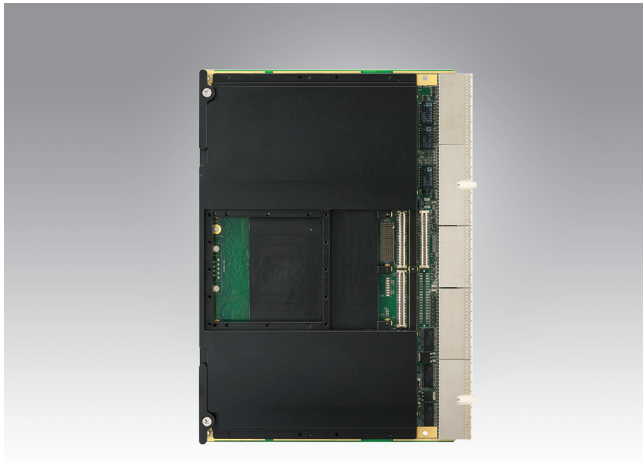# MIC-3395MIL

6U CompactPCI 3rd Generation Intel® Core™ i7 Rugged Processor Blade with ECC

Features

- Supports 3rd Generation Intel® Core™ i3/i5/i7 processors and Intel® QM67 PCH with embedded graphic (dual independent display)
- Up to 16GB (DDR3 1600) ECC memory (max 8GB on board, socket SO-UDIMM x1, max 8GB)
- Conduction cooled with ANSI/VITA30.1-2002 compliancy
- Optimized single-slot SBC with 2.5" SATA-III HDD/CFast socket/ on-board flash (optional)
- TPM
- Two SATA ports, four USB 2.0 ports, two DVI ports, two RS-232 ports, one PS/2 connector, and PCIe x4 interfaces to the Rear Transition Module (RTM)
- Six 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

MIC-3395MIL, a CompactPCI PICMG2.16 compliant single slot 6U CPU board, is available in two different configurations that meet a wide range of environmental requirements for ruggedized application.

Using Intel® 3rd generation core i7 ULV processors, it offers a low power dissipation design without the need for forced air cooling. Ruggedized requirements are addressed by a conduction cooled design for an 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-3395MIL fully utilizes the I/O features of the Intel® chipsets. It supports up to 16GB of 1600MHz DDR3 RAM, an onboard 2.5" Serial ATA HDD or SSD, a CFast slot, an onboard NAND flash (optional), and a set of I/O functions routed through the backplane to a unique rear transition module, which contains two/four LAN ports, two DVI ports, two USB 2.0, one P/S2 port and one RS-232 port on the front panel.

Specifications

Processor System	CPU	3rd Generation Intel® Core™ i7 ULV up to 2.5 GHz (4MB L2 cache)
	Platform Controller Hub	Intel® QM67
	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
	J4~J5 Connectors	RTM area
XMC/PMC Socket	PCIex8	Gen2 (5GT/s)
	PCI	64-bit/66 MHz
Memory	Technology	DDR3 1600 MHz, dual channel with ECC support
	Max. Capacity	Up to 16GB (max. 8GB on-board, max. 8GB SODIMM)
	Socket	204-pin SODIMM x1
Graphic	Controller	Intel® embedded graphic controller Iris (triple independent display)
	VRAM	Dynamic
	Resolution	Up to 2048 x 1536, 64k colors at 75Hz
Ethernet	Controller	5 Intel® 82574L 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® 82579LM 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 soldered NAND Flash (SATA-II optional)
	RTM	SATA-III
	Channels	2 SATA-III connectors
Front I/O	USB2.0	1 type A
	VGA	1
	COM	1 RS232 on RJ45
	LAN	2 10/100/1000 Mbps on RJ45
	Front Panel LEDs	x1 blue/yellow for Hot Swap/HDD, x1 green for Master/Drone mode, x1 yellow BMC Heartbeat, and x1 green for Power
	Buttons	CPU reset button and BMC reset button

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Specifications (Cont.)

Rear I/O	USB2.0	4 ports	
	COM	2 ports	
	LAN	2 ports	
	SATA	2 SATA-III	
	PCIe	1 PCIex4	
	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	NCT6776F	
BMC	Controller	Renesas H8S 2167, IPMI v2.0 compliant	
Operating System	Compatibility	Windows® 2003/XP SP3/2008/Win7, RHEL 6.1, VxWorks 6.x (on request)	
Power Requirement	Configuration	4HP	
	TDP	Maximum: up to 50W (dual core) or less, depending on CPU type	
Physical	Dimension (WxD)	233.35 x 160.0 mm	
Environment		Operating	Non-operating
	Temperature	-40 ~ 70° C (-40 ~ 158° F)	-40 ~ 85° C (-40 ~ 185° F)
	Humidity	95 % @ 40° C, non-condensing	95 % @ 60° C, non-condensing
	Vibration (5-500 Hz)	3.5 Grms (without on-board 2.5" SATA HDD)	
	Bump		25G, 6ms
	Altitude	15000ft above sea level (without conformal coating)	40000 ft, -40° C, above sea level
Regulatory	Conformance	FCC Class A, CE, RoHS	
Compliance	Standards	PICMG2.0 R3.0, PICMG2.1 R.0, PICMG2.9 R1.0, PICMG2.16 R1.0	

Ordering Information

System Board Model Number	Front Panel					Main On-board Features					
	VGA	USB2.0 (type A)	Ethernet (RJ45)	Console (RJ45)	Conduction cool	CPU	Memory	CFast Socket	Storage Channel	SODIMM Socket	BMC
MIC-3395MILS-P4E	1	1	2	1	-	I7-3517UE	4GB	1	1	1	Yes
MIC-3395MILS3-P8E	1	1	2	1	-	I7-3555LE	8GB	1	1	1	No
MIC-3395MILC-P4E	-	-	-	-	Yes	I7-3555LE	4GB	1	-	-	Yes

Part number	Rear Panel								On-board Header/Socket/Connector						
	LAN	USB2.0 (type A)	COM (D-SUB9)	COM (RJ45)	PS/2	DVI-D	DVI-I	VGA	MiniSAS	USB	COM	SATA	SAS (SATA interface)	Slot Width	Conn.
RIO-3395MIL-A1E	2	2	1	-	1	1	-	1	-	-	-	2	-	2*	J3, J4, J5
RIO-3315-A1E	2	2	-	1	1	1	1	-	1	2	1	2	4	1	J3, J4, J5
RIO-3315-C1E	4	2	-	1	1	1	1	-	-	2	1	2	-	1	J3, J4, J5

CPU Information

CPU Type	# of Core	# of Thread	DMI	Frequency	Cache	TDP	Graphics	PCIe
I7-3517UE	2	4	5 GT	1.7 GHz	4 MB	17W	350-900GHz	Gen 3
I7-3555LE	2	4	5 GT	2.5 GHz	4 MB	25W	550-950GHz	Gen 3

Related Products

Model number	Configuration
RIO-3395MIL-A1E	RTM Module with 2 LAN port, 1 DVI, 1 VGA, 1 COM (D-SUB9), 2 USB 2.0
RIO-3315-A1E	RTM Module with SAS Controller for MIC-3395 and MIC-3395MIL
RIO-3315-C1E	RTM Module with 4 LAN ports and USB2.0 for MIC-3395 and MIC-3395MIL
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