MIC-3329

3U CompactPCI® Intel® Quad-Core Atom™ Processor Blade



Features

- Supports Intel[®] Atom™ Processor E3826/E3827/E3845
- Supports up to 4GB DDR3L-1333 soldered ECC memory
- Optional extension module on 8HP and RIO for VGA, LAN, USB, PS/2, Audio, COM ports
- Supports fanless application with optimized heatsink design
- Designed to meet EN50121-4 and EN50155 for railway applications
- PICMG2.0 R3.0, PICMG2.1 R2.0 Compliant



Introduction

The Advantech MIC-3329 is based on Intel[®] Atom[™] technology, previously codenamed Baytrail and is designed to provide balanced performance and power efficiency. The MIC-3329 is a 3U CompactPCI[®] processor blade designed for dual-core Intel[®] Atom E3826/E3827 and quad-core Intel[®] Atom E3845 processors, and up to 4GB soldered DDR3L-1066/1333 ECC memory. It is available in single and dual slot form factor, offering a range of I/O functionality by XTM (8HP) & Rear I/O extensions.

Front panel I/O on the single slot (4HP) provides 2 x RJ45 GbE ports (Switchable with RIO 4HP), 1 x VGA port (Switchable with RIO 4HP), 1 x USB2.0 port and 1 x USB3.0 port.

Front panel I/O on the second layer (XTM) provides 2 x COM ports (RS232/422/485), 1 x PS/2 KB/MS and 1 x Audio ports or 2 x M12 GbE ports, 1 x COM ports (RS232/422/485). The MIC-3329 provides an ideal solution for transportation, railway and factory automation applications. Its robust design from a layout and thermals perspective allows it to meet or exceed EN50155 and EN50121-4 using a very low TDP selection of 7W/8W/10W processors.

Its low power consumption and industrial SoC features make the MIC-3329 a perfect fit for all fanless system applications.

Specifications

CPU Intel® Atom™ Processor E3826/E3827/E3845 Processor System Max Speed Up to 2MB L2 Cache, 1.91 GHz BioS 2 x AMI 8 MByte SPI flash Memory Technology Single Channel DDR3L 1066/1333 MHz with ECC Max. Capacity Up to 4GB on board Other Compact PCI Interface J Connectors 32bit/33MHz PCI local bus Compact PCI Interface J Connector RTM Mode System Master/Drone (Stand alone) Memory Controller Intel® WGI/210 SLXR Gigabil Ethernet Controller Interface PCI to .1, 10/100/1000 Base TX Ethernet Ethernet Controlor 2 x RJ45 to 4HP front (Switchable with RIO 4HP); 2 x M12 Coded to 8HP front Interface Graphics Mode SATA-II Sata Connector SATA-II Storage Mode SATA-II Sata Connector on 8HP and 1 x Clast connector on 8HP and 1 x Clast socket on RTM (Switchable with NAND flash, upon request) Front I/O Connector 1 x VGA 20 type A, 1 x USB3 0 type A Class on RTM (Switchable with RIO) Front I/O Mode Sata 1 x US2 0 type A, 1 x USB3 0 type A Class on RTM (Switchable with RIO) Class 1 x VGA (Switchable with RIO)			
BIOS2 x AMI 8 MByte SPI flashMemoryTechnologySingle Channel DDR3L 1066/1333 MHz with ECCMax. CapacityUp to 4GB on boardCompact PCI InterfaceJ1 Connectors3 2bit/33MHz PCI local busCompact PCI InterfaceJ2 ConnectorRTMModeSystem Master/Drone (Stand alone)EthernetControllerIntel® WGI210 SLJXR Gigabit Ethernet ControllerInterfacePCle 1.0 x 1, 10/100/1000 Base TX EthernetI/O Connector2 x RJ45 to 4HP front (Switchable with RIO 4HP); 2 x M12 Coded to 8HP frontGraphicsChipsetIntegrated in processorGraphicsModeSATA-IIStorageObeSATA-IIStorageUSB1 x US2.0 type A, 1 x USB.0 type AV/OChannelsOption 1: 1 x SATA connector on 8HP option 2: 1 x SATA connector on 8HP option 2: 1 x SATA connector on 8HP option 2: 1 x SATA connector on 8HP and 1 x Cfast socket on RTM (Switchable with NAND flash, upon request)Front I/OUSB1 x US2.0 type A, 1 x USB.0 type AV/OX NA2 x 10/100/1000Mbps on RJ45 (Switchable with RIO)LAN2 x 10/100/1000Mbps on RJ45 (Switchable with RIO)Front I/OFront Panel LEDsx 1 blue/yellow for HS swap/HDD, x 1 green for Master/Drone modeBH (XTM)Option 1: 2 x DB9 COW; 1 x PS/2; 1 x Audio Line in/out Option 2: 1 x DB9 COW; 2 x M12 X-coded GbE	Processor System	CPU	Intel® Atom™ Processor E3826/E3827/E3845
Memory Technology Single Channel DDR3L 1066/1333 MHz with ECC Memory Max. Capacity Up to 4GB on board Compact PCI Interface J1 Connectors 32bit/33MHz PCI local bus Compact PCI Interface J2 Connector RTM Mode System Master/Drone (Stand alone) Controller Ethernet Intel® WGI210 SLJXR Gigabit Ethernet Controller Interface PCIe 1.0 x1, 10/100/1000 Base TX Ethernet V/O Connector 2 x RJ45 to 4HP front (Switchable with RIO 4HP); 2 x M12 Coded to 8HP front Graphics V/O Connector 2 x RJ45 to 4HP front (Switchable with RIO 4HP) 2 x M12 Coded to 8HP front Storage Mode SATA-II Storage Integrated in processor V/O Connector 1 x VGA 2560 x 1600, 60Hz Storage Option 1: 1 x SATA connector on 8HP option 2: 1 x USAS 0 type A		Max Speed	Up to 2MB L2 Cache, 1.91 GHz
Memory Max. Capacity Up to 4GB on board Compact PCI Interface J1 Connectors 32bit/33MHz PCI local bus Compact PCI Interface J2 Connector RTM Mode System Master/Drone (Stand alone) Controller Ethernet Interface PCIe 1.0 x 1, 10/100/1000 Base TX Ethernet Controller Interface PCIe 1.0 x 1, 10/100/1000 Base TX Ethernet V/O Connector V/O Connector 2 x RJ45 to 4HP front (Switchable with RIO 4HP); 2 x M12 Coded to 8HP front Graphics V/O Connector 1 x VGA to 4HP front (Switchable with RIO 4HP) Resolution 1 x VGA to 4HP front (Switchable with RIO 4HP) Resolution 1 x VGA to 4HP front (Switchable with RIO 4HP) Resolution 1 x VGA 2560 x 1600, 60Hz Storage Option 1: 1 x SATA connector on 8HP option 2: 1 x SATA connector on 8HP opti		BIOS	2 x AMI 8 MByte SPI flash
Max. Capacity Up to 468 on board Pompact PCI Interface J1 Connectors 32bit/33MHz PCI local bus Mode System Master/Drone (Stand alone) Controller Intel® WGI210 SLJXR Gigabit Ethernet Controller Interface PCIe 1.0 x 1, 10/100/1000 Base TX Ethernet // O Connector 2 x RJ45 to 4HP front (Switchable with RIO 4HP); 2 x M12 Coded to 8HP front // O Connector 2 x RJ45 to 4HP front (Switchable with RIO 4HP); 2 x M12 Coded to 8HP front (Fipset Integrated in processor (Jo connector 1 x VGA to 4HP front (Switchable with RIO 4HP) Resolution 1 x VGA 2560 x 1600, 60Hz Storage Option 1: 1 x SATA connector and 1x Cfast connector on 8HP Option 2: 1 x SATA connector on 8HP and 1 x Cfast socket on RTM (Switchable with NAND flash, upon request) VGA 1 x VGA (Switchable with RIO) Kora 1 x VGA (Switchable with RIO) Kora 1 x VGA (Switchable with RIO) Kora 2 x 10/100/1000Mbps on RJ45 (Switchable with RIO) Kora 1 x UGA (Switchable with RIO) Kora 1 x UGA (Switchable with RIO) Kora 1 blue/yellow for Hot Swap/HDD, x 1 green for Power, and x 1 green for Master/Drone mode <	Memory	Technology	Single Channel DDR3L 1066/1333 MHz with ECC
Compact PCI Interface J2 Connector RTM Mode System Master/Drone (Stand alone) Ethernet Controller Intel® WGI210 SLJXR Gigabit Ethernet Controller Interface PCIe 1.0 x 1, 10/100/1000 Base TX Ethernet I/O Connector 2 x RJ45 to 4HP front (Switchable with RIO 4HP); 2 x M12 Coded to 8HP front V/O Connector 2 x RJ45 to 4HP front (Switchable with RIO 4HP); 2 x M12 Coded to 8HP front Graphics Chipset Integrated in processor V/O Connector 1 x VGA to 4HP front (Switchable with RIO 4HP) Resolution 1 x VGA 2560 x 1600, 60Hz Resolution 1 x VGA 2560 x 1600, 60Hz Storage Option 1: 1 x SATA connector and 1 x Cfast connector on 8HP Option 2: 1 x SATA connector on 8HP and 1 x Cfast socket on RTM (Switchable with NAND flash, upon request) VGA 1 x US2.0 type A, 1 x US83.0 type A VGA 1 x VGA (Switchable with RIO) LAN 2 x 10/100/1000Mbps on RJ45 (Switchable with RIO) Front Panel LEDs x 1 blue/yellow for Hot Swap/HDD, x 1 green for Power, and x 1 green for Master/Drone mode 8HP (XTM) Option 1: 2 x DB9 COM; 1 x PS/2; 1 x Audio Line in/out Option 2: 1 x DB9 COM; 2 x M12 X-coded GbE		Max. Capacity	Up to 4GB on board
ModeSystem Master/Drone (Stand alone)EthernetControllerInterfacePCle 1.0 x 1, 10/100/1000 Base TX Ethernet// O Connector2 x RJ45 to 4HP front (Switchable with RI0 4HP); 2 x M12 Coded to 8HP front// O Connector2 x RJ45 to 4HP front (Switchable with RI0 4HP); 2 x M12 Coded to 8HP frontGraphicsChipset// O Connector1 x VGA to 4HP front (Switchable with RI0 4HP)Resolution1 x VGA 2560 x 1600, 60HzResolution1 x VGA 2560 x 1600, 60HzStorageModeStorageOption 1: 1 x SATA connector and 1 x Cfast connector on 8HP Option 2: 1 x SATA connector on 8HP and 1 x Cfast socket on RTM (Switchable with NAND flash, upon request)Front I/OUSB1 x US2.0 type A, 1 x USB.0 type AKIAN2 x 10/100/1000Mbps on RJ45 (Switchable with RI0)Front I/OFront Panel LEDsx 1 blue/yellow for Hot Swap/HDD, x 1 green for Power, and x 1 green for Master/Drone modeBHP (XTM)Option 1: 2 x DB9 COM; 1 x PS/2; 1 x Audio Line in/out Option 2: 1 x DB9 COM; 2 x M12 X-coded GbE		J1 Connectors	32bit/33MHz PCI local bus
EthernetIntel® WGI210 SLJXR Gigabit Ethernet ControllerEthernetInterfacePCIe 1.0 x 1, 10/100/1000 Base TX EthernetI/O Connector2 x RJ45 to 4HP front (Switchable with RIO 4HP); 2 x M12 Coded to 8HP frontGraphicsChipsetIntegrated in processorI/O Connector1 x VGA to 4HP front (Switchable with RIO 4HP)Resolution1 x VGA 2560 x 1600, 60HzModeSATA-IIStorageOption 1: 1 x SATA connector and 1x Cfast connector on 8HP Option 2: 1 x SATA connector on 8HP and 1 x Cfast socket on RTM (Switchable with NAND flash, upon request)Front I/OUSB1 x UGA (Switchable with RIO)Front I/OFront Panel LEDsx 1 blue/yellow for Hot Swap/HDD, x 1 green for Power, and x 1 green for Master/Drone mode8HP (XTM)Option 1: 2 x DB9 COM; 1 x PS/2; 1 x Audio Line in/out Option 2: 1 x DB9 COM; 2 x M12 X-coded GbE	Compact PCI Interface	J2 Connector	RTM
Ethernet Interface PCIe 1.0 x 1, 10/100/1000 Base TX Ethernet I/O Connector 2 x RJ45 to 4HP front (Switchable with RIO 4HP); 2 x M12 Coded to 8HP front Graphics Chipset Integrated in processor V/O Connector 1 x VGA to 4HP front (Switchable with RIO 4HP) Resolution 1 x VGA 2560 x 1600, 60Hz Mode SATA-II Storage Option 1: 1 x SATA connector and 1x Cfast connector on 8HP Option 2: 1 x SATA connector on 8HP and 1 x Cfast socket on RTM (Switchable with NAND flash, upon request) VGA 1 x US2.0 type A, 1 x USB3.0 type A VGA 1 x VGA (Switchable with RIO) LAN 2 x 10/100/1000Mbps on RJ45 (Switchable with RIO) Front I/O Front Panel LEDs x 1 blue/yellow for Hot Swap/HDD, x 1 green for Power, and x 1 green for Master/Drone mode 8HP (XTM) Option 1: 2 x DB9 COM; 1 x PS/2; 1 x Audio Line in/out Option 2: 1 x DB9 COM; 2 x M12 X-coded GbE		Mode	System Master/Drone (Stand alone)
I/O Connector2 x RJ45 to 4HP front (Switchable with RIO 4HP); 2 x M12 Coded to 8HP frontGraphicsChipsetIntegrated in processorI/O Connector1 x VGA to 4HP front (Switchable with RIO 4HP)Resolution1 x VGA 2560 x 1600, 60HzModeSATA-IIStorageOption 1: 1 x SATA connector and 1x Cfast connector on 8HP Option 2: 1 x SATA connector on 8HP and 1 x Cfast socket on RTM (Switchable with NAND flash, upon request)Front I/OUSB1 x US2.0 type A, 1 x USB3.0 type AVGA1 x VGA (Switchable with RIO)LAN2 x 10/100/1000Mbps on RJ45 (Switchable with RIO)Front I/OFront Panel LEDsx 1 blue/yellow for Hot Swap/HDD, x 1 green for Power, and x 1 green for Master/Drone modeBHP (XTM)Option 1: 2 x DB9 COM; 1 x PS/2; 1 x Audio Line in/out Option 2: 1 x DB9 COM; 2 x M12 X-coded GbE		Controller	Intel® WGI210 SLJXR Gigabit Ethernet Controller
Graphics Chipset Integrated in processor I/O Connector 1 x VGA to 4HP front (Switchable with RIO 4HP) Resolution 1 x VGA 2560 x 1600, 60Hz Mode SATA-II Channels Option 1: 1 x SATA connector and 1x Cfast connector on 8HP Option 2: 1 x SATA connector on 8HP and 1 x Cfast socket on RTM (Switchable with NAND flash, upon request) VGA 1 x US2.0 type A, 1 x USB3.0 type A VGA 1 x VGA (Switchable with RIO) LAN 2 x 10/100/1000Mbps on RJ45 (Switchable with RIO) Front I/O Front Panel LEDs x 1 blue/yellow for Hot Swap/HDD, x 1 green for Power, and x 1 green for Master/Drone mode BHP (XTM) Option 1: 2 x DB9 COM; 1 x PS/2; 1 x Audio Line in/out Option 2: 1 x DB9 COM; 2 x M12 X-coded GbE	Ethernet	Interface	PCIe 1.0 x 1, 10/100/1000 Base TX Ethernet
Graphics I/O Connector 1 x VGA to 4HP front (Switchable with RIO 4HP) Resolution 1 x VGA 2560 x 1600, 60Hz Mode SATA-II Storage Option 1: 1 x SATA connector and 1x Cfast connector on 8HP Option 2: 1 x SATA connector on 8HP and 1 x Cfast socket on RTM (Switchable with NAND flash, upon request) VGA 1 x US2.0 type A, 1 x USB3.0 type A VGA 1 x VGA (Switchable with RIO) LAN 2 x 10/100/1000Mbps on RJ45 (Switchable with RIO) Front I/O Front Panel LEDs x 1 blue/yellow for Hot Swap/HDD, x 1 green for Power, and x 1 green for Master/Drone mode 8HP (XTM) Option 1: 2 x DB9 COM; 1 x PS/2; 1 x Audio Line in/out Option 2: 1 x DB9 COM; 2 x M12 X-coded GbE		I/O Connector	2 x RJ45 to 4HP front (Switchable with RIO 4HP); 2 x M12 Coded to 8HP front
Resolution 1 x VGA 2560 x 1600, 60Hz Mode SATA-II Channels Option 1: 1 x SATA connector and 1x Cfast connector on 8HP Option 2: 1 x SATA connector on 8HP and 1 x Cfast socket on RTM (Switchable with NAND flash, upon request) VGA 1 x US2.0 type A, 1 x USB3.0 type A VGA 1 x VGA (Switchable with RIO) LAN 2 x 10/100/1000Mbps on RJ45 (Switchable with RIO) Front I/O Front Panel LEDs x 1 blue/yellow for Hot Swap/HDD, x 1 green for Power, and x 1 green for Master/Drone mode 8HP (XTM) Option 1: 2 x DB9 COM; 1 x PS/2; 1 x Audio Line in/out Option 2: 1 x DB9 COM; 2 x M12 X-coded GbE		Chipset	Integrated in processor
Mode SATA-II Storage Option 1: 1 x SATA connector and 1x Cfast connector on 8HP Option 2: 1 x SATA connector on 8HP and 1 x Cfast socket on RTM (Switchable with NAND flash, upon request) VGA 1 x US2.0 type A, 1 x USB3.0 type A VGA 1 x VGA (Switchable with RIO) LAN 2 x 10/100/1000Mbps on RJ45 (Switchable with RIO) Front I/O Front Panel LEDs x 1 blue/yellow for Hot Swap/HDD, x 1 green for Power, and x 1 green for Master/Drone mode 8HP (XTM) Option 1: 2 x DB9 COM; 1 x PS/2; 1 x Audio Line in/out Option 2: 1 x DB9 COM; 2 x M12 X-coded GbE	Graphics	I/O Connector	1 x VGA to 4HP front (Switchable with RIO 4HP)
Storage Option Channels Option 1: 1 x SATA connector and 1x Cfast connector on 8HP Option 2: 1 x SATA connector on 8HP and 1 x Cfast socket on RTM (Switchable with NAND flash, upon request) VB 1 x US2.0 type A, 1 x USB3.0 type A VGA 1 x VGA (Switchable with RIO) LAN 2 x 10/100/1000Mbps on RJ45 (Switchable with RIO) Front I/O Front Panel LEDs x 1 blue/yellow for Hot Swap/HDD, x 1 green for Power, and x 1 green for Master/Drone mode 8HP (XTM) Option 1: 2 x DB9 COM; 1 x PS/2; 1 x Audio Line in/out Option 2: 1 x DB9 COM; 2 x M12 X-coded GbE		Resolution	1 x VGA 2560 x 1600, 60Hz
Channels Option 2: 1 x SATA connector on 8HP and 1 x Cfast socket on RTM (Switchable with NAND flash, upon request) USB 1 x US2.0 type A, 1 x USB3.0 type A VGA 1 x VGA (Switchable with RIO) LAN 2 x 10/100/1000Mbps on RJ45 (Switchable with RIO) Front I/O Front Panel LEDs x 1 blue/yellow for Hot Swap/HDD, x 1 green for Power, and x 1 green for Master/Drone mode 8HP (XTM) Option 1: 2 x DB9 COM; 1 x PS/2; 1 x Audio Line in/out Option 2: 1 x DB9 COM; 2 x M12 X-coded GbE		Mode	SATA-II
Front I/O VGA 1 x VGA (Switchable with RIO) LAN 2 x 10/100/1000Mbps on RJ45 (Switchable with RIO) Front I/O Front Panel LEDs x 1 blue/yellow for Hot Swap/HDD, x 1 green for Power, and x 1 green for Master/Drone mode 8HP (XTM) Option 1: 2 x DB9 COM; 1 x PS/2; 1 x Audio Line in/out Option 2: 1 x DB9 COM; 2 x M12 X-coded GbE	Storage	Channels	
Front I/O LAN 2 x 10/100/1000Mbps on RJ45 (Switchable with RIO) Front I/O Front Panel LEDs x 1 blue/yellow for Hot Swap/HDD, x 1 green for Power, and x 1 green for Master/Drone mode BHP (XTM) Option 1: 2 x DB9 COM; 1 x PS/2; 1 x Audio Line in/out Option 2: 1 x DB9 COM; 2 x M12 X-coded GbE		USB	1 x US2.0 type A, 1 x USB3.0 type A
Front I/O Front Panel LEDs x 1 blue/yellow for Hot Swap/HDD, x 1 green for Power, and x 1 green for Master/Drone mode BHP (XTM) Option 1: 2 x DB9 COM; 1 x PS/2; 1 x Audio Line in/out Option 2: 1 x DB9 COM; 2 x M12 X-coded GbE	Front I/O	VGA	1 x VGA (Switchable with RIO)
8HP (XTM) Option 1: 2 x DB9 COM; 1 x PS/2; 1 x Audio Line in/out Option 2: 1 x DB9 COM; 2 x M12 X-coded GbE		LAN	2 x 10/100/1000Mbps on RJ45 (Switchable with RIO)
Option 2: 1 x DB9 COM; 2 x M12 X-coded GbE		Front Panel LEDs	x 1 blue/yellow for Hot Swap/HDD, x 1 green for Power, and x 1 green for Master/Drone mode
Buttons System reset button		8HP (XTM)	
		Buttons	System reset button

Specifications (Cont.)

To RTM	USB	2 x US2.0 type A,						
	VGA	1 x VGA (Switchable with front)	1 x VGA (Switchable with front)					
	LAN	2 x 10/100/1000Mbps on RJ45 (Switchable w	2 x 10/100/1000Mbps on RJ45 (Switchable with front)					
	8HP (XTM)	2 x COM port on DB9 (RS232/422/485)	2 x COM port on DB9 (RS232/422/485)					
BIOS	Boot Options	SATA, USB, network (PXE)	SATA, USB, network (PXE)					
Watchdog Timer	Output	Local reset						
	Interval	Programmable 1s ~ 255s						
Operating System	Compatibility	Windows7, Windows 10, Linux, CentOS6.6, VxWorks 6.9 & 7.0						
Physical	Dimension & Weight	3U/ 4HP&8HP: 100mm x 160 mm	3U/ 4HP&8HP: 100mm x 160 mm					
		Operating	Non-operating					
	Temperature	-40 ~ 70 °C (-40 ~ 158 °F) Fanless	-40 ~ 85 °C (-40 ~ 185 °F)					
Environment	Humidity	95 % @ 40 °C, non-condensing	95 % @ 60 °C, non-condensing					
	Vibration	2Grms (X,Y,Z 1H/axis, w/o HDD)	2G					
	Shock	30 G, 11ms, each axis three times						
Regulatory	Conformance	FCC Class A, CE, RoHS EN50121-4, EN50155						
Compliance	Standards	PICMG2.0 R3.0, PICMG2.1 R2.0						

Supported CPU Configurations

Intel [®] CPU Model Number	# Cores	Freq.	Cache	Memory Types	CPU TDP
Intel [®] Atom [™] Processor E3845	4	1.91GHz	2 MB L2 Cache	DDR3L-1333	10W

Ordering Information

	Front/Rear Panel								On Board Features		
	4HP				8HP XTM						
	RJ45 LAN (1)	USB2.0	USB3.0	VGA (2)	CPU	M12 LAN	COM	Audio	PS/2	SATA Conn.	Cfast Socket ⁽³⁾
P/N List	Front Board										
MIC-3329C1-D2E	2	1	1	1	E3845	2	1	NA	NA	1	1
MIC-3329C1-D1E	2	1	1	1	E3845	NA	2	1	1	1	NA
P/N List	RIO Board										
MIC-3329R1-D1E	2	2	NA	1		NA	2	NA	NA	NA	1

Notes:

(1)(2) are switchable between front and rear boards. On board NAND flash is requested by customer.

(3): MIC-3329R1-D1E Cfast socket is only active in MIC-3329C1-D1E

Related Products

Peripheral board	Description
MIC-3955	3U CPCI 4 or 8 ports RS232/422/485 communication card, with RIO support
MIC-3958	3U CPCI 4/2 port RJ45 or M12 X-code Gigabit Ethernet Card, with RIO support
MIC-3022	4U enclosure for 3U cards, with RIO support
MIC-3023	3U enclosure for 3U cards, with RIO support

Front Board









