
2. Introduction and Specification

2-1. Introduction

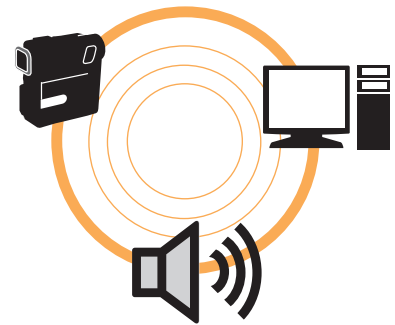
High Performance Note PC

- High Performance with Intel Core 2 Duo / Celeron Processor and DDR III Memory
- Intel Turbo Memory (Option)
- Fingerprint recognition (Optional), TPM(Trusted Platform Module) (Optional)
- Wireless LAN (Optional), Bluetooth (Optional)



Convenient Function

- Camera Module Installed (Optional)



Prudent Design for easy use.

- Various shortcut keys on the keyboard
- Multi-card slot
- Luxurious design with increased usability



2. Introduction and Specification

2-2. Specification

| Processor and Motherboard | Description |
|----------------------------------|---|
| Processor | Intel® Core™2 Duo Processor T9600 (2.8 GHz, 1066 MHz, 6 MB, 35 W) Intel® Core™2 Duo Processor T9400 (2.53 GHz, 1066 MHz, 6 MB, 35 W) Intel® Core™2 Duo Processor P9500 (2.53 GHz, 1066 MHz, 6 MB, 25 W) Intel® Core™2 Duo Processor P8600 (2.4 GHz, 1066 MHz, 3 MB, 25 W) Intel® Core™2 Duo Processor P8400 (2.26 GHz, 1066 MHz, 3 MB, 25 W) Intel® Core™2 Duo Processor P7350 (2.00 GHz, 1066 MHz, 3 MB, 25 W, Tj) Intel® Core™2 Duo Processor T5870 (2.00 GHz, 800 MHz, 2 MB, 35 W) Intel® Core™2 Duo Processor T5670 (1.8 GHz, 800 MHz, 2 MB, 35 W) |
| Chipset (MCH + ICH) | Intel PM45 + ICH9M, GM45 + ICH9M, PM45 + ICH9ME, GM45 + ICH9ME |
| Memory | |
| Memory capacity | Min. 1 GB ~ Max. 4 GB |
| Memory type | DDR3 (1066MHz) |
| Memory modules | 1 GB SODIMM |
| Sockets | 2-slot SODIMMs |
| Display | |
| LCD 1 | 15.4" WSXGA+ Non Glare |
| Vendor | Samsung LCD |
| Resolution | 1,680 x 1050 pixel |
| Colors | 262,144 colors |
| Viewing angle | Left 65° / Right 65° / Up 50° / Down 50° |
| Dot pitch | 0.1972 x 0.1972mm (Horizontal x Vertical) |
| Contrast ratio | Typical 300 CR |
| Brightness | Typical 200 cd/m2 |
| Response time | Typical 16 ms / max.25 ms |
| Polarizer | Non Glare |
| Weight | Max. 590 g |
| LCD 2 | 15.4" WXGA Non Glare |
| Vendor | Samsung LCD |
| Resolution | 1,280 x 800 pixel |
| Colors | 262,144 colors |
| Viewing angle | Left 40° / Right 40° / Up 15° / Down 30° |
| Dot pitch | 0.25875 x 0.25875 mm (Horizontal x Vertical) |
| Contrast ratio | Typical 500 CR |
| Brightness | Typical 200 cd/m2 |
| Response time | Typical 16 ms / max.25 ms |
| Polarizer | Non Glare |
| Weight | Max. 570 g |
| LCD 3 | 15.4" WXGA Non Glare |
| Vendor | Samsung LCD |
| Resolution | 1,280 x 800 pixel |
| Colors | 262,144 colors |
| Viewing angle | Left 40° / Right 40° / Up 10° / Down 30° |
| Dot pitch | 0.25875 x 0.25875 mm (Horizontal x Vertical) |
| Contrast ratio | Typical 500 CR |
| Brightness | Typical 220 cd/m2 |

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| Processor and Motherboard | Description |
|----------------------------------|--|
| Response time | Typical 8 ms / max.16 ms |
| Polarizer | Non glare |
| Weight | Max. 565 g |
| Graphics | |
| Interface | PCI Express 16x, DirectX 10 support |
| Graphic Controller | [Internal Graphic] Cantiga-GM [External Graphic] NB9P GE - GeForce 9600M GS (In case of intel PM45) |
| Video Memory | [Internal Graphic] Shared Memory 32MB ~ Max 256MB [External Graphic] GDDR3 256MB, GDDR3 512MB (In case of intel PM45) |
| Ext. Port | VGA (Dual Independent Display) HDMI (DVI Supported with HDMIto DVI Cable) HDCP (High Bandwidth Digital Content Protection) |
| Ext. CRT Resolution | Upto 1,920x1,440 : 32-bit true color EDID (Extended Display Identity Data, According to support output ratio of monitor 4:3 and 16:10 etc.) |
| Audio | |
| Sound | |
| Codec | Intel® HD (High Definition) audio codec |
| Chipset | REALTEK ALC262-VC2-GR |
| Conversion | Built-in high performance 20 bit ADC & 24 bit DAC |
| Sound effect | EDS (Enhanced Digital Sound) |
| Internal interfaces | Embedded stereo speakers & integrated mono microphone |
| Speaker power rating | 2 speakers x 1.5 W with enclosure |
| External interfaces | Headphone-out, microphone-in |
| Controls | Keyboard volume control |
| Microphone | |
| Type | 1 integrated mono microphone |
| Sensitivity | -40±3 dB |
| Output impedance | Max. 2,200 Ohm |
| Noise suppression | Noise suppression |
| Storage | |
| Hard disk drive 1 | |
| Vendor | HGST, Fujitsu, Samsung Storage, Toshiba , WD |
| Type | 9.5 mm Height 2.5" S-ATA |
| Speed | 5,400 rpm |
| Average seek time | Read max. 14 ms, write max. 15 ms |
| Supports | SATA II 3.0Gbit , SataI 1.5Gbit/s |
| Capacity | 80 GB 120 GB 160 GB 200 GB 250 GB 320 GB |

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| Processor and Motherboard | Description |
|----------------------------------|--|
| Hard disk drive 2 | |
| Vendor | HGST, Fujitsu |
| Type | 9.5 mm Height 2.5" S-ATA |
| Speed | 7,200 rpm |
| Average seek time | Read max. 16 ms, write max. 17 ms |
| Supports | SATA II 3.0Gbit , Satal 1.5Gbit/s |
| Security | 80 GB 120 GB 160 GB 200 GB |
| Type | NAND flash |
| Memory capacity | 2 GB |
| Feature | ReadyDrive/ReadyBoost Support, AHCI Mode, Intel® Turbo Memory driver |
| Interface | Mini card (PCI-Express) |
| Optical disk drive | |
| DVD-rom 1 | Factory Option |
| Vendor | TSST |
| Module type | Fixed 12.7mm Slim |
| Speed | 8x DVD-ROM, 24x RW, 24x CD-R, 24x CD : TSST, TS-L333A |
| Average Access Time | DVD 130ms Typ, CD 130ms Typ |
| Weight | 176g or less |
| S/W Supplied | Cyberlink DVD Solution |
| Security | RPC-II Regional Encoding |
| DVD-rom 2 | Factory Option |
| Vendor | TEAC |
| Module type | Fixed 12.7mm Slim |
| Speed | 8x DVD-ROM, 24x RW, 24x CD-R, 24x CD : TSST, DV-28S-V |
| Average Access Time | DVD 130ms Typ, CD 130ms Typ.. |
| Weight | 176g or less |
| S/W supplied | Cyberlink DVD Solution |
| Security | RPC-II Regional Encoding |
| Software supplied | CyberLink DVD Suite |
| Security | RPC-II regional encoding |
| Super multi dual layer 1 | |
| Vendor | TSST |
| Type | 12.7 mm, S-ATA, Fixed type |
| Speed | 5 x DVD-RAM, 8 x DVD±R, 6 x DVD±R DL, 8 x DVD+RW, 6 x DVD-RW, 24 x CD-R/RW, 8 x DVD, 24 x CD |
| Average access time | DVD 130 ms Typ., CD 130 ms Typ. |
| Weight | Max. 165 g |
| Software supplied | CyberLink DVD Suite |
| Security | RPC-II regional encoding |
| Super multi dual layer 2 | |
| Vendor | TEAC |
| Type | Fixed 12.7mm |

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|--|--|
| Speed | 5 x DVD-RAM, 8 x DVD±R, 6 x DVD±R DL, 8 x DVD+RW, 6 x DVD-RW, 24 x CD-R/RW, 8 x DVD, 24 x CD |
| Average access time | DVD 150 ms Typ., CD 140 ms Typ. |
| Weight | Max. 180 g |
| Software supplied | CyberLink DVD Suite |
| Security | RPC-II regional encoding |
| Super multi light scribe 1 | |
| Vendor | TSST |
| Type | 12.7 mm, S-ATA, Fixed type |
| Speed | 5 x DVD-RAM, 8 x DVD±R, 6 x DVD±R DL, 8 x DVD+RW, 6 x DVD-RW, 24 x CD-R/RW, 8 x DVD, 24 x CD |
| Average access time | DVD 130 ms Typ., CD 130 ms Typ. |
| Weight | Max. 165 g |
| Software supplied | CyberLink DVD Suite |
| Security | RPC-II regional encoding |
| Network communication | |
| Fax / Modem | |
| Type | 56 Kbps / V.92 Modem (F.Option) |
| Chipset | SV92A3 |
| Interface | RJ11 output |
| LAN | |
| Type | 10/100/1000 Ethernet |
| Chipset | Boazman(82567V, 82567LM) |
| Interface | RJ45 output |
| Feature | |
| Wireless LAN 1 | |
| Type | Intel® 802.11a/b/g/n |
| Interface | Mini card type |
| Chipset | Intel® WiFi Link 5300 |
| Antenna | 3 integrated (Main, AUX, MIMO) |
| Feature | |
| Wireless LAN 2 | |
| Type | Intel® 802.11a/b/g/n (11a/b/g for Russia, Ukraine, Pakistan) |
| Interface | Mini card type |
| Chipset | Intel® WiFi Link 5100 |
| Antenna | 2 integrated (Main, AUX) |
| Feature | |
| Bluetooth | |
| Type | Bluetooth V2.0 + EDR (Enhanced Data Rate) |
| Interface | USB daughter card type with integrated PIFA (Plane Inverted F Antenna) |
| Chipset | Broadcom BCM2045 |
| Ports and interfaces (Input / output) | |
| PC card slot 1 | |
| Type | PCMCIA |
| Chipset | Ricoh R5C847 |

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| Processor and Motherboard | Description |
|-----------------------------------|--|
| Support | PCMCIA I, II type |
| Memory card slot | YES |
| Type | 3-in-1 Multi-memory Card Slot |
| Support | SD / SDHC / MMC |
| Dock port | YES |
| Type | P-Dock port [P-Dock Option Product] |
| Model Code | AA-RD0NDOC |
| Feature | USB2.0 x 5, PS/2, DVI, VGA, RJ45, SIO, E-SATA, Display Port(option), Mic-in jack, Headphone jack |
| Input / output ports | |
| VGA | Yes (15 pin) |
| S-Video (TV-out) | No |
| HDMI | Yes |
| Headphone-out | Yes |
| Microphone-in | Yes |
| USB | 4 x USB 2.0 |
| SIO | Yes |
| IEEE1394 | No |
| RJ11 (Modem) | Yes (F.Option) |
| RJ45 (LAN) | Yes |
| TV antenna | No |
| DC-In (power port) | Yes (5 pie) |
| Input devices | |
| Keyboard | Yes |
| - Amount of keys | 88 (KOR, RUS, UKR, US) 89 (UK, FR, GM, SP) |
| - Feature | Travel length 2.6 mm, key pitch 19.05 mm |
| - Silver Nano Technology | Yes |
| - Fast function keys (EZ BLU) | F7 (Magic Doctor), F8 (SpeedUp Manager) |
| Touchpad | Synaptics touchpad (plat type with scroll area) |
| Button | Power On |
| LED indicator | Power, AC-in / battery, HDD, num-lock, caps-lock, scroll-lock, wireless antenna |
| Multimedia | |
| Integrated digital camera | |
| Type | 1.3M Web-Cam |
| Chipset | GD-5931A/B (D-MAX) |
| Image sensor | Color CMOS SXGA (1.3 Mpixel) |
| SCAN mode | Progressive |
| Still image capture resolution | SXGA (1,280 x 1,024), VGA (640 x 480), CIF (352 x 288) |
| Video capture resolution | VGA (640 x 480) |
| Digital video capture speed | Max. 30 frame |
| Focus | Min. 50 cm ~ infinity |
| UVC support | USB video class 1.0 standard compliant |
| Power and power management | |

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2. Introduction and Specification

| <i>Processor and Motherboard</i> | <i>Description</i> |
|----------------------------------|---|
| System power management | |
| Power management features | ACPI 1.0b support, standby (S3), hibernate (S4) |
| Standard battery | |
| Model code | BA43-00150A Sanyo (1'st) BA43-00149A SDI (2'nd) |
| Details of cell | 6 cells |
| Battery capacity | 5,200 mAh |
| Voltage | 11.1 V |
| Battery rating | 57.72 Wh |
| Color | Black |
| Dimension | 204 x 48.05 x 21.4 mm (W x H x D) |
| Weight | Max. 350 g |
| Recharge time | Approx. 2 hours |
| Battery life (DVD play mode) | Typ. 2.6 hours |
| - Test program | PowerDVD(Max Batttery Mode) |
| - Test condition | Multimedia M0de, LCD Brightness-Level 4, WLAN R/F Off, discharged by 3% T9400(2.53GHz), DDR3 1GB, 15.4" WXGA(200nits), NB9P-GS(512MB), 80GB, DVD-Multi, Vista Home Premium |
| Battery life (Bench mark mode) | Max. 3.7 hours |
| - Test program | BatteryMark v.4.0.1 |
| - Test condition | Samsung Optimized mode, LCD Brightness-Minimum, WLAN R/F Off, discharged by 3% T9400(2.53GHz), DDR3 1GB, 15.4" WXGA(200nits), NB9P-GS(512MB), 80GB, DVD-Multi, Vista Home Premium |
| Long-life battery | |
| Model code | AA-PL2NC9B |
| Details of cell | 9 cells |
| Battery capacity | 7,800 mAh |
| Voltage | 11.1 V |
| Battery rating | 86.58 Wh |
| Color | Black |
| Dimension | 204 x 67 x 21.4 mm (W x H x D) |
| Weight | Max. 470 g |
| Recharge time | Approx. 3.2 hours |
| Battery life (DVD play mode) | Typ. 4.0 hours |
| - Test program | PowerDVD (Max Batttery Mode) |
| - Test condition | Mutimedia Mode, LCD Brightness-Level 4, WLAN R/F Off, discharged by 3% T9400(2.53GHz), DDR3 1GB, 15.4" WXGA(200nits), NB9P-GS(512MB), 80GB, DVD-Multi, Vista Home Premium |
| Battery life (Bench mark mode) | Max. 5.7 hours |
| - Test program | BatteryMark v.4.0.1 |
| - Test condition | Samsung Optimized mode, LCD Brightness-Minimum, WLAN R/F Off, discharged by 3% T9400(2.53GHz), DDR3 1GB, 15.4" WXGA(200nits), NB9P-GS(512MB), 80GB, DVD-Multi, Vista Home Premium |
| AC adapter 1 | |
| Model code | AD6016 |
| Output power | 60 W |
| Dimension | 107.9 x 46.5 x 28 mm (W x H x D) |

2. Introduction and Specification

| Processor and Motherboard | Description |
|----------------------------------|---|
| Weight (AC Adapter) | Max. 295 g |
| Worldwide compatibility | Auto-sensing 100-240 VAC |
| Line frequency | 50 Hz / 60 Hz |
| Adapter rating (input) | 100 VAC ~ 240 VAC, 1.8 A |
| Adapter rating (output) | 19.0 VDC, 3.16 A |
| AC Adapter 2 | |
| Model Code | AA-PA1N90W |
| Output Power | 90 W |
| Dimension | 126 x 50 x 30 mm (W x H x D) |
| Weight (AC Adapter) | 430g (Max.) |
| Worldwide Compatibility | Auto-sensing 100 - 240 VAC |
| Line Frequency | 50 Hz / 60Hz |
| Adapter Rating - Input | 100 VAC ~ 240 VAC, 1.5A |
| Adapter Rating - Output | 19.0 VDC, 4.74 A |
| System dimensions | |
| Dimensions (W x D x H) | 358.3 x 269.2 x 30.8 (min) ~ 36.5 (max.) mm (14.1" x 10.6" x 1.21" (min) ~ 1.44" (max.) inch) |
| Weight | 2.67Kg (5.89lbs) (With Weight saver : 2.53Kg (5.58lbs)) |
| - Condition | (with battery) |
| Package dimensions (W x D x H) | 425 x 110 x 405 mm |
| Package weight | 4.34 Kg |
| - Condition | Status : supermulti , 6cell battery, 2.5" 80GB 2 platter HDD with Bundle items |
| Materials & Design | |
| - LCD Back | PC/ABS |
| - LCD Front | PC/ABS |
| - System Top | PC/ABS |
| - System Bottom | PC/ABS |
| Installed software | |
| Operating system | Genuine Windows Vista® Home Premium SP1 |
| Software | Samsung Recovery Solution III (optional), Samsung Magic Doctor, Samsung Update Plus Easy Display Manger, Easy Battery Manager, Easy Network Manager, Easy SpeedUp Manager McAfee SecurityCenter, Adobe Acrobat Reader, Microsoft® Office Professional 2007 (free 60-day trial) |

2. Introduction and Specification

2-3. Comparing product specifications

| | Lisbon (Standard Model) | P560 (Development model) |
|----------------|---|---|
| Feature |  |  |
| CPU | 667/800MHz Intel Core 2 Duo Processor (Merom) | 800MHz/1066MHz Intel Core 2 Duo Processor (Penryn) |
| Chipset | GM965 | Intel GM45 / PM45 |
| Memory | DDR2 512MB ~ 4G | DDR3 1G ~ 4G |
| Graphic | Nvidia GF Go 8400 w/ 128MB Nvidia GF Go 8600 w/ 256MB | nVIDIA NB9P Series w/ 256MB & 512MB |
| LCD | 15" SXGA+, Non-Glare | 15.4" WXGA / WSXGA+, Glare / Non-Glare |
| HDD | SATA | SATA |
| ODD | PATA 12.7mm | SATA 12.7mm |
| Port | VGA, PCMCIA, 6-in-1 | VGA, HDMI, PCMCIA, 3-in-1 |


2. Introduction and Specification

2-4. Comparing product specifications jatasa

| Model | Toshiba Tecra S5 | HP Compaq 6710b | Sony VAIO FZ21Z | Dell Latitude D830 | Lenovo ThinkPad T61 |
|----------|---|---|---|--|---|
| Feature |  |  |  |  |  |
| CPU | Intel Core 2 Duo | Intel Core 2 Duo | Intel Core 2 Duo | Intel Core 2 Duo | Intel Core 2 Duo |
| Memory | 2 GB | 1 GB | 2 GB | 2 GB | 2 GB |
| HDD | 160 GB SATA 5400rpm | 120 GB SATA 5400rpm | 300 GBSATA 4200rpm | 120 GB SATA 5400rpm | 160 GB SATA 5400rpm |
| ODD | DVD-Multi | DVD-Multi | BluRay-RE | DVD-Multi | DVD-Multi |
| Display | 1680 x 1050 (WSXGA+) | 1680 x 1050 (WSXGA+) | 1280 x 800 (WXGA) | 1920 x 1200(WUXGA) | 1680 x 1050 (WSXGA+) |
| Graphic | NVIDIA Quadro NVS 130M (256MB) | Intel GMA X3100 | NVIDIA GeForce 8600M GS (256MB) | nVidia Quadro NVS 140M | NVIDIA Quadro NVS 140M (128MB) |
| Network | 802.11abgnBluetooth 2.0+EDR | 802.11abgBluetooth 2.0+EDR | 802.11abgnBluetooth 2.0 | 802.11abg Bluetooth 2.0+EDR | 802.11abgn |
| Security | Fingerprint recognition | TPM, Fingerprint recognition | - | - | TPM, Fingerprint recognition |
| Battery | - | 5.2 Cell | - | 5 Cell | 5.5 Cell |




2. Introduction and Specification

2-5. Option Material List

| HDD | | |
|---|-----------------------|---------------------------------|
|  | | |
| BA59-02355A | HM320JI | 5400RPM, 160G/P, 320G, SATA, 8M |
| BA59-02354A | HM251JI | 5400RPM, 160G/P, 250G, SATA, 8M |
| BA59-02347A | MHZ2320BH-G2 | 5400RPM, 160G/P, 320G, SATA, 8M |
| BA59-02346A | MHZ2250BH-G2 | 5400RPM, 160G/P, 250G, SATA, 8M |
| BA59-02345A | MHZ2200BH-G2 | 5400RPM, 160G/P, 200G, SATA, 8M |
| BA59-02344A | MHZ2160BH-G2 | 5400RPM, 160G/P, 160G, SATA, 8M |
| BA59-02343A | MHZ2120BH-G2 | 5400RPM, 160G/P, 120G, SATA, 8M |
| BA59-02286A | MK1246GSX | 5400RPM, 125G/P, 120G, SATA, 8M |
| BA59-02226A | WD1200BEVS-22UST0 | 5400RPM, 125G/P, 120G, SATA, 8M |
| BA59-02202A | HTS542512K9A300 | 5400RPM, 125G/P, 120G, SATA, 8M |
| BA59-02189A | HM121HI | 5400RPM, 160G/P, 120G, SATA, 8M |
| BA59-02208A | MHY2120BH | 5400RPM, 125G/P, 120G, SATA, 8M |
| BA59-02287A | MK1646GSX | 5400RPM, 125G/P, 160G, SATA, 8M |
| BA59-02279A | WDC-WD1600BEVT-22ZCT0 | 5400RPM, 160G/P, 160G, SATA, 8M |
| BA59-02227A | WD1600BEVS-22RST0 | 5400RPM, 80G/P, 160G, SATA, 8M |
| BA59-02187A | HM160HI | 5400RPM, 160G/P, 160G, SATA, 8M |
| BA59-02203A | HTS542516K9A300 | 5400RPM, 125G/P, 160G, SATA, 8M |
| BA59-02209A | MHY2160BH | 5400RPM, 125G/P, 160G, SATA, 8M |
| BA59-02290A | MK2046GSX | 5400RPM, 125G/P, 200G, SATA, 8M |
| BA59-02210A | MHY2200BH | 5400RPM, 125G/P, 200G, SATA, 8M |
| BA59-02210A | MHY2200BH | 5400RPM, 125G/P, 200G, SATA, 8M |
| BA59-02204A | HTS542520K9A300 | 5400RPM, 125G/P, 200G, SATA, 8M |
| BA59-02204A | HTS542520K9A300 | 5400RPM, 125G/P, 200G, SATA, 8M |
| BA59-02288A | MK2546GSX | 5400RPM, 125G/P, 250G, SATA, 8M |
| BA59-02228A | WD2500BEVS-22UST0 | 5400RPM, 125G/P, 250G, SATA, 8M |
| BA59-02211A | MHY2250BH | 5400RPM, 125G/P, 250G, SATA, 8M |
| BA59-02205A | HTS542525K9A300 | 5400RPM, 125G/P, 250G, SATA, 8M |
| BA59-02190A | HM250JI | 5400RPM, 160G/P, 250G, SATA, 8M |
| BA59-02280A | WDC-WD3200BEVT-22ZCT0 | 5400RPM, 160G/P, 320G, SATA, 8M |


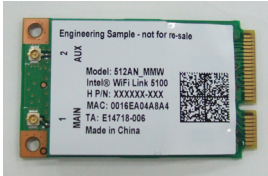

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| LCD | | |
|---|------------------|---|
|  | | |
| BA59-02170A | LTN154P4-L02-0 | 15.4"WSXGA+(High Bright, 200nit Gloss) |
| BA59-02276A | LTN154P3-L04-0 | 15.4" WSXGA+(High Bright, 200nit Gloss) |
| BA59-02275A | LTN154AT07-8 | 15.4" WXGA(High Bright, 200nit Gloss) |
| BA59-02350A | LTN154AT10-8 | 15.4" WXGA(High Bright, 220nit Gloss) |
| MEMORY | | |
|  | | |
| 1105-001923 | M471B2874DZ1-CF8 | 1GB (DDR3 1066MHz/1G*1) |
| 1105-001921 | M471B5673DZ1-CF8 | 2GB (DDR3 1066MHz/2G*1) |
| CPU | | |
|  | | |
| 0902-002337 | T2_P8600 | 2.4 GHz, 1066 MHz, 3 MB, 25 W |
| 0902-002336 | T2_T9400 | 2.53 GHz, 1066 MHz, 6 MB, 35 W |
| 0902-002342 | T2_T9600 | 2.8 GHz, 1066 MHz, 6 MB, 35 W |
| 0902-002341 | T2_P8400 | 2.26 GHz, 1066 MHz, 3 MB, 25 W |
| 0902-002340 | T2_P9500 | 2.53 GHz, 1066 MHz, 6 MB, 25 W |
| 0902-002331 | T2_T5870 | 2.0 GHz, 800 MHz, 2 MB, 35 W |
| 0902-002330 | T2_T5670 | 1.8 GHz, 800 MHz, 2 MB, 35 W |
| 0902-002356 | T2_P7350 | 2.0 GHz, 90 MHz, 3 MB, 25 W |

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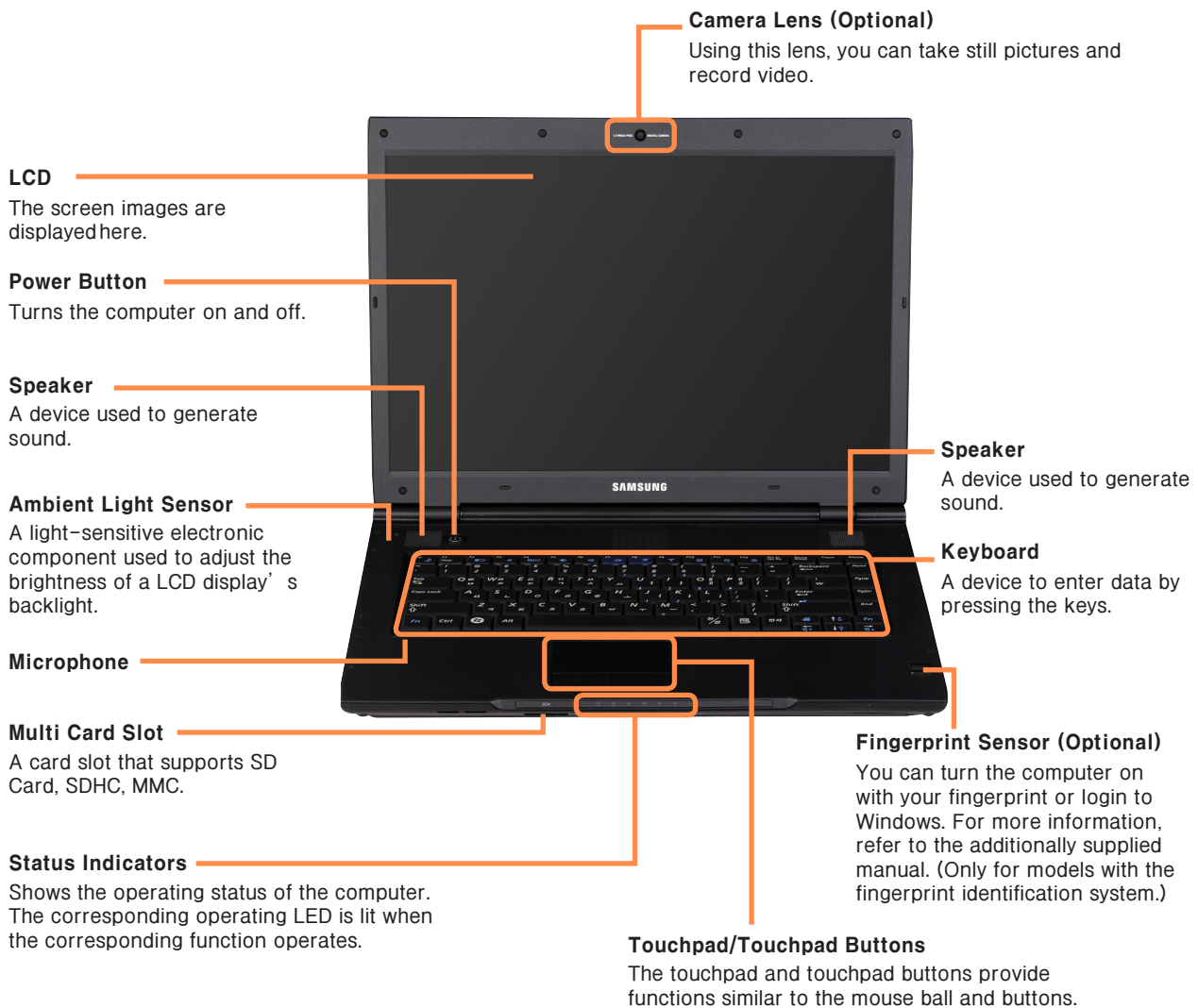
| ODD | | |
|---|------------|----------------------------|
|  | | |
| BA96-03666A | TEAC | DVD-ROM |
| BA96-03667A | TSST | DVD-ROM |
| BA96-03665A | TSST | Super Mul |
| BA96-03670A | TEAC | Super Mul |
| BA96-03671A | TSST | Super Mul |
| WLAN | | |
|  | | |
| BA59-02273A | | Intel Shirley Peak 3x3 AGN |
| BA59-02297A | | Intel Shirley Peak 1x2 AGN |
| BLUE TOOTH | | |
|  | | |
| BA59-01691A | T60H928.01 | Bluetooth V2.0, FOXCONN |
| BA59-01916A | BTO2P0B2SA | Bluetooth V2.0, SEM |

2. Introduction and Specification

2-6. Function of Product

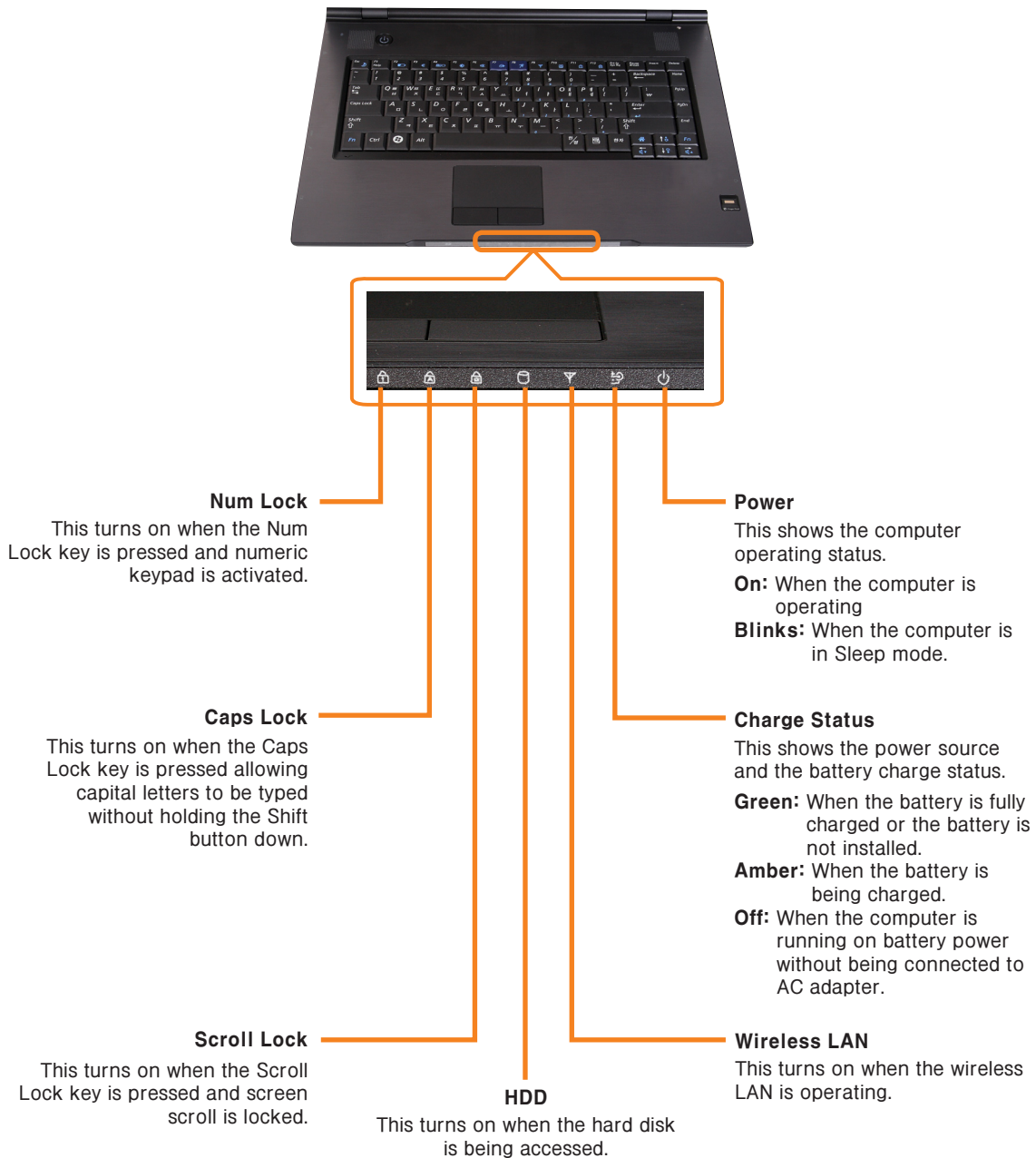
2-6-1. Overview

Front View



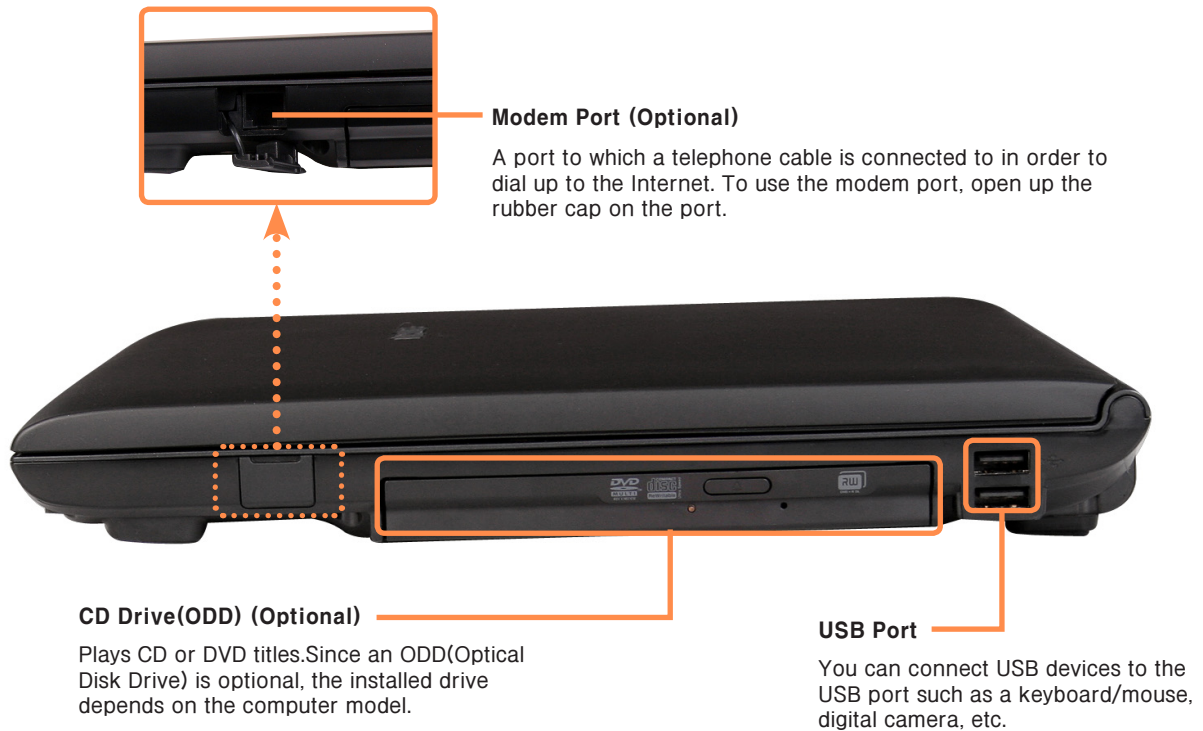
2. Introduction and Specification

Status Indicators



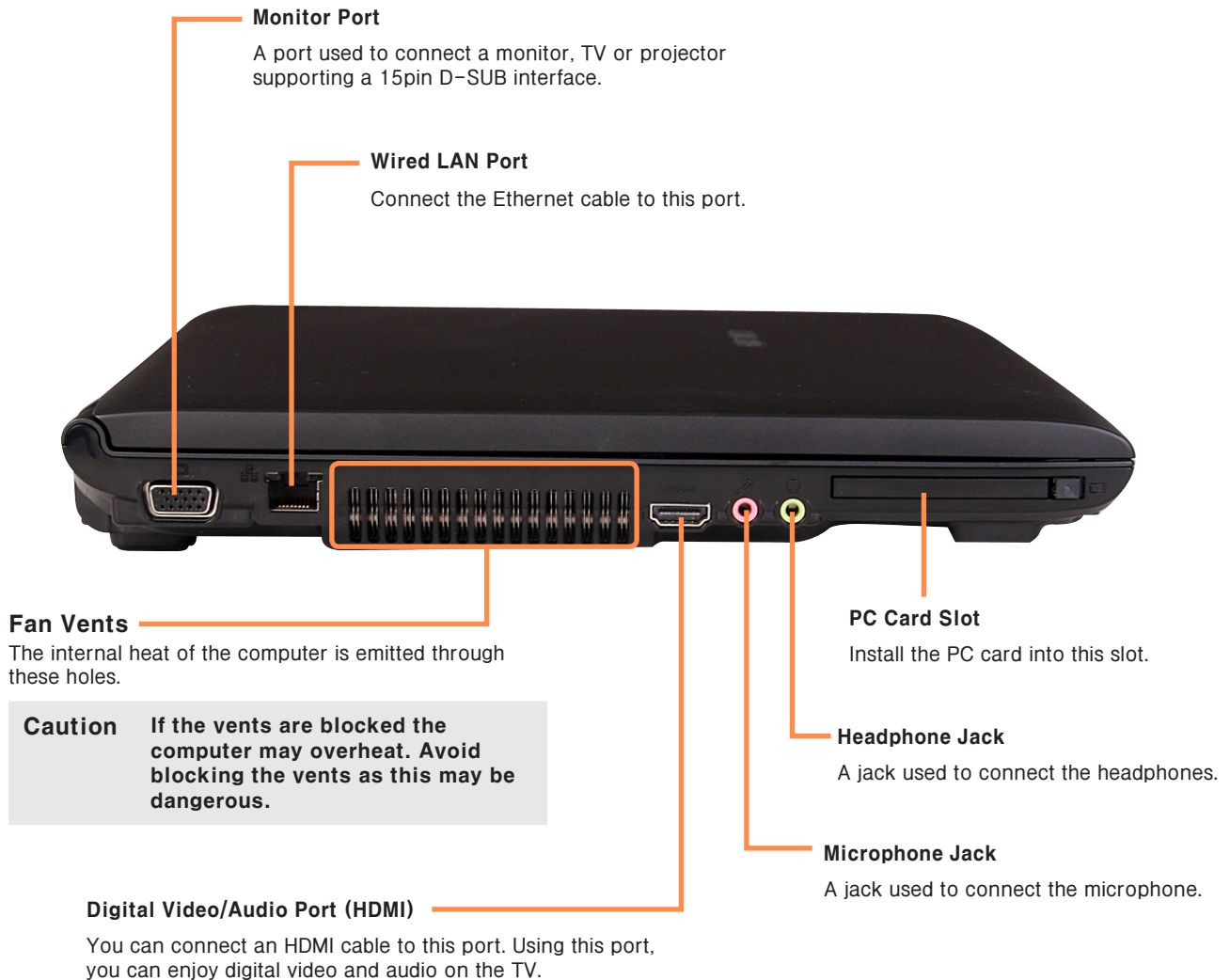
2. Introduction and Specification

Right View



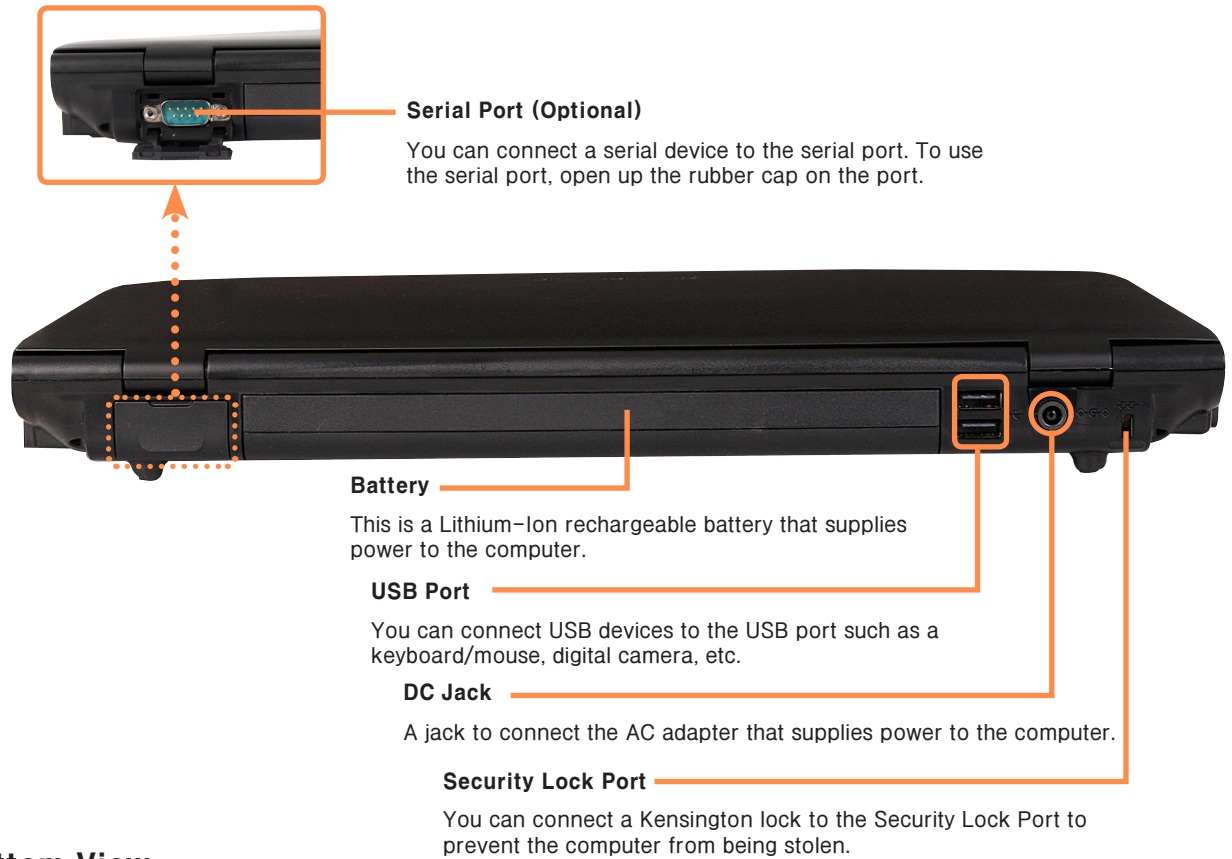
2. Introduction and Specification

Left View

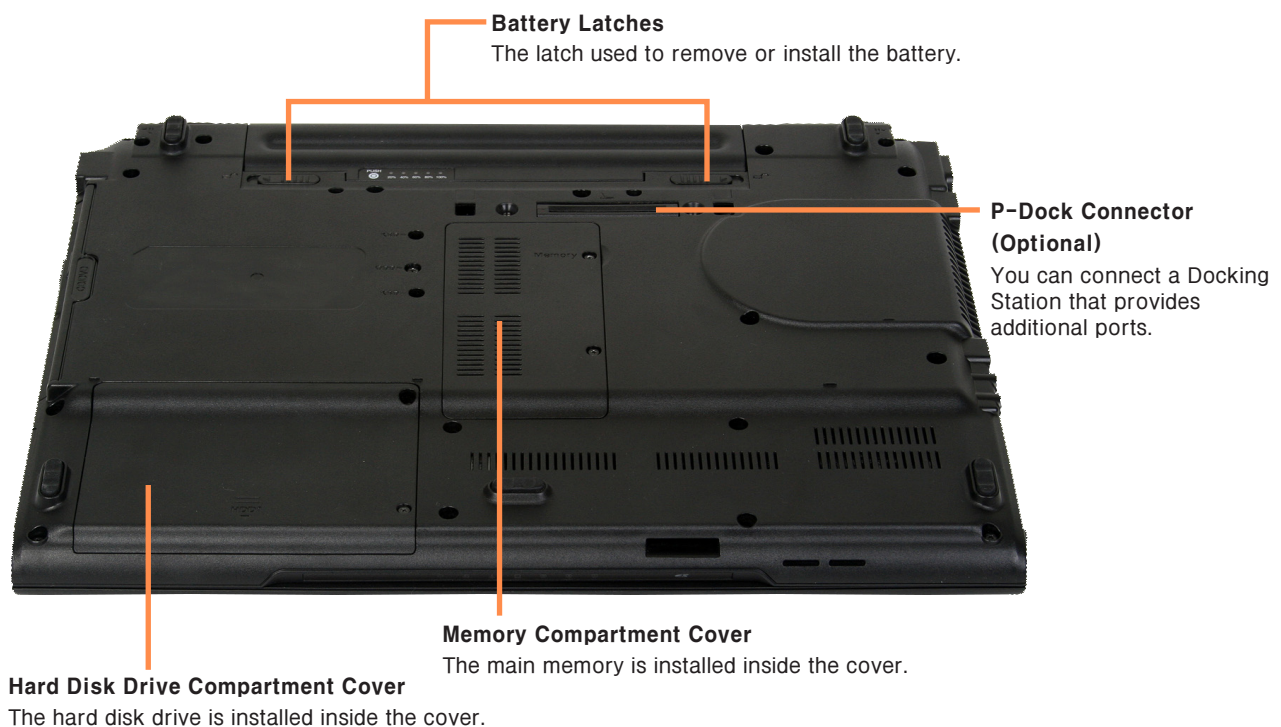


2. Introduction and Specification

Back View



Bottom View



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2. Introduction and Specification

2-6-2. New Added Function

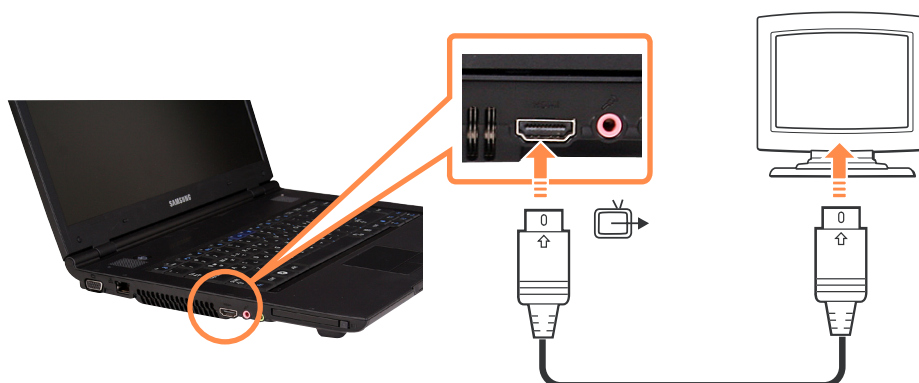
Camera (Option)

Easy use of taking a picture and moving image.



HDMI Port

Convenient connection with MONITOR through HDMI port.






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2. Introduction and Specification

HD-DVD, Blue-Ray

The existing DVD HD-DVD can store more data in the next-generation storage devices, much sharper than the existing HD DVD movies, SD-class save, and you can enjoy.

| Type | HD DVD | DVD | CD |
|----------------------|---|---|---|
| Logo |  |  |  |
| Storage Capacity | 15GB / 30GB | 4.7GB / 8.5GB | 0.65GB |
| Data Rate | 36.55 Mbps | 11.08 Mbps | 7.8 Mbps |
| Supported Resolution | 1920 x 1080(i) | 720 x 480 | 320 x 240 |




Date Rate : The amount of data that can be read or written onto a storage media per second.

Supported Disk Types

HD DVD supports the nfollowing disk types.

| Type | Function |
|------------|--|
| HD DVD-ROM | Reads HD DVD disks. |
| HD DVD-R | Reads HD DVD disks and writes data onto HD DVD disks once. |
| HD DVD-RW | Reads and writes to rewritable HD DVD media. |

Blu-Ray is a next generation storage media that can save approximately 5 to 10 times more data than the existing DVD format. You can record and play better quality HD movies than the existing SD-grade DVD format.

| Type | Blu-Ray | DVD | CD |
|----------------------|---|---|---|
| Logo |  |  |  |
| Storage Capacity | 25GB / 50GB | 4.7GB / 8.5GB | 0.65GB |
| Data Rate | 36 Mbps | 11.08 Mbps | 7.8 Mbps |
| Supported Resolution | 1920 x 1080(i) | 720 x 480 | 320 x 240 |

Date Rate : The amount of data that can be read or written onto a storage media per second.

Supported Disk Types

Blu-Ray supports the nfollowing disk types.

| Type | Function |
|--------|--|
| BD-ROM | Reads Blu-Ray disks. |
| BD-R | Reads Blu-Ray disks and writes data onto Blu-Ray disks once. |
| BD-RE | Reads and writes to rewritable Blu-Ray media. |

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2. Introduction and Specification

New Keyboard



Shortcut Keys



You can use the following functions by pressing the keys below with the Fn key.





| Fn+ | Name | Function |
|-----|-----------------------------|---|
| | REST(Sleep Mode) | Switches to Sleep mode. To wake the computer up, press the Power button. |
| | Gauge | Shows the remaining battery charge. You can only use this function when the Easy Display Manager program is installed. |
| | Euro | Enters the Euro monetary unit symbol. This key may not be provided depending on the keyboard type. |
| | CRT/LCD | Switches the screen output to the LCD or external monitor when an external monitor (or TV) is connected to the computer. |
| | Backlit | Turns the LCD backlight on or off. |
| | Mute | Mutes or cancels mute. |
| | Samsung Magic Doctor | System diagnosis, recovery and Internet consultation program, Samsung Magic Doctor, will be launched. |
| | Easy SpeedUP Manager | You can select operation mode when you need maximum system performance or low-noise/low power consumption with one-click. Silent : Low-noise and low power consumption mode Normal : Normal Mode Speed : Maximum performance mode. The system operates in its maximum performance, and system resources are allocated to the currently active program with priority for maximum performance. |
| | Wireless LAN | Turns the wireless LAN function on or off in models with wireless LAN capability. |
| | Touchpad | Turns the Touchpad function on or off. When using an external mouse only, you can turn the Touchpad off. |

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2. Introduction and Specification

| | | |
|---|--------------------|---|
|  | Num Lock | Turns the numeric keyboard on or off. |
|  | Scroll Lock | If you turn the Scroll Lock on, you can scroll the screen up or down without changing the cursor location in some applications. |


Screen Brightness Control

To adjust the LCD brightness press the **Fn** +  key combination or the **Fn** +  key combination. The changed screen brightness is displayed at the center of the screen for a moment.

Volume Control

To control the volume, press the **Fn** +  key combination or the **Fn** +  key combination. You can mute the sound or cancel the mute function by clicking the **Fn** +  key combination.

Numeric Key

The numbers are printed in blue on the numeric keys. If Num Lock is turned on by pressing the **Fn** +  key combination, you can use the numeric keys to enter digits.

Other Function Keys

Application Key

Performs the right-click mouse function (touchpad).

Internet Explorer Quick Launch Key : (Fn+)

Launches Internet Explorer.

2. Introduction and Specification

2-7. SW List

| Item | | Specification | Ver | Comment |
|-------------|-----------------------------|-----------------------------------|--------------|---------|
| OS | Vista | Vista Home Premium 32Bit SP1 | | New |
| Driver | Chipset | Montevina PM45 + ICH9M | 8.7.0.1007 | New |
| | Graphic Driver | Intel GM45 (Internal) | 7.15.10.1481 | New |
| | | Nvidia GeForce 9600M GS(External) | | |
| | Wireless LAN Driver (Intel) | 3965ABG | 12.0.0.78 | New |
| | Sound Driver | ALC262-GR | 6.0.1.5605 | |
| | Bluetooth Driver | Bluetooth Driver | 6.0.1.6300 | |
| | Touchpad Driver | Touchpad Driver | 10.1.2.0 | |
| | Modem Driver | Delphi V92 | 2.1.88 | |
| | LAN Driver | Boazman | 9.51.4.0 | |
| | Camera Driver | Demax Camera Driver | 6.11.706.13 | New |
| | Intel Turbo Memory Driver | Intel Turbo Memory Driver | 1.6.1.1004 | New |
| Application | | Adobe Reader | 8.1.0.137 | |
| | | Easy Battery Manager | 3.2.1.7 | New |
| | | Easy Display Manager | 2.2.6.0 | New |
| | | Easy Network Manager | 4.0.0.12 | |
| | | Easy Partition Manager | 2.2.2.2 | |
| | | Easy Speed Up Manager | 2.0.1.0 | |
| | | Intel Turbo Memory Console | 1.6.1.1004 | |
| | | McAfee VirusScan | 8.0.226.0 | |
| | | Ms Office 2007 Ready | 1.2 | |
| | | Play Camera | 2.0.0.12 | New |
| | | Recovery Solution III | 3.0.0.5 | New |
| | | Samsung Magic Doctor5 | 5.0.3.3 | |
| | | Samsung Update Plus | 1.3.0.12 | |
| | | Samsung Screen Saver | 1.0.2.0 | |
| | | Samsung Wall Paper | 2.0.0.0 | |

2. Introduction and Specification

2-8. System Setup (BIOS Setup)

MAIN

SATA Port 1

- HDD model name is displayed in this item for SATA Port 1.

SATA Port 2

- HDD model name is displayed in this item for SATA Port 2.

Total Memory

- Total memory size of the system.

Slot 1 Memory

- Memory size of the slot 1.

Slot 2 Memory

- Memory size of the slot 2.

| Phoenix SecureCore(tm) Setup Utility | | | | | |
|---|----------------|-------------------------|-----------|------|--|
| Main | Advanced | Security | TPM State | Boot | Exit |
| System Time [18:06:14] System Date [06/04/2008] ▶ SATA Port 1 [FUJITSU MHY2160BH-(PM)] ▶ SATA Port 2 [TSSTcorp CDWDVD TS-L463A-] CPU Type Intel(R) Core (TM) 2 Duo CPU CPU Speed 2.53 GHz Total Memory 1024 MB Slot1 Memory 1024 MB Slot2 Memory Not Installed Graphics Memory [Auto : Shared] BIOS Version 00LU.TEST.20080520.hkk MICOM Version 00LUPU00 | | | | | Item Specific Help <Tab>, <Shift-Tab>, or <Enter> selects field. |
| F1 Help | ↑↓ Select Item | F5/F6 Change Values | | | F9 Setup Defaults |
| ESC Exit | ←→ Select Menu | Enter Select ▶ Sub-Menu | | | F10 Save and Exit |

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2. Introduction and Specification

Advanced

Intel(R) SpeedStep(TM)

- This selects whether Intel® SpeedStep™ Thchnology is enabled or not.

Legacy USB Support

- Enable support for Legacy Universal Serial Bus.

Large Disk Access Mode

- UNIX, Novell NetWare or other O/S, select 'Other'.

AHCI Mode Control

- Select a AHCI mode always enabled or disabled.

EDB (Execute Disable Bit)

- supports the Data Execution Prevention (DEP) feature. DEP is a set of H/W & S/W technologies that perform additional checks on memory to help prevent malicious code from running on a system.

Internal LAN

- "Enabled" will allow the internal LAN to operate correctly.

Touch Pad Mouse

- 'Disabled' prevents installed Touch Pad mouse from functioning, but frees up IRQ 12. 'Enabled' forces the Touch Pad mouse to be enabled.

CPU Power Saving Mode

- 'Enabled' will decrease system power consumption.

USB S3 Wake-up

- Select Enabled to support that system can be waked up from ACPI S3 state by USB activities.

Purchased Date

- Purchased date is displayed after 10 times boot.

| Phoenix SecureCore(tm) Setup Utility | | | | | |
|---|----------------|-------------------------|-------------------|--|------|
| Main | Advanced | Security | TPM State | Boot | Exit |
| <div>Intel (R) SpeedStep (TM) [Enabled]</div> <div>Legacy OS Boot [Enabled]</div> <div>Legacy USB Support [Enabled]</div> <div>Large Disk Access Mode [DOS]</div> <div>AHCI Mode Control [Enabled]</div> <div>EDB (Execute Disable Bit) [Disabled]</div> <div>Internal LAN [Enabled]</div> <div>Touch Pad Mouse [Enabled]</div> <div>CPU Power Saving Mode [Enabled]</div> <div>USB S3 Wake-up [Disabled]</div> <div>► I/O Device Configuration</div> | | | | <div>Item Specific Help</div> <div>This selects whether Intel (R) SpeedStep (TM) Techhnology is enabled or not.</div> <div>'Disbled' means that system does not support Intel (R) SpeedStep (TM) Technology.</div> <div>'Enabled' is recommened.</div> | |
| F1 Help | ↑↓ Select Item | F5/F6 Change Values | F9 Setup Defaults | | |
| ESC Exit | ←→ Select Menu | Enter Select ► Sub-Menu | F10 Save and Exit | | |

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2. Introduction and Specification

Security

set Supervisor Password

- Supervisor Password controls access to the setup utility.

set User Password

- User Password controls access to a few items in the setup utility.

set HDD Password

- User can set a password of a HDD.

Password on Boot

- Supervisor Password controls access to system boot.

Fixed Disk Boot Sector

- "Write Protect" will protect to write in Boot Sector of HDD.

| Phoenix SecureCore(tm) Setup Utility | | | | | | |
|---|----------|----------|-------------|-------|---|-------------------|
| Main | Advanced | Security | TPM State | Boot | Exit | |
| <div> <div>Supervisor Password</div> <div>Clear</div> </div> <div> <div>User Password</div> <div>Clear</div> </div> <div> <div>HDD Password</div> <div>Clear</div> </div> <div> <div>Set Supervisor Password</div> <div>[Enter]</div> </div> <div> <div>Set User Password</div> <div>[Enter]</div> </div> <div> <div>Set HDD Password</div> <div>[Enter]</div> </div> <div> <div>Password on boot</div> <div>[Enabled]</div> </div> <div> <div>Fixed disk boot sector</div> <div>[Normal]</div> </div> <div> <div>TPM Support</div> <div>[Enabled]</div> </div> | | | | | <div>Item Specific Help</div> <div>Supervisor Password controls access to the setup utility</div> | |
| F1 | Help | ↑↓ | Select Item | F5/F6 | Change Values | F9 Setup Defaults |
| ESC | Exit | ←→ | Select Menu | Enter | Select ► Sub-Menu | F10 Save and Exit |

2. Introduction and Specification

TPM State

Security Chip State

- Display the current status of TPM chip.

Change TPM State

- Set the status of TPM chip.

| Phoenix SecureCore(tm) Setup Utility | | | | | | |
|---|----------|----------|-------------|---|-------------------|---|
| Main | Advanced | Security | TPM State | Boot | Exit | |
| Security Chip State Change TPM State | | | | Disabled and Deactivated [No Change] | | Item Specific Help |
| | | | | | | Change TPM State A disabled security chip prevents encrypted data from being used A deactivated security chip prevents a user from taking ownership |
| F1 | Help | ↑↓ | Select Item | F5/F6 | Change Values | F9 Setup Defaults |
| ESC | Exit | ←→ | Select Menu | Enter | Select ► Sub-Menu | F10 Save and Exit |

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2. Introduction and Specification

Boot

Boot Device Priority

- Select system boot options.

NumLock

- Selects Power-on state for Numlock.

Enable Keypad

- Select a method of Keypad.
 - [Only By Fn Key] : Leave the embedded keypad disabled when the Numlock LED is on.
 - [By NumLock] : Enable the embedded keypad when Numlock LED is on and no external keyboard is attached.

Summary Screen

- Display system configuration on boot.

Boot-time Diagnostic Screen

- Display the diagnostic screen during boot.

PXE OproM

- This selects whether network boot PXE will be loaded or not during the POST.
 - [Only with F12] : The network boot PXE will be loaded only if F12 is pressed during the POST.
 - [Always] : The network boot PXE will be always loaded during the POST.

Brightness Control Mode

- [Auto] : The brightness values are set by the status of AC adapter at each bootup.
- [User Control] : The brightness values could be remained regardless of the status of AC adapter.

Wireless Device Control

- [Always On / Off] : The wireless devices are turned on or not.
- [Last Status] : The wireless devices are restored to last status.

Smart Battery Calibration

- If you select this option, the system battery will be discharged completely for more accurate battery level detection.
This option only works with SMART battery.

| Phoenix SecureCore(tm) Setup Utility | | | | | | | | | |
|--------------------------------------|--|----------|--|--------------|--|-----------|--|----------------------------|------|
| Main | | Advanced | | Security | | TPM State | | Boot | Exit |
| ▶ Boot Device Priority | | | | | | | | Item Specific Help | |
| NumLock | | | | [OFF] | | | | Select system boot options | |
| Enble Keypad | | | | [By NumLock] | | | | | |
| Summary screen | | | | [Disabled] | | | | | |
| Boot-time Diagnostic Screen | | | | [Disabled] | | | | | |
| PXE OPROM | | | | [Always] | | | | | |
| Brightness Mode Control | | | | [Auto] | | | | | |
| Wireless Device Control | | | | [Always On] | | | | | |
| Smart Battery Calibration | | | | | | | | | |
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- This Document can not be used without Samsung's authorization -

2. Introduction and Specification

Exit

Exit Saving changes

- Exit System Setup and save your changes to CMOS.

Exit Discarding Changes

- Exit utility without saving Setup data to CMOS.

Load Setup Defaults

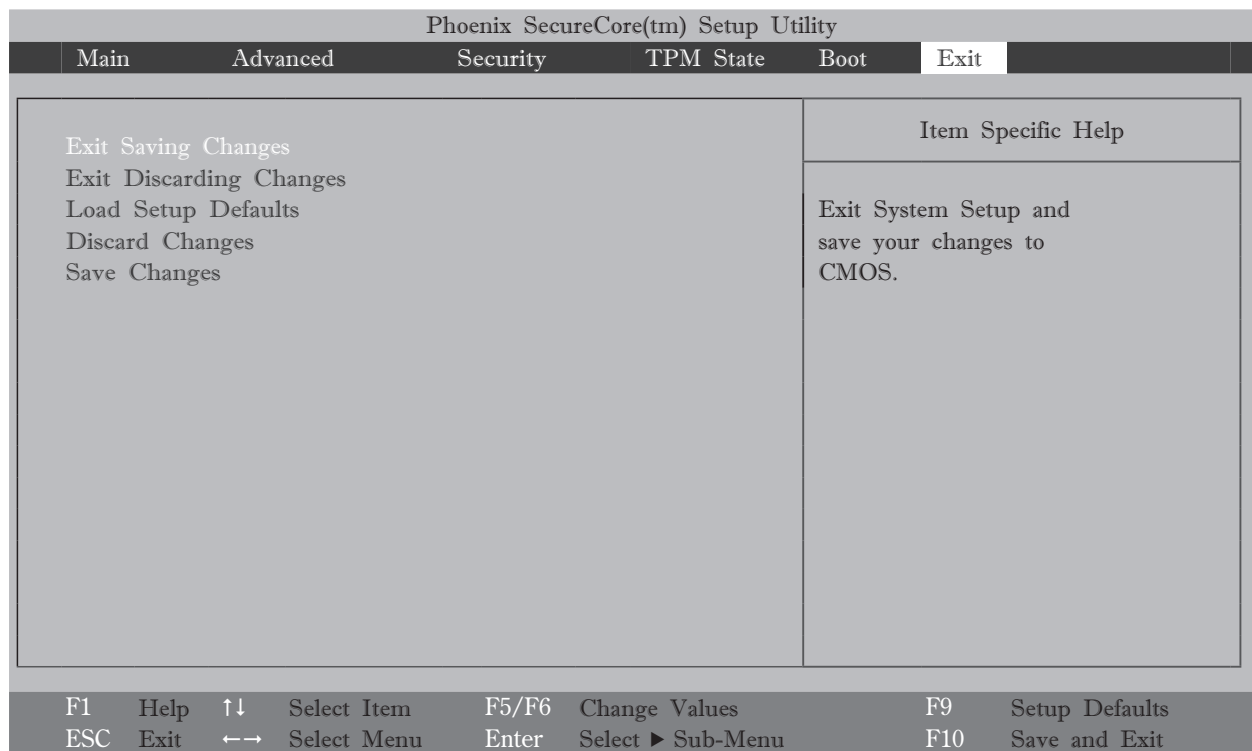
- Load default values for all SETUP items.

Discard Changes

- Load previous values from CMOS for all SETUP items.

Save Changes

- Save Setup Data to CMOS.



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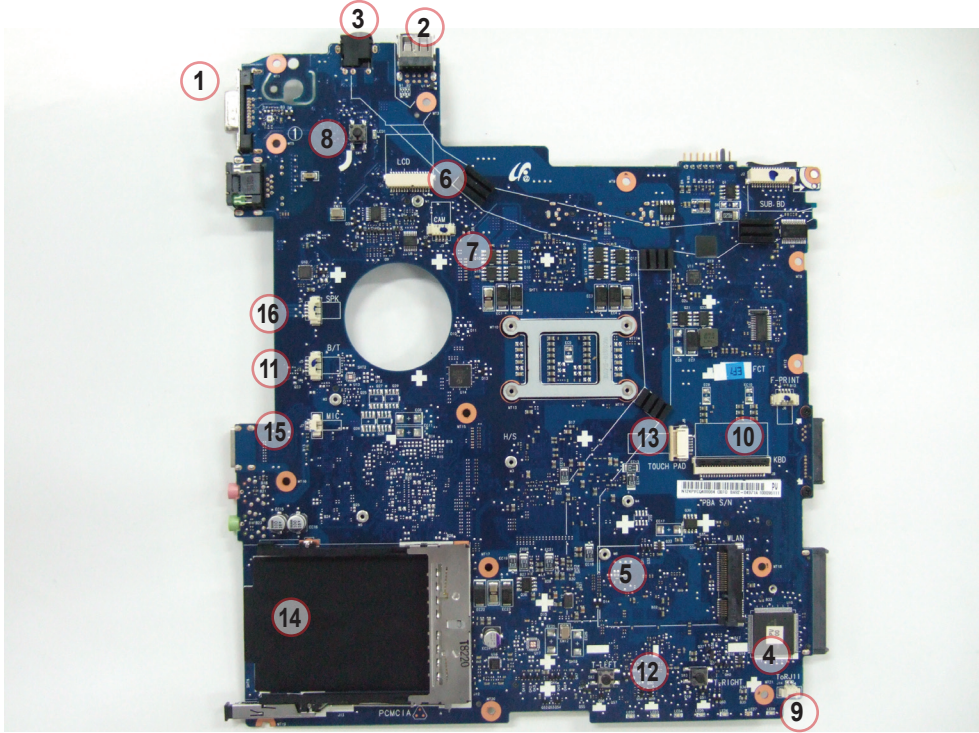
2. Introduction and Specification

BIOS Vendor

BIOS Vendor : **Phoenix**

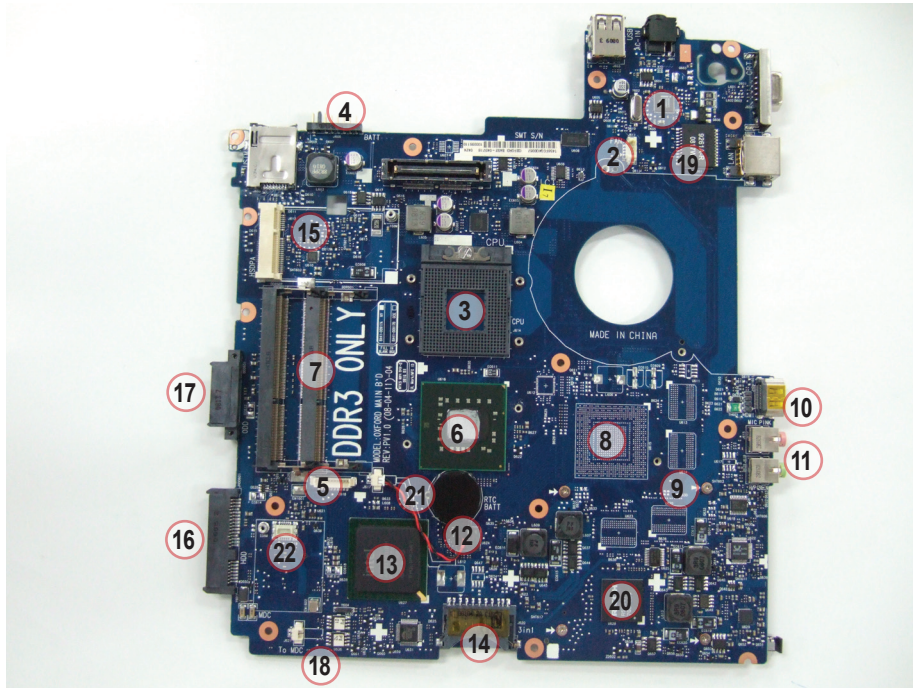
2. Introduction and Specification

2-9. Mainboard Part Description

| TOP | | | |
|---|--------------------------------|----|------------------------------------|
|  | | | |
| 1 | CRT Connector (J604) | 9 | MDC Cable Connector (J14 , Option) |
| 2 | 2-stack USB Connector (J603) | 10 | KBD Connector (J9) |
| 3 | DC-Jack (J601) | 11 | Bluetooth Connector (J5) |
| 4 | MICOM (U15) | 12 | Touchpad button (SW2, SW3) |
| 5 | Minicard Connector (WLAN, J11) | 13 | Touchpad FFC Connector (J8) |
| 6 | LCD Connector (J1) | 14 | PCMCIA Frame (J13) |
| 7 | Camera Connector (J3) | 15 | MIC Connector (J7) |
| 8 | Power switch (SW1) | 16 | Speaker Connector (J4) |

2. Introduction and Specification

Bottom



| | | | |
|----|---------------------------------------|----|-----------------------------------|
| 1 | LAN Controller (U604) | 12 | Clock generator (U623) |
| 2 | FAN Connector (J611) | 13 | ICH9M (U626) |
| 3 | CPU socket (J614) | 14 | 3-in-1 Connector (J620) |
| 4 | Battery Connector (J608) | 15 | Minicard Connector (Robson, J613) |
| 5 | Debug Connector (J618) | 16 | SATA HDD Connector (JHDD601) |
| 6 | MCH (U615) | 17 | SATA ODD Connector (ODD601) |
| 7 | DDR3 Connector (DDR601, 602) | 18 | SPI ROM (U629) |
| 8 | GFX Controller (U614) | 19 | LAN Transformer (LT601) |
| 9 | GDDR3 Memory (U612, U613, U619, J622) | 20 | Multicard Controller (U627) |
| 10 | HDMI Connector (JHDMI601) | 21 | RTC Battery |
| 11 | Headphone, MIC jack (J615, J616) | 22 | MDC card |