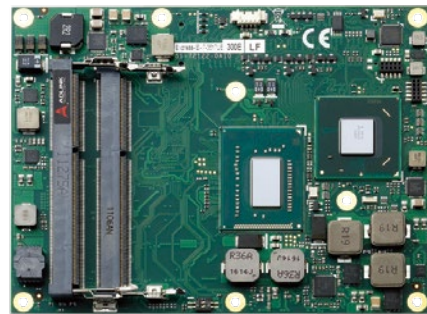


# Express-IB

## COM Express<sup>®</sup> Basic Size Type 6 Module with 3rd Generation Intel<sup>®</sup> Core™ i7/i5/i3 Processor

### Features

- 3rd Generation quad or dual Intel<sup>®</sup> Core™ i7/i5/i3 Processor with Mobile Intel<sup>®</sup> QM77 Express Chipset
- Up to 16GB Dual Channel DDR3 SDRAM at 1600MHz
- Three Digital Display Interfaces (DDI) for DisplayPort /HDMI/DVI/SDVO
- Seven PCIe x1, one PCIe x16 (Gen3) for graphics (or general purpose x8/4/1)
- GbE, two SATA 3 Gb/s, two SATA 6 Gb/s, four USB 3.0, four USB 2.0



### Specifications

#### • Core System

##### CPU

Intel<sup>®</sup> Core™ i7/i5/i3, 22nm process, BGA type  
 Intel<sup>®</sup> Core™ i7-3615QE 2.3GHz, 6MB L3 cache, 45W (4C)  
 Intel<sup>®</sup> Core™ i7-3612QE 2.1GHz, 6MB L3 cache, 35W (4C)  
 Intel<sup>®</sup> Core™ i7-3555LE 2.5GHz, 4MB L3 cache, 25W (2C)  
 Intel<sup>®</sup> Core™ i7-3517UE 1.7GHz, 4MB L3 cache, 17W (2C) Intel<sup>®</sup> Core™ i5-3610ME 2.7GHz, 3MB L3 cache, 35W (2C) Intel<sup>®</sup> Core™ i3-3120ME 2.4GHz, 3MB L3 cache, 35W (2C) Intel<sup>®</sup> Core™ i3-3217UE 1.6GHz, 3MB L3 cache, 17W (2C)  
 Intel<sup>®</sup> Celeron<sup>®</sup> 1020E 2.2 GHz (no Turbo) 35W (2C)  
 Intel<sup>®</sup> Celeron<sup>®</sup> 1047UE 1.4 GHz (no Turbo) 17W (2C)  
 Intel<sup>®</sup> Celeron<sup>®</sup> 927UE 1.5 GHz (no Turbo) 17W (1C)

##### Memory

Dual channel 1333/1600 MHz DDR3 non-ECC memory up to 16GB in dual stacked SODIMM socket

##### Chipset

Mobile Intel<sup>®</sup> QM77 Express Chipset

##### L3 Cache

6MB (i7-3615QE and i7-3612QE), 4MB (i7-3555LE and i7-3517UE), 3MB (i5-3610ME, i3-3120ME and i3-3217UE)

##### BIOS

AMI EFI with CMOS backup in 16 Mbit SPI flash

##### Hardware Monitor

Supply voltages and CPU temperature

##### Debug Interface

XDP SFF-26 extension for ICE debug

##### Watchdog Timer

Programmable timer range to generate RESET

##### Expansion Busses

PCI Express x16 (Gen3) bus for discrete graphics solution or general purpose  
 PCI Express (2 x8 or 1 x8 with 2 x4)  
 8 PCI Express x1: Lanes 0/1/2/3/4/5/6 are free, lane 7 is occupied by GbE  
 LPC bus, SMBus (system), I2C (user)

#### • Video

##### Integrated in Processor

Intel<sup>®</sup> HD Graphics 4000 at 650–1200 MHz (depending on processor)

##### Integrated Video

DirectX 11, OpenGL 3.1, OpenCL 1.1

##### Feature Support

Intel<sup>®</sup> Clear Video HD Technology  
 Advanced Scheduler 2.0, 1.0, XPDM support  
 DirectX Video Acceleration (DXVA) support for full AVC/VC1/MPEG2 hardware decode

##### VGA Interface

Analog VGA support with 300 MHz DAC  
 Analog monitor support up to QXGA (2048 x 1536) and VGA hot plug

##### LVDS Interface

Dual channel 18/24-bit LVDS

##### Digital Display Interface

Three DDI ports supporting HDMI/DVI/DisplayPort or SDVO

#### • Audio

##### Chipset

Integrated in Mobile Intel<sup>®</sup> QM77 PCH

##### Audio Codec

On Express-BASE6 carrier (ALC886)

#### • Ethernet

Chipset: Intel<sup>®</sup> Gigabit Ethernet PHY WG82579LM  
 Interface: 10/100/1000 Mbps Ethernet

#### • I/O Interfaces

Chipset: Integrated in Mobile Intel<sup>®</sup> QM77 PCH  
 USB: 4 ports USB 3.0 (USB0~3) and 4 ports USB 2.0 (USB4~7)  
 SATA: Supports two SATA ports at 6 Gb/s and two ports at 3 Gb/s with support for RAID 0,1,5,10

## Specifications

- **Super I/O**

Connected to LPC bus on carrier if needed

- **TPM**

Chipset: Infineon SLB9635TT1.2

Type: TPM 1.2

- **Power**

Input Power: 8.5~20V only (AT), 8.5~20V and 5Vsb (ATX)

Power States: Supports S0, S1, S3, S4, S5

Smart Battery Support: Yes

Power Consumption: 40W with i7-3612QE and 4GB memory typical

- **Operating Systems**

### Standard Support

Windows 7, Linux

### Extended Support (BSP)

Embedded XP support package, Linux BSP, VxWorks 6.x, AIDI Library for Windows and Linux

- **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

Storage Temperature: -20°C to +80°C

### Humidity

90% at +60°C

### Shock

15G peak-to-peak, 11ms duration, non-operating

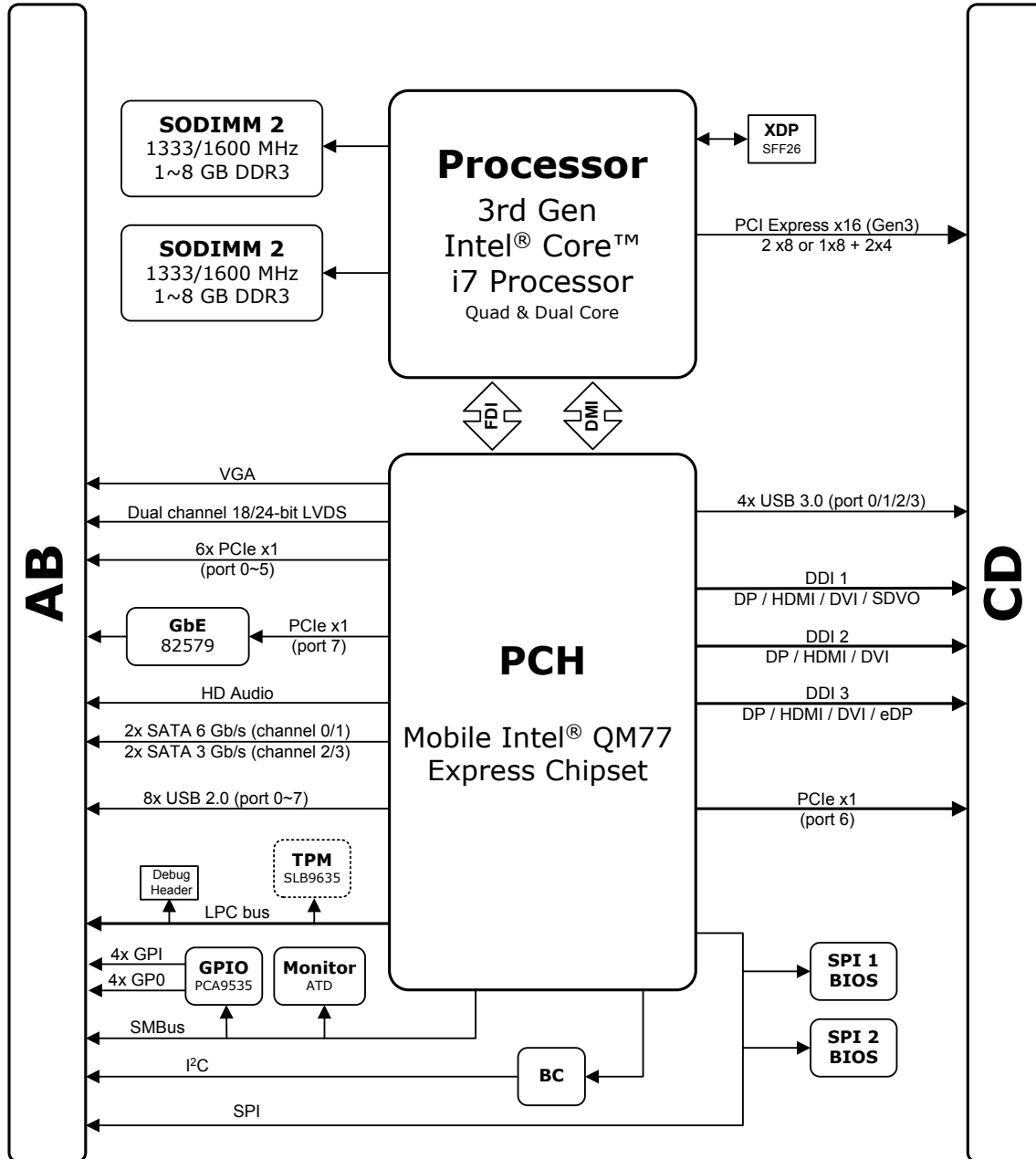
### Vibration

Non-operating: 1.88Grms, 5-500Hz, each axis

Operating: 0.5Grms, 5-500Hz, each axis

Certification: CE, FCC, HALT

## Functional Diagram



## Ordering Information

- **Express-IB-i3-3120ME**  
COM Express® Basic Size Type 6 Module with Intel® Core™ i3-3120ME SV at 2.4 GHz
- **Express-IB-i3-3217UE**  
COM Express® Basic Size Type 6 Module with Intel® Core™ i3-3217UE ULV at 1.6 GHz
- **Express-IB-i5-3610ME**  
COM Express® Basic Size Type 6 Module with Intel® Core™ i5-3610ME SV 2.7 GHz
- **Express-IB-i7-3517UE**  
COM Express® Basic Size Type 6 Module with Intel® Core™ i7-3517UE ULV at 1.7 GHz
- **Express-IB-i7-3555LE**  
COM Express® Basic Size Type 6 Module with Intel® Core™ i7-3555LE LV at 2.5 GHz
- **Express-IB-i7-3612QE**  
COM Express® Basic Size Type 6 Module with Intel® Core™ i7-3612QE SV at 2.1 GHz
- **Express-IB-i7-3615QE**  
COM Express® Basic Size Type 6 Module with Intel® Core™ i7-3615QE SV at 2.3 GHz
- **Express-IB-1020E**  
COM Express® Basic Size Type 6 Module with Intel® Celeron® 1020E at 2.2GHz
- **Express-IB-1047UE**  
COM Express® Basic Size Type 6 Module with Intel® Celeron® 1047UE 1.4 GHz
- **Express-IB-927UE**  
COM Express® Basic Size Type 6 Module with Intel® Celeron® 927UE 1.5 GHz

## Accessories

### Heat Spreaders

- **HTS-IB-B**  
Heatspreader for Express-IB with threaded standoffs
- **HTS-IB-BT**  
Heatspreader for Express-IB with through hole for top mounting

### Passive Heatsinks

- **TSHS-IB-B**  
High profile heatsink for Express-IB with threaded standoffs
- **THS-IB-BL**  
Low profile heatsink for Express-IB for bottom mounting

### Active Heatsink

- **THSF-IB-B**  
High performance heatsink with Fan for Express-IB 2C with threaded standoffs

## Starter Kit

- **COM Express Type 6 Starter Kit Plus**  
COM Express formfactor starter kit with Express-BASE6 board, power supply and accessory kit