

Chapter

5

Hardware Specifications

You can enjoy and utilize the S6Fm Notebook more effectively with a better comprehension of detailed hardware specifications of the notebook.

This chapter lists the detailed specifications of the notebook's main system and modules. Please refer to this section when you need to find out specific technical data about the notebook.

This chapter contains the following information:

- ◆ **System Specifications**
- ◆ **Chipset Specifications**
- ◆ **Key Parts List**
- ◆ **System Resource**
- ◆ **Module Specification**

1. Marketing spec

S6Fm Specification				
Product Family	S6Fm			
Dimension	12.40" x 8.92" x 1.23"			
	315 x 226.65 x 31.3 mm			
Weight	3.3 lbs/1.5 kg			
Color	Yellow	White	Coffee	Leather
CPU Type	Intel Yonah/ Merom Dual core			
Speed	1.83/1.5/1.66 GHz			Support Power4 Gear 2 (Frequency limited + throttle)
Package	Intel Micro-FCBGA (479 pin)			
L2 Cache	YES			
Size	2/4 MB			On-die cache memory
Memory Type	DDR2 667 DRAM			
Base Memory	512 MB			On board
Expansion Memory	512MB /1GB			SO-DIMM
MAX	Up to 1.5G MB DDR2 DRAM support			
LCD Size	11.1" Wide			
Resolution	1360*768(TSB)			
Panel Type	Glare TFT			
Interface	LVDS			
Contrast Control	None			
Brightness Control	Function Key			
HDD type	2.5", 9.5mm			
Ultra DMA 100	YES			
Size	120/160/100 GB(5400/7200 rpm)			
ODD Driver	5.25", 9.5mm Slim Type			
HLDS	GSA-4083N			DVD Super Multi
KME	UJ-842BAL1-Z			DVD Super Multi
Chip Set				
GMCH+	Intel 945GM			
ICH	Intel ICH7-M			
Thermal Sensor	ADT 7460			
KBC	Mitsubishi M38857			



Hardware Technical Specification

Flash ROM (FWH)	SST 49LF004A	4Mb
Graphic Accelerator	Intel 945 GM	
3D	Yes	
Controller	Embedded	
Package	Intel Micro-FCBGA (1466 pin)	
I/F		
AGP Support		
Dual view/Dual App	Yes	
Graphic Memory	UMA	
TV Out Support	No	
NEWCARD		
Express card 34	Yes	
Express card 54	Yes	
Controller	ICH7-M	
USB	Yes	
Sound System		
Controller	Realtek ALC660	
SW wave table	Yes	
FM synthesizer	Yes	
Speaker	Stereo	
I/F	Azalia	
PC99	Yes	
Audio Amplifier	G1420	
Microphone	Stereo	
Modem	ASUS MDC	
Controller	Azalia	Realtek
Spec	56K	
I/F	Azalia	
Jack	RJ-11	RJ-11/RJ-45 combo port
ACPI	Yes	
V.90	Yes	
V.92	Yes	By driver
Voice Phone		
Digital Line Protection		
Wake On Ring	Yes	
LAN		
Jack	RJ-45	RJ-11/RJ-45 combo port



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I/F	PCIE	
Wake On LAN	YES	
Controller	Realtek RTL8111B	
GOLAN		
Spec	802.11 a/b/g	
I/F	Mini CARD	
Bluetooth Module		
Vendor	ASUS	
Spec	2.4GHz v2.0	
Internal Keyboard		
Vendor	Sunrex	
Key	83 Keys (US, Int'l) 86 Keys (JP)	Support US, JPN, TWN, UK, KR
Stroke/Pitch	17.5mm/2.0mm	
Function Key	YES	
Hot Key Function	15 Hot Keys	
Suspend (STR or STD)	Fn + F1	
Wireless switch	Fn + F2	
E-Mail Messaging	Fn + F3	
Internet Explorer	Fn + F4	
Brightness Down	Fn + F5	
Brightness Up	Fn + F6	
Back light on/off	Fn + F7	
LCD/CRT	Fn + F8	
TouchPad On/Off	Fn + F9	
Volume on/mute	Fn + F10	
Volume down	Fn + F11	
Volume up	Fn + F12	
Splendid	Fn + C	
Numeric Key Pad on/off	Fn+Ins	
Scroll Lock on/off	Fn+Del	
Status Indication	6 LEDs	
Power Status	Yes (Blue when Power on. Blinking when in S3 mode. OFF when power off.)	
Battery Charge Status	Yes (ORANGE when charging. Blinking when battery low. OFF when fully charged/empty.)	
HDD LED	Yes (White while accessing)	
Wireless LED	Yes (Blue while accessing)	



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Bluetooth LED	Yes (White while accessing)	
Caps lock	Yes (White while accessing)	
Pointing Device		
Touch Pad	Glide Pad	Synaptics
Function Control		
Power On Button	Yes	
LCD Brightness	Yes	Hot Keys
Power4Gear	Yes	
Wireless On/Off	Yes	
LCD Lid Switch	Yes	Hall Sensor
Sound Volume	Yes	Hot Keys
Password Override		
Force OFF	Yes (Reset switch)	
I/O Port	Port support hot-plug	
Serial	No	
CRT	Yes	15-pin D-sub
Modem/LAN Jack	RJ-11/RJ-45 Combo Port	
Head Phone Jack	Yes	Stereo
Mic In Jack	Yes	Mono
Line In Jack	No	
USB port	Yes	3 Ports
DC-In	Yes	
Heat Solution		
Heat Sink	Yes	
FAN Support	Yes	
AC Adaptor	Delta/Liton	2-pin/3-pin type
Input	AC 100-240V, 50~60Hz	
Output	DC 19V, 3.42A, 65W	
Battery	3/6/9Cells (3S1/2/3P)	2600mAh/Per Cell
Type	Samsung	
1st Battery	Samsung	
2nd Battery	No	
Charging time		
Machine ON	2.3-5 Hour	
Machine OFF	2.3~4 Hours	
Battery Life		
PM On	7 Hours	JEITA
Power Management	AMI BIOS	
LCD Close/Open	Yes	



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LCD Back-light	Yes	
Suspend/Resume	Yes	
Hibernation (S2D)	Yes	
Thermal Control	Yes	
ACPI	Yes	
DMI 2.0		Support DMI BIOS 2.3
Security		
Password	Yes	BIOS setup, Power-on, HDD User Password Protection
Security Lock	Yes	
S/W		
Install OS	Vista	
Option	Vista	
Flash BIOS	Yes	
Drivers		
Chipset Driver	Yes	
VGA Driver	Yes	
AUDIO Driver	Yes	
LAN Driver	Yes	
Card Bus Driver	Yes	
Glide Pad Driver	Yes	
Modem Driver	Yes	
RF Driver	Yes	
Bluetooth Driver	Yes	
TPM Driver	Yes	
LOGO		
INF Update (Intel)	Yes	V8.1.1.1010_logo
VGA (Intel NAPA 945GM)	Yes	V7.14.10.1132_logo_Vista32
Audio (ALC660)	Yes	V6.0.1.5334_logo_SID12227_20_Vista32_64
Lan (RTL8111B)	Yes	V6.186.1103.2006_logo_Vista32_64
Wireless LAN	Yes	3945: V10.6.0.46_TIC130279_logo_Vista32_64 4965: V11.0.0.74_TIC129161_logo_Vista32_64
Bluetooth	Yes	V5.10.02_Vista32_logo
Touch Pad (Synaptics)	Yes	V9.1.5.0_Logo_Vista32_64_Premium
1394 (R5C832)	Yes	R5C8xx_V1.00.01_logo_Vista32
RICOH Media Card (R5C832)	Yes	R5C8xx_V1.00.01_logo_Vista32



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Modem (Motorola ML3054)	Yes	V6.12.04_DFV_logo_XP_Vista32_64
ASUS NB probe	Yes	NB_Probe_V3.0.0026
ASUS ATK0100	Yes	ATKDrv_V1043.2.31.100_logo_Vista32
ASUS Splendid	Yes	Splendid_V1.02.15_Vista
ASUS WinFlash	Yes	V2.20_ASUS
Wireless Switch (Wireless Console 2)	Yes	Wireless_Console_V2.0.8
POWER GEAR	Yes	p4gX_V1.00.0008_Asus
ASUS LiveUpdate	Yes	LiveUpdate_V2.4.8
ASUS Net4Switch	Yes	Net4Switch_V1.0.0011_20070115
ASUS ASPM	Yes	V2.1.0.844.12_Vista32_64
ASUS PowerForPhone	Yes	PowerForPhone_V1.0.0.12
TPM	Yes	V3.0.0RC3_with_driver_V1.80.4_XP32_Vista32
CD-ROM	Yes	OS Default

2. Chipset list

Chipset Summary Table

Function	S6Fm	HW ACPI/PC99
CPU	Mobile Intel Yonah/Merom	
SRAM (L2 Cache)	Pipeline Burst SRAM (On-die) 2/4MB	
GMCH+	Intel 945GM	YES
ICH	Intel ICH7-M	YES
SpeedStep Controller	Intel ICH7-M	YES
MEMORY	DDR2 DRAM	
BIOS ROM	FWH 4MB	
VGA	Embedded	YES
Memorycard&1394	RICOH R5C832	YES
AUDIO	Realtek ALC 660	YES
AUDIO AMPLIFIER	G1420	
KB CONTROLLER	Mitsubishi M38857	YES
CLOCK Generator	ICS954310	YES
MODEM	ASUS MDC	YES
LAN	Realtek RTL8111B	YES

2.1. CPU

Processor Type:	Mobile Intel Yonah/Merom
Processor frequency:	1.83/1.33/1.5 GHz
Construction method:	u-FCBGA
Supply voltage:	VCCA: 1.5V VCCP: 1.05V Deeper Sleep:0.7V
Function feature:	<ol style="list-style-type: none">1. 667/800 MHz processor system bus2. Support Streaming SIMD extensions 2(SSE2)3. Primary 32-KB instruction cache and 32-KB write-back data cache4. Integrated on-die 2MB /4MB L2 cache5. Enhanced Intel SpeedStep technology to enable real-time dynamic switching between multiple voltage and frequency points6. Advanced gunning transceiver logic(AGTL+)bus driver technology7. Data Prefetch Logic

2.2. CHIPSET

2.2.1. GMCH+

Function:

1. Full support mobile Intel Yonah with a maximum system bus frequency of 533/667MHz
2. 400/533/667 MHz DDR2 SDRAM interface
3. Integrated system power management (APM & ACPI) support
4. Support 32-bit AGTL+ host bus addressing
5. 2X address, 4x data
6. 2D display core frequency at 133,200 or 222Mhz@vcc=1.05v depending on the host/memory configuration
7. 3D display core frequency at 133,200 or 222Mhz@vcc=1.05v depending on the host/memory configuration
8. Intel Smart 2D display Technology support
9. Intel Dual-Frequency Graphics Technology support
10. Dynamic_Video_Memory_Technology (DVMT)3.0 support
11. 3D Graphics Engine
12. Analog CRT DAC Interface support
13. Analog TV_OUT Interface support
14. Digital LVDS Interface support
15. Direct Media Interface

Vendor:

Intel

Parts Number:

82945GM

Package:

1466 pin FCBGA

2.2.2. ICH7-M

Function:	<ol style="list-style-type: none"> 1. I/O control hub 2. PCI 2.3 interface (6 PCI Request/Grant Pairs) 3. Integrated PC/AT compatible system (DMA Controller, INT, Timer/Counters) 4. Integrated two channels IDE controller with Ultra ATA 33/66/100 support 5. USB1.1 and USB2.0 Host Controllers 6. Integrated SMBus 2.0 Controller 7. FWH Interface 8. LPC Interface 9. Azalea audio Interface 10. PCI-Express Interface 11. Serial ATA Controller 12. Real time clock 13. AC97 2.3 controller
Vendor:	Intel
Parts Number:	82801GBM
Package:	652-pin BGA

2.3. DRAM

2.3.1. ON-BOARD MEMORY

Type:	DDR2 667DRAM
Size:	512 MB
Bus:	64-bit data path
Supply voltage:	1.8V
Hardware features:	667 MHz

2.3.2. EXPANSION MEMORY

Number of sockets:	One 200 pin DDR2 SODIMM sockets
Bus:	64-bit data path
Supply voltage:	1.8V
Functional features:	Hyper page mode
Hardware features:	400/533/667 MHz Easy removable and exchangeable for user's future upgradeability
Parity support:	No parity bit for all memory

2.4. BIOS ROM

ROM Type:	SST FWH Flash Memory
Package:	32-Lead TSOP
Supply voltage:	3.3V
Serviceability:	End user upgradeable for the firmware

2.5. 5VGA CONTROLLER

Function features:	<ol style="list-style-type: none"> 1. 2D display core frequency at 133,200 or <u>222Mhz@vcc=1.05v</u> depending on the host/memory configuration 2. 3D display core frequency at 133,200 or <u>222Mhz@vcc=1.05v</u> depending on the host/memory configuration 3. 3D Graphics Engine 4. Dual independent pipe for dual independent display 5. LVDS panel support up to UXGA panel
Vendor:	Intel
Parts Number:	Embedded on GMCH+
Video Memory:	Share system memory 8MB

2.6. 1394/Memory Card Controller

Function:	<ol style="list-style-type: none"> 1. MMC, SD, MS, MS-Pro, xD memory card support 2. IEEE1394 support
Hardware features:	<ol style="list-style-type: none"> 1. Single Chip PCI-CardBus/1394 Bridge 2. Compliant with PCI Specification 3.0 3. 1394 PHY 4. 1394 OHCI-LINK Bridge 5. Flash Memory Interface
Vendor:	Ricoh
Parts Number:	R5C832
Package:	128-pin TQFP

2.7. KEYBOARD CONTROLLER

Function features:	<ol style="list-style-type: none"> 1. 8042-style host interface 2. Support hardware speed-up of GateA20 and RC 3. Local 16x8 keyboard switch matrix support 4. Three industry standard serial keyboard interfaces 5. All three ports are bi-directional
Vendor:	Mitsubishi
Parts Number:	M38857
Package:	80-pin TQFP

2.8. AUDIO CODEC

Function features:	<ol style="list-style-type: none">1. 3 DAC support 16/20/24-bit PCM format for 5.1 audio solution2. 1 stereo ADCs support 16 bit PCM format3. Supports 48K/96K sample rate4. Support Analog pc-beep output5. Supports 48K/96K S/PDIF output
Vendor:	REALTEK
Parts Number:	ALC660-D
Package:	48-Teminal LQFP

2.9. AUDIO AMPLIFIER

Function features:	<ol style="list-style-type: none">1. Depop circuitry integrated.2. Mute and shutdown control available.
Vendor:	GMT
Parts Number:	G1420
Package:	24-pin TSSOP

2.10. LAN & MODEM BOARD

2.10.1. LAN

Function features:	<ol style="list-style-type: none">1. Integrated 10/100/1000 transceiver.2. Supports PCI Express™ 1.0a.3. Fully compliant with IEEE 802.3, IEEE 802.3u, IEEE 802.3ab.4. Supports full duplex flow control (IEEE 802.3x).5. Transmit/Receive on-chip buffer (48KB) upport.
Vendor:	Realtek
Parts Number:	RTL8111B
Package:	64-pin QFN

2.10.2. MODEM

- | | |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Function features: | <ol style="list-style-type: none">1. Modem Daughter Card (MDC) hardware component2. Host signal processing based modem with both controller and data pump function executing on CPU3. Robust hardware component supports software-only upgrade4. V.92/V.90 analog receive data up to 56kbps with V.44 data compression, V.17 analog fax to 14.4kbps5. PC 98/99 compliant6. V.80 synchronous access mode supports host-controlled7. Caller ID8. Support ACPI, AMP power management |
| Vendor: | 9. ASUS |
| Parts Number: | ML 3054 |

Key parts list

Key Parts Summary:

No.	CATEGORY	MODEL No.	VENDOR	1'st	2'nd
1.	Yonah, 2M L2, 667 MHz FSB, 15W	Core processor Duo LV 1.66 GHz (L2400)	Intel	V	
	Yonah, 2M L2, 667 MHz FSB, 15W	Core processor Duo LV 1.83 GHz (L2500)	Intel	V	
	Merom, 4M L2, 667MHz FSB, 17W	Core processor Duo 2 1.33 GHz (L7200)	Intel	V	
	Merom, 4M L2, 667MHz FSB, 17W	Core processor Duo 2 1.5 GHz (L7400)	Intel	V	
2.	11.1" TFT WXGA	LTD111EXDA	TOSHIBA	V	
3.	DVD Super Multi	GSA-4083N	HLDS	V	
	DVD Super Multi	UJ-842BAL1-Z	KME	V	
4.	80GB HDD (5400 rpm)	HTS541680J9SA00	HGST	V	
	120GB HDD (5400 rpm)	HTS541612J9SA00	HGST	V	
	160GB HDD (5400 rpm)	HTS541616J9SA00	HGST	V	
	80GB HDD (5400 rpm)	ST980811AS	SEAGATE		V
	100GB HDD (5400 rpm)	ST9100828AS	SEAGATE		V
	120GB HDD (5400 rpm)	ST9120822AS	SEAGATE		V
	160GB HDD (5400 rpm)	ST9160821AS	SEAGATE		V
	80GB HDD (7200 rpm)	HTS721080G9SA00	HGST	V	
	100GB HDD (7200 rpm)	HTS721010G9SA00	HGST	V	
5.	MDC	ML 3054	ASUS	V	
6.	Bluetooth Module	BT-183	ASUS	V	
7.	Touchpad	TM61PUZG336A	Synaptics	V	
8.	Mini-Card WLAN	Pro Wireless 3945AGM1GEN	Intel	V	
		Pro Wireless 3945AGM2GEN	Intel	V	
		Pro Wireless 3945AGRWGEN	Intel	V	
		Pro Wireless 3945AGJPGEN	Intel	V	
		Pro Wireless 3945AGBGGEN	Intel	V	
		WiFi Link 4965AGNMM1GN	Intel	V	
		WiFi Link 4965AGNMM2GN	Intel	V	
		WiFi Link 4965AGNMJPGN	Intel	V	
		WiFi Link 4965AGNMRWGN	Intel	V	
9.	Keyboard	V021562AJ1	Sunrex	V	
		V021562AS1	Sunrex	V	



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		V021562AK1	Sunrex	V	
		V021562BJ1	Sunrex		
		V021562BS1	Sunrex	V	
		V021562BK1	Sunrex		
		V021562AJ1	Sunrex		
10.	Samsung Battery 3S1P	2600 mAh (A31-S6)	Celxpert	V	
	Samsung Battery 3S2P	5200 mAh (A32-S6)	Celxpert	V	
	Samsung Battery 3S3P	7800 mAh (A33-S6)	Celxpert	V	
11.	65W 19V AC Adapter	SADP65KB-BFJ	Delta	V	
		SADP-65KB AFEF	Delta	V	
12.	512MB DDR2 667 On Board Memory	NT5TU32M16BG-3C	Nanya	V	
		HY5PS121621CFP-Y5	Hynix	V	
13.	512MB DDR2 667 SO-DIMM	NT512T64UH8B0FN-3C	Nanya	V	
		GU33512AJEPN612L4GG	Unifosa		V
14.	1GB DDR2 667 SO-DIMM	NT1GT64U8HB0BN-3C	Nanya	V	
		GU331G0AJEPN6E2L4G	Unifosa		V
15.	TPM	C.S SLB 9635 TT 1.2	Infineon	V	

3.1. Display

Technology:	Active color (TFT: Thin Film Transistor)
Size:	11.1"
Resolution:	WXGA (1360 X 768)
Dimension:	260 x 152 x 5.9-3.7max(D) mm
Pixel Pitch:	0.18mm (per one triad) x 0.18mm
Power Consumption	4.78W Typ. ($I_{FL}=6mA$ rms)
Weight	200g (Typ.)
Vendor:	TSB

3.2. Hard Disk Drive

2.5"	[Option]	
Form factor:		2.5 inch
Capacity:		80/100/120/160 GB
Height:		9.5 mm
Interface:		SATA Interface conforming to Serial ATA/High Speed Serialized AT Attachment
Voltage:		5.0V
Functional features:		Power Management APM 1.1 and 1.2 (standby/suspend) LBA-modes
Hardware features:		Standard I/O addresses: 1F0h to 1F7h and 3F6h Support of minimum IRQ 14 Support of at least 3 DMA channels, if DMA is supported Easily removable and exchangeable for user's future upgradeability

3.3. CD-ROM Drive

Physical Dimention:	128mm x 126mm x 10mm
Read Speed:	24X or higher(CD), 8X (DVD)
Write Speed:	24X (CD-R), 16X (CD-RW), 8X (DVD)
Interface:	IDE (ATAPI)
Functional features:	Power Management APM 1.1 and 1.2 (standby/suspend)
Hardware features:	Standard I/O addresses Support of minimum IRQ
Vendor/Model:	HLDS GSA-4083N

3.4. Touch Pad

Dimensions:	53.50 mm (W) x 39.80 mm (H) x 2.77 mm (T)
Sensor effective areas:	34.26 mm (W) x 31.28 mm (H)
Interface:	PS/2
X/Y position resolution:	40 points/mm (graphics mode)
Track pad top material:	
Customizing:	
Functional features:	Accurate positioning Low fatigue pointing action Low power consumption Environmentally scaled Software configurable
Vendor/Model	Synaptics: TM61PUZG336A

3.5. Keyboard

Compatibility:	MS-Windows XP 、 Vista
Functional features:	Standard Notebook-KeyBoard MF2-Layout
Hardware feature:	Simultaneously use of internal and external keyboard Easily to assemble or disassemble
Dimensions:	(H) 254.75 mm x (V) 96.4 mm
Pitch/Stoke:	14.73mm/4.5mm
Type:	Key switch Membrane
Key top:	ABS material, UV-coating shall
Language versions:	English, Japanese etc.
Vendor/ Model	Sunrex V021562AJ1

3.6. Battery

3.6.1. Main Battery

Purpose:	Main power supply battery
Gas-gauge:	SMBus interface
Chemistry:	Li-Ion rechargeable battery
Voltage:	Nominal 11.1V
Capacity:	2.6AH (3S1P), 5.2AH (3S2P), 7.8AH(3S3P)
Power:	28.86WH(3S1P), 57.72WH (3S2P), 86.58WH (3S3P)
Vendor:	Samsung
Charge Method:	Fast Charge: 1.4A, 2.3 hour (3S1P) 2.5A, 3.0 hour (3S2P) 2.5A, 4.0 hour (3S3P) (While System off)
Charging Source:	AC Adapter
Gas-gauge:	BENCHMARQ bq2060H

3.6.2. RTC Backup Battery

Purpose:	Backup the RTC/CMOS data While AC adapter off & Main Battery removed
Chemistry:	Coin cell Li-ion battery
Voltage:	Nominal 3.0V
Capacity:	220mAH
Vendor:	Panasonic (CR2032)

3.7. AC/DC Adapter

The notebook can be powered either by an external AC adapter or by an internal battery pack. The AC adapter is used as power source for the DC/DC converter and as constant current source for the battery pack.

Input Requirements:	
AC line voltage	90V to 264V, Full Range
AC line current	1.5Amax. (100-240Vac full load)
AC line frequency	47 Hz to 63 Hz, single phase
Efficiency	85% min. (100-240Vac full load)

Output requirements:

Output Voltage +18.4V~20V

Output-Current 3.42A max

Ripple voltage 300mV_{P-P}

Power cord: Plug to the adapter

DC Cable length: 180 mm +/- 50mm

Regulatory:

EMI: FCC PART 15 Class B

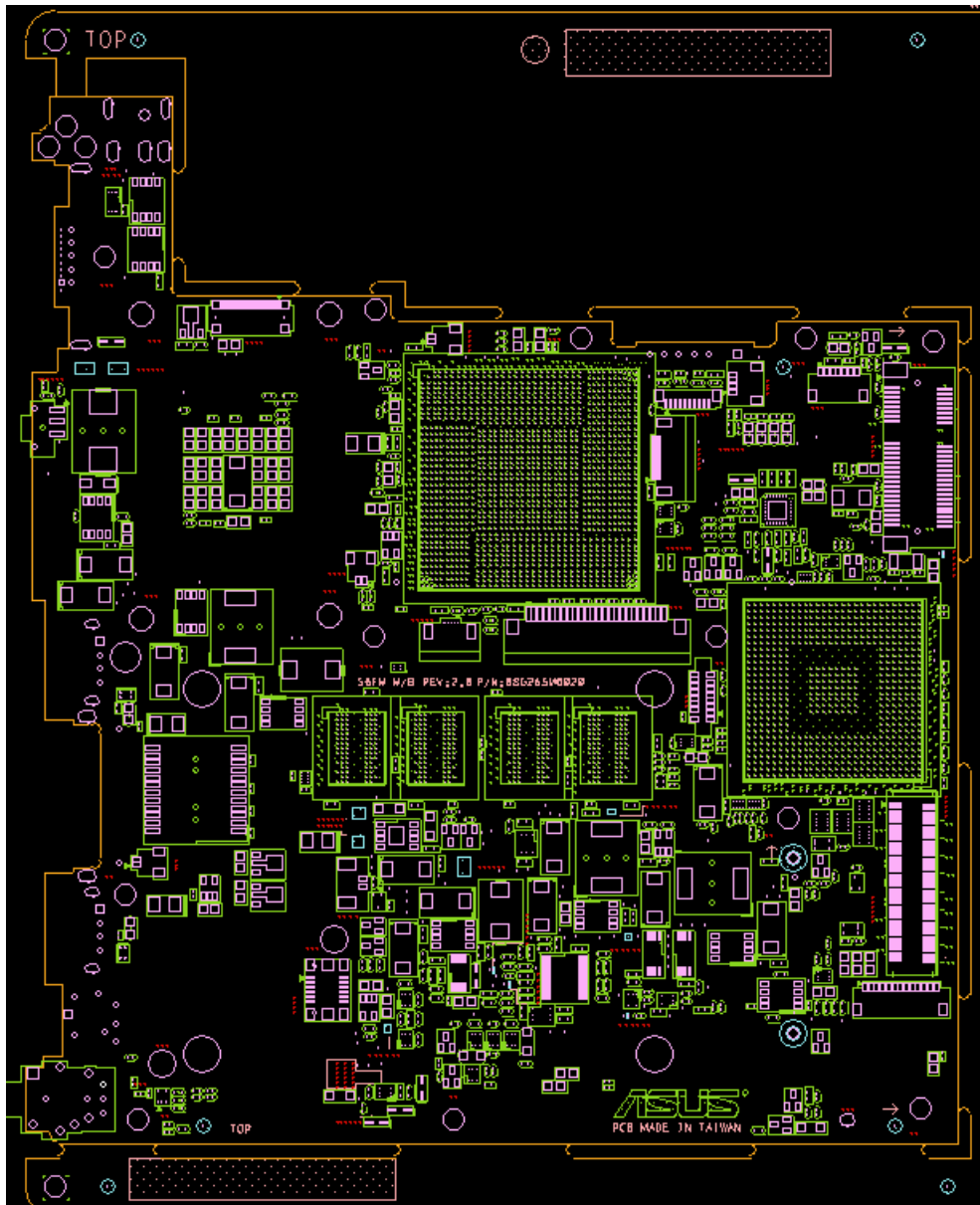
CISPR 22 Class B

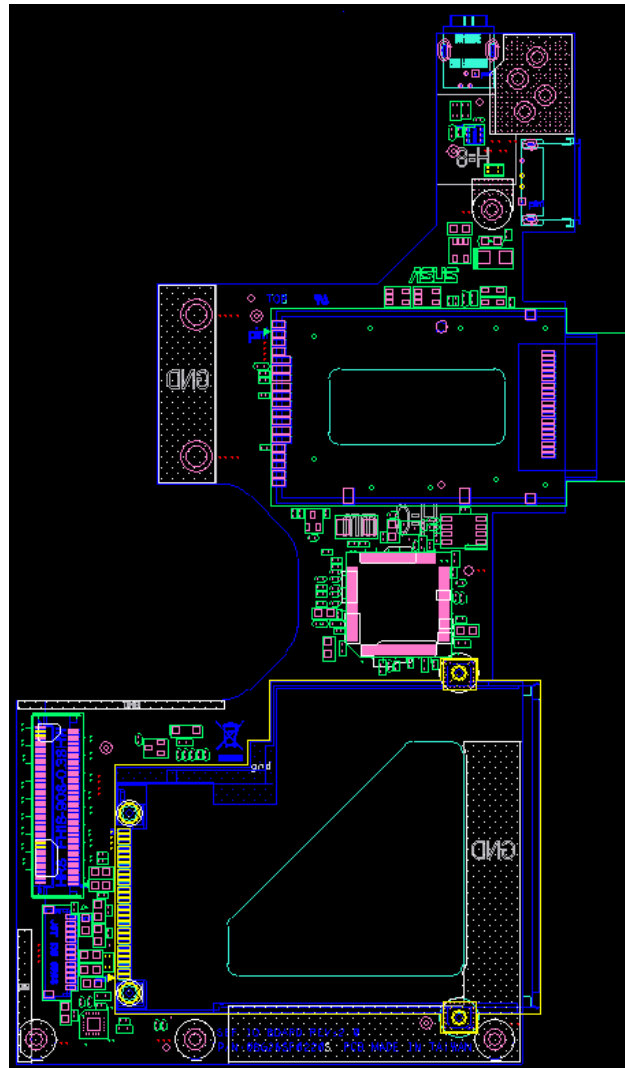
Safety: UL,c-UL,TUB+CB,CCC,PSE,CE,BSMI

Dimension: (H) 108 x (V) 46 x (T) 29.5 mm

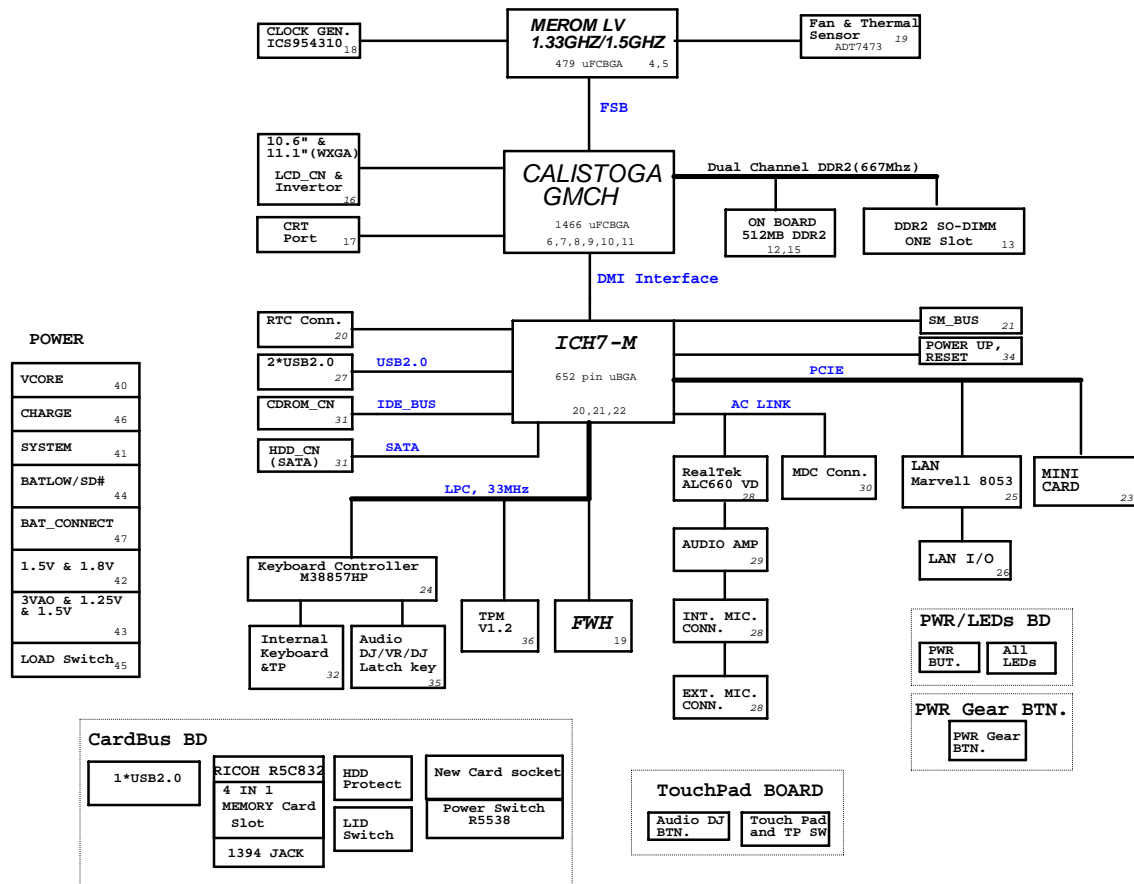
4. System

4.1. System diagram





4.2. Main components block diagrams



4.3. System resource

4.3.1. IRQ Map

IRQ#	Description
0	System Timer
1	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
8	System CMOS/real time clock
9	Microsoft ACPI-Compliant System
12	Microsoft PS/2 Mouse
13	Numeric data processor
14	Primary IDE Channel
15	Secondary IDE Channel
16	Mobile Intel® 945GM Express Chipset Family
16	PCI standard PCI-to-PCI bridge
16	Realtek RTL8168/8111 PCI-E Gigabit Ethernet NIC
17	PCI standard PCI-to-PCI bridge
17	Intel® PRO/Wireless 3945ABG Network Connection
18	PCI standard PCI-to-PCI bridge
18	Standard Universal PCI to USB Host Controller
19	Standard Universal PCI to USB Host Controller
20	SDA Standard Compliant SD Host Controller
20	Ricoh MMC Host Controller
20	Ricoh Memory Stick Host Controller
20	Ricoh XD-Picture Card Host Controller
21	Microsoft UAA Bus Driver for High Definition Audio
21	OHCI Compliant IEEE 1394 Host Controller
22	Standard Universal PCI to USB Host Controller
23	Standard Universal PCI to USB Host Controller
23	Standard Universal PCI to USB Host Controller

Note: This is subject to change.

4.3.2. ISA DMA Map

DMA Channel	Device
DMA 4	DMA Controller

4.3.3. PCI INT Map

INT	Description
INT	Description
INT A	None
INT B	None
INT C	None
INT D	None
INT E	SD/ MMC/ MS/ xD Card Host Controller
INT F	IEEE 1394
INT G	None
INT H	None

4.3.4. PCI Bus Master Map

REQ	Description
REQ0	None
REQ1	1394/ SD/ MMC/ MS/ xD Card Host Controller
REQ2	None
REQ3	None
REQ4	None
REQ5	None

4.3.5. IDSEL

IDSEL	CHIPSET
AD19	CARDBUS & 1394

5. I/O port pin assignment

No	FUNCTION	DESCRIPTION
1.	CRT	Display (Analog)
2.	HDD	Hard Disk Drive
3.	LCD	LVDS Interface Display
4.	KEYBOARD	
5.	TOUCHPAD	Pointing Device

6.	BATTERY	6 pins
7.	DC IN	Adapter Input
8.	AUDIO	Headphone, Microphone-In
9.	FAN	
10.	INVERTER	
11.	MINI PCIE	Wireless LAN Interface
12.	MDC	Azalia Modem
13.	4 IN1 CARD	MS, SD, xD and MMC
14.	USB	Universal Serial Bus
15.	ODD	Optical Disk Drive
16.	BLUETOOTH	

5.1. CRT Connector Pin Assignment

Vendor	Part No.	Pin No.
SUYIN	7846S-15G2T	15 Pin (DIP)
No	Pin Assignment (by: sort)	Description
1	RED Video (analog)	Red this DAC analog output drives the CRT interface.
2	GREEN Video (analog)	Green this DAC analog output drives the CRT interface.
3	BLUE Video (analog)	Blue this DAC analog output drives the CRT interface.
4	NC	NC
5	GROUND	Ground
6	RED Return (ground)	Ground
7	GREEN Return (ground)	Ground
8	BLUE Return (ground)	Ground
9	KEY	VCC
10	SYNC Return (ground)	Ground
11	NC	NC
12	DDC2BD_Q	DDC monitor data
13	HSYNC	CRT Horizontal Sync this output is The Horizontal sync pulse for the CRT Monitor.
14	VSYSN	CRT Vertical Sync this output is the Vertical sync pulse for the CRT Monitor.
15	DDC2BC_Q	DDC monitor clock

5.2. Hard Disk Device Pin Assignment

No.	Signal	Description	Type
1	GND	Ground	P
2	GND	Ground	P
3	GND	Ground	P
4	TP	Test point	O
5	+5Vs	+5V power supply	P
6	+5Vs	+5V power supply	P
7	+5Vs	+5V power supply	P
8	Reserved	NC	
9	+3Vs	+3V power supply	P
10	+3Vs	+3V power supply	P
11	+3Vs	+3V power supply	P
12	Reserved	NC	
13	GND	Ground	P
14	GND	Ground	P
15	SATA_RXP0	Receiving differential signal positive	I/O
16	Reserved	NC	
17	SATA_RXN0	Receiving differential signal negative	I/O
18	GND	Ground	P
19	GND	Ground	P
20	SATA_TXN0	Transmitting differential signal negative	I/O
21	Reserved	NC	
22	SATA_TXP0	Transmitting differential signal positive	I/O
23	GND	Ground	P
24	GND	Ground	P

5.3. LCD Pin Assignment

No.	Signal	Description	Type
1	EDID_Data	DDC Data	O
2	EDID_Clock	DDC Dlock	O
3	PANEL ID	Panel size	O
4	+3VS	EDID VCC	P
5	GND	Ground	P
6	L1_TX0-	Upper data channel 0-	O
7	L1_TX0+	Upper data channel 0+	O
8	GND	Ground	P
9	L1_TX2-	Upper data channel 2-	O
10	L1_TX2+	Upper data channel 2+	O
11	GND	Ground	P
12	L1_TX1-	Upper data channel 1-	O
13	L1_TX1+	Upper data channel 1+	O
14	GND	Ground	P
15	L1_TXC-	Upper clock channel -	O
16	L1_TXC+	Upper clock channel +	O
17	GND	Ground	P
18	GND	Ground	P
19	LCD_VCC	+3.3V power supply	P
20	LCD_VCC	+3.3V power supply	P
21	GND	Ground	P
22	GND	Ground	P

5.4. Internal Keyboard Pin Assignment

No	Signal	Description	Type
1	KSI1	Keyboard matrix row 1	I
2	KSI0	Keyboard matrix row 0	I
3	KSO0	Keyboard matrix column 0	O
4	KSI2	Keyboard matrix row 2	I
5	KSI3	Keyboard matrix row 3	I
6	KSI4	Keyboard matrix row 4	I
7	KSO1	Keyboard matrix column 1	O
8	KSO2	Keyboard matrix column 2	O
9	KSI5	Keyboard matrix row 5	I
10	KSI6	Keyboard matrix row 6	I
11	KSO3	Keyboard matrix column 3	O
12	KSI7	Keyboard matrix row 7	I
13	KSO4	Keyboard matrix column 4	O
14	KSO5	Keyboard matrix column 5	O
15	KSO6	Keyboard matrix column 6	O
16	KSO7	Keyboard matrix column 7	O
17	KSO8	Keyboard matrix column 8	O
18	KSO9	Keyboard matrix column 9	O
19	KSO10	Keyboard matrix column 10	O
20	KSO11	Keyboard matrix column 11	O
21	KSO12	Keyboard matrix column 12	O
22	KSO13	Keyboard matrix column 13	O
23	KSO14	Keyboard matrix column 14	O
24	KSO15	Keyboard matrix column 15	O

5.5. Internal Touch Pad Pin Assignment

No	Signal	Description	Type
1	GND	Ground	P
2	INTCLK_Q3	T/P PS2 CLK	I
3	INTDATA_Q3	T/P PS2 DATA	I
4	+5Vs	5V Power supply	P
5	+5Vs	5V Power supply	P
6	GND	Ground	P

5.6. Battery Pin Assignment

No	Signal	Description	Type
1	GND	Ground	P
2	TS#	Battery temperature thermal pin	I
3	SMD_BAT	Battery SMBus Data	I/O
4	SMC_BAT	Battery SMBus Clock	I/O
5	GND	Ground	P
6	BAT_CON	Battery voltage	P

5.7. DC in Jack Pin Assignment

No	Signal	Description	Type
1	A/D DOCK IN	Adapter input voltage	P
2	GND	Ground	P
3	GND	Ground	P

5.8. Audio Jack

5.8.1. Internal Speaker Jack

No	Signal	Description	Type
1	INTSPKR-	Internal speaker negative signal R channel	O
2	INTSPKR+	Internal speaker positive signal R channel	O
3	INTSPKL-	Internal speaker negative signal L channel	O
4	INTSPKL+	Internal speaker positive signal L channel	O

5.8.2. Headphone Jack

No	Signal	Description	Type
1	Jack Sense#	Detect Headphone presence	I
2	AC HP L	Headphone left channel	O
3	AC HP R	Headphone right channel	O
4	AUD GND	Audio Ground	P
5	SPDIF Jack	SPDIF jack-in detect pin	I
6	AUD GND	Audio Ground	P
7	SPDIF_OUT	SPDIF Data Output	I
8	SPDIF_VCC	SPDIF VCC	P
9	AUD GND	Audio Ground	P
10	NC	Not connected	

5.8.3. Microphone Jack

No	Signal	Description	Type
1	AUD GND	Audio Ground	P
2	MIC_IN_L	External microphone input left channel	I
3	MIC_IN_R	External microphone input right channel	I
4	Jack Sense#	Detect microphone presence	I
5	AUD GND	Audio Ground	P
6	AUD GND	Audio Ground	P

5.9. Fan Pin Assignment

No	Signal	Description	Type
1	+5VS	5V Power Supply	P
2	FAN_SPD	FAN Speed Detect	I
3	FAN_PWM	FAN PWM Signal	I
4	GND	Ground	P

5.10. Inverter Pin Assignment

No	Signal	Description	Type
1,2	AC_BAT_SYS	Inverter board power supply	P
3,4	GND	Ground	P
5	NC	Not connected	
6	LCD_ENBACK	LCD backlight enable signal	I
7	LCD_BACK_A DJ	LCD brightness adjustment	I

5.11. Mini CARD Connector Pin Assignment

Pin No.	Signal	Pin No.	Signal
1	PCIE_WAKE#	2	+3VS
3	CH_DATA	4	GND
5	CH_CLK	6	+1.5VS
7	CLK_REQ_MINI#	8	NC
9	GND	10	NC
11	CLK_PCIE_MINICARD#	12	NC
13	CLK_PCIE_MINICARD	14	NC
15	GND	16	NC
17	NC	18	GND
19	NC	20	WIRELESS_LAN_ON/OFF#
21	GND	22	PLT_RST#_BUF
23	PCIE_MINICARD_RXN2	24	+3V
25	PCIE_MINICARD_RXP2	26	GND
27	GND	28	+1.5VS
29	GND	30	SMBCK_3S
31	PCIE_MINICARD_TXN2	32	SMBDA_3S
33	PCIE_MINICARD_TXP2	34	GND
35	GND	36	NC
37	RESERVED	38	NC
39	RESERVED	40	GND
41	RESERVED	42	NC
43	RESERVED	44	WLAN_LED#
45	RESERVED	46	NC
47	RESERVED	48	+1.5VS

49	RESERVED	50	GND
51	RESERVED	52	+3VS
53	GND	54	GND
55	NC	56	NC

5.12. MDC Connector Pin Assignment

Pin No.		Pin No.	
1	GND	2	NC
3	ACZ_SDOOUT	4	NC
5	GND	6	+3V
7	ACZ_SYNC	8	GND
9	ACZ_SDIN1	10	GND
11	ACZ_RST#	12	ACZ_BCLK
13	GND	14	GND
15	GND	16	GND
17	GND	18	GND
19	NC	20	NC

5.13. Card Reader Connector Pin Assignment

Pin No	Signal	Remark
3/X0	MDIO00/SDCD	SD Card Detect
X0/M6	MDIO01/MSCD	MS Card Detect
5/X2	MDIO03/SDWP	SD Write Protect
	MDIO04/SDPC/MSPC	SD Card Power0 Control/ MS Power control
S2/M2/X7	MDIO08/SDCMD/MSBS	SD Command / MS Bus State
S5/M8/X3	MDIO09/SDCLK/MSCLK	SD Clock / MS Clock
S7/M4/X10	MDIO10/SDDA0/MSDA0	SD Data 0 / MS Data 0
M3/X11	MDIO11/SDDA1/MSDA1	SD Data 1 / MS Data 1
M5/X12	MDIO12/SDDA2/MSDA2	SD Data 2 / MS Data 2
S1/M7/X13	MDIO13/SDDA3/MSDA3	SD Data 3 / MS Data 3
X4	MDIO02	xDCE#
X8	MDIO05	SD Power control 1 / xDWP (Write Protect signal)
	MDIO06	sD/MS/SD LED Control
X14	MDIO14	xD Data
X15	MDIO15	xD Data
X16	MDIO16	xD Data
X17	MDIO17	xD Data
X5	MDIO18	xD CLE (Command Latch Enable signal)
X6	MDIO19	xD ALE (Address Latch Enable signal)

5.14. USB Connector Pin Assignment

No	Signal	Description	Type
1	+5V	USB +5V Power	P
2	USB-	USB Differential Data Negative	I/O
3	USB+	USB Differential Data Positive	I/O
4	GND	Ground	P

5.15. Optical Disk Device pin assignment

No	Signal	Description	Type
1	CD-L	Audio CD LEFT channel signal	I
2	CD-R	Audio CD RIGHT channel signal	I
3	CD_GND	Audio CD ground	I
4	GND	Ground	P
5	RST#	Reset slave disk	O
6	PDD8	Parallel device data 8	I/O
7	PDD7	Parallel device data 7	I/O
8	PDD9	Parallel device data 9	I/O
9	PDD6	Parallel device data 6	I/O
10	PDD10	Parallel device data 10	I/O
11	PDD5	Parallel device data 5	I/O
12	PDD11	Parallel device data 11	I/O
13	PDD4	Parallel device data 4	I/O
14	PDD12	Parallel device data 12	I/O
15	PDD3	Parallel device data 3	I/O
16	PDD13	Parallel device data 13	I/O
17	PDD2	Parallel device data 2	I/O
18	PDD14	Parallel device data 14	I/O
19	PDD1	Parallel device data 1	I/O
20	PDD15	Parallel device data 15	I/O
21	PDD0	Parallel device data 0	I/O
22	PDDREQ	Parallel device DMA request	I
23	GND	Ground	P
24	PDIOR#	Parallel device IO read	I
25	PDIOW#	Parallel device IO write	O
26	GND	Ground	P
27	PIORDY	Parallel device IO channel ready	I
28	PDDACK	Parallel device DMA acknowledge	O
29	IRQ14	Parallel device interrupt request	I
30	RESERVED	NC	
31	PDA1	Parallel device address 1	O
32	PDIAG#	Parallel device diagnostics status	I/O
33	PDA0	Parallel device address 0	O
34	PDA2	Parallel device address 2	O
35	PDCS1#	Parallel device chip select for 100 range	O

36	PDCS3#	Parallel device chip select for 300 range	O
37	PDIAG#	Parallel device driver active / slave present	I/O
38	+5VS	+5V DC power supply	P
39	+5VS	+5V DC power supply	P
40	+5VS	+5V DC power supply	P
41	+5VS	+5V DC power supply	P
42	+5VS	+5V DC power supply	P
43	GND	Ground	P
44	GND	Ground	P
45	GND	Ground	P
46	RESERVED	NC	
47	S_CSEL	Cable select (device configuration)	I
48	GND	Ground	P
49	RESERVED	NC	
50	RESERVED	NC	

5.16. Bluetooth Connector pin assignment

No	Signal	Description	Type
1	GND	Ground	P
2	USBP6+	Bluetooth Differential Data Positive	I/O
3	USBP6-	Bluetooth Differential Data Negative	I/O
4	RESERVED	NC	
5	CH_CLK	BT Priority and channel clock for WCS	
6	BT_ON/OFF#	Disable BT Device when low	I
7	CH_DATA	Channel Data for WCS, or WLAN_Active input from 802.11b for Activity Signaling which is optional	
8	+3V_BT	Bluetooth +3V power supply	P
9	RESERVED	NC	
10	GND	Ground	P

6. Power management

6.1. System power plane

Power Group	Power Control Pin	Controlled Devices
+VCORE	VID	CPU
+VCCP	VR_ON	CPU I/O, GMCH+
+3VSUS	SUSC#	ICH7-M, LAN
+5V	SUSC#	USB
+5VS	SUSB#	HDD, Internal Touch Pad, Audio AMP, Fan
+3V	SUSC#	Keyboard Controller, Bluetooth
+3VS	SUSB#	ICH7-M, Clock Generator, PCI interface, Azalia CODEC, FWH, Thermal sensor, 1394 Controller, CD-ROM
+12VS	SUSB#	MOS
+2.5VS	SUSB#	GMCH+
+1.8V	SUSC#	DDR2 SO-DIMM
+1.5VS	SUSB#	GMCH+
+0.9VS	SUSB#	DDR2 Termination

6.2. Power management mode

6.2.1. Full-On mode

All system devices are not power managed and the system can respond to applications with maximum performance.

6.2.2. Doze mode

The CPU clock is slow down but all other devices are full on.

6.2.3. Suspend to RAM mode (STR)

A suspend state where all motherboard components are powered-off. The CPU and PCI busses are powered off. All devices connected to the CPU and PCI busses must either be powered-off or isolate their bus interfaces.

The system memory is powered and refreshed by the memory bridge, and the graphics frame buffer is powered and refreshed by the graphics chip. The system provides a 32 kHz clock (SUSCLK) in this suspend mode to support refresh of these memory subsystems. Only an enabled “resume event” can bring the platform out of the suspend to RAM (STR) state.

6.2.4. Suspend to disk mode (STD)

A suspend state where the context of the entire system is saved to disk, all motherboard components are powered-off, and all clocks are stopped. Any enabled “resume event”, such as Power switch or RTC, can bring the platform out of the suspend to disk (STD) state.

6.2.5. Soft off mode (SOFF)

This is the same as suspend to disk except the context of memory is not saved. The system will resume from Soft Off as if a hard reset had occurred.

6.2.6. Mechanical off mode (MOFF)

All power except the RTC has been removed from the system.

6.3. PMU mode transition event

The following table summarizes the entry events and wake-up events of each power management mode.

Power State	Entry Event	Wake up Event
Doze	Doze Time out	Predefined Memory/IO range access Ring Indicator Keystroke Mouse movement IRQ 1-15
STR	Suspend Time out STR hot key pressed Suspend button Battery Low	Power Button Ring Indicator Keystroke (Int. KB) Schedule Alarm

STD	Suspend Time out STD hot key pressed Hibernate Battery Low	Power Button Schedule Alarm
Soft Off	Power button Execute Windows shutdown command	Power Button Schedule Alarm

6.3.1. Lid switch

Display mode	State	Lid close	Lid open
LCD	Full on	LCD OFF	No action
	Stand by	LCD OFF	No action
	STR/STD	LCD OFF	No action
CRT	Full on	No action	No action
	Stand by	No action	No action
	STR/STD	No action	No action
SIMUL	Full on	LCD OFF/CRT ON	No action
	Stand by	No action	No action
	STR/STD	No action	No action

LCD display will be shut down while closing LCD.

6.3.2. Power button

Power button can power on/ off the system. To reset the system, you need to press the reset button.

6.4. Device Power management

Power state of local devices table

Power State Component	Doze	Stand By	STR	STD/Soft Off
CPU	Quick Start	Stop Clock	Power Off	Power Off
GMCH+	ON	Stop Clock	Power Off (except VCCP)	Power Off
ICH7-M	ON	ON	Power Off (except SUSVCC, RTCVCC)	Power Off (except SUSVCC, RTCVCC)
DDR2-533 DRAM	ON	Self Refresh	Self Refresh	Power Off
HDD	ON	Power down	Power Off	Power Off
KBC	ON	ON	Power down	Power Off
VGA	ON	Power down	Power down	Power Off
1394 Controller	ON	Power down	Power down	Power Off
Audio CODEC	ON	ON	Power Off	Power Off
Audio Amplifier	ON	Power down	Power Off	Power Off
LCD Backlight	ON	Power Off	Power Off	Power Off
LAN	ON	Power down	Power down	Power Off
Modem	ON	Power down	Power down	Power Off

6.4.1. Device PM control during Stand By mode

Device	Power Controlled by	Description
CPU	Hardware	Controlled by STPCLK#
VGA Chip	Hardware	Controlled by SUS_STAT#
1394 Controller	Software	Enter PCI PM D3Hot state
Keyboard Controller	Working	M38859 support power down command
HDD	Software	HDD support power down command
Audio AMP	Hardware	Controlled by KBC P2.2
MDC	Software	Enter PCI PM D3Hot state
LAN	Software	Enter PCI PM D3Hot state
LCD Panel Back Light	Hardware	Controlled by GMCH+
Clock Synthesizer	Hardware	Controlled by SUSA#

6.4.2. Device PM control during STR mode

Device	Power Down Controlled by	Description
HDD	Hardware	Power Off
MDC	Software	Power Off
LAN	Software	Power Down
Audio CODEC	Software	Power Off
Audio AMP	Hardware	Power Off
LCD Panel	Hardware	Power Off
LCD Back Light	Hardware	Power Off
Clock Synthesizer	Hardware	Power Off
Keyboard Controller	Software	Controlled by M38857 power down command

6.4.3. Device PM control during STD mode

Device	Power Down Controlled by	Description
Core Logic	Hardware	Power off (except Resume Well)
HDD	Hardware	Power off
PCMCIA Controller	Hardware	Power off
MDC	Hardware	Power off
LAN	Hardware	Power off
Audio Chip	Hardware	Power off
Audio AMP	Hardware	Power off
LCD Panel	Hardware	Power off
Back light	Hardware	Power off
Clock Synthesizer	Hardware	Power off
Keyboard Controller	Hardware	Power off

7. Module Specification

7.1. Overall System

The notebook system consists of the following PCB assembly and modules.

7.1.1. Board assembly

1	Processor	LV (u-FCBGA)
2	Main Board	Main System and DC/DC module Board
3	Inverter Board	LCD Module Back-light
4	Power Switch Board	Power Switch and LED
5	Gear Board	Power4Gear Button
6	Pointing Device Board	Built-in Touch Pad device/2 click buttons
7	IO Board	4IN1 Card Reader Connector Board
8		

7.1.2. Modules

1	Hard Disk Drive Module	HGST/ Seagate 100/120/160 GB
2	DDR2 SO-DIMM Module	Memory Expansion
3	Optical Disk Drive Module	KME UJ-842BAL1-Z
4	Modem Module	ASUS MDC
5	Wireless LAN Module	Intel 3945 ABG
6	Thermal Module	
7	Bluetooth Module	ASUS BT-183
8	Keyboard	Sunrex K021562I1

7.2. Processor

Feature:	MeromCPU with on-die L2 cache. Thermal diode integrated. (u-FCBGA)
[CPU Cooling System]	For cooling the CPU
Function:	Cooling of CPU by heat sink and Fan. The fan controlled by thermal sensor and BIOS/ACPI OS.

7.3. Main board

7.3.1. Main system module spec

Feature:

- On board CPU , Intel Graphic-Memory Control Hub, Intel I/O Control Hub,
- Clock generator,
- DDR2-667 DRAM & its expansion sockets (SODIMM),
- PC/AT compatible system (RTC, DMA, INT, Timer, ... etc)
- IDE controller with PIO Mode 4 & Ultra-33/66/100
- Express Card & their sockets
- Card reader controller
- Audio CODEC,
- Audio amplifier,
- CPU thermal sensor,
- I/O connectors,
- Power management control circuit,
- Display controller,
- Keyboard Controller,
- Audio analog signal,
- Power control, DC/DC,

7.3.2. DC/DC module spec

Controller	Input Voltage	Output Voltage	Current	Regulation
MAX8770GTL	8-20V	+Vcore		+/-1.5%
TPS51020	8-20V	+3VO +5VO	3.5A 5.0A	+/-5% +/-5%
MIC5235	8-20V	+3VAO	100mA	+/-5%
ISL6227CAZ	8-20V	+1.8VO +1.05VO	4.5A 4A	+/-5% +/-5%
MAX8578	8-20V	+1.5VO	4.65A	+/-5%
CM8562GISTR	8-20V	+0.9VO +2.5VO	2A 2A	+/-5% +/-5%

7.4. Inverter Board

Inverter spec

- Input voltage: 9~20V
- Output current: 6mA(max)
- Start voltage: 1500Vrms(min)
- Efficiency: 80%(min)
- Brightness adjusted by input control duty cycle(DC level).
- Support output short circuit and open LAMP protection
- Frequency: 50~60KHz
- Output connector for CCFT:

CN2 --- SM02B-BHSS-1

NO	Mark	Description
1	GND	CCFL negative
2	CCFL	CCFL positive

7.5. Adapter spec

7.5.1. Input

- Input voltage: 100~240VAC, Full range
- Input frequency: 50~60Hz
- Input current: 1.5A max (100-240VAC at full load)
- Inrush current: No damage
- Efficiency: 85%min (100-240VAC @ full load)
(Warm up after 1 hour)

7.5.2. Output

- 65W power output
- Output Voltage/Current: 18.4~19.6V/3.42A
- Ripple: 350mVp-p

7.5.3. Protection

- OVP: 26.1V max
- SCP: Yes
- OCP: 9A(max)

7.6. Battery spec

Battery pack capacity:

	Vendor	Cells	Voltage	Capacity	Watts
Li-Ion	Samsung	3	11.1V	2600mAh	28.86W
Li-Ion	Samsung	6	11.1V	5200mAh	57.72W
Li-Ion	Samsung	9	11.1V	7800mAh	86.58W

Battery warning and low percentage (Li-Ion):

Battery warning = Depend on OS setting

Battery low = Depend on OS setting

Gauge controller (BQ2060H) setting:

Charging voltage: 12.6V (3S)

Charging efficiency: 90%

Low temperature capacity: 70%

8. LAN/Modem Spec

8.1. LAN Spec

- Controller: REALTEK RTL8111B
- Interface: Mini PCI
- Compliant to PCI 2.2
- Support ACPI, PCI power management
- Support for Wake-On-LAN
- Integrated IEEE 802.3x 10BASE-T and 100 BASE-TX compatible PHY and transceiver in one chip
- Full duplex and half duplex support at both 10 and 100Mbps
- 64-pin QFN package

8.2. Modem spec

- Part Number: ML 3054
- Interface: Azalia
- Support Caller ID
- Support Ring wake up function
- Data compression and error correction
- V.80 synchronous access mode supports host-controlled
- Modem Data speed: 56Kbps
- FAX transfer speed: 14.4Kbps
- Host software-based signal processing
- Advanced Power Management (AMP and ACPI)
- Microsoft PC 98 and PC 99 Design Initiative compliant

9. Miscellaneous

9.1. Indicators

Power LED

Feature:	Show System power status
Type:	0603 size LED
Color:	Blue
Indication:	On: System in ON Mode Flash (1Hz): System in SUSPEND Mode Off: System in OFF Mode
Location:	Power Switch Board (in front of system) and Inverter Board (in back of panel)

Charging LED

Feature:	Show Battery status
Type:	0603 size LED
Color:	Orange
Indication:	On: Battery in Charging Flash (0.5Hz): Battery Low Off: Battery is fully charged or absent
Location:	Main Board (in front of System) and Inverter Board (in back of panel)

Hard Disk / ODD Drive LED

Feature:	On: While HDD / ODD is accessing
Type:	0603 size LED
Color:	Blue
Location:	Main Board (in front of System)

Wireless LAN LED

Feature:	On: While Wireless Lan is accessing
Type:	0603 size LED
Color:	Blue
Location:	Main Board (in front of System)

Caps Lock LED

Feature:	On: While Caps Lock is enable
Type:	0603 size LED
Color:	White
Location:	Main Board (in front of System)

Specification

Bluetooth LED

Feature:	On: While bluetooth is accessing
Type:	0603 size LED
Color:	White
Location:	Main Board (in front of System)

9.2. Power cord list

Where	Description	Vendor
US	P-CORD 1.8m 125V 7A UL 2-PIN WS-027-T	Well shin
UK	P-CORD 1.8m 250V 2.5A UK 2-PIN WS-027-T	Well shin
Japan	P-CORD 1.8m 125V 7A T-MARK 2-PIN WS-027-T	Well shin
Europe	P-CORD 1.8m 250V 2.5A EUR 2-PIN WS-027-T	Well shin
Austria	P-CORD 1.8m 250V 2.5A AUS 2-PIN WS-027-T	Well shin
South Asia	P-CORD 1.8m 125V 7A WS016+WS027 WS-027-T	Well shin

9.3. Safety/ EMI Appliance (TBD):

Agency Approval	EMC	CE Mark (Europe) BCIQ (Taiwan)
	EMI	FCC Class B Certified (USA & Canada), VCCI (Japan)
	Safety	UL, CSA or CUL, NEMKO-CB (Norway), TUV, CE Mark (Europe)
	Telecomm.	FCC Part 68 (USA), DOC (Canada), JATE (Japan), AUSTEL (Australia), TELEPERWIT (New Zealand), CTR-21 (EU)
Other Requirements	Industry Standards Compliance	SPA Energy Star Compliance Designed for Windows 95/98 and Windows NT Logo (Compliance with Microsoft PC98)