Express-LPC

COM Express® Compact Size Type 2 Module with Dual Core Intel® Atom™ Processor

Type 2



Features

- Single/Dual-core Intel® Atom™ Processor with Mobile Intel® ICH8-M Chipset
- Up to 4 GB DDR3 SDRAM at 800 MHz
- Five free PCIe x1 lanes (optional PCIe x4)
- VGA and LVDS support
- SATA 3 Gb/s, Gigabit Ethernet, USB 2.0

Specifications

Core System

CPU	N455: Single-core Intel® Atom™ processor 1.66 GHz at 6.5 W
	D425: Single-core Intel® Atom™ processor 1.80 GHz at 10 W
	D525: Dual-core Intel® Atom™ processor 1.80 GHz at 13 W
Memory	Dual SODIMM sockets support up to 4 GB of non-ECC 667/800 MHz DDR3 memory (N455 supports max. 2 GB)
Chipset	Intel® I/O Controller Hub 8 Mobile (ICH8-M)
L2 Cache	1 MB for D525, 512KB for N455 & D425
BIOS	AMIBIOS® 8 with CMOS backup in 16 Mbit SPI flash supports SPI BIOS on carrier (COM.0 R2.0)
Hardware Monitor	Supply voltages and CPU temperature
Debug Interface	XDP SFF-26 extension for ICE debug
Embedded Features	Instant on with Intel Bootloader support, OEM BIOS settings, Board Info & Statistics, ACPI 3.0, Smart Battery Management support, Watchdog with programmable timer ranges
Expansion Busses	6 PCI Express x1: 0/1/2/3/4 are free, 5 is occupied by GbE; 0/1/2/3 x1 can be optionally configured as 1 PCIe x4
	32-bit PCI: PCI rev. 2.3 at 33MHz, supporting 4 bus masters
	LPC bus, SMBus (system), I²C (user)

Video

GPU Core	Integrated in CPU with Gen3.5+ GFX Core and render core frequency at 200 MHz (N455) and 400 MHz (D425/D525)
Integrated Video	Intel® Dynamic Video Memory Technology 4.0 support
Feature Support	DirectX 9 compliant Pixel Shader v2.0
	400 MHz render clock frequency
	2 display ports: LVDS and RGB
	Intel® Clear Video Technology
	MPEG2 Hardware Acceleration, ProcAmp
VGA Interface	Analog RGB graphics, resolution up to 2048x1536@ 60 Hz
LVDS Interface	Single 18-bit channel, resolution up to 1366x768, 18bpp

Audio

Chipset	Integrated in Intel® I/O Controller Hub 8 Mobile (ICH8M)
Audio Codec	On carrier (ALC886)

Ethernet

Chipset	Intel® 82583V Gigabit Ethernet Controller
Interface	10/100/1000 Mbps Ethernet

I/O Interfaces

Chipset	Intel® I/O Controller Hub 8 Mobile (ICH8M)
USB	Supports up to eight ports USB 2.0
SATA	Three ports SATA 3 Gb/s

Super I/O

	BIOS support for legacy free or legacy with two types of Super I/O (Winbond W83627HG and W83627DHG)

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	10 W (with N455 CPU and 2 GB memory typical)
Smart Battery Support	Yes

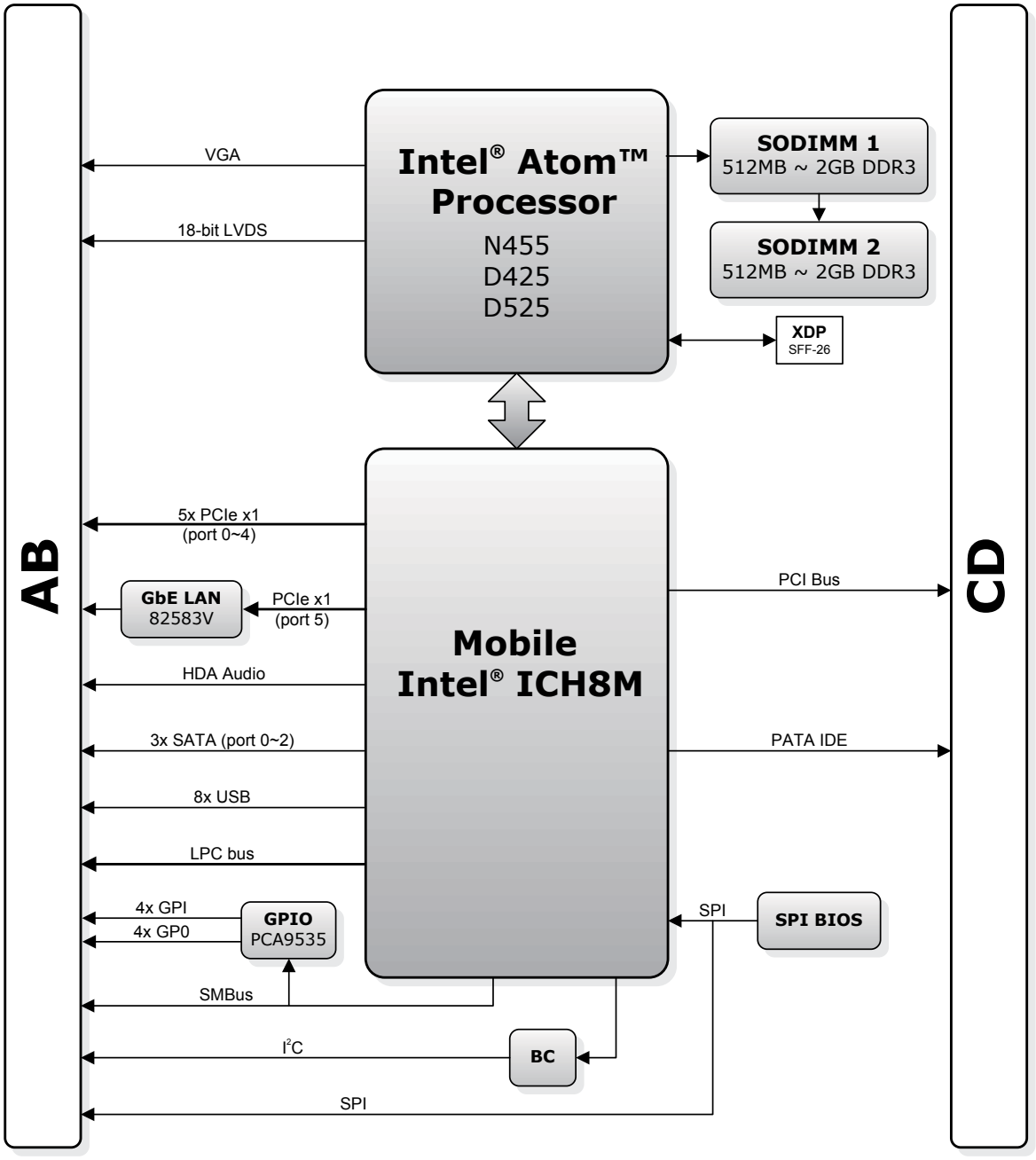
Mechanical and Environmental

Form Factor	Compact size: 95 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: 1.88 Grms, 5-500 Hz, each axis
	Operating: 0.5 Grms, 5-500 Hz, each axis
Compatibility	COM Express® Type 2, COM.0 R2.0
	Compact form factor 95 mm x 95 mm
Certification	CE, FCC

Operating Systems

Standard Support	Windows XPe/ Vista, Windows 7, Linux
Extended Support (BSP)	Embedded XP / 2009 support package, Linux 2.6.x BSP, VxWorks 6.x BSP, AIDI Library for Windows and Linux

Functional Diagram



Ordering Information

Modules

Model Number	Description/Configuration
Express-LPC-D425	COM Express® Compact Size Type 2 Module with Intel® Atom™ Single Core Processor D425 at 1.80 GHz
Express-LPC-D525	COM Express® Compact Size Type 2 Module with Intel® Atom™ Dual Core Processor D525 at 1.80 GHz
Express-LPC-N455	COM Express® Compact Size Type 2 Module with Intel® Atom™ Single Core Low Voltage Processor N455 at 1.66 GHz

Accessories

Model Number	Description/Configuration
Heat Spreader	
HTS-LPC-B	Heatspreader for Express-LPC with threaded standoffs
Passive Heatsink	
THS-LPC-B	Low profile heatsink for Express-LPC with threaded standoffs
Active Heatsink	
THSF-LPC-B	Heatsink with Fan for Express-LPC with threaded standoffs

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