CPU-71-16

VMEbus SBC - Intel Core i7



- **Legacy VME or VME64 Compatible**
- **2nd Generation Core™ i7**
- **MIL-STD-810F Versions**
- **Convection and Conduction-cooled**
- **RTM Available for Rear I/O Support**

Features

VME Compatible - Tundra Universe IID PCI-VMEbus interface provides VME64 compatibility and backward compatibility with older VME backplanes

High Perfomance and Low Power - Dual core processing at less than 25W typical power consumption enables cool operation at extended temperature

Gigabit Ethernet - Three Gigabit Ethernet ports are provided, one on the front and two on the rear, VITA 31.1 compatible

MIL-STD Versions - The CPU-71-16 is offered in versions that support wedge locks for high shock and vibration immunity, and conduction-cooling. Conformal coating is available for all versions

Description

The CPU-71-16 is a high performance Single Board Computer (SBC) based on the VMEbus 6U form factor. The CPU-71-16 is offered in both convection cooled and ruggedized conduction cooled variants, meeting the needs of numerous commercial and military applications requiring maximum processing power, low power consumption, and small physical footprint.

At the heart of the CPU-71-16 there is an Intel 2nd Generation Core i7 ULV Sandy Bridge Processor and a QM67 Cougar Point Platform Controller Hub (PCH). These two devices form the central processing backbone of the design. With a dual-channel memory controller integrated in the processor, the CPU-71-16 supports up to 8 GB of DDR3 SDRAM running at up to 1333MHz.

The CPU-71-16 supports two PMC and one optional XMC sites: the on-board XMC site is connected to the Core i7 CPU by one PCIe x8 (Gen 2); the two PMC sites are implemented with a PCIe to PCI bridge connected to the QM67 PCH with a PCIe x1 link. The VME interface to the backplane is implemented with the Universe IID PCI-VMEbus interface controller.

The CPU-71-16 offers both front panel and P2/P0 Ethernet ports: an Intel 82579 10/100/1000BaseT Ethernet controller is routed to an RJ45 interface on the front panel access, while an 82571EB dual 10/100/1000 BaseT, provides two additional Gigabit Ethernet ports routed to either P2 or P0 in compliance with the VITA 31.1 Ethernet backplane network. Three RS-232 ports and an LPT1 port are also routed to P2.

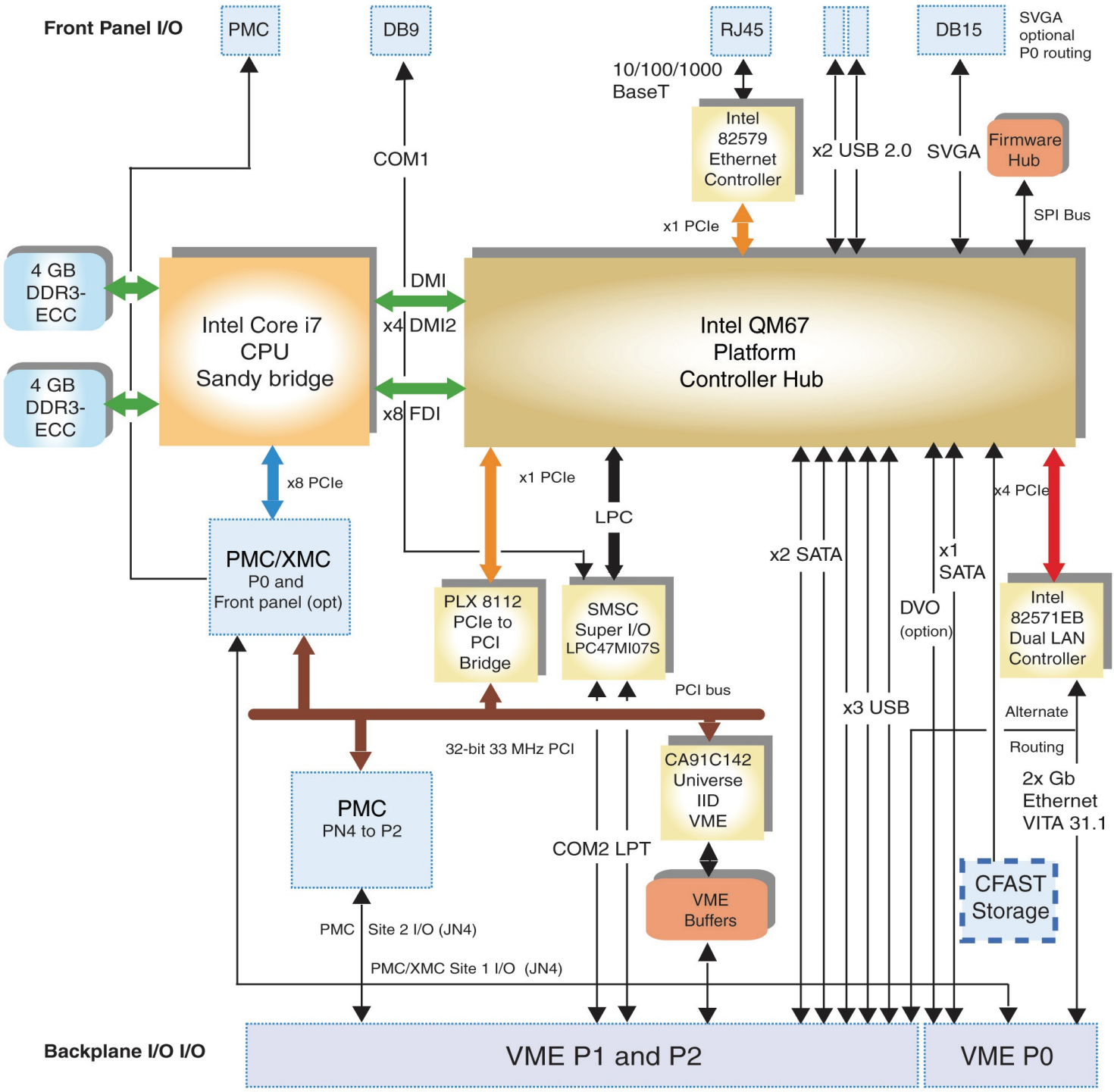
The CPU-71-16 supports on board CFast (SATA) card for bootable storage. Extended temperature and conduction cooled versions are also available.

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Specifications		
PROCESSOR	CPU	Intel Core i7-2610UE / 1.5GHz, 17W
	Chipset	Mobile Intel QM67
BIOS	Type	Phoenix SecureCore Tiano UEFI
Platform Controller Hub (PCH)	Platform Controller Hub (PCH)	Intel Cougar Point QM67 Platform Controller Hub – PCI Express Base Specification, Revision 2.0 – Enhanced DMA controller, interrupt controller, and timer functions – Integrated 3G Serial ATA host controllers with independent DMA – USB host interface with support for eight USB ports – System Management Bus (SMBus) Specification, Version 2.0 with additional support for on-board I2C devices – Supports Intel Rapid Storage Technology – Supports Intel Virtualization Technology for Directed I/O – Supports buffered mode generating extra clocks from a clock chip – Analog Display port (VGA) – Firmware Hub (FWH) interface
MEMORY	RAM	4GB DDR3-ECC Soldered Memory
STORAGE	CFAST	On-board connector for bootable high-spped CFAST
	EEPROM	64Mbit EEPROM on SPI bus for BIOS
I/O INTERFACES	Ethernet	82579 BaseT single channel via x4 PCIe from PCH – 82571EB BaseT dual channel via x4 PCIe from PCH
	Super I/O	SMSC LPC4M10S7 Super I/O: 2x COM Ports Support RS-232, 1x LPT interface
	PMC/XMC	PCI x8 Express Bus from Processor to XMC site 1 (JN4 I/O to P2) – 32-bit, 33MHz PCI bus available to both PMC sites
	VME Rear I/O	P0 VITA TA 31.1 compatible dual Gb Ethernet, PMC/XMC site 1 I/O, 1x SATA 3G, Digital Video Output (optional), optional routing of SVGA – P2 COM2, LPT, 3x USB 2.0, 2x SATA 3G, 2x 10/100/1000Base-T (if P0 not populated), PMC site 2 I/O
	Front Panel I/O	10/100/1000 BaseT (RJ45 connnector), 2x USB 2.0, COM1 (DB9 connector), and high density DB15 VGA connector (alternate routing to P0 available) – Optional PMC/XMC site 1 I/O access
OTHER	Sensors	On-board temperature monitoring via SMBus
POWER	Consumption	Estimated +5V @5A (typ) – Total Power: 25W (typ) based upon 2610UE processor – Actual power depends on CPU-71-16 product configuration and XMC and USB loads (Power consumption values subject to change without notice)
ENVIRONMENT	Operating Temp	0 to +70°C (-40 to +85° C versions available)
	Storage Temp	- 50 to +85°C
	Operating Humidity	20 to 95% non-condensing
	Storage Humidity	0 to 100% non-condensing
MECHANICAL	Compliance	6U VMEbus Form Factor
	Cooling	Rugged/Conduction-Cooled: Available in conduction-cooled versions – Optional wedge locks provide high shock and vibration immunity per 1101.2 – Convection and Conduction-cooled versions have conformal coating as an option – Available in standard and extended operating tempearture range
SOFTWARE	OS	Support for Windows 7, Windows 10

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