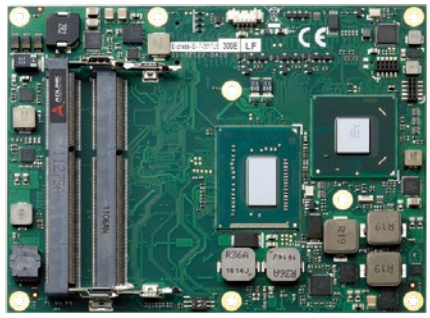
Express-IB

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

Features

- 3rd Generation qual or dual Intel® Core™ i7/i5/i3 Processor with Mobile Intel® 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® Core™ i7/i5/i3, 22nm process, BGA type

Intel® Core™ i7-3615QE 2.3GHz, 6MB L3 cache, 45W (4C)
Intel® Core™ i7-3612QE 2.1GHz, 6MB L3 cache, 35W (4C)
Intel® Core™ i7-3555LE 2.5GHz, 4MB L3 cache, 25W (2C)
Intel® Core™ i7-3517UE 1.7GHz, 4MB L3 cache, 17W (2C) Intel® Core™ i5-3610ME 2.7GHz, 3MB L3 cache, 35W (2C)Intel® Core™ i3-3120ME 2.4GHz, 3MB L3 cache, 35W (2C)Intel® Core™ i3-3217UE 1.6GHz, 3MB L3 cache, 17W (2C)
Intel® Celeron® 1020E 2.2 GHz (no Turbo) 35W (2C)
Intel® Celeron® 1047UE 1.4 GHz (no Turbo) 17W (2C)
Intel® Celeron® 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® 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® HD Graphics 4000 at 650–1200 MHz (depending on processor)

Integrated Video

DirectX 11, OpenGL 3.1, OpenCL 1.1

Feature Support

Intel® 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® QM77 PCH

Audio Codec

On Express-BASE6 carrier (ALC886)

Ethernet

Chipset: Intel® Gigabit Ethernet PHY WG82579LM

Interface: 10/100/1000 Mbps Ethernet

I/O Interfaces

Chipset: Integrated in Mobile Intel® 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

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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 typcial

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

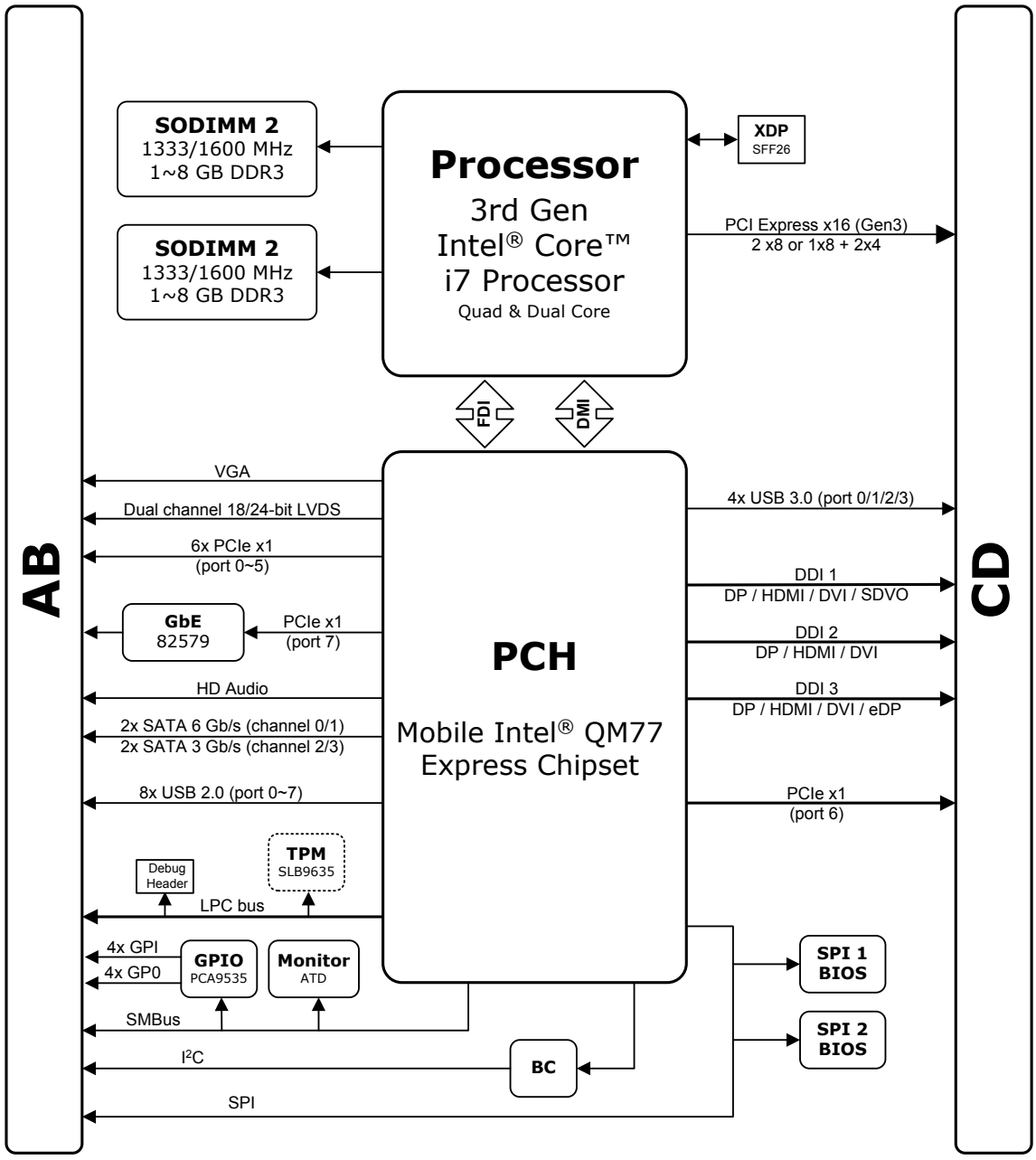
Shock

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

- **THSH-IB-B**
  High profile heatsink for Express-IB with threaded standoffs
- **THS-IB-BL**
  Low profile hearsink 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 6Starter Kit Plus**
  COM Express formfactor starter kit with Express-BASE6 board, power supply and accessory kit

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