

Features

- Intel® Core™2 Duo processor (up to 2.1 GHz)
- Intel® 945GME / ICH7-M chipset
- Dual SODIMM for up to 4 GB DDR2 at 667 MHz
- One PCIe® x16, five PCIe® x1 (or one x4)
- Single/dual 18/24-bit LVDS, TV-out
- SATA, PATA, Gigabit LAN, USB 2.0

Specifications

Core System

| | |
|------------------|---|
| CPU | <p>Merom Core socket type</p> <p>Intel® Core™2 Duo T7400, 2.16GHz with 4MB L2 cache, 34 W Intel® Celeron® M 530, 1.73GHz with 1MB L2 cache, 27 W</p> <p>Merom Core BGA type</p> <p>Intel® Core™2 Duo L7400, 1.5 GHz with 4MB L2 cache, 17 W Intel® Core™2 Duo U7500, 1.06 GHz with 2MB L2 cache, 10 W</p> <p>Yonah Core socket type</p> <p>Intel® Core™ Duo T2500, 2.0 GHz with 2MB L2 cache, 31 W Intel® Celeron® M 440, 1.86 GHz with 1MB L2 cache, 27 W</p> <p>Yonah Core BGA type</p> <p>Intel® Core™ Duo L2400, 1.66GHz with 2MB L2 cache, 15 W Intel® Core™ Duo U2500, 1.2 GHz with 2MB L2 cache, 9 W Intel® Celeron® M 423, 1.06GHz with 1MB L2 cache, 5.5 W</p> |
| Memory | Dual SODIMM sockets supporting dual channel memory, up to 4 GB of non-ECC, 533/667 MHz DDR2 |
| Chipset | Intel® 945GME Express Graphics Memory Controller Hub Intel® I/O Controller Hub 7 Mobile (ICH7-M DH) |
| BIOS | AMIBIOS®8 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 | 6 PCI Express x1 (0 – 4 free, 5 occupied by GbE LAN), optional configurable as x4 Graphics PCI Express x16, or SDVO digital video bus 32-bit PCI 2.3 at 33MHz, supporting 6 bus masters LPC, SMBus, I²C |

Video

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|----------------|--|
| Chipset | 945GME GMCH integrated graphics supports dual independent displays |
| CRT Interface | Analog VGA support up to 2048 x1536 resolution |
| LVDS Interface | Single / Dual channel 18/24-bit |
| TV-out | NTSC/PAL up to 1024x768 resolution, HDTV 480p/720p/1080i/1080p modes supported (without Macrovision) |

Audio

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|-------------|--|
| Chipset | Integrated on Intel® ICH7-M DH |
| Audio Codec | HDA (Azalia) or AC'97 codec on carrier |

LAN

| | |
|-----------|-------------------------|
| Chipset | PCIe type Intel® 82573L |
| Interface | 10/100/1000 Mbps |

Multi I/O

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|------------|--|
| Chipset | Intel® ICH7-M |
| IDE (PATA) | Single channel IDE with UDMA 100 support |
| SATA | Three SATA 1.5 Gb/s ports |
| USB | Up to eight USB 2.0 ports |

Super I/O

Connected to LPC bus on carrier if needed

TPM

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|---------|-----------------------|
| Chipset | Infineon SLB9635TT1.2 |
| Type | TPM 1.2 |

Power Specifications

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|-------------------|--|
| Input Power | AT mode (12 V) and ATX mode (12 V and 5 Vsb) |
| Power States | Supports S0, S1, S3, S4, S5 |
| Power Consumption | 16 W typical (with Core™2 Duo U7500 and 1 GB memory) |

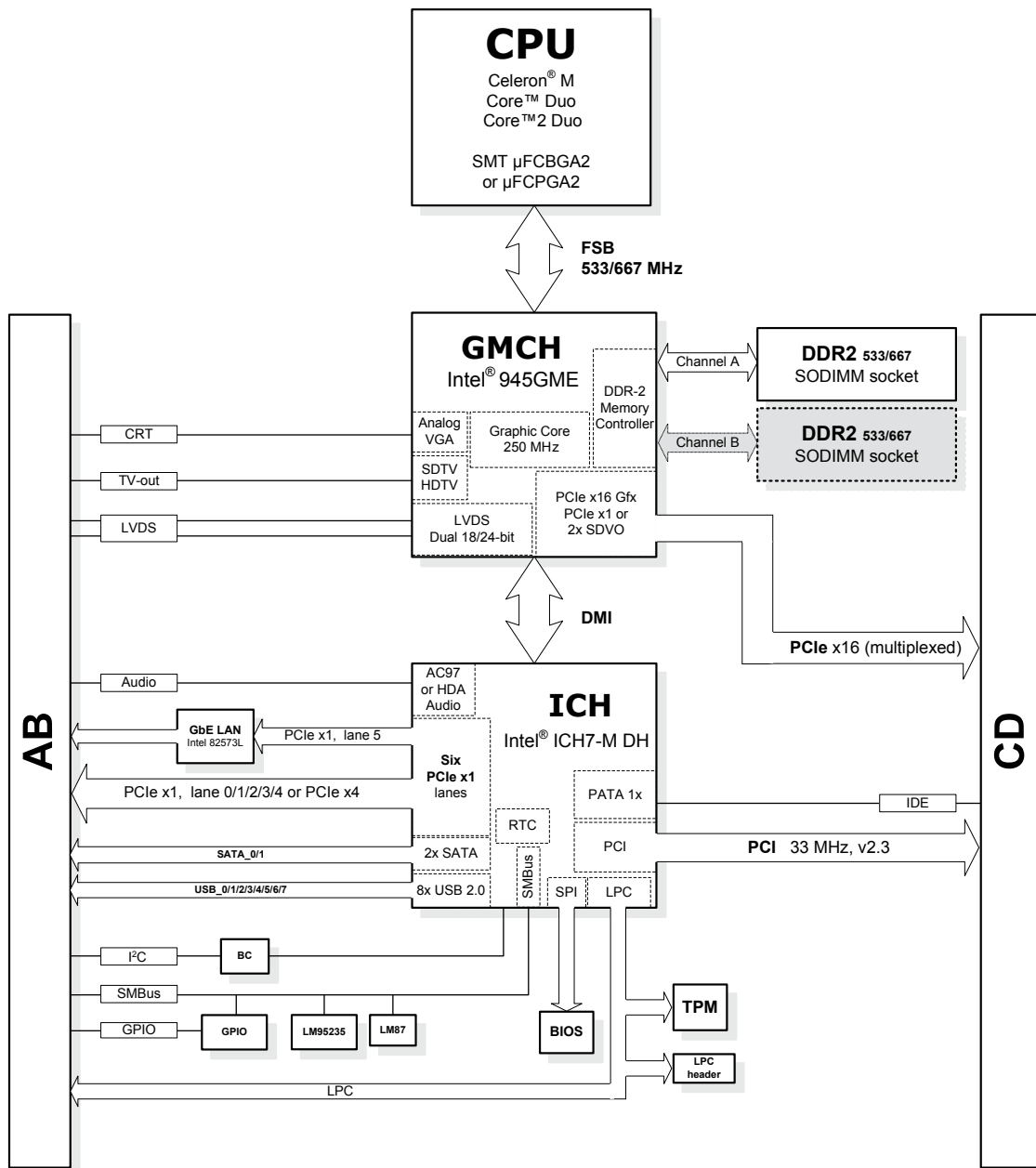
Mechanical and Environmental

| | |
|-----------------|---|
| Operating Temp. | 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 32/64-bit Windows® Vista 32/64-bit Windows® Server 2003 Linux® 2.6.x |
| Extended Support | Embedded XP BSP WinCE BSP Linux® 2.6.x BSP AIDI Library for Win32, WinCE and Linux® |

Functional Diagram



Ordering Information

Modules

| Model Number | Description/Configuration |
|------------------|--|
| Express-NR-S | COM Express™ Module with socket for Celeron® M / Core™ Duo / Core™2 Duo processor (for Intel® Core™2 Duo T7400 processor at 2.16 GHz or Intel® Celeron® M 440 processor at 1.86 GHz) |
| Express-NR-L7400 | COM Express™ Module with LV Intel® Core™2 Duo L7400 processor at 1.5 GHz |
| Express-NR-L2400 | COM Express™ Module with LV Intel® Core™2 Duo L2400 processor at 1.66 GHz |
| Express-NR-U7500 | COM Express™ Module with ULV Intel® Core™2 Duo U7500 processor at 1.06 GHz |
| Express-NR-423 | COM Express™ Module with ULV Intel® Celeron® M 423 processor at 1.06 GHz |

Accessories

| Model Number | Description/Configuration |
|-------------------------------------|--|
| Heat Spreaders | |
| HTS-NR-B | Heatspreader for Express-NR (BGA CPU) with threaded standoffs |
| Passive Heatsinks | |
| THS-NR-B | Low Profile Heatsink for Express-NR (BGA CPU) with threaded standoffs |
| THSH-NR-B | High Heatsink for Express-NR (BGA CPU) with threaded standoffs |
| Heatsink with Active Cooling | |
| THSF-NR-S | High Performance Heatsink with Fan for Express-NR (socket CPU) with threaded standoffs |