

### Features

- Intel® Atom™ N270 processor at 1.6 GHz
- Intel® 945GSE / ICH7M chipset
- Up to 2 GB DDR2 533 MHz SDRAM
- Three PCIe x1 (optional 4 x1 or 1 x4)
- High resolution CRT, 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	<p><b>BGA type</b></p> <p>Intel® Atom™ N270, FSB 533, 1.6 GHz with 512 KB L2 cache, 2.5 W, on-die primary 32-KB instructions cache and 24-KB write-back data cache</p> <p>Hyperthreading (2-thread) support</p> <p>Advanced gunning transceiver logic (AGTL+) bus driver technology</p> <p>Enhanced Intel SpeedStep® Technology</p> <p>Source synchronous double-pumped (2x) Address</p> <p>Source synchronous quad-pumped (4x) Data</p> <p>C0 - C4 low power states supported</p>
Memory	Single SODIMM socket memory, for max 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	AMBIOS8® with CMOS backup in 8 Mbit SPI BIOS
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
CRT Interface	Analog CRT 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 in Intel® I/O Controller Hub 7 Mobile (ICH7-M)
Audio Codec	HDA (Azalia) or AC97 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-150
USB	Supports up to eight ports USB 2.0

#### Super I/O

Connected to LPC bus on carrier if needed

#### TPM

Chipset	Infineon SLB9635TT1.2
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)

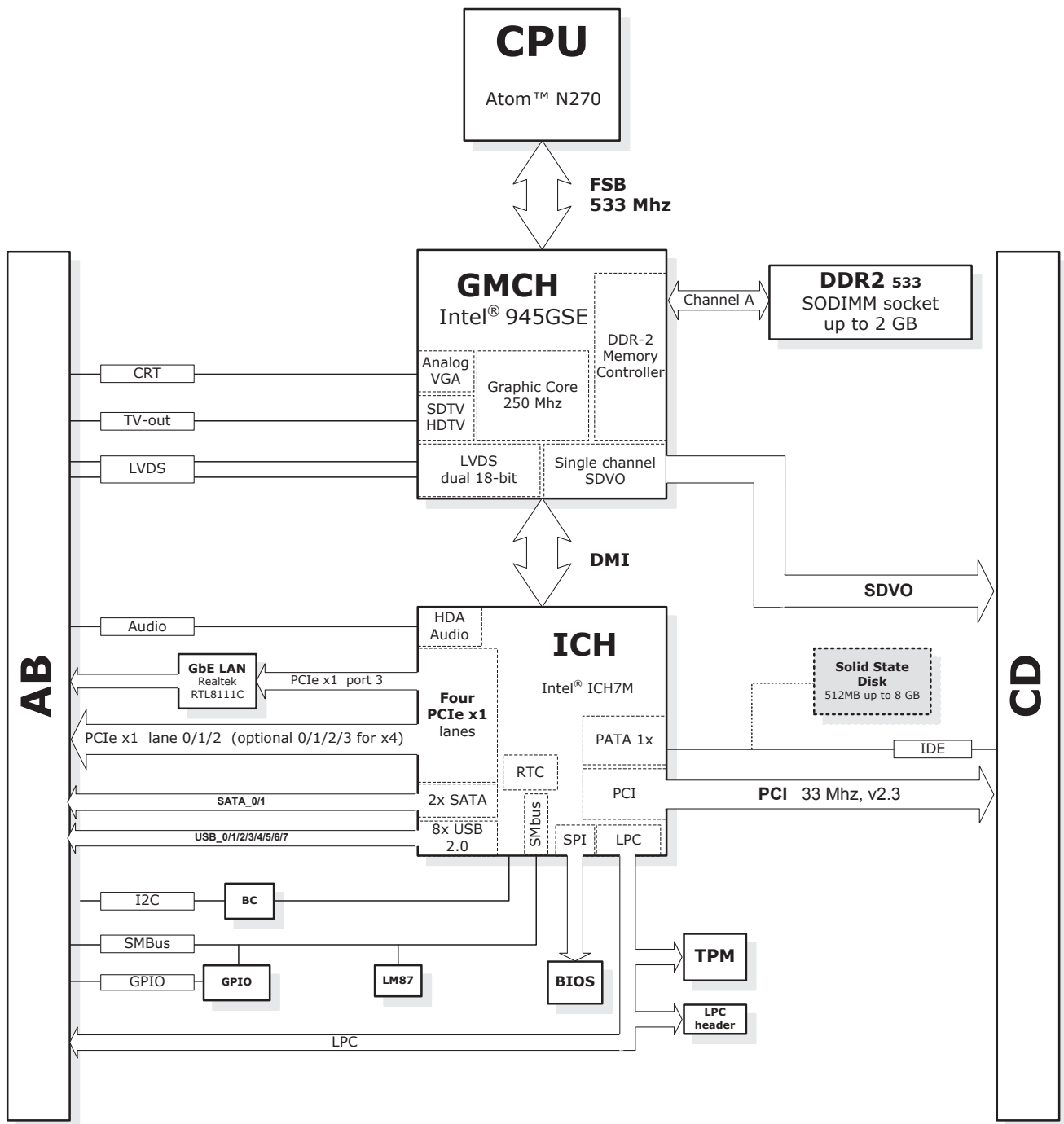
#### Mechanical and Environmental

Operating Temp.	0 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-operation: 1.88 Grms, 5-500 Hz, each axis Operation: 0.5 Grms, 5-500 Hz, each axis
Form Factor	COM Express™ Type 2, standard 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 I²C Library for Win32, WinCE and Linux®

# Functional Diagram



## Ordering Information

### Modules

Model Number	Description/Configuration
Express-AT	COM Express™ module with Intel® Atom™ N270 processor at 1.6 GHz

### Accessories

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