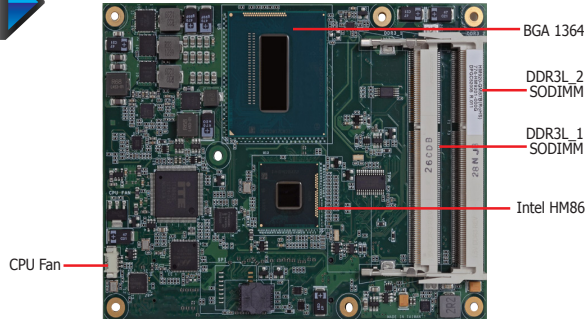




4th Gen Intel® Core™
COM Express® Basic

HM920-HM86

HM86

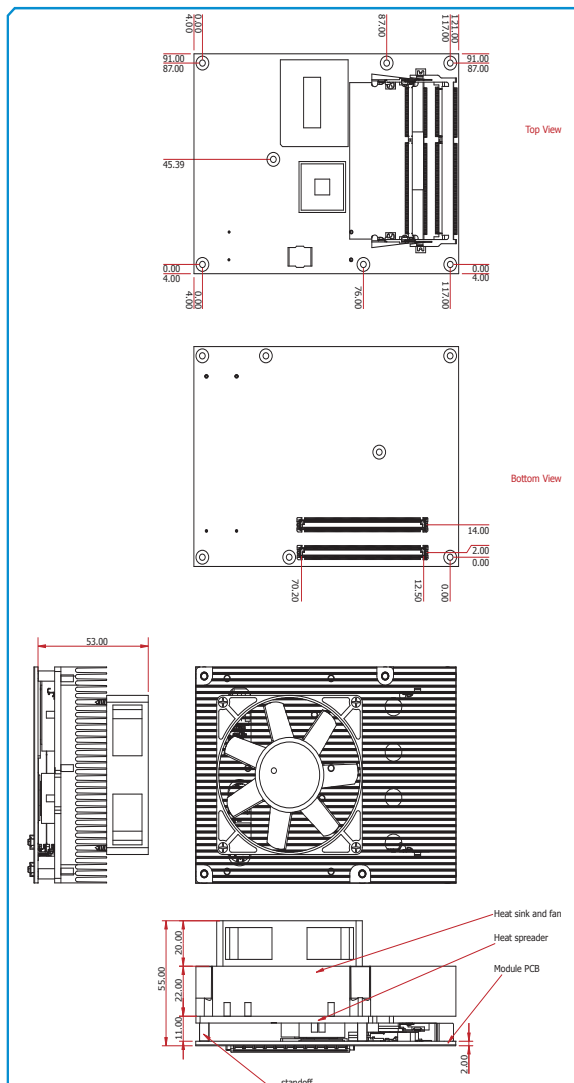


Features

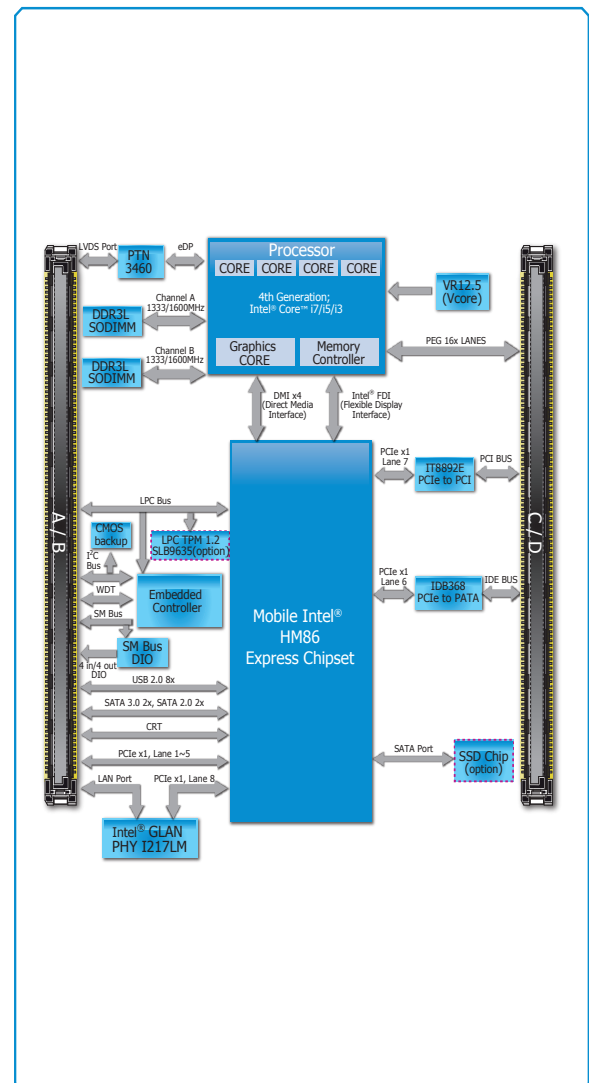
MEMORY	2 DDR3L SODIMM up to 16GB
EXPANSION	1 PCIe x16, 5 PCIe x1, 4 PCI 1 LPC, 1 SMBus, 1 I ² C, 1 IDE 1 VGA, 1 LVDS 8 USB 2.0 4 SATA: 2 SATA 3.0, 2 SATA 2.0 SSD (optional) 4-bit input and 4-bit output GPIO
LAN	1 LAN
DIMENSIONS	COM Express® R2.1 Basic, Type 2 95mm x 125mm (3.74" x 4.9")



Mechanical Drawing



Block Diagram



**4th Gen Intel® Core™
COM Express® Basic**


HM920-HM86

Specifications * Optional and is not supported in standard model. Please contact your sales representative for more information.

PROCESSOR

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

CHIPSET

- Intel® HM86 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 4.0, OpenCL 1.2

ONBOARD AUDIO FEATURES

- Supports High Definition Audio interface

ONBOARD LAN FEATURES

- Intel® I217LM 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 2 SATA 3.0, 2 SATA 2.0
- Supports 2 SATA 3.0, 1 SATA 2.0, and 1 SSD*
- Integrated Advanced Host Controller Interface (AHCI) controller

SSD*

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

TRUSTED PLATFORM MODULE (TPM)*

- Provides a Trusted PC for secure transactions
- Provides software license protection, enforcement and password protection

IDE INTERFACE

- Supports one IDE device
- DMA mode: Ultra ATA up to 100MB/s
- PIO mode: up to 16MB/s

EXPANSION INTERFACES

- Supports 8 USB 2.0 interfaces
- Supports 1 PCIe x16 Gen 3 interface
- Supports 5 PCIe x1 interfaces
- Supports 4 PCI interfaces (PCI 2.3)
- Supports LPC interface
- Supports SMBus interface
- Supports I²C 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*

POWER CONSUMPTION

- HM920-HM86BS0-4100E: 37.62W with i3-4100E at 2.4GHz and 1x 4GB DDR3L SODIMM

OS SUPPORT

- Windows XP Professional x86 & SP3 (32-bit) (limited function)
- 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%

MTBF

- 728,093 hrs @ 25°C; 415,277 hrs @ 45°C
- Calculation model: Telcordia Issue 2, Method I Case 3
- Environment: GB, GC – Ground Benign, Controlled

PCB

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

CERTIFICATION

- CE
- FCC Class B
- RoHS

Ordering Information

Model Name	Processor	Memory	SSD	Power	Thermal	Temperature
HM920-HM86BS0-4400E	Intel® Core™ i5-4400E, 3M Cache, 2.7GHz (3.3GHz), 37W	2 SODIMM	None	ATX/AT	None	0°C to 60°C
HM920-HM86BS0-4400E	Intel® Core™ i5-4400E, 3M Cache, 2.7GHz (3.3GHz), 37W	2 SODIMM	None	ATX/AT	Cooler	0°C to 60°C
HM920-HM86BS0-4402E	Intel® Core™ i5-4402E, 3M Cache, 1.6GHz (2.7GHz), 25W	2 SODIMM	None	ATX/AT	None	0°C to 60°C
HM920-HM86BS0-4402E	Intel® Core™ i5-4402E, 3M Cache, 1.6GHz (2.7GHz), 25W	2 SODIMM	None	ATX/AT	Cooler	0°C to 60°C
HM920-HM86BS0-2000E	Intel® Celeron® 2000E, 2M Cache, 2.2GHz, 37W	2 SODIMM	None	ATX/AT	Cooler	0°C to 60°C
HM920-HM86BS0-2002E	Intel® Celeron® 2002E, 2M Cache, 1.5GHz, 25W	2 SODIMM	None	ATX/AT	Cooler	0°C to 60°C

Packing List

- 1 HM920 board
- 1 DVD
- Heat spreader with heat sink and fan: 761-HSWMBL-000G

Optional Items

- COM330-B carrier board kit: 770-COM330-000G
- Heat spreader: A71-011029-000G

www.dfi.com

DFI reserves the right to change the specifications at any time prior to the product's release. Changes thereafter will be based on the product's revision. Please contact your sales representative for the exact revision offered in your area. All product names mentioned are trademarks of their respective companies. © December 16, 2016 DFI Inc.

Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

US

sales@assured-systems.com

Sales: +1 347 719 4508

Support: +1 347 719 4508

1309 Coffeen Ave
Ste 1200
Sheridan
WY 82801
USA

EMEA

sales@assured-systems.com

Sales: +44 (0)1785 879 050

Support: +44 (0)1785 879 050

Unit A5 Douglas Park
Stone Business Park
Stone
ST15 0YJ
United Kingdom

VAT Number: 120 9546 28

Business Registration Number: 07699660