



### 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	<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 instruction cache and 24 KB write-back data cache</p> <p>Hyper-Threading support (2-threads)</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	<p>Single SODIMM socket memory, up to 2 GB of non-ECC, 400/533 MHz DDR2</p>
Chipset	<p>Intel® 945GSE Express Graphic Memory Controller Hub and Intel® I/O Controller Hub 7 Mobile (ICH7-M)</p>
BIOS	<p>AMIBIOS®8 with CMOS backup in 8 Mbit SPI flash</p>
Hardware Monitor	<p>Supply voltages and CPU temperature</p>
Watchdog Timer	<p>Programmable timer ranges to generate RESET</p>
Expansion Buses	<p>4 PCI Express x1 (0/1/2 are free, 3 is occupied by GbE LAN) optionally configured as x4</p> <p>Serial Digital Video Out (SDVO)</p> <p>32-bit PCI 2.3 at 33MHz, supporting 4 bus masters</p> <p>LPC, SMBus, I²C</p>

#### Video

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

#### Audio

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

#### LAN

Chipset	<p>PCIe x1 Realtek RTL8111C</p>
Interface	<p>10/100/1000 Mbps</p>

#### Multi I/O

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

#### Super I/O

Connected to LPC bus on carrier if needed

#### TPM

Chipset	<p>Infineon SLB9635TT1.2 (optional)</p>
Type	<p>TPM 1.2</p>

#### Power Specifications

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

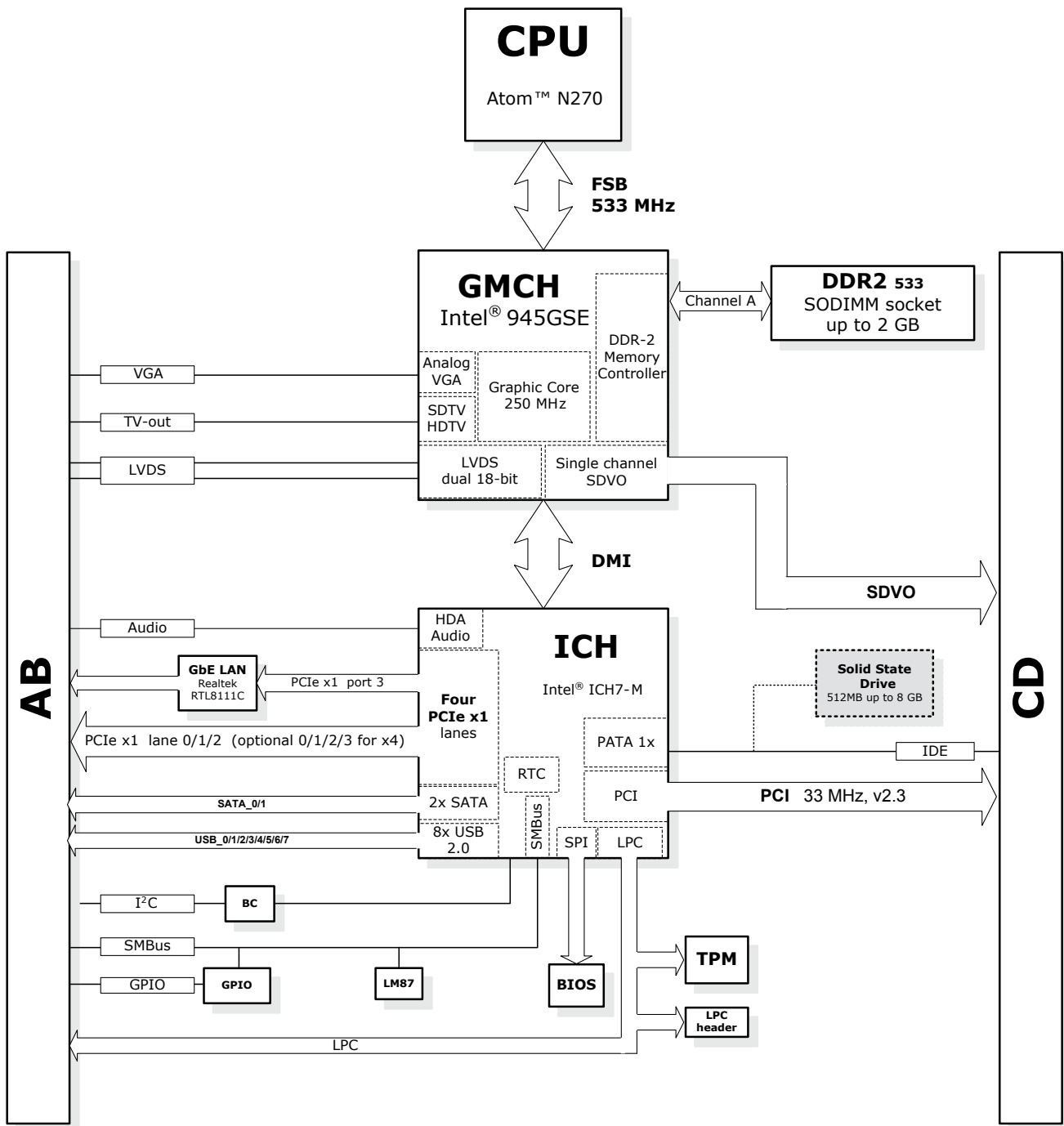
#### Mechanical and Environmental

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

#### Operating Systems

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

## 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
<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