Express-BL

COM Express Basic Size Type 6 Module with 5th Generation Intel® Core™ i7 processor and Intel® Xeon® E3-12xx processor

NEW

Features

- 5th Generation Intel® Core™ i7 and Xeon® E3-12xx processor with Intel® QM87 Chipset
- Up to 32GB Dual Channel DDR3L at 1600MHz
- Three DDI channels, LVDS/eDP and VGA, supports up to 3 independent displays
- Seven PCIe x1, one PCIe x16
- GbE, four SATA 6 Gb/s, four USB 3.0 and four USB 2.0
- Supports Smart Embedded Management Agent (SEMA) functions
- Extreme Rugged™ operating temperature: -40°C to +85°C (optional)

Specifications

Core System

CPU	5th Generation Intel® Core™ and Xeon® Processors (Mobile) - 14nm (formerly"Broadwell-H")
	Xeon® E3-1278L v4 2.0/3.3GHz (Turbo), 0.8/1.0GHz (Turbo), 47W (4C/GT3e)
	Xeon® E3-1258L v4 1.8/3.2GHz (Turbo), 0.7/1.0GHz (Turbo), 47W (4C/GT2)
	Core™ i7-5850EQ 2.7/3.4GHz (Turbo), 0.3/1.0GHz (Turbo), 47W (4C/GT3e)
	Core™ i7-5700EQ 2.6/3.4GHz (Turbo), 0.3/1.0GHz (Turbo), 47W (4C/GT2)
	Supports: Intel® VT, Intel® TXT, Intel® SSE4.2, Intel® HT Technology, Intel® 64 Architecture, Execute Disable Bit, Intel® Turbo Boost Technology 2.0, Intel® AVX2, Intel® AES-NI, PCLMULQDQ Instruction, Intel® Secure Key and Intel® TSX.
	Note: Availability of features may vary between processor SKUs.
Memory	Dual channel non-ECC 1600/1333 MHz DDR3L memory up to 32GB in dual SODIMM socket
Embedded BIOS	AMI EFI with CMOS backup in 8MB SPI BIOS with Intel® AMT 10 support
Cache	6MB for Xeon E3-1278L v4, E3-1258L v4 and Core™ i7-5850EQ, i7-5700EQ
Expansion Busses	1 PCIe x16 (Gen3), or 2 PCIe x8, or 1 PCIe x8 and 2 PCIe x4
	6 PCIe x1 (AB): Lanes 0/1/2/3/4/5
	1 PCIe x1 (CD): Lane 6
	LPC bus, SMBus (system) , I²C (user)
SEMA Board Controller	Supports : Voltage/current monitoring, power sequence debug support, AT/ATX mode control, logistics and forensic information, flat panel control, general purpose I2C, failsafe BIOS (dual BIOS), watchdog timer and fan control
Debug Headers	40-pin multipurpose flat cable connector for use in combination with DB-40 debug module providing BIOS
	POST code LED, BMC access, SPI BIOS flashing, power testpoints, debug LEDs
	60-pin XDP header for ICE debug of CPU/chipset

Video

GPU Feature Support	Generation 8 Intel® Graphics architecture, supporting 3 independent and simultaneous display combinations of DisplayPort, HDMI, LVDS, VGA or eDP (optional)
	Encode/transcode HD content
	Playback of high definition content including Blu-ray Disc
	Advanced Scheduler 2.0, 1.0 XPDM support
	DirectX 11.1, DirectX 11.1+, DirectX 11, DirectX 10.1, DirectX 10, DirectX 9 support
	OpenGL 4.0, OpenGL 4.2 support
	Digital Display Interface
Digital Display Interface	DDI1/2/3 supporting DisplayPort/HDMI/DVI
VGA	Analog VGA support with 300 MHz DAC
	Analog monitor support up to QXGA (2048 x 1536)
LVDS	Single/dual channel 18/24-bit LVDS from eDP (two lanes)
eDP	Optional, in place of LVDS and VGA

Audio

Chipset	Intel® HD Audio integrated in chipset
Audio Codec	Located on carrier Express-BASE6 (ALC886 standard support)

Ethernet

Intel® MAC/PHY	I218LM with Intel® AMT 10.0 support
Interface	10/100/1000 GbE connection

I/O Interfaces

USB	4x USB 1.1/2.0/3.0 (USB 0,1,2,3) and 4x USB 1.1/2.0 (USB 4,5,6,7)
SATA	Four ports SATA 6Gb/s (SATA0, SATA1, SATA2, SATA3)
Serial	2 UART ports COM1/2 with console redirection
GPIO	4 GPO and 4 GPI

Super I/O

Supported on carrier if needed (standard support for W83627DHG-P)

TPM (optional)

Chipset	Atmel AT97SC3204
Type	TPM 1.2

Power

Standard Input	ATX = 12V±5% / 5Vsb ±5% or AT = 12V±5%
Wide Input	ATX = 8.5~20 V / 5Vsb ±5% or AT = 8.5 ~20V
Management	ACPI 5.0 compliant, Smart Battery support
Power States	C1-C6, S0, S1, S3, S4, S5 , S5 ECO mode (Wake on USB S3/S4, WOL S3/S4/S5)
ECO Mode	Support deep S5 mode for power saving

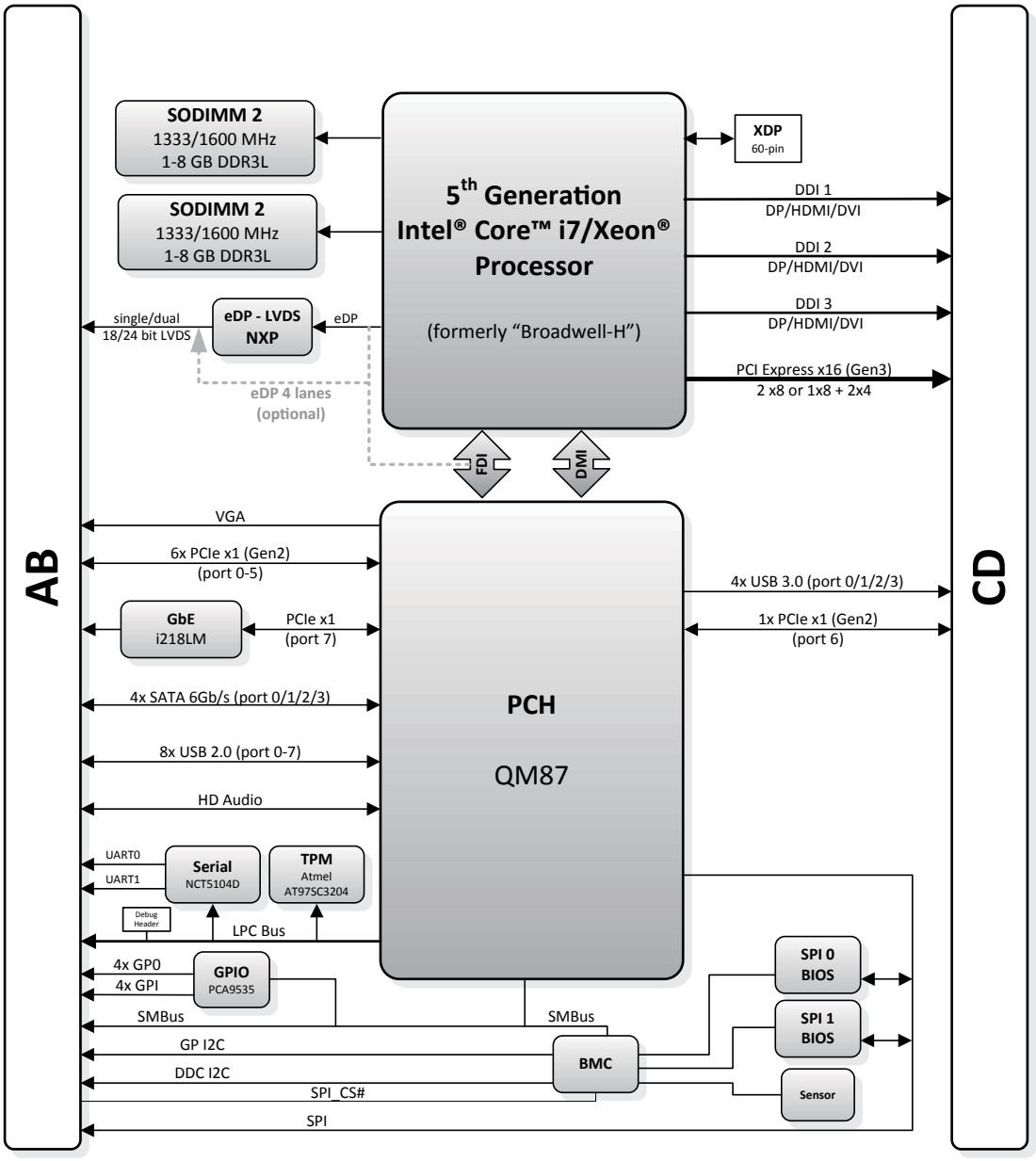
Mechanical and Environmental

Form Factor	PICMG COM.0: Rev 2.1 Type 6
Dimension	Basic size: 125 mm x 95 mm
Operating Temperature	Standard: 0°C to 60°C
	Extreme Rugged™: -40°C to +85°C (optional)
Humidity	5-90% RH operating, non-condensing
	5-95% RH storage (and operating with conformal coating)
Shock and Vibration	IEC 60068-2-64 and IEC-60068-2-27
	MIL-STD-202F, Method 213B, Table 213-I, Condition A and Method 214A, Table 214-I, Condition D
HALT	Thermal Stress, Vibration Stress, Thermal Shock and Combined Test

Operating Systems

Standard Support	Windows 7 32/64-bit, Windows 8 64-bit, Linux 64-bit
Extended Support (BSP)	WES7 32/64-bit, Windows Embedded 8.1 Industry 64-bit, Linux 64-bit, VxWorks 64-bit

Functional Diagram



Ordering Information

Modules

Model Number	Description/Configuration
Express-BL-i7-5850EQ	Basic COM Express® Type 6 module with Intel® i7-5850EQ at 2.7/3.4GHz with GT3 level graphics with eDRAM
Express-BL-i7-5700EQ	Basic COM Express® Type 6 module with Intel® i7-5700EQ at 2.7/3.4GHz with GT2 level graphics
Express-BL-E3-1278	Basic COM Express Type6 module with Intel® Xeon® E3-1278L v4 at 2.0/3.3GHz with GT3 level graphics with eDRAM
Express-BL-E3-1258	Basic COM Express Type6 module with Intel® Xeon® E3-1258L v4 at 1.8/3.2GHz with GT2 level graphics

Starter Kit

Model Number	Description/Configuration
Starterkit-COM Express 6 PLUS	COM Express formfactor starter kit with Express-BASE6 carrier board, power supply, and accessory kit

Accessories

Model Number	Description/Configuration
Heat Spreaders	
HTS-BL-B	Heatspreader for Express-BL with threaded standoffs for bottom mounting
HTS-BL-BT	Heatspreader for Express-BL with through hole standoffs for top mounting
Passive Heatsinks	
THS-BL-BL	Low profile heatsink for Express-BL with threaded stand-offs for bottom mounting
THS-BL-BT	Low profile heatsink for Express-BL with through hole stand-offs for top mounting
THSH-BL-BL	High profile heatsink for Express-BL with threaded standoffs for top mounting
Active Heatsink	
THSF-BL-BL	High profile heatsink with Fan for Express-BL with threaded standoffs for bottom mounting

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