

Features

- Intel® Core™2 Duo processor (up to 2.26 GHz)
- Intel® GS45 and ICH9M-SFF chipset
- Dual SODIMM for up to 8 GB DDR3 at 1066 MHz
- Five PCIe x1, one PCIe x16 for graphics (or general purpose x8, x4 or x1)
- Single/dual channel 18/24-bit LVDS and TV-out (SDTV and HDTV)
- SATA 3 Gb/s, IDE (PATA), Gigabit LAN, USB 2.0

Specifications

Core System

CPU	<p>Penryn SFF BGA type</p> <p>Intel® Core™2 Duo SP9300, FSB 1066, 2.26 GHz with 6MB L2 cache, 25 Watt</p> <p>Intel® Core™2 Duo SL9400, FSB 1066, LV 1.86 GHz with 6MB L2 cache, 17 Watt</p> <p>Intel® Core™2 Duo SU9300, FSB 800, ULV 1.2 GHz with 3MB L2 cache, 10 Watt</p> <p>Intel® Celeron® M 722, FSB 800, ULV 1.2GHz with 1MB L2 cache, 5.5 Watt</p>
Memory	Dual stacked SODIMM sockets supporting dual channel memory, up to 8 GB of non-ECC, 800/1066 MHz DDR3
Chipset	Intel® GS45 Express Graphics Memory Controller Hub SFF (Small Form Factor) and Intel® I/O Controller Hub ICH9M-SFF
BIOS	AMIBIOS®8 with CMOS backup in 16 Mbit SPI flash
Hardware Monitor	Supply voltages and CPU temperature
Watchdog Timer	Programmable timer ranges to generate RESET
Expansion Busses	<p>Graphics PCI Express x16 bus for SDVO/HDMI/DisplayPort or general purpose PCI Express (x8 / x4 / x1)</p> <p>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 x4</p> <p>32-bit PCI 2.3 at 33MHz, supporting 4 bus masters</p> <p>LPC, SMBus, I²C</p>

Video

Chipset	GS45 GMCH integrated Mobile Intel® Graphics Media Accelerator 4500MHD with core render clock 533 MHz @ 1.05-V core voltage or 266 MHz @ 1.025 L.P. Mode
Integrated Video Feature Support	<p>Intel® Dynamic Video Memory Technology (Intel® DVM T 5.0)</p> <p>Video capture via x1 concurrent PCI Express port</p> <p>PAVP (Protected Audio-Video Path) support for Protected Intel® HD Audio Playback</p> <p>High performance MPEG-2 decoding</p> <p>WMV9 (VC-1) and H.264 (AVC) support</p> <p>Hardware acceleration for MPEG2 VLD/IDCT</p> <p>Microsoft DirectX 10 support</p> <p>Blu-ray support @ 40 Mb/s</p> <p>Hardware motion compensation</p> <p>Intermediate Z in classic rendering</p>
VGA Interface	<p>Analog VGA support by 300MHz DAC</p> <p>Analog monitor support up to QXGA, supports VGA hot plug</p>
LVDS Interface	Single / Dual channel 18/24-bit at 25~112 MHz
TV-out	NTSC/PAL up to 1024x768 resolution supported HDTV 480p/720p/1080i/1080p modes supported (without Macrovision)

Audio

Chipset	Integrated on Intel® ICH9M
Audio Codec	HDA codec on carrier
HDMI	Audio routed to HDMI interface

LAN

Chipset	Integrated on Intel® ICH9M with Intel® 82567LM PHY
Interface	10/100/1000 Mbps Ethernet

Multi I/O

Chipset	Integrated on Intel® ICH9M
USB	Supports up to eight ports USB v. 2.0
SATA	Four ports SATA 3 Gb/s with (optional) support for RAID 0,1,5,10
PATA	SATA to PATA JM20330 controller on SATA channel 3, Master only

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 +/- 5%) and ATX mode (12 V and 5 Vsb +/- 5%)
Power States	Supports S0, S1, S3, S4, S5
Power Consumption	18 W (with Core™2 Duo SU9300 at 1.2 GHz and 2 GB memory typical)

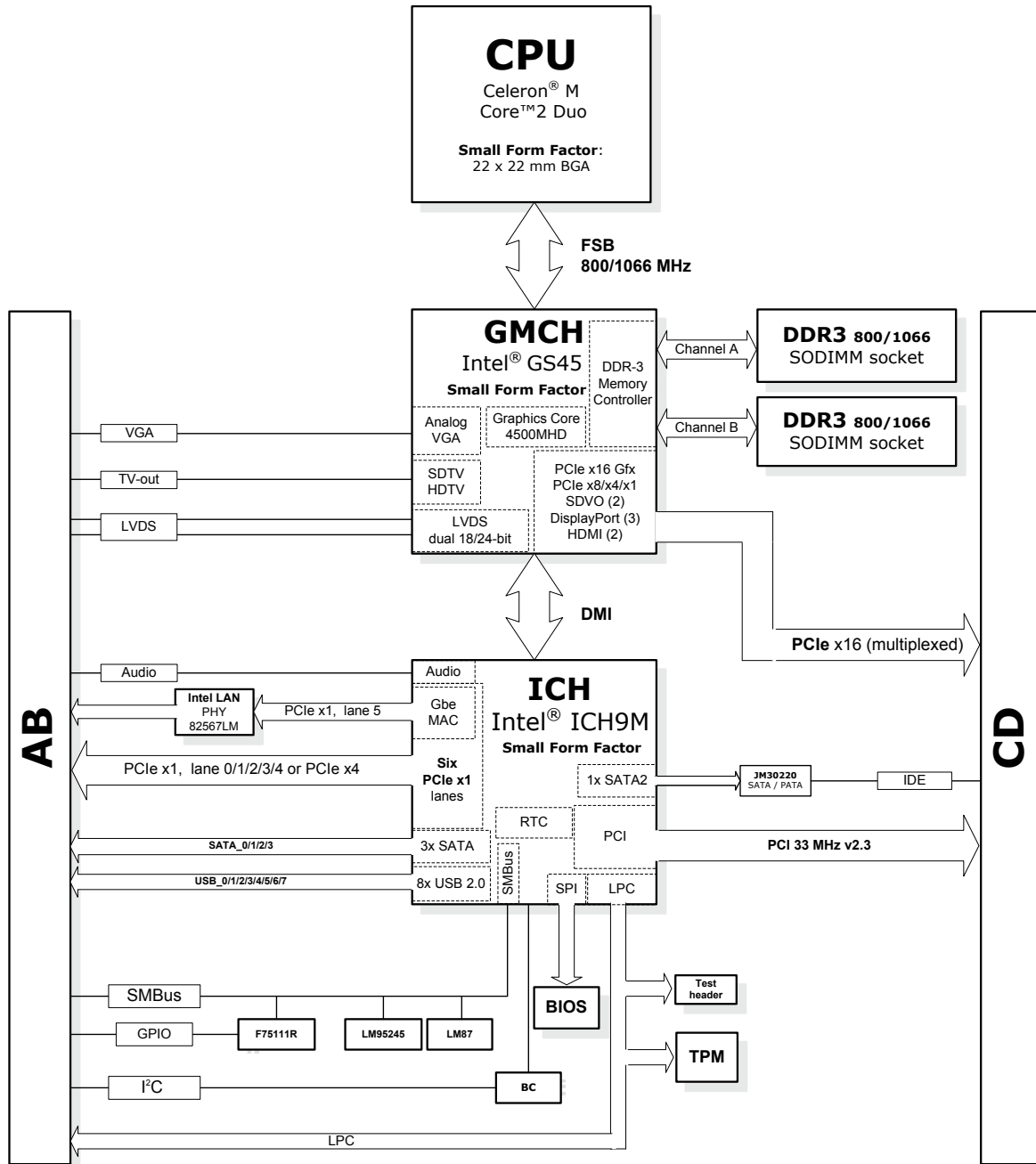
Mechanical and Environmental

Operating Temp.	0°C to 60°C
Storage Temp.	-20°C to 80°C
Humidity	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	<p>Windows® XP 32/64-bit</p> <p>Windows® Vista 32/64-bit</p> <p>Windows® Server 2003/2008</p> <p>Linux® 2.6.x</p>
Extended Support	<p>Embedded XP BSP</p> <p>Linux® 2.6.x BSP</p> <p>WinCE 6.0 BSP</p> <p>AIDI Library for Win32, WinCE and Linux®</p>

Functional Diagram



Ordering Information

Modules

Model Number	Description/Configuration
Express-MV-SP9300	COM Express® Module with Intel® Core™2 Duo processor SP9300 at 2.26 GHz
Express-MV-SL9400	COM Express® Module with LV Intel® Core™2 Duo processor SL9400 at 1.86 GHz
Express-MV-SU9300	COM Express® Module with ULV Intel® Core™2 Duo processor SU9300 at 1.20 GHz
Express-MV-722	COM Express® Module with ULV Intel® Celeron® M processor 722 at 1.20 GHz

Accessories

Model Number	Description/Configuration
Heat Spreaders	
HTS-MV-B	Heatspreader for Express-MV (BGA CPU) with threaded standoffs
Passive Heatsinks	
THS-MV-BL	Low Profile Heatsink for Express-MV (BGA CPU) with threaded standoffs for bottom mounting with long cooling fins (incl screws for 5 and 8 mm btb)
Heatsink with Active Cooling	
THSF-MV-B	High Performance Heatsink with Fan for Express-MV (BGA CPU) with threaded standoffs