Express-CB/CBE

COM Express® Basic Size Type 2 Module with Intel® Core i7/i5/i3 Processor

Type 2



Features

- Intel® Core™ i7/i5/i3 Processor with Mobile Intel® QM57 Express 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	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
Memory	Dual channel 800/1066 MHz DDR3 memory up to 8 GB in dual stacked SODIMM socket; ECC memory for CBE series only
Chipset	Mobile Intel® QM57 Express Chipset
L2 Cache	2 MB (Celeron® M), 4/3 MB (Intel® Core™ i7 / i5)
BIOS	AMI EFI with CMOS backup in 16 Mbit SPI flash
Hardware Monitor	Supply voltages and CPU temperature
Watchdog Timer	Programmable timer ranges to generate RESET
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 PCIe x4 (on 0/1/2/3) and 2 PCIe x1 (4/5)
	32-bit PCI: PCI Rev. 2.3 at 33MHz, supporting 4 bus masters
	LPC bus, SMBus (system) , I²C (user)

Video

Integrated in Processor	Gen 5.75 with 12 execution units
Integrated Video Feature Support	DirectX 10 and OpenGL 2.1
	Intel® Dynamic Video Memory Technology (Intel® DVMT 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
VGA	Analog VGA support by 300 MHz DAC
	Analog monitor support up to QXGA (2048 X 1536)
LVDS	Single / Dual channel 18/24-bit panels

Audio

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

Ethernet

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

I/O Interfaces

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

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

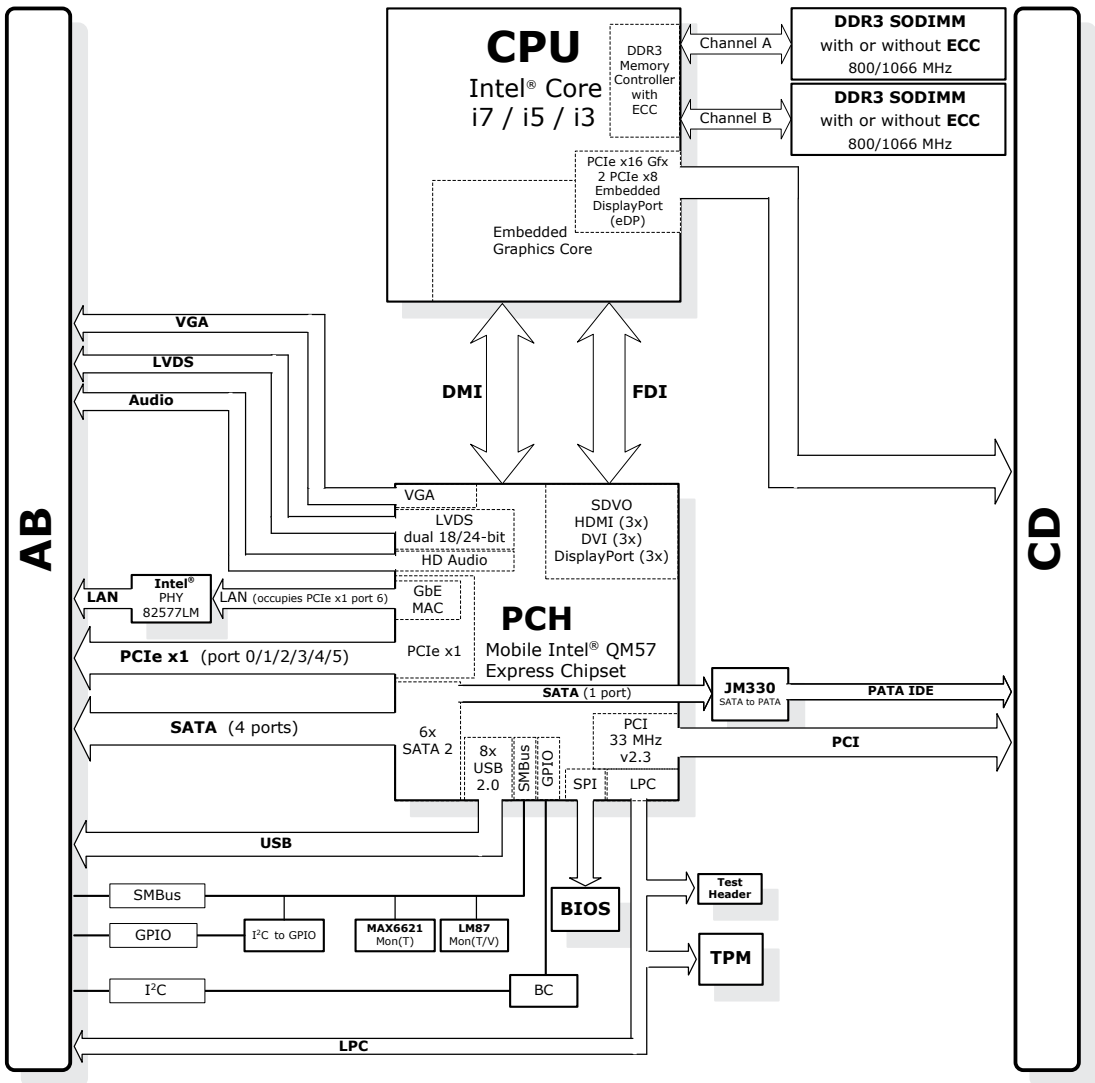
Dimension	Basic size: 125 mm x 95 mm
Operating Temperature	Standard: 0°C to +60°C
Storage Temperature	-20°C to +80°C
Humidity	90% at +60°C
Shock	15G peak-to-peak, 11ms duration, non-operation
Vibration	Non-operating: 1.88 Grms, 5-500 Hz, each axis
	Operating: 0.5 Grms, 5-500 Hz, each axis
Compatibility	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

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Functional Diagram



Ordering Information

Modules

Non-ECC Model Number	ECC Model Number	Description/Configuration
Express-CB-i3-330E	**Express-CBE-i3-330E**	COM Express® Basic Size Type 2 Module with Intel® Core™ i3-330E SV at 2.13 GHz
Express-CB-i5-520E	**Express-CBE-i5-520E**	COM Express® Basic Size Type 2 Module with Intel® Core™ i5-520 SV at 2.4 GHz
Express-CB-i7-610E	**Express-CBE-i7-610E**	COM Express® Basic Size Type 2 Module with Intel® Core™ i7-610E SV at 2.53 GHz
Express-CB-i7-620LE	**Express-CBE-i7-620LE**	COM Express® Basic Size Type 2 Module with Intel® Core™ i7-620LE LV at 2.0 GHz
Express-CB-i7-620UE	**Express-CBE-i7-620UE**	COM Express® Basic Size Type 2 Module with Intel® Core™ i7-620UE ULV at 1.07 GHz
Express-CB-U3405	**Express-CBE-U3405**	COM Express® Basic Size Type 2 Module with Intel® Celeron® U3405 ULV at 1.06 GHz
Express-CB-P4505	**Express-CBE-P4505**	COM Express® Basic Size Type 2 Module with Intel® Celeron® P4505 SV at 1.86 GHz

Accessories

Model Number	Description/Configuration
Heat Spreaders	
HTS-CB-B	Heatspreader with threaded standoffs for Express-CB/CBE
HTS-CB-BT	Heatspreader with thouth hole for top mounting for Express-CB/CBE
Active Heatsink	
THSF-CB-B	Heatsink with fan and threaded standoffs for Express-CB/CBE

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

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