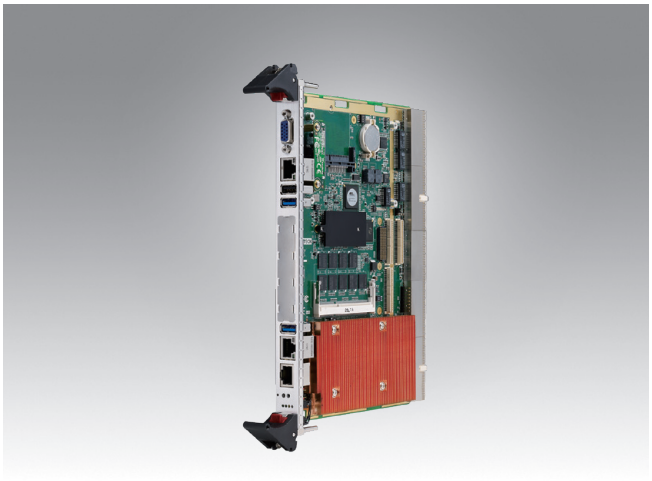
MIC-3396

6U CompactPCI Intel® 4th Gen. Core™ i3/i5/i7 Processor Blade with ECC support



Features

- Supports 4th Generation Intel® Core™ i3/i5/i7 processors and Intel® QM87 PCH with embedded graphic (up to 3 independent displays)
- Up to 16GB (DDR3 1600) low voltage ECC memory (max 8GB on board, socket SO-UDIMM x1, max 8GB)
- Optimized single-slot SBC with 2.5" SATA-III HDD/CFast socket/ on-board flash (optional)
- Two SATA ports, eight USB2.0 ports, two DVI ports, two RS-232 ports, one PS/2 connector, and PCIe x8 interfaces to the Rear Transition Module (RTM)
- Five Gigabit Ethernet ports including two PICMG 2.16 for front and rear connectivity
- PICMG 2.16 R1.0, PICMG 2.1 R2.0, PICMG 2.6 R1.0 compliant

CE FCC

Introduction

Using 4th generation Intel® Core™ i3/i5/i7 processors based on 22nm process technology supporting up to four cores / eight threads at 2.4GHz and 6MB last level cache, the MIC-3396 blade boosts computing performance deploying the latest virtualization, techniques and CPU enhancements. Onboard soldered low voltage DRAM (1.35V) with ECC support and optional memory expansion via an SODIMM socket extend the memory to a maximum of 16GB supporting the most demanding applications in high performance or virtualized environments. Dual channel design and memory speeds up to 1600MT/s along with increased cache size and cache algorithms guarantee maximum memory performance. Combined with the powerful Intel® QM87 chipset, the 4th generation Intel® Core™ processors offer improved I/O performance by leveraging 5GT/s DMI and 3rd generation PCIe interfaces. An onboard XMC/PMC site, and XMC with PCIe x8 gen.2 connectivity can host high speed offload or I/O mezzanines such as the MIC-3666 dual 10GE XMC card. With SATA-III support and up to 7Gbps I/O. the latest enhancements in storage technology such as high speed SSDs or traditional HDDs can be used on the MIC-3396. Five gigabit Ethernet ports based on Intel® GbE controllers for front and rear,including two PICMG 2.16, ensure best in class network connectivity

The processor's integrated enhanced graphics engine (Iris) offers twice the performance over previous generations. With triple independent display support, the MIC-3396 is an ideal fit for demanding workstation applications.

RASUM features integrated in the CPU and chipset combined with PICMG 2.9, IPMI-based management make the MIC-3396 a highly available and reliable computing engine.

The RIO-3316 RTM module supports PS/2 connector with both keyboard and mouse ports, USB 2.0 ports, RS-232 ports, SATA ports, DVI ports, and Gigabit Ethernet ports. Detail please refer to RIO-3316 datasheet. In case of the SATA disk drives and SATA RAID support of the QM87 do not meet performance and reliability requirements, the RIO-3315 SAS version supports a 4-port SAS controller with RAID and fail over support.

Specifications

Processor System	CPU	4th Generation Intel® Core™ i3/i5/i7 mobile processors up to 2.4 GHz (6MB LLC)
	Platform Controller Hub	Intel® QM87
	BIOS	Redundant AMI 8MByte SPI flash
CompactPCI Interface	J1 Connector	32-bit PCI local bus
	J2 Connector	64-bit PCI local bus
	J3 Connector	PICMG2.16 + RTM area, 1x PCIex8
	J4~J5 Connectors	RTM area
XMC/PMC Socket	PCIex8	Gen3 (7GT/s)
	PCI	64-bit/66 MHz
Memory	Technology	DDR3 1600 MHz, dual channel with low voltage and ECC support
	Max. Capacity	Up to 16GB (max. 8GB on-board, max. 8GB SODIMM)
	Socket	SODIMM x1
Graphics	Controller	Intel® embedded graphic controller Iris (triple independent display)
	VRAM	Dynamic
	Resolution	Up to 2048 x 1536, 64k colors at 75Hz
Ethernet	Controller	4 Intel® I210AT single-port Gigabit Ethernet controllers (on PCIe x1 channel)
	Interface	10/100/1000Base-TX Ethernet
	I/O Connector	PICMG 2.16 and RJ-45 x2 (RTM rear panel), RJ-45 x1 (front panel)
	Controller	1 Intel® I217LM single-port Gigabit Ethernet controller
	Interface	10/100/1000Base-TX Ethernet
	I/O Connector	RJ-45 (front panel)
Storage	Onboard HDD/SSD	1 2.5" (SATA-III)
	Channels	Onboard SATA-III connector
	Onboard Flash	SATA-II
	Channels	1 CFast socket (SATA-II) 1 on-board flash (SATA-II optional)
	RTM	SATA-II
	Channels	2 SATA-II connectors

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Specifications (Cont.)

Front I/O	USB3.0	2 type A	
	USB2.0	1 type A	
	VGA	1	
	COM	1 RS-232 on RJ-45	
	LAN	2 10/100/1000 Mbps on RJ-45	
	Front Panel LEDs	x1 blue for Hot Swap, 1x yellow for HDD, x1 green for Master/Drone mode, x1 green BMC Heartbeat, and x1 green for Power	
	Buttons	CPU reset button and BMC reset button	
Rear I/O	USB2.0	6 ports	
	COM	2 ports	
	LAN	4 ports, one connectivity with front port	
	SATA	2 SATA-II	
	PCIe	1 PCIex8 Gen3 7GT/s	
	Display	1 DVI-I and 1 DVI-D	
	Others	PS/2 for keyboard & mouse	
Watchdog Timer	Output	Local Rest and Interrupt	
	Interval	Programmable 1s ~ 255s	
Hardware Monitor	HWM	NCT7904	
BMC	Controller	LPC1768, IPMI v2.0 compliant	
Operating System	Compatibility	Win7, Linux, VxWorks 6.x (on request)	
Power Requirement	Configuration	4HP	
	TDP	Maximum: up to 80W (quad core), 50W (dual core) or less, depending on CPU type	
Physical	Dimensions (W x D)	233.35 x 160.0 mm	
Environment		Operating	Non-operating
	Temperature	0 ~ 55 °C (32 ~ 122 °F)	-40 ~ 85 °C (-40 ~ 185 °F)
	Humidity	95 % @ 40 °C, non-condensing	95 % @ 60 °C, non-condensing
	Vibration (5-500 Hz)	3.5Grms (without on-board 2.5" SATA HDD)	
	Bump		25G, 6ms
	Altitude	15000ft, 55 °C above sea level	40000 ft, -40 °C above sea level
Regulatory	Conformance	FCC Class A, CE, RoHS	
Compliance	Standards	PICMG2.0 R3.0, PICMG2.1 R2.0, PICMG2.9 R1.0, PICMG2.16 R1.0,	

Ordering Information

System Board Model Number	Front Panel					Main On-board Features							
	VGA	USB3.0 (type A)	USB2.0 (type A)	Ethernet (RJ-45)	Console (RJ45)	CPU	Onboard Memory	Cfast Socket	Stroage Channel	SODIMM Socket	BMC	PCIex8	XMC/ PMC
MIC-3396HB-M8E	1	2	1	2	1	i5-4400E	8GB	1	1 SATA-III	1	No	Yes	Yes
MIC-3396HC-M8E	1	2	1	2	1	i7-4700EQ	8GB	1	1 SATA-III	1	Yes	Yes	Yes
MIC-3396HD-M8E	1	2	1	2	1	i7-4700EQ	8GB	1	1 SATA-III	1	Yes	No	No

*Note: For i3 CPU, 4GB on-board memory and on-board flash available by request, please contact your local sales office.

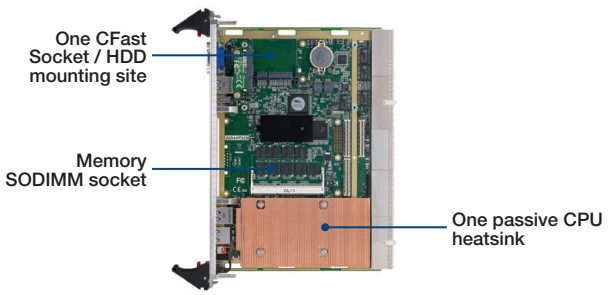
CPU Configurations

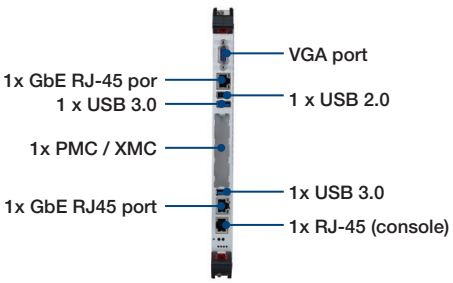
Intel® CPU Model Number	CPU Architecture	# Cores	# Threads	Freq.	Cache	CPU TDP	ECC
i3-4100E	22 nm	2	4	2.4 GHz	3 MB	37W	Yes
i5-4400E	22 nm	2	4	2.7 GHz	3 MB	37W	Yes
i7-4700EQ	22 nm	4	8	2.4 GHz	6 MB	47W	Yes

Related Products

Model number	Configuration
RIO-3316-H1E	RTM Module with 4 LAN ports and USB 2.0 for MIC-3396
MIC-3666-AE	Dual 10 Gigabit Ethernet XMC
MIC-3665-AE	CompactPCI PMC with dual copper (RJ-45) Gigabit Ethernet interfaces
MIC-3665-BE	CompactPCI PMC with dual fiber Gigabit Ethernet interfaces
MIC-3667-AE	Quad copper (RJ-45) Gigabit Ethernet XMC

MIC-3396x-MxE Series





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