

Features

- Intel® Core™ i7/i5/i3 Processor
- Intel® QM57 chipset
- Up to 8 GB Dual Channel DDR3 SDRAM at 1066 MHz (optional ECC)
- Six PCIe x1, one PCIe x16 for graphics (or general purpose x8/4/1)
- 18/24-bit LVDS and Embedded DisplayPort
- SATA 3 Gb/s IDE (PATA), Gigabit Ethernet, USB 2.0

Specifications

Core System

CPU	1st Generation Intel® Core™ i7/i5/i3, 35nm process, BGA type Intel® Core™ i7-610E Processor (4M Cache, 2.53 GHz) 35 W Intel® Core™ i5-520E Processor (3M Cache, 2.40 GHz) 35 W Intel® Core™ i7-620LE Processor (4M Cache, 2.00 GHz) 25 W Intel® Core™ i7-620UE Processor (4M Cache, 1.06 GHz) 18 W Intel® Core™ i3-330E Processor (3M Cache, 2.13 GHz) 35W Intel® Celeron® Processor P4505 (2M Cache, 1.86 GHz) 35 W Intel® Celeron® Processor U3405 (2M Cache, 1.06GHz) 18W
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Memory	Dual channel 800/1066 MHz DDR3 memory up to 8 GB in dual stacked SODIMM socket; ECC memory for CBE series only
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Chipset	Intel® Mobile QM57
L2 Cache	2 MB (Celeron® M), 4/3 MB (Intel® Core™ i7 / i5)

BIOS	AMI EFI with CMOS backup in 16 Mbit SPI flash
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Hardware Monitor	Supply voltages and CPU temperature
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Watchdog Timer	Programmable timer ranges to generate RESET
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Expansion Busses	PCI Express x16 bus for discrete graphics solution or general purpose PCI Express (2 x8 or 2 x4 or 2 x1) or Embedded Display Port (eDP) 7 PCI Express x1: Lanes 0/1/2/3/4/5 are free, lane 6 is occupied by GbE; can be optionally configured as 1 x4 (on 0/1/2/3) and 2 x1 (4/5) 32-bit PCI: PCI Rev. 2.3 at 33MHz, supporting 4 bus masters LPC bus, SMBus (system), I ² C (user)
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Video

Integrated in Processor	Gen 5.75 with 12 execution units
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Integrated Video Feature Support	DirectX 10 and OpenGL 2.1 Intel® Dynamic Video Memory Technology (Intel® DVM T 5.0) Video capture via x1 concurrent PCI Express port PAVP (Protected Audio-Video Path) support for Protected Intel HD Audio Playback High performance MPEG-2 decoding WMV9 (VC-1) and H.264 (AVC) support Hardware acceleration for MPEG2 VLD/iDCT Microsoft DirectX 10 support OpenGL 2.1 support Blu-ray support @ 40 Mb/s Hardware motion compensation Intermediate Z in classic rendering
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VGA	Analog VGA support by 300 MHz DAC Analog monitor support up to QXGA (2048 X 1536)
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LVDS	Single / Dual channel 18- or 24-bit panels
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Audio

Chipset	Integrated on Intel® PCH QM57
Audio Codec	On Express-BASE carrier (ALC886)

Ethernet

Chipset	Integrated on QM57 with 82577LM PHY
Interface	10/100/1000 Mbps Ethernet

Multi I/O and Storage

Chipset	Integrated on Intel® PCH QM57
USB	Supports up to eight ports USB v. 2.0
SATA	Four ports SATA 3 Gb/s with optional support for RAID 0,1,5,10
PATA	SATA to PATA bridge on SATA channel 1, Master only

Super I/O

	Connected to LPC bus on carrier if needed
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TPM (optional)

Chipset	Infineon SLB9635TT1.2
Type	TPM 1.2

Power

Input Power	AT mode (12 V +/- 5%) and ATX mode (12 V and 5 Vsb +/- 5%)
Power States	Supports S0, S1, S3, S4, S5
Power Consumption	21 W with Core™ i7-620UE at 1.2 GHz and 2 GB memory typical
Smart Battery Support	Yes

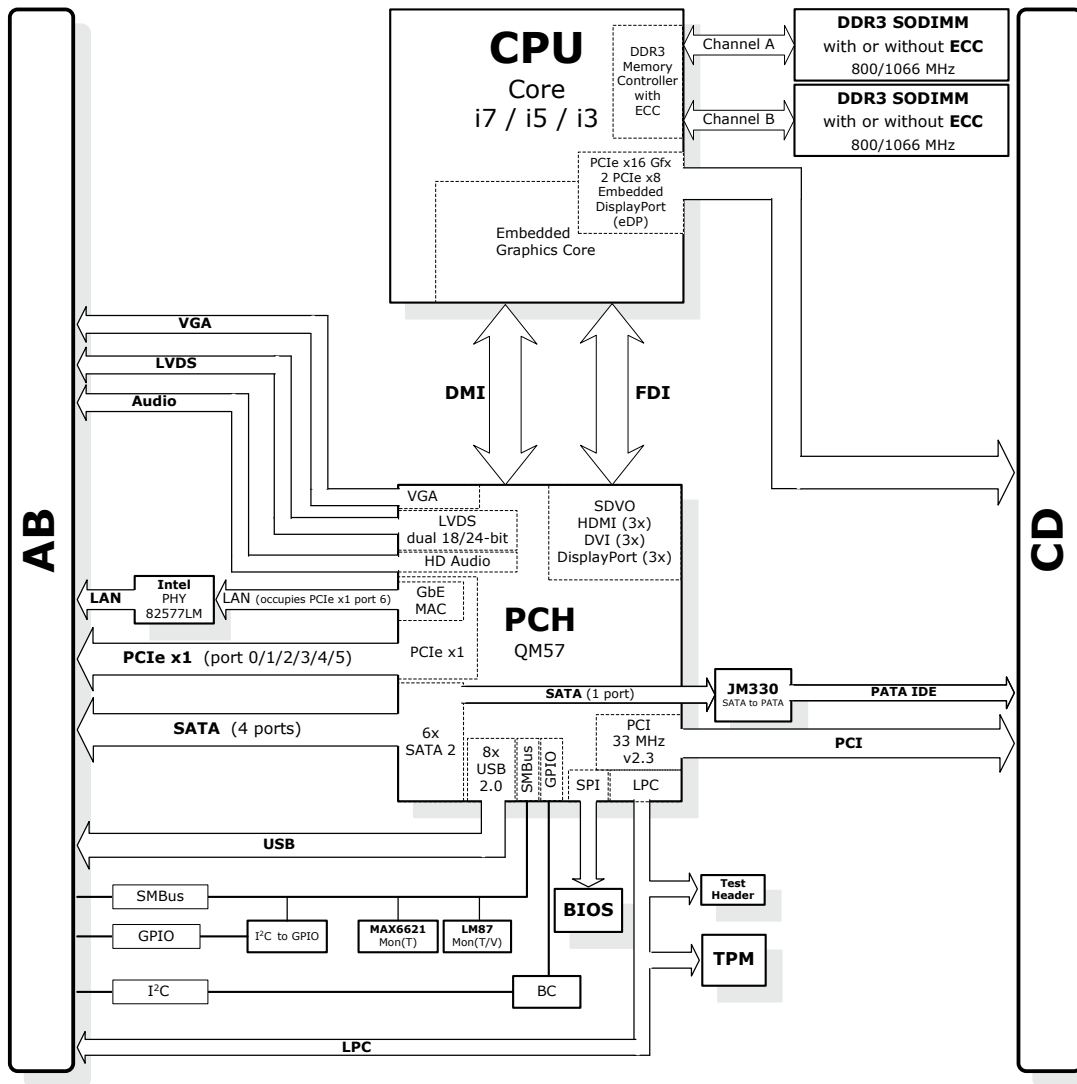
Mechanical and Environmental

Operating Temperature	0°C to 60°C
Storage Temperature	-20°C to 80°C
Humidity	90% at 60°C
Shock	15G peak-to-peak, 11ms duration, non-operation
Vibration	Non-operating: 1.88 Grms, 5-500 Hz, each axis Operating: 0.5 Grms, 5-500 Hz, each axis
Compatibility	COM Express® Type 2, Basic form factor 125 mm x 95 mm
Certification	CE, FCC

Operating Systems

Standard Support	Windows XP(e) / Vista / Windows 7 Linux
Extended Support (BSP)	Embedded XP support package Linux 2.6.x BSP VxWorks 6.x BSP AIDI Library for Windows and Linux

Functional Diagram



Ordering Information

Modules

Non-ECC Model Number	ECC Model Number	Description/Configuration
Express-CB-i7-610E	Express-CBE-i7-610E	COM Express® module with Intel® Core i7-610E SV processor at 2.53 GHz with QM57 chipset
Express-CB-i5-520E	Express-CBE-i5-520E	COM Express® module with Intel® Core i5-520 SV processor at 2.4 GHz with QM57 chipset
Express-CB-i7-620LE	Express-CBE-i7-620LE	COM Express® module with Intel® Core i7-620LE LV processor at 2.0 GHz with QM57 chipset
Express-CB-i7-620UE	Express-CBE-i7-620UE	COM Express® module with Intel® Core i7-620UE ULV processor at 1.07 GHz with QM57 chipset
Express-CB-i3-330E	Express-CBE-i3-330E	COM Express® module with Intel® Core i3-330E SV processor at 2.13 GHz with QM57 chipset
Express-CB-P4505	Express-CBE-P4505	COM Express® module with Intel® Celeron® P4505 SV processor at 1.86 GHz with QM57 chipset
Express-CB-U3405	Express-CBE-U3405	COM Express® module with Intel® Celeron® U3405 ULV processor at 1.06 GHz with QM57 chipset

Accessories

Model Number	Description/Configuration
Heat Spreaders	
HTS-CB-B	Heatspreader with threaded standoffs for Express-CB/CBE
Heatsink with Active Cooling	
THSF-CB-B	Heatsink with fan and threaded standoffs for Express-CB/CBE