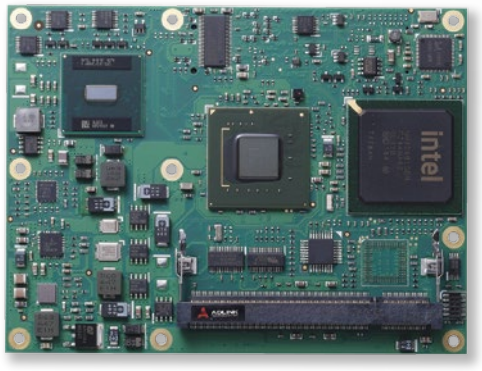
Express-AT

COM Express® Module with Intel® Atom™ Processor N270 and 945GSE / ICH7-M Chipset



Features

- Intel® Atom™ processor N270 at 1.6 GHz
- Intel® 945GSE / ICH7-M chipset
- SODIMM for up to 2 GB DDR2 at 533 MHz
- Three PCIe x1 (optional 4 x1 or 1 x4)
- High resolution VGA, single/dual 18-bit LVDS and TV-out (SDTV and HDTV)
- SATA, IDE (PATA), Gigabit LAN, USB 2.0
- Optional 512MB~8GB IDE-based Solid State Disk

Specifications

Core System

CPU	**BGA type**
	Intel® Atom™ N270, FSB 533, 1.6 GHz with 512 KB L2 cache, 2.5 W, on-die primary 32-kB instruction cache and 24 KB write-back data cache
	Hyper-Threading support (2-threads)
	Advanced gunning transceiver logic (AGTL+) bus driver technology
	Enhanced Intel® SpeedStep® Technology
	Source synchronous double-pumped (2x) Address
	Source synchronous quad-pumped (4x) Data
	C0 - C4 low power states supported
Memory	Single SODIMM socket memory, up to 2 GB of non-ECC, 400/533 MHz DDR2
Chipset	Intel® 945GSE Express Graphic Memory Controller Hub and Intel® I/O Controller Hub 7 Mobile (ICH7-M)
BIOS	AMIBIOS®8 with CMOS backup in 8 Mbit SPI flash
Hardware Monitor	Supply voltages and CPU temperature
Watchdog Timer	Programmable timer ranges to generate RESET
Expansion Busses	4 PCI Express x1 (0/1/2 are free, 3 is occupied by GbE LAN) optionally configured as x4
	Serial Digital Video Out (SDVO)
	32-bit PCI 2.3 at 33MHz, supporting 4 bus masters
	LPC, SMBus, I²C

Video

Chipset	Intel® Graphics Media Accelerator 950 integrated into 945GSE GMCH supporting dual independent displays
VGA Interface	Analog VGA support up to 1600 x 1200
LVDS Interface	Single / Dual channel 18-bit (optional 24-bit on carrier through SDVO)
TV-out	NTSC/PAL up to 1024x768 resolution supported, HDTV 480p/720p/1080i/1080p modes supported (without Macrovision)

Audio

Chipset	Integrated on Intel® I/O Controller Hub 7 Mobile (ICH7-M)
Audio Codec	HDA (Azalia) or AC'97 codec on carrier

LAN

Chipset	PCIe x1 Realtek RTL8111C
Interface	10/100/1000 Mbps

Multi I/O

Chipset	Intel® ICH7-M
IDE (PATA)	Single IDE channel with UDMA100 with optional 512MB - 8GB IDE-based Solid State Disk
SATA	Two port SATA 1.5 Gb/s
USB	Up to eight ports USB 2.0

Super I/O

Connected to LPC bus on carrier if needed

TPM

Chipset	Infineon SLB9635TT1.2 (optional)
Type	TPM 1.2

Power Specifications

Input Power	AT mode (12 V) and ATX mode (12 V and 5 Vsb)
Power States	Supports S0, S1, S3, S4, S5
Power Consumption	9 W typical (with Atom™ N270 and 1 GB memory)

Mechanical and Environmental

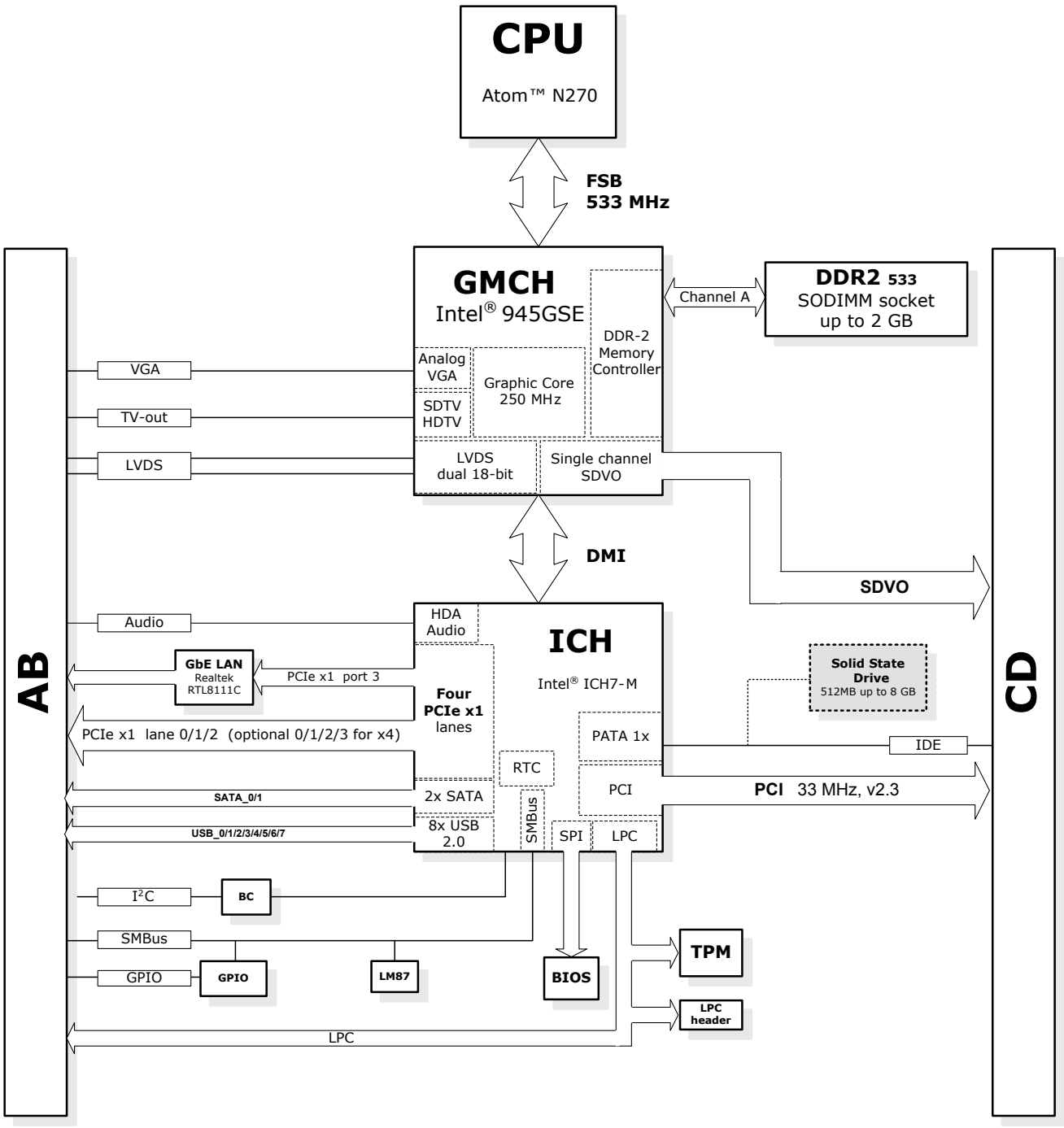
Operating Temp.	Standard: 0°C to 60°C
Storage Temp.	-20°C to 80°C
Humidity	Up to 90% at 60°C
Shock	15G peak-to-peak, 11ms duration, non-operation
Vibration	Non-operating: 1.88 Grms, 5-500 Hz, each axis
	Operating: 0.5 Grms, 5-500 Hz, each axis
Form Factor	COM Express® Type 2, Basic form factor, 95 mm x 125 mm
Certifications	CE, FCC

Operating Systems

Standard Support	Windows® XP 32-bit
	Windows® Vista 32-bit
	Linux® 2.6.x
Extended Support	Embedded XP BSP
	WinCE BSP
	Linux® 2.6.x BSP
	AIDI Library for Win32, WinCE and Linux®

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Functional Diagram



Ordering Information

Modules

Model Number	Description/Configuration
Express-AT-N270	COM Express® module with Intel® Atom™ N270 processor at 1.6 GHz
Express-AT-N270-4G	COM Express® module with Intel® Atom™ N270 processor at 1.6 GHz 4GB SSD Solid State Disk

Accessories

Model Number	Description/Configuration
Heat Spreaders	
HTS-CAT-B	Heatspreader for Express-AT (BGA CPU) with threaded standoffs
Passive Heatsinks	
THS-CAT-B	Low Profile Heatsink for Express-AT (BGA CPU) with threaded standoffs

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