MIC-6314

OpenVPX CPU Blade with 4th/ 5th Generation Intel® Core™ Processor

Features

- 4th/ 5th Generation Intel® Core™ processor, up to 4 cores / 8 threads
- Intel® QM87 PCH
- Triple independent display support
- OpenVPX MOD6-PAY-4F1Q2U2T-12.2.1-2 profile compliant
- Onboard and SO-DIMM DDR3L-1600, up to 16 GB, with ECC support
- TwoPCIEx8 ports on the data plane and two PCIex8 ports on the extension plane
- Four 1000BASE-T ports on Base interface (two configurable to SERDES)
- Two 1000BASE-T front panel ports
- One SSD and one onboard flash storage device

Introduction

The MIC-6314 is Advantech's next generation single processor 6U VPX blade, based on the 4th/ 5th Generation Intel® Core™ embedded platform with increased cache size and efficiency, as well as instruction set improvements. The MIC-6314 provides two configurable PCIE x 8 ports in the VPX data plane and two PCI Express ports x8 lanes in the VPX expansion plane to enable the highest performance available in the 6U VPX form factor compute intense applications. These PCIE interfaces offer high speed up to PCIE gen. 2 (5Gb/s) throughput, low latency, scalable, error recoverable deterministic interconnectivity to the mainstream peripherals and I/O cards such as DSP and FPGA cards. The PCIE widths and ports on the data plane and the extension plane of MIC-6314 is user configurable, which make MIC-6314 capable to replace the PCIE switch blade in a small system.

With a SO-DIMM socket and additional soldered, onboard DRAM with ECC in a dual channel design running up to 1600MT/s, the MIC-6314 can be integrated into various harsh environments while maintaining maximum memory throughput, and supports memory expansion by using the latest SO-DIMM technology simultaneously.

Tailored for harsh environments, the MIC-6314 has a native ruggedized convection cooled heat sink adaptable to various chassis environments; with the alternated optional air cooled heat sink, additional I/O is provided on the front panel. An onboard soldered, industrial SSD is included for maximum reliability, and a SSD socket is also available for a cost-efficient, modular storage. By using Intel®'s powerful PCH (Lynx Point) with its advanced SATA controller, the MIC-6314 offers high storage capacity at up to 6Gbps transfer speed. An onboard XMC site with PCIe x8 gen.3 connectivity can host high speed offload or I/O mezzanines. Two USB 3.0 ports on the front panel can connect to external devices with up to 5Gbps data rate. Network and remote connectivity can be achieved via a RS-232 console (RJ-45) and two GbE RJ-45 ports, powered by Intel®'s latest Gigabit Ethernet controller.

The Intel® next generation graphics engine Iris Pro offers up to 2x the graphic performance compared to previous generation solutions. Triple independent display support can be implemented by using VGA and 2 DVI ports on MIC6314. Audio is powered by a ALC892 controller via the backplane interface, and provides media support. A PCIEinterface is reserved for the optional M.2 high speed storage.Besides the modern M.2 storage, three SATA III one SATA II and four USB ports (2x USB 3.0, 2x USB 3.0) are also connected to the backplane to fulfill the demand for extra IO ports or storage. Four GbE ports (two SERDES selectable) support system level IP connectivity, and four UART interfaces (RS232/422/485 selectable) can be leveraged to interface to legacy devices and consoles.

Specifications

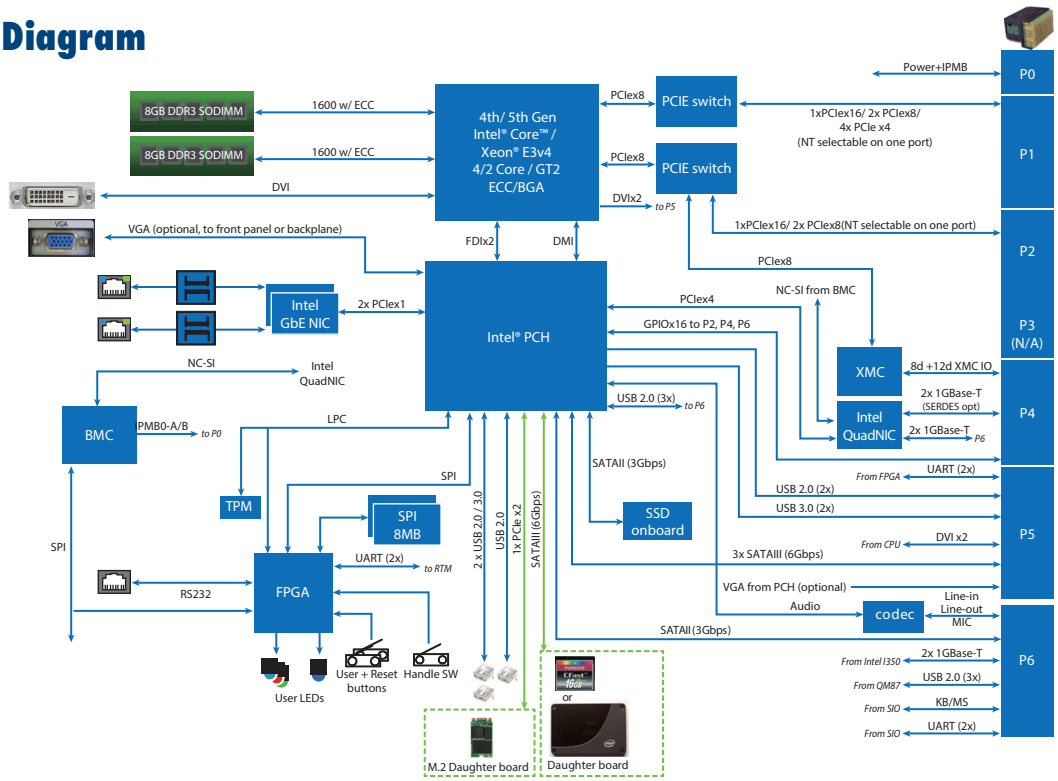
Processor System	CPU	Intel® Core™ I7-5850EQ/i5-4402E*
	Max. Speed	3.4 GHz
	Chipset	Intel® QM87
	BIOS	Redundant AMI UEFI based 8MByte SPI flash
Memory	Technology	Dual channel DDR3L 1600MHz w/ ECC
	Max. Capacity	Configurable up to 16GB
	Socket	8GB memory soldered onboard, 1x 204-pin SODIMM socket max. to 8GB
VPX Interface	P1	2x PCIEx8 Gen2 configurable to 1 x 16 or 4 x 4
	P2	2x PCIex8 (1 port NT Capable)
	P4	8d+12d XMC IO;, 2x 10/100/1000BT (alternative of SerDes) from I350
	P5	2x USB3.0; 2x USB 2.0; 3x SATA-III; DVI x2; 2x UART(RS-232/422/485 switchable)
	P6	2x 10/100/1000BT; Audio from ALC892; 2x USB 2.0; KB/Mouse from SIO;1x SATA II
Graphics	Controller	Intel® Iris™ Pro Graphics 6200 (3 independent displays)
Ethernet	Controller	Intel® I350-AM4 Quad Port Gigabit Ethernet Controller to backplane; 2x I210 to front panel
Front I/O Interface	Serial (COM)	1 RS-232 on RJ-45 connector,
	Ethernet	2 x RJ-45 10/100/1000BASE-T
	USB	2x USB 3.0, 1x USB2.0
	Miscellaneous	XMC, DVI
Operating System	Compatibility	Linux; Windows7
Storage	Onboard Flash	64G SATA
Power Requirement	Consumption	59 W total power envelope with 47W CPU
Physical Characteristics	PCB Dimensions	4HP, 233.35 x 160 mm (9.2" x 6.3") (W x D)
	Weight	0.95kg without peripherals

Last updated : 21-Jun-2017

Specifications (Cont.)

Environment		Operating (with 30 CFM airflow)	Non-operating
	Temperature	-40 ~ 70° C	-50 ~ 100° C
	Humidity	95% @ 40° C, non-condensing	95% @ 60° C, non-condensing
	Shock	VITA 47, OS2 VITA 47, OS1 (ruggedized convection cooled)	
	Vibration	VITA 47, V2 (ruggedized convection cooled) 0.008 g²/Hz, 2 Grms, 5-500Hz (convection cooled)	
	Altitude	50,000ft @ -40° C above sea level	
Compliance	VPX	OpenVPX (VITA 65), REDI (VITA 48), IPMI 2.0	
	Safety	FCC class A, CE, RoHS	
	EMC	FCC47 CFR Part15, Class A, CE Mark (EN55022/EN55024/EN300386)	

Block Diagram



	Front Panel				Main On-board Features					
Part Number	**Display**	**USB**	**Ethernet (RJ45)**	**Console (RJ45)**	**CPU**	**Onboard Memory**	**Onboard Flash**	**External storage**	**SODIMM Socket**	**XMC site**
MIC-6314-A1A4E	DVI x1	2.0x1; 3.0x2	2	1	I7-5850EQ	8GB	64GB	SSD site	Yes	No
MIC-6314-A2A4E (POR)*	DVI x1	2.0x1; 3.0x2	2	1	I7-5850EQ	8GB	64GB	M.2 site	Yes	Yes
MIC-6314-B1C4E	VGA x1	3.0x2	0	0	i5-4402E	8GB	64GB	SSD site	No	No

Ordering Information**

Model number	Configuration
MIC-6314-A1A4E	MIC-6314 with I7-5850EQ, convection heat sink, SSD site
MIC-6314-A2A4E	MIC-6314 with I7-5850EQ, convection heat sink, XMC & M.2 site
MIC-6314-B1C4E	MIC-6314 with i5-4402E, ruggedized convection cooled heat sink, SSD site

*: For the other Intel® 4th/5th generation Core family CPU availability, please contact your local sales office.