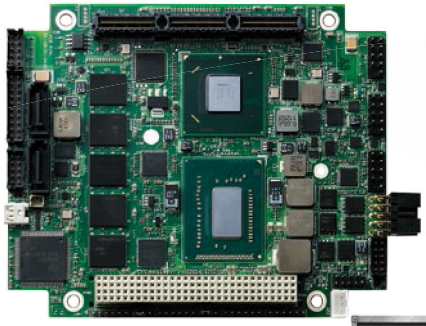
CM-920

Extreme Rugged™ PCI/104-Express Single Board Computer with 3rd Generation Intel® Core™ Processor



CM = CoreModule®

Features

- Dual-core 3rd Generation Intel® Core™ Processor
- Up to 4GB industrial grade soldered-down ECC 1600MHz DDR3 memory
- One HDMI, one VGA, and one 18/24-bit LVDS display interfaces
- 8GB industrial grade solid state drive (SSD)
- One PCIe x16 (Gen 3) and 1 x4 or 4 x1 (Gen 2)
- Two SATA 6 Gb/s ports, two Gigabit Ethernet, four USB 2.0 interfaces, and two serial ports
- PCI/104-Express Type 1 and PCI/104 expansion interfaces
- Extreme Rugged™ operating temperature -40°C to +85°C
- 50% thicker PCB for high vibration environments

Specifications

Core System

CPU	Intel® Core™ i7-3517UE 1.7GHz (up to 2.8GHz Turbo), 4MB L3 cache, 17W, dual core
	Intel® Celeron® 807UE 1.0GHz, 1MB L3 cache, 10W, single core
Chipset	Mobile Intel® QM67 Express Chipset (PCH)
Memory	2 or 4GB single channel industrial grade solder down ECC 1600 MHz DDR3 memory
BIOS	AMI EFI with CMOS backup in 16 Mb SPI flash
Hardware Monitor	Supply voltages and CPU temperature
Watchdog Timer	Programmable timer range to generate RESET
Technologies	PAVP 3.0, Intel® AMT 8.0, Intel® VT, Intel® AES-NI, Intel® HT, Intel® HD Graphics with Dynamic Frequency, Intel® Turbo Boost , Dynamic Turbo, Intel® AVX 1.0, Intel® Quick Sync Video
Expansion Busses	PCI/104 (32-bit 33/66MHz)
	PCI/104-Express Type 1 with 1 of PCI Express x16 (Gen3) bus
	SMBus (system), 2 of USB 2.0, 4 of PCI Express x1

Video

Integrated Graphics	HD Graphics 4000 at 350-1000 MHz
Integrated Video	DirectX 11.0, OpenGL 3.1, and OCL 1.1
Media Processing	Decode (HW JPEG & MJPEG decode), encode (full HW MPEG2 encode), transcode Intel® Clear Video HD Technology + enhanced media processing
VGA Interface	Analog VGA support with 300 MHz DAC
	Analog monitor support up to QXGA (2048 x 1536) and VGA hot plug
LVDS Interface	Dual-channel 18/24-bit LVDS
Digital Display Interface	One DVI

Audio

Chipset	Integrated on Mobile Intel® QM67 Express Chipset, available on HDMI port

Ethernet

10/100/1000Mbps	Two GbE: one from PCH using Intel® 82579 PHY, one from Intel® 82574 MAC/PHY

I/O Interface

Chipset	Integrated on Mobile Intel® QM67 Express Chipset
USB	Four USB 2.0 ports (plus two to the PCI/104-Express stack)
SATA	Two SATA 6 Gb/s with support for RAID 0,1
Storage	Onboard 8GB industrial grade SSD
Serial	Two RS-232 Serial ports implemented in LPC based Super I/O

Power Specifications

Input Power	5V (3.3V and 12V if required by the PCI/104-Express stack)
Power States	Supports S1, S4, S5
Power Consumption	9W typical

Mechanical and Environmental

Form factor	PCI/104 Express
Dimensions	116mm x 96mm
Board Thickness	2.36mm (0.093")
Operating Temperature	Standard: -20°C to +70°C
	Extreme Rugged™: -40°C to +85°C (CPU throttling at 800MHz, no throttling to +75°C)
Storage Temperature	-55°C to +85°C
Humidity	90% at 60°C non-condensing
Shock	50G peak-to-peak, 11ms duration, MIL-STD-202G Method 213B
Vibration	Operating: 11.96 Grms, 50-2,000 Hz, each axis, MIL-STD-202G Method 214A

Operating Systems

Standard Support	Windows 7, Linux
Extended Support (BSP)	WES 7, WES 2009, WEC 7, VxWorks 6.9, QNX 6.5

Ordering Information

Modules

Model Number	Description/Configuration
CM-920-R-10	PCI-104™ with Intel® Celeron® 807UE 1.0GHz, 10W, 2GB solder down DDR3 1600 memory, 8GB SSD, 18/24 bit LVDS, VGA, HDMI, SATA, PCI
CM-920-R-17	PCI/104-Express with Intel® Core™ i7-3517UE 1.7GHz, 17W, 2GB solder down DDR3 1600 memory, 8GB SSD, 18/24 bit LVDS, VGA, HDMI, SATA, PCI Express, PCI
CM-920-R-18	PCI/104-Express with Intel® Core™ i7-3517UE 1.7GHz, 17W, 4GB solder down DDR3 1600 memory, 8GB SSD, 18/24 bit LVDS, VGA, HDMI, SATA, PCI Express, PCI
CM-920-L-10	CM-920 Quick Start Kit includes CM-920-R-10, cable kit, CM920-TM-CU. USB stick with BSP/drivers and manuals
CM-920-L-17	CM-920 Quick Start Kit includes CM-920-R-17, cable kit, CM920-TM-CU. USB stick with BSP/drivers and manuals

Accessories

Model Number	Description/Configuration
CM-920-X-01	CM-920 cable kit (RoHS). Additional cables to be defined as required for extreme rugged pin headers
CM-920-TM-AL	CM-920 Aluminum Heatspreader
CM-920-TM-CU	CM-920 Copper Heatsink
CM-920-TM-FAN	CM-920 Aluminum/Copper Heatsink with Fan

Recommended Configurations

Model Number	Description/Configuration
CM-920-R-10 (ETT), (CC)	CM-920-R-10, -40°C to +85°C (optional), coating (optional)
CM-920-R-17 (ETT), (CC)	CM-920-R-17, -40°C to +85°C (optional), coating (optional)

Note: All specifications are subject to change without further notice.

ADLINK TECHNOLOGY INC.