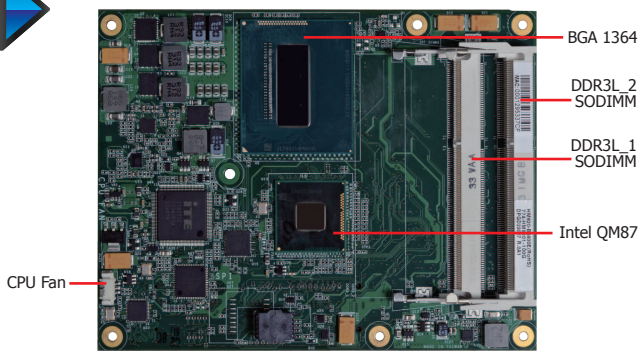
4th Gen Intel® Core™
COM Express® Basic

HM920-QM87

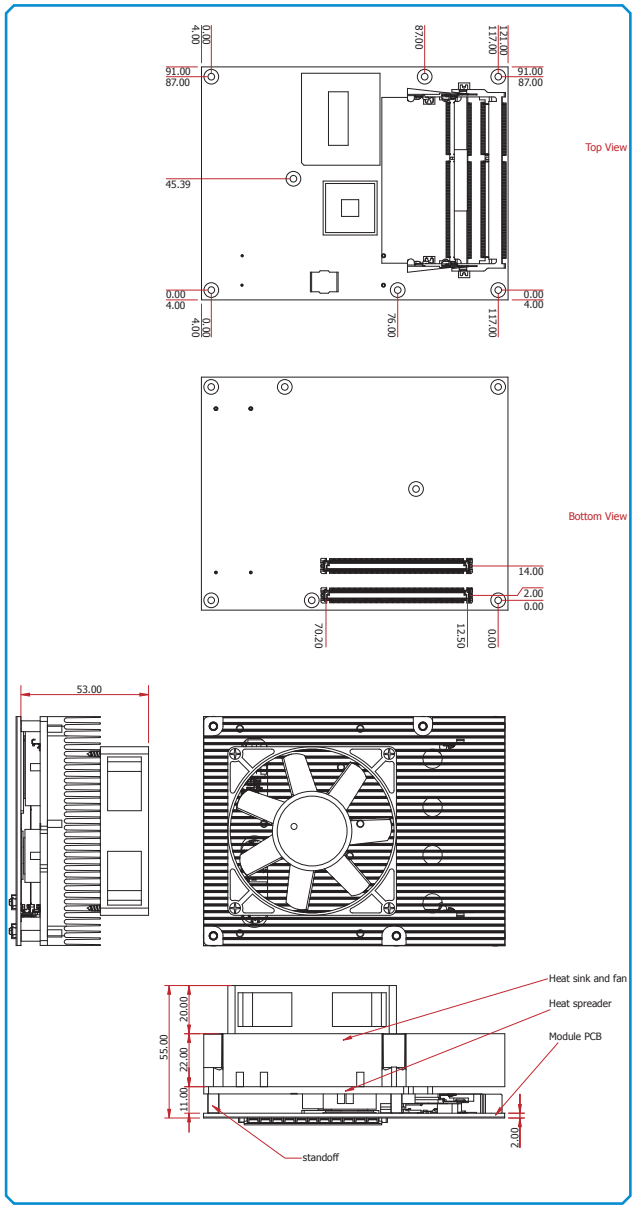
QM87



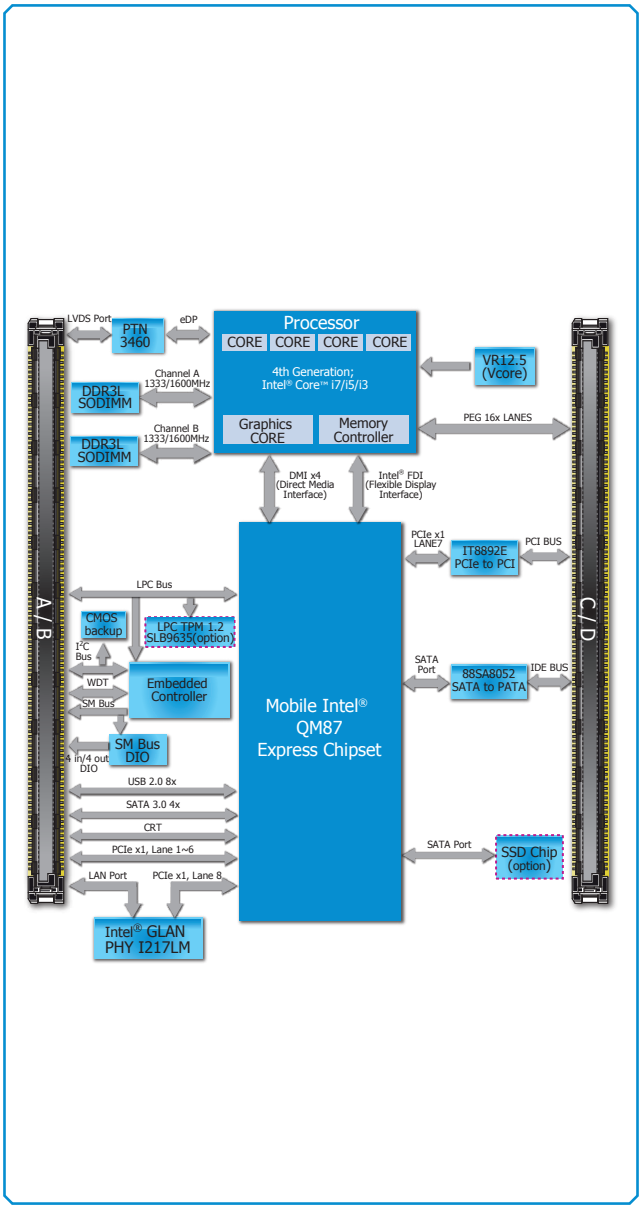
Features

MEMORY	2 DDR3L SODIMM up to 16GB
EXPANSION	1 PCIe x16, 6 PCIe x1, 4 PCI
	1 LPC, 1 SMBus, 1 I²C, 1 IDE
	1 VGA, 1 LVDS
	8 USB 2.0
	4 SATA 3.0
	SSD (optional)
	4-bit input and 4-bit output GPIO
LAN	1 LAN
DIMENSIONS	COM Express® R2.1 Basic, Type 2
	95mm x 125mm (3.74" x 4.9")

Mechanical Drawing



Block Diagram



HM920-QM87

Specifications

PROCESSOR
- 4th generation Intel® Core™ processors
- BGA 1364 packaging technology
- 22nm process technology
  Please refer to the Ordering Information below

CHIPSET
- Intel® QM87 Express Chipset

SYSTEM MEMORY
- Two 204-pin DDR3L SODIMM sockets
- Supports DDR3L 1333/1600MHz SODIMM
- Supports up to 16GB system memory
- DRAM device technologies: 1Gb, 2Gb and 4Gb DDR3L DRAM technologies are supported for x8 and x16 devices, unbuffered, non-ECC

ONBOARD GRAPHICS FEATURES
- Intel® HD Graphics 4600
- Supports 1 VGA and 1 LVDS
- VGA: resolution up to 2048x1536 @ 60Hz
- LVDS: NXP PTN3460, 24-bit, dual channel, resolution up to 1920x1200 @ 60Hz
- Intel® Clear Video Technology
- Intel® Advanced Vector Extensions (Intel® AVX) Instructions
- Supports DirectX 11.1, OpenGL 3.2, OpenCL 1.2

ONBOARD AUDIO FEATURES
- Supports High Definition Audio interface

ONBOARD LAN FEATURES
- Intel® I217LM with iAMT9.0 Gigabit Ethernet Phy
- Integrated 10/100/1000 transceiver
- Fully compliant with IEEE 802.3, IEEE 802.3u, IEEE 802.3ab

SERIAL ATA (SATA) INTERFACE
- Supports 4 SATA 3.0 with data transfer rate up to 6Gb/s
- Integrated Advanced Host Controller Interface (AHCI) controller
- Supports RAID 0/1/5/10
- Supports Intel® Smart Response Technology

SSD-optional
- 2GB/4GB/8GB/16GB/32GB/64GB
- Write: 30MB/sec (max), Read: 70MB/sec (max)
- SATA to SSD onboard

INTEL ACTIVE MANAGEMENT TECHNOLOGY (AMT)
- Supports iAMT9.0
- Out-of-band system access
- Remote troubleshooting and recovery
- Hardware-based agent presence checking
- Proactive alerting
- Remote hardware and software asset tracking

IDE INTERFACE
- Supports up to two IDE devices
- DMA mode: Ultra ATA up to 100MB/s

TRUSTED PLATFORM MODULE (TPM) - optional
- Provides a Trusted PC for secure transactions
- Provides software license protection, enforcement and password protection

EXPANSION INTERFACES
- Supports 8 USB 2.0 interfaces
- Supports 1 PCIe x16 Gen 3 interface
- Supports 6 PCIe x1 interfaces
- Supports 4 PCI interfaces (PCI 2.3)
- Supports LPC interface
- Supports SMBus interface
- Supports I^2C interface
- Supports IDE interface
- Supports 4-bit input and 4-bit output GPIO

DAMAGE FREE INTELLIGENCE
- Monitors CPU temperature and overheat alarm
- Monitors CPU fan speed and failure alarm
- Monitors Vcore/1.05V/DDR voltages and failure alarm

BIOS
- AMI BIOS
  - 64Mbit SPI BIOS

WATCHDOG TIMER
- Software programmable from 1 to 255 seconds

POWER
- Input: 12V, VCC_RTC, 5VSB (optional)

POWER CONSUMPTION
- TBD

OS SUPPORT
- Windows XP Professional x86 & SP3 (32-bit)
- Windows XP Professional x64 & SP2 (64-bit)
- Windows 7 Ultimate x86 & SP1 (32-bit)
- Windows 7 Ultimate x64 & SP1 (64-bit)
- Windows 8 Enterprise x86 (32-bit)
- Windows 8 Enterprise x64 (64-bit)

TEMPERATURE
- Operating: 0°C to 60°C
- Storage: -20°C to 85°C

HUMIDITY
- 5% to 90%

PCB
- Dimensions
  - COM Express® Basic
  - 95mm (3.74") x 125mm (4.9")
- Compliance
  - PICMG COM Express® R2.1, Type 2

Ordering Information

Model Name		Chipset	Temperature	Memory	SSD		Processors
HM920	**-**	**QM87**	**B**	**S**	**0**	**-**	**4700EQ**
			B: 0°C to 60°C	S: Socket	0: None 2: 2GB 4: 4GB 8: 8GB 1: 16GB 3: 32GB 6: 64GB		4700EQ: Intel® Core™ i7-4700EQ, 6M Cache, up to 3.4 GHz, 47W 4400E: Intel® Core™ i5-4400E, 3M Cache, up to 3.3 GHz, 37W 4402E: Intel® Core™ i5-4402E, 3M Cache, up to 2.7 GHz, 25W 4100E: Intel® Core™ i3-4100E, 3M Cache, up to 2.4 GHz, 37W 4102E: Intel® Core™ i3-4102E, 3M Cache, up to 1.6 GHz, 25W

Packing List
- 1 HM920 board
- 1 QR (Quick Reference)
- 1 DVD

Optional Items
- COM330-B carrier board kit
- Heat spreader with heat sink and fan: 761-HSWMBL-000G

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