+1)	Hot-swap AC cPCI 500 W + 250 W (2+1)
	DC (-48 V)	Hot-swap DC cPCI 500 W + 250 W (2+1)	Hot-swap DC cPCI 500 W + 250 W (2+1)
CPU Board	MIC-3392	Yes	Yes
	MIC-3390	Yes	Yes
	MIC-3369C	Yes	Yes
RIO Card		Yes	Yes
PCI Carrier Board	MIC-3961	Yes	Yes
Media Carrier Board	MIC-3960	-	-
Dual PMC Carrier Board	MIC-3951	Yes	Yes
Chassis Management Module	MIC-3927	MIC-3927AE	-
		MIC-3927BE	-
		MIC-3927CE	Yes
Dimensions (W x H x D)	mm	440 x 177 x 320	440 x 177 x 320
	inch	17.3 x 7 x 12.6	17.3 x 7 x 12.6
Weight	kg	18	18
	lb	39.7	39.7
RoHS Compliance		RoHS	RoHS
Reference Page		1-24	1-24

Yes: Supported; -: Unsupported; △: CPU board and chassis don't support HDD



MIC-3042 Series



MIC-3043 Series

4U Enclosure			
MIC-3043DE/MIC-3043D-BE	MIC-3042AE/MIC-3042A-xE	MIC-3042BE/MIC-3042B-xE	MIC-3043AE/MIC-3043A-BE
4U	4U	4U	4U
6	8	8	6
32-bit/33 MHz	32-bit/33 MHz	32-bit/33 MHz	32-bit/33 MHz
64-bit/66 MHz	64-bit/66 MHz	64-bit/66 MHz	64-bit/66 MHz
-	Yes	Yes	Yes
-	-	-	-
3.3 V/5 V	3.3 V/5 V	3.3 V/5 V	3.3 V/5 V
-	-	-	-
2 SATA (IDE or SATA interface optional) hot-swappable	-	-	2 IDE removable
-	-	-	-
1 USB	-	-	1 USB
2	2	2	2
193 CFM, 61.3 CFM	193 CFM, 61.3 CFM	193 CFM, 61.3 CFM	193 CFM, 61.3 CFM
Hot-swap AC cPCI 500 W + 250 W (2+1)	Hot-swap AC cPCI 500 W + 250 W (2+1)	Hot-swap AC cPCI 500 W + 250 W (2+1)	Hot-swap AC cPCI 500 W + 250 W (2+1)
Hot-swap DC cPCI 500 W + 250 W (2+1)	Hot-swap DC cPCI 500 W + 250 W (2+1)	Hot-swap DC cPCI 500 W + 250 W (2+1)	Hot-swap DC cPCI 500 W + 250 W (2+1)
Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes
Yes	-	Yes	Yes
-	Yes	Yes	-
Yes	Yes	Yes	Yes
-	-	-	-
-	-	-	-
Yes	Yes (optional)	Yes (optional)	Yes (optional)
440 x 177 x 320	440 x 177 x 320	440 x 177 x 320	440 x 177 x 320
17.3 x 7 x 12.6	17.3 x 7 x 12.6	17.3 x 7 x 12.6	17.3 x 7 x 12.6
18	18	18	18
39.7	39.7	39.7	39.7
RoHS	RoHS	RoHS	RoHS
1-24	1-26	1-26	1-24

MIC-3043

4U CompactPCI® Enclosure with cPCI Power Supply and Removable HDD Bay (CT Bus or Non-CT Bus)



Features

- 6-slot 6U CompactPCI® backplane
- Supports two hot-swappable SCSI/SATA or removable IDE HDD bays
- Built-in IDE slim-type CD-ROM
- AC cPCI 250 W + 250 W redundant (1+1) power supplies
- Supports hot-swappable fan modules
- PICMG 2.5 (CompactPCI Computer Telephony) compliance
- Built-in alarm module (MIC-3924L-AE)

Introduction

The MIC-3043 is a 4U enclosure designed for mission-critical and high-reliability applications such as Networking, Telecommunication, Computer Telephony Integration, and Image Processing. It is equipped with a hot-swappable CompactPCI redundant power supply and hot-swappable fan modules to minimize MTTR (Mean-Time-to-Repair). The MIC-3043 supports IEEE 1101.11 rear I/O transition boards. Users can route I/O signals to the rear transition boards for simplified system cabling. Front boards pop in and out without any hardwiring. The MIC-3043 has two hot-swappable SCSI/SATA or removable IDE HDD bays and one slim CD-ROM as standard.

The MIC-3043 has a high-quality backplane that supports impedance control and 64-bit / 66 MHz cards for full compatibility. The H.110 CT Bus complies with PICMG 2.5, which is an open architecture ideal for telecom solutions or development platforms.

Specifications

		MIC-3043A	MIC-3043B	MIC-3043C	MIC-3043D
Backplane	6U Slot	System x 1, Peripheral x 5, Rear transition x 6 (80 mm, IEEE1101.11 compliant)			
	H.110 CT Bus	Yes	-	Yes	Yes
	Bus	32-bit/33 MHz, 64-bit/66 MHz			
	V (I/O)	+3.3 V/+5 V (selectable)			
Cooling	Fan	2 (front: 193 CFM, rear: 61.3 CFM)			
Drive Bay	3.5" HDD	2 (IDE)	2 (IDE)	2 (SCSI)	2 (SATA)
	Slim CD-ROM	1	1	1	1
Management Interface	Alarm indicators	2 (fan failure and system overheating)			
Power Supply	Input	AC 100 ~ 240 V @ 50 ~ 60 Hz, full range (MIC-3043X-XX)			
	Output	AC cPCI 250 W redundant power module			
		+3.3 V	+5 V	+12 V	-12 V
	Max. Load	36 A	50 A	10 A	1 A
	Min. Load	0 A	2.0 A	0 A	0 A
Reliability	MTBF	Backplane	Fan module	Power supply	
		800,000 hours	50,000 hours @ 25° C	100,000 hours @ 70%	
Environment		Operating		Non-Operating	
	Temperature	0 ~ 45° C, (32 ~ 113° F)		-20 ~ 60° C, (-4 ~ 140° F)	
	Humidity	-		10 ~ 95% @ 40° C, non-condensing	
	Shock	10 G		30 G	
	Vibration (5 ~ 500 Hz)	1.0 Grms*		2.0 G	
Physical Characteristics	Dimensions (W x H x D)	440 x 177 x 320 mm (17.3" x 7" x 12.6")			
	Weight	18 kg (39.7 lb)			
Compliance	PICMG 2.0 R3.0 CompactPCI Specification				
	PICMG 2.1 R2.0 CompactPCI Hot Swap Specification				
	PICMG 2.11 R3.0 Front-Access Power Connectors Specification				
	PICMG 2.5 R1.0 CompactPCI Computer Telephony Specification (MIC-3043B is not compliant with PICMG 2.5)				
	RoHS, CE, FCC, UL, CCC				

* Without SCSI/IDE/SATA HDD

Backplane Information

Physical Number	Function
6	I/O slot
5	System slot
4	I/O slot
3	I/O slot
2	I/O slot
1	I/O slot

MIC-3811, CT Bus backplane (for MIC-3043A/C/D)

MIC-3812, non-CT Bus backplane (for MIC-3043B)

Recommended Configurations

Enclosure	CPU Board	Rear I/O Board	Chassis Management Module
MIC-3043AE MIC-3043A-BE	MIC-3369C-MxE, MIC-3358A-MxE MIC-3390E, MIC-3390-AE MIC-3392A-MxE, MIC-3392B-MxE	RIO-3309C-AE, RIO-3309S-A2E, RIO-3309S-A1E RIO-3310AE, RIO-3310S-A2E, RIO-3310S-A1E	Included MIC-3924L-AE Optional MIC-3924A-BE MIC-3927AE
MIC-3043BE MIC-3043B-BE	MIC-3369C-MxE, MIC-3358A-MxE MIC-3390E, MIC-3390-AE MIC-3392A-MxE, MIC-3392B-MxE	RIO-3309C-AE, RIO-3309S-A2E, RIO-3310S-A1E RIO-3310AE, RIO-3310S-A2E, RIO-3310S-A1E	
MIC-3043CE MIC-3043C-BE	MIC-3369C-MxE, MIC-3358A-MxE MIC-3390E, MIC-3390-AE MIC-3392A-MxE, MIC-3392B-MxE	RIO-3309S-A1E RIO-3310S-A1E	
MIC-3043DE MIC-3043D-BE	MIC-3369C-MxE, MIC-3358A-MxE MIC-3390E, MIC-3390-AE MIC-3392A-MxE, MIC-3392B-MxE	RIO-3309S-A1E, RIO-3309C-AE, RIO-3309S-A2E RIO-3310S-A1E, RIO-3310S-A2E, RIO-3310AE	

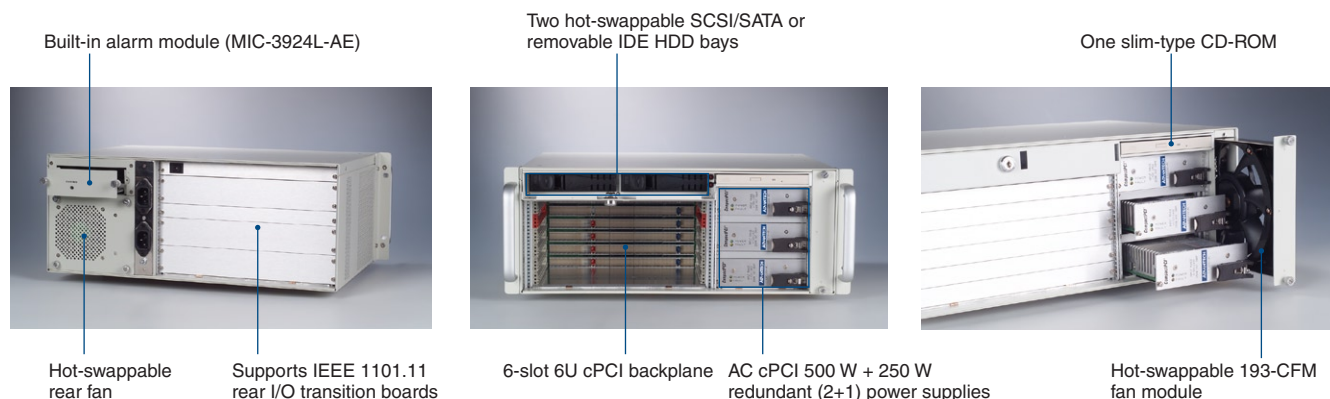
Ordering Information

Part Number	PICMG 2.5	HDD Bay	Media Support	Chassis Management Module	cPCI Power Supply
MIC-3043AE	Yes	IDE	Slim CD-ROM	MIC-3924L-AE	-
MIC-3043A-BE	Yes	IDE	Slim CD-ROM	MIC-3924L-AE	Hot-swap AC cPCI 250 W + 250 W
MIC-3043BE	-	IDE	Slim CD-ROM	MIC-3924L-AE	-
MIC-3043B-BE	-	IDE	Slim CD-ROM	MIC-3924L-AE	Hot-swap AC cPCI 250 W + 250 W
MIC-3043CE	Yes	SCSI	Slim CD-ROM	MIC-3924L-AE	-
MIC-3043C-BE	Yes	SCSI	Slim CD-ROM	MIC-3924L-AE	Hot-swap AC cPCI 250 W + 250 W
MIC-3043DE	Yes	SATA	Slim CD-ROM	MIC-3924L-AE	-
MIC-3043D-BE	Yes	SATA	Slim CD-ROM	MIC-3924L-AE	Hot-swap AC cPCI 250 W + 250 W

Note: Please contact your local distributor to order AC 500W + 250W (2+1) redundant power suppliers.

Accessories

Part Number	Description
1757000190G	One AC cPCI 250 W redundant power module (included)
1757000011	One DC cPCI 250 W redundant power module
968A390022	MIC-3924L-AE alarm module (included)
MIC-3927CE	MIC-3927 intelligent chassis management module (IPMI)



MIC-3042

4U CompactPCI® Enclosure with cPCI Power Supply (CT Bus or PICMG 2.16)



Features

- 8-slot 6U CompactPCI® backplane
- AC cPCI 500 W + 250 W redundant (2+1) power supplies
- PICMG 2.16 (CompactPCI Packet Switching Backplane) compliance
- PICMG 2.5 (CompactPCI Computer Telephony) compliance
- Built-in alarm module (MIC-3924L-AE)

Introduction

The MIC-3042 is a 4U enclosure designed for standard cPCI power supplies. It is equipped with a cPCI 500 W redundant 2+1 power supply with hot-swap support. The system has 8 slots for CompactPCI boards and 6 slots for IEEE 1101.11 rear I/O transition boards. The MIC-3042 comes with a built-in high quality backplane that supports 64-bit / 66 MHz PCI cards. The standard configuration includes a H.110 CT Bus that complies with PICMG 2.5, which is the open architecture used to build telecom solutions.

Specifications

		MIC-3042A		MIC-3042B	
Backplane	6U slot	System x 1, Peripheral x 6, Switch x 1, Rear transition x 8 (80 mm, IEEE1101.11 compliant)		System x 1, Peripheral x 6, Media x 1, Rear transition x 7 (80 mm, IEEE1101.11 compliant)	
	Blade Server Support	Yes		-	
	Bus	Up to 64-bit/66 MHz PCI bus			
	H.110 CT Bus	Yes		Yes	
	V (I/O)	+3.3 V/+5 V (selectable)			
Cooling	Fan	2 (front: 193 CFM, rear: 61.3 CFM)			
Power Supply	Input	AC 100 ~ 254 V @ 50 ~ 60 Hz, full range (MIC-3042X-A)			
	Output	AC cPCI 250 W redundant power module			
		+3.3 V	+5 V	+12 V	-12 V
	Max. Load	36 A	50 A	10 A	1 A
	Min. Load	0 A	2.0 A	0 A	0 A
Environment		Operating		Non-Operating	
	Temperature	0 ~ 45° C (32 ~ 113° F)		-20 ~ 60° C (-4 ~ 140° F)	
	Humidity	20 ~ 90% @ 40° C, non-condensing		10 ~ 95% @ 40° C, non-condensing	
	Shock	10 G		30 G	
	Vibration (5 ~ 500 Hz)	1.0 Grms		2.0 G	
Physical Characteristics	Dimensions (W x H x D)	440 x 177 x 320 mm (17.3" x 7" x 12.6")			
	Weight	18 kg (39.7 lb)			
Reliability	MTBF	Backplane	Fan module	Power supply	
		800,000 hours	50,000 hours @ 25 °C	100,000 hours @ 70% load	
Serviceability	MTTR	5 minutes			
Compliance	PICMG 2.0 R3.0 CompactPCI Specification				
	PICMG 2.1 R2.0 CompactPCI Hot Swap Specification				
	PICMG 2.5 R1.0 CompactPCI Computer Telephony Specification				
	PICMG 2.11 R3.0 Front-Access Power Connectors Specification				
	PICMG 2.16 R1.0 CompactPCI Packet Switching Backplane Specification (MIC-3042B is not compliant with PICMG 2.16)				
	RoHS, CE, FCC, UL, CCC				

Backplane Information

Physical Number	Function
8	Switch slot
7	I/O slot
6	I/O slot
5	I/O slot
4	I/O slot
3	I/O slot
2	I/O slot
1	System slot

MIC-3042A, PICMG 2.16 / CT backplane (for MIC-3042A series)

Physical Number	Function
8	I/O slot
7	I/O slot
6	I/O slot
5	I/O slot
4	I/O slot
3	I/O slot
2	System slot
1	Media blade slot

MIC-3042B, CT backplane (for MIC-3042B series)

Recommended Configurations

Enclosure	CPU Board	Rear I/O Board	Chassis Management Module
MIC-3042AE MIC-3042A-AE	MIC-3369C-MxE MIC-3358A-MxE MIC-3390E, MIC-3390-AE MIC-3392A-MxE, MIC-3392B-MxE	RIO-3309C-AE, RIO-3309S-A2E RIO-3309C-AE, RIO-3309S-A2E RIO-3310S-A2E	Included MIC-3924L-AE or Optional MIC-3927CE
MIC-3042BE MIC-3042B-AE	MIC-3369C-MxE MIC-3358A-MxE MIC-3390E, MIC-3390-AE MIC-3392A-MxE, MIC-3392B-MxE	RIO-3309C-AE, RIO-3309S-A2E RIO-3309C-AE, RIO-3309S-A2E RIO-3310S-A2E	

Ordering Information

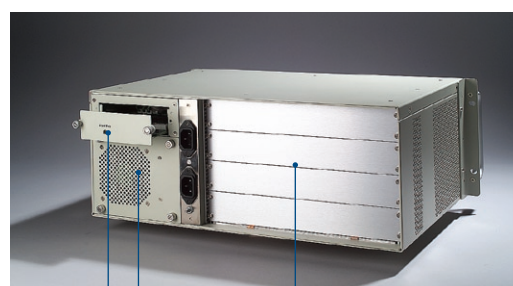
Part Number	PICMG 2.16	PICMG 2.5	PCI	Switch Board Support	Media Blade Support	Chassis Management Module	cPCI Power Supply
MIC-3042AE	Yes	Yes	Yes	Yes	-	MIC-3924L-AE	-
MIC-3042A-AE	Yes	Yes	Yes	Yes	-	MIC-3924L-AE	AC cPCI 500 W + 250 W redundant (2+1)
MIC-3042BE	-	Yes	Yes	-	Yes	MIC-3924L-AE	-
MIC-3042B-AE	-	Yes	Yes	-	Yes	MIC-3924L-AE	AC cPCI 500 W + 250 W redundant (2+1)

Accessories

Part Number	Description
1757000190G	One AC cPCI 250 W redundant power module (included)
968A390022	MIC-3924L-AE alarm module (included)
MIC-3927CE	MIC-3927 intelligent chassis management module (IPMI)



LED board
Hot-swappable 193-CFM fan module
AC cPCI 500 W + 250 W redundant (2+1) power supplies



Built-in alarm board (MIC-3924L-AE)
Hot-swappable rear fan
Supports IEEE 1101.11 rear I/O transition boards

MIC-3927

CompactPCI® Intelligent Chassis Management Module (PICMG® 2.9)



Features

- Compatible with PICMG 2.1, 2.16, and 2.9-compliant components
- Monitors via the Intelligent Platform Management Bus (IPMB) protocol
- Provides isolated IPMI signals for each slot for maximum security and reliability
- Out-of band management interface
- Hot swap support for IPMI based field replaceable components
- Alarm cut off push button on the front panel
- Standalone system monitoring: no driver needed, independent OS

Introduction

The MIC-3927 is a proprietary form factor Chassis Management Module (CMM) intended for use with PICMG* 2.1, 2.16, and 2.9-compliant systems (the CompactPCI* Hot Swap, Packet Switching Backplane, and System Management specifications respectively). The MIC-3927 plugs into a dedicated slot in compatible systems. It provides centralized management and alarm notification for system power supplies and fans as well as single board operation status. The CMM may be paired with a backup for high-availability applications.

The MIC-3927 is essentially a special-purpose single board computer with a CPU, some memory, a PCI bus, an operating system and peripherals. The MIC-3927 monitors and configures IPMI-based components in the chassis. When the thresholds for temperature and voltage limitations are reached or when failure occurs, the CMM will capture an event. At the same time, the MIC-3927 sends SNMP traps and drives the Telco alarm relays that trigger onboard LEDs. The CMM can query FRU information (such as serial number, model number, manufacture date, etc.), detect presence of components (such as fan tray, CPU board, etc.), and monitor the status of each component.

The MIC-3927 also has a built-in Web-based administration interface that allows users to monitor the system's operation from any place with Internet connectivity. The MIC-3927 adds another dimension to the reliability of your most critical applications.

*IPMI function only supported for MIC-3390 and MIC-3392

Sensor Specifications

Voltage	Input	+3.3 V _{DC} , +5 V _{DC} , -5 V _{DC} , +5 V _{SB} , +12 V _{DC} , -12 V _{DC} , VBat
Temperature	Input	1 (onboard)
	Sensor	Thermistor
	Interface	I2C
	Range	-40 ~ 120° C (-40 ~ 248° F)
Fan Speed	Input	9
	Range	700 ~ 10000 rpm
Power Good	Input	4
	Range	High > 2.4 V _{DC} , Low < 0.8 V _{DC}
CPU Board Health	Interface	I2C
	Input	CPU Vcore, CPU fan, CPU temperature (up to 2 CPUs), DC +5 V, DC -5 V, V (I/O), DC +12 V, DC -12 V
	Max. SBC Monitoring	8 boards
Digital Input/Output (optional)	Input	4
	Output	4

Hardware Specifications

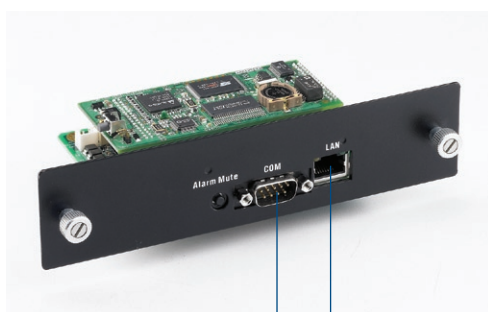
Processor System	CPU	RDC2880	
	Firmware	2 MB Embedded Flash ROM	
	Memory	2 MB SRAM	
Ethernet	Interface	10/100Base-T	
Serial Port	Interface	RS-232	
	Baud Rate	9600 bps	
Miscellaneous	Buzzer support	Yes	
	Time-out Signal for watchdog timer detection	Yes	
Battery	Charge Time	24 hr	
	Battery Type	Ni-MH	
	Capacity	1500 mA-H (full charged, for 15~20 minutes operation, depending on the system configuration)	
	Battery Life	80% capacity @ 20° C after 1000 cycles of charge and discharge	
Power Requirement	Typical	5 V @ 550 mA	
Environment		Operating	Non-Operating
	Temperature	0 ~ 60° C (-32 ~ 140° F)	-20 ~ 70° C (-4 ~ 158° F)
	Humidity	-	5 ~ 95 % RH, non-condensing
Physical Characteristics	Dimensions (W x D)	Kernel module: 40.5 x 93 mm (1.6" x 3.7")	
		Carrier module: 100 x 95 mm (3.9" x 3.7")	

Ordering Information

Part Number	Description
MIC-3927AE	MIC-3927 alarm module for MIC-3056, MIC-3081
MIC-3927BE	MIC-3927 alarm module for MIC-3038, MIC-3041
MIC-3927CE	MIC-3927 alarm module for MIC-3042, MIC-3043

Firmware Specifications

System Status Monitoring and Management	Real-time system status monitoring: provides real-time status display in HTTP/Java graphical format
	Monitor the temperature, fan speed and system voltage
	Alarm event record display
Alarm Notification	E-mail: can setup up to 4 addresses to receive notification e-mails
	Audible alarm sound
	SMS support for receiving short message through mobile phone
Supported Protocol	TCP, UDP, IP, ICMP, DHCP, BOOTP, ARP, SNMP, HTTP, Telnet
Management Function	Web-based remote configuration, control and monitor
	Remote power up and power down
	Firmware upgrade from serial port and Ethernet port
	Supports Time Sync with system board
	The SSL and SSH secure communications across Internet



RS-232 COM port LAN port



Onboard Battery

RIO-3309/3310

6U CompactPCI® Rear Transition Boards

Introduction

The RIO series of rear transition boards provide rear-panel access to the I/O interfaces of Advantech's CompactPCI CPU boards.

RIO-3309C/3309S is designed for the MIC-3358A and MIC-3369C series.

RIO-3310S/3310A is designed for the MIC-3390 and MIC-3392 series.

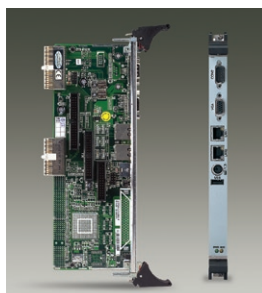
Features

- External rear-panel interface connectors for CPU boards
- Onboard CompactFlash socket
- Ultra 320 SCSI interface
- Supports SATA interface

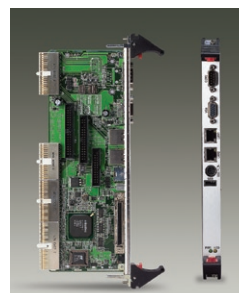


Specifications

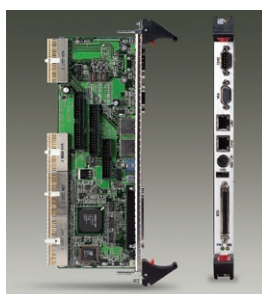
CompactPCI Connector	RIO-3309C: J3, J5; RIO-3309S: J1/J2/J3/J5; RIO-3310S: J1/J2/J3/J5; RIO-3310A: J3/J5			
SCSI Controller	RIO-3309S: Adaptec AIC-7901 Ultra 320 SCSI controller chip supports RAID 0, 1, 10 RIO-3310S: Adaptec AIC-7901 Ultra 320 SCSI control chip supports RAID 0, 1, 10			
Power	Power Consumption	+3.3 V	+5 V	+12 V
		3 A	2 A	1 A
Environment	Operating	Non-Operating		
	Temperature	0 ~ 60° C (32 ~ 140° F)		
	Humidity	-20 ~ 80° C (-4 ~ 176° F)		
Physical Characteristics	Dimensions (W x D)	5 ~ 95%, non-condensing		
	Weight	233.35 x 80 mm (9.2" x 1.5"), 1-slot width		
		0.4 kg (0.88 lb)		



RIO-3309C-AE



RIO-3309S-A1E



RIO-3309S-A2E



RIO-3310S series

I/O Interfaces

I/O	Connector				Interface Location			
	RIO-3309C	RIO-3309S	RIO-3310S	RIO-3310A	RIO-3309C	RIO-3309S	RIO-3310S	RIO-3310A
Keyboard	J5	J5	J5	J5	Rear panel	Rear panel	Rear panel	Rear panel
Mouse	J5	J5	J5	J5	Rear panel	Rear panel	Rear panel	Rear panel
COM1	J5	J5	J5	J5	Internal	Internal	Rear panel	Rear panel
FDD	J3	J3	J3	J5	Internal	Internal	Internal	Internal
IDE	J3	J3	J3/J5	J3/J5	Internal	Internal	Internal	Internal
FE LAN	-	J5	J5	J5	-	Rear panel (optional)	Rear panel (optional)	Rear panel (optional)
GbE LAN	J5	J5	J5	J5	Rear panel	Rear panel	Rear panel	Rear panel
USB	J5	J5	J5	J5	Rear panel/ Internal	Rear panel	Rear panel	Rear panel
VGA	J5	J5	J5	J5	Rear panel	Rear panel	Rear panel	Rear panel
COM2	J5	J5	J5	J5	Rear panel	Rear panel	Rear panel	Rear panel
Ultra 320 SCSI (controller chip on board)	-	J1/J2	J1/J2	-	-	Rear panel/internal	Internal	-
Parallel	-	J3	J3	J3	-	Internal	Internal	Internal
SATA	-	-	-	-	-	-	Internal	Internal

Ordering Information

Part Number	Rear Panel I/O							On-board Header						Slot Width
	Keyboard	Mouse	COM	USB	LAN	VGA	SCSI	COM	USB	SCSI	IDE 40-pin	FDD	Parallel	
RIO-3309C-AE	1*	1*	1	1	2 (GbE)	1	-	1	1	-	1	1	1**	1
RIO-3309S-A1E	1*	1*	1	1	2 (GbE)	1	-	1	1	1***	1	1	1	1
RIO-3309S-A2E	1*	1*	1	1	2 (GbE)	1	1***	1	1	-	1	1	1	1
RIO-3310S-A1E	1*	1*	2	1	2 (GbE)	1	-	-	1	1***	2	1	1	1
RIO-3310S-A2E	1*	1*	2	1	2 (GbE)	1	1***	-	1	-	2	1	1	1
RIO-3310AE	1*	1*	2	1	2 (GbE)	1	-	-	1	-	2	1	1	1

* Y cable is included.

** An optional extension adapter will extend a 2-slot width panel.

*** Only RIO-3310S has the SCSI chipset on board.

RIO-3392MIL

6U CompactPCI® Rear Transition Board for MIC-3392MIL

NEW



Features

- External rear-panel interface connectors for the MIC-3392MIL CPU board
- On-board battery
- Supports SATA, IDE, FDD, LPT, USB2.0, COM, and audio interfaces
- 4 RJ-45 ports on the rear-panel
- 2 DVI-I ports on the rear panel

Introduction

RIO-3392MIL is designed specifically for the MIC-3392MIL series. It contains a rich variety of I/O interfaces and ports on the external rear panel, extending the functional features of MIC-3392MIL.

Specifications

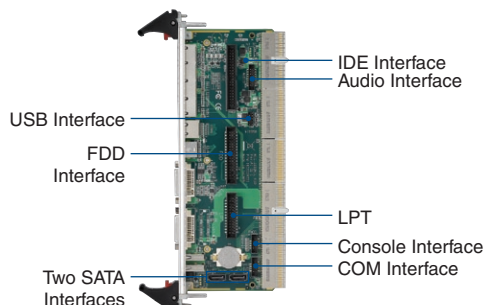
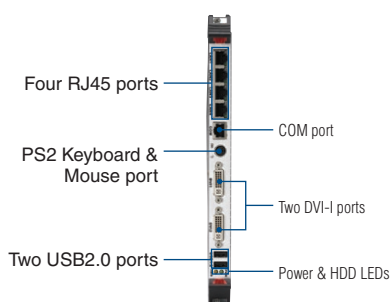
CompactPCI Connector	J3/J4/J5		
Environment	Operating	Non-Operating	
	Temperature	-40 ~ 70° C (-40 ~ 158° F)	
Physical Characteristics	Humidity	5 ~ 85 % @ 45° C, non-condensing	
	Dimensions (W x D)	233.35 mm x 80 mm (9.2" x 1.5"), 1-slot width	
	Weight	0.305 kg (0.672 lbs)	

Recommended Configurations

Rear I/O Board	CPU Board	Enclosure
RIO-3392MIL-AxE Series	MIC-3392MILS-PxE Series	MIC-3039-BE, MIC-3042A/B, MIC-3043A/B/C/D, MIC-3056A, MIC-3081B
RIO-3392MIL-AxE Series	MIC-3392MILC-PxE Series	Customized conduction cool enclosure

Ordering Information

RTM Model Number	Rear Panel					On-board Header/Socket/Connector							CPCI Conn.	Conformal Coating
	LAN	COM	DVI-I	PS2	USB	IDE	FDD	LPT	SATA	COM Interface	Console Interface	USB Interface		
RIO-3392MIL-A1E	4	1	2	1	2	1	1	1	2	1	1	2	J3 ~ J5	-
RIO-3392MIL-A2E	4	1	2	1	2	1	1	1	2	1	1	2	J3 ~ J5	v



Note: final production will not contain J1 and J2 connectors.

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