Aspire 5920G Series
Service Guide

> Service guide files and updates are available
> on the ACER/CSD web; for more information,
> please refer to http://csd.acer.com.tw

PRINTED IN TAIWAN

Revision History

Please refer to the table below for the updates made on Aspire Chapla service guide.

Date	Chapter	Updates

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Conventions

The following conventions are used in this manual:

SCREEN MESSAGES	Denotes actual messages that appear on screen.
NOTE	Gives bits and pieces of additional information related to the current topic.
WARNING	Alerts you to any damage that might result from doing or not doing specific actions.
CAUTION	Gives precautionary measures to avoid possible hardware or software problems.
IMPORTANT	Reminds you to do specific actions relevant to the accomplishment of procedures.

Preface

Before using this information and the product it supports, please read the following general information.

1. This Service Guide provides you with all technical information relating to the BASIC CONFIGURATION decided for Acer's "global" product offering. To better fit local market requirements and enhance product competitiveness, your regional office MAY have decided to extend the functionality of a machine (e.g. add-on card, modem, or extra memory capability). These LOCALIZED FEATURES will NOT be covered in this generic service guide. In such cases, please contact your regional offices or the responsible personnel/channel to provide you with further technical details.

2. Please note WHEN ORDERING FRU PARTS, that you should check the most up-to-date information available on your regional web or channel. If, for whatever reason, a part number change is made, it will not be noted in the printed Service Guide. For ACER-AUTHORIZED SERVICE PROVIDERS, your Acer office may have a DIFFERENT part number code to those given in the FRU list of this printed Service Guide. You MUST use the list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

System Specifications

Features

Below is a brief summary of the computer's many features:

Operating system

- ❑ Genuine Windows® Vista™ Capable
- ❑ Genuine Windows® Vista™ Home Basic / Home Premium / Ultimate / Business Edition
- ❑ Genuine Windows® XP Home / Professional Edition (Service Pack 2)
- ❑ Genuine Windows® XP Media Center / Tablet Edition
- ❑ Genuine Windows® 2000 (Service Pack 4)

NOTE: Windows® Vista™ Capable PCs come with Windows® XP installed, and can be upgraded to Windows® Vista™. For more information on Windows® Vista™ and how to upgrade, go to: Microsoft.com/windowsvista.

Platform and memory

- ❑ Intel® Mobile Merom mobile technology, featuring:
  - ❧ Intel® Core™ Duo processor (4 MB L2 cache, 1.66/1.83/2/2.16 GHz, 800 MHz FSB) or higher
  - ❧ Intel® PM965 Chipset
- ❑ Integrated Intel® PRO/Wireless 3945ABGN network connection (dual-band tri-mode 802.11a/b/g/n) Wi-Fi CERTIFIED™ solution, supporting Acer SignalUp™ wireless technology
- ❑ Core logic: Intel® Santa Rose Platform, Crestline 965GM+ICH8M (north bridge+ south bridge)
- ❑ Up to 2GB of DDR2 533/677 MHz memory, upgradeable to 4GB using two soDIMM modules (dual-channel support)

Display and graphics

- ❑ 15.4" WXGA+ high-brightness Acer CrystalBrite™ TFT LCD, 1680 x 1050 pixel resolution, 6 lamps
- ❑ 16 ms typical of/off and 8 ms average gray-to-gray response time
- ❑ Simultaneous multi-window viewing via Acer Vista™ supported
- ❑ Supporting NVIDIA® PureVideo™ technology (WMV HD, High-Definition MPEG-2 Hardware Acceleration, integrated HDTV encoder) dual-link DVI, Microsoft® DirectX® 10, Shader Model 4.0, OpenEXR High Dynamic Range (HDR) technology, Unified Shader Architecture, Geometry Instancing 2.0, SGI OpenGL® 2.0 Optimizations and support, SmartDimmer™ Technology and PCI Express®
- ❑ Dual independent display
- ❑ 16.7 million colors (20.1" LCD model)
- ❑ 16.2 million colors (19" LCD model)
- ❑ MPEG-2/DVD hardware-assisted capability
- ❑ S-video/TV-out (NTSC/PAL) support
- ❑ Acer Arcade™ featuring Acer CinemaVision™ and Acer ClearVision technologies

Audio

❑ Intel® High Definition audio support

❑ Two built-in Acer 3DSonic stereo speakers (1W)

❑ Realtek ALC268 Audio Code with Dolby®

❑ Sound Blaster Pro™ and MS Sound compatible

❑ Built-in microphone

❑ VoIP-enabled

Storage subsystem

❑ One or two 60/80/100/120 GB Serial ATA hard disk drive, supporting Ultra DMA100 S.M.A.R.T / Hybrid HDD

❑ Optical drive options: DVD-Super Multi double-layer drive, Blue-ray drive (slot-load)

❑ 5-in-1 card reader, supporting Secure Digital (SD), MultiMediaCard (MMC), Memory Stick® (MS), Memory Stick PRO™ (MS PRO), xD-Picture Card™ (xD)

❑ Supports 3G SIM Card

Input devices

❑ 88/89-key keyboard with 101/102 key emulation

❑ Touchpad with 4-way scroll button

❑ Six Media keys

❑ Four easy-launch buttons

Communication

❑ Acer Video Conference, featuring Voice and Video over Internet Protocol (VVoIP) support via Acer OrbiCam™ and optional Acer Bluetooth® VoIP phone

❑ Acer OrbiCam™ 0.3 megapixel CMOS camera, featuring:

♦ 30 degree ergonomic rotation

♦ Acer VisageOn™ technology

♦ Acer PrimaLite™ technology

❑ Modem: 56K V.90/V.92 WWDAA modem; wake-on-ring ready support by S3

❑ LAN: gigabit Ethernet; wake-on-LAN ready

❑ WPAN: Bluetooth® 2.0+EDR (Enhanced Data Rate)

❑ Integrated Kedron-n 3945abg network connection (dual-band tri-mode 802.11a/b/g/n) Wi-Fi CERTIFIED™ solution, supporting Acer SignalUp™ wireless technology

Mini Cards

❑ Two mini card slots (one supports a wireless module, the other a TV, 3G, or MPEG decoder module)

❑ 3G SIM card support

I/O Ports

❑ PC Card slot (one Type II)

❑ 5-in-1 card reader (SD/MMC/MS/MS PRO/xD)

❑ Four USB 2.0 ports

❑ Two mini card slots

❑ HDMI port

❑ IEEE 1394 port

- ❑ Fast infrared (FIR) port
- ❑ External display (VGA) port
- ❑ S-video/TV-out (NTSC/PAL) port
- ❑ Headphones/speaker/line-out port with S/PDIF support
- ❑ Microphone-in jack
- ❑ Line-in jack
- ❑ Ethernet (RJ-45) port
- ❑ Modem (RJ-11) port
- ❑ DC-in jack for AC adaptor
- ❑ 3G SIM Card slot (optional)
- ❑ TV-in port (optional)
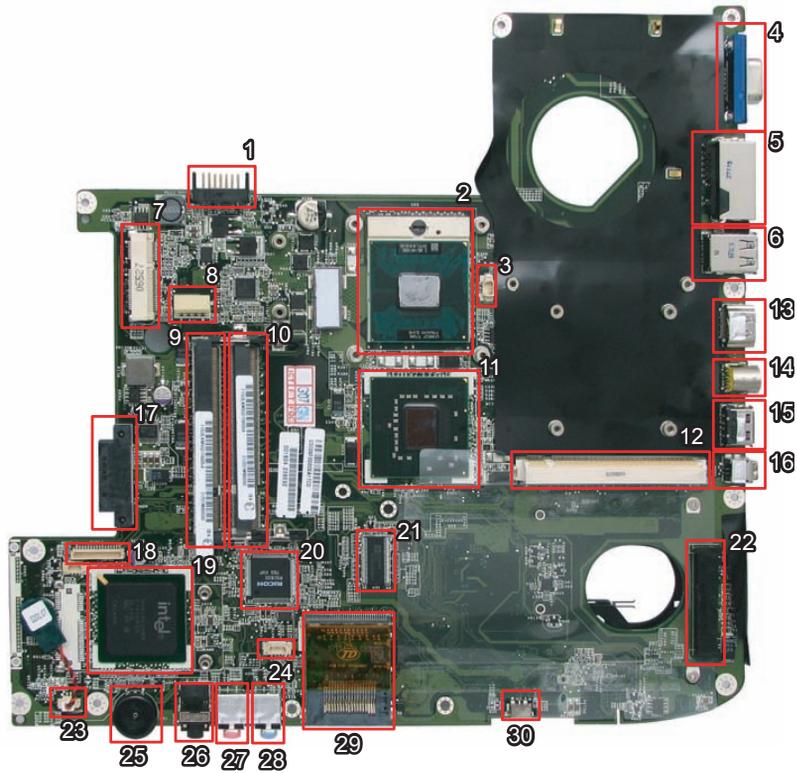- ❑ RF-in port (optional)

Environment

- ❑ Temperature:
  - ❥ Operating: 5ºC to 35ºC
  - ❥ Non-operating: -20ºC to 65ºC
- ❑ Humidity (non-condensing):
  - ❥ Operating: 20%~80%
  - ❥ Non-operating: 20%~80%

System Block Diagram
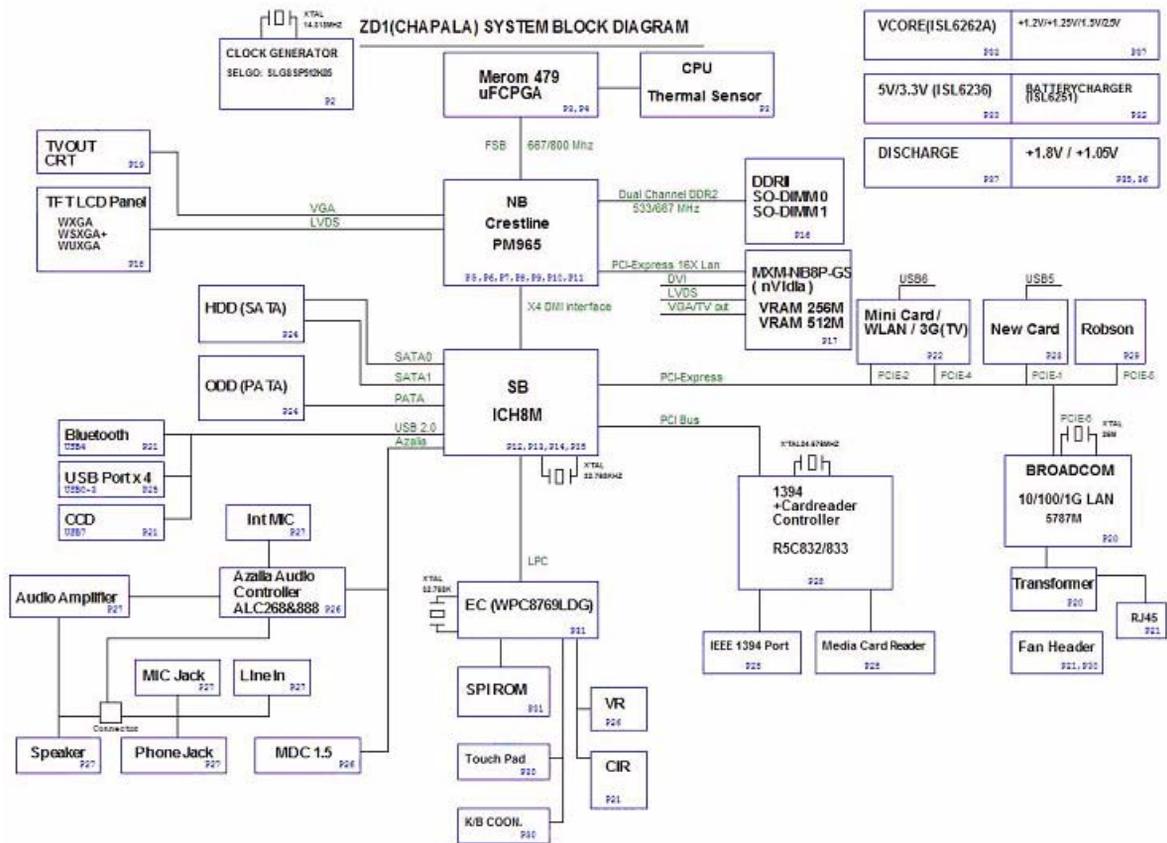
Board Layout

Top View

#				#		
1	CN15	Battery Connector		16	CN26	IEEE 1394 Connector
2	U22	CPU Socket		17	CN28	Optical Disk Drive Connector
3	CN20	Fan Connector		18	CN30	
4	CN13	VGA Jack		19	U34	South Bridge
5	CN14	Ethernet Controller		20	U32	Audio Codec
6	CN18	USB Connector		21	U31	
7	CN19	Wireless LAN Card Connector		22	CN32	SATA HDD Connector
8	PJ1	DC-IN Connector		23	CN39	
9	CN25	DIMM Socket		24	CN35	Speaker Connector
10	CN23	DIMM Socket		25	VR1	Volume Dial
11	U29	North Bridge		26	CN30	Headphones/Speaker/Line-out Jack
12	U30			27	CN37	Microphone-in Jack
13	CN21	HDMI Connector		28	CN36	Line-in Jack
14	CN22	S-Video Connector		29	CN38	5-in-1 Card Reader
15	CN23	USB Connector		30	U37	Infrared Sensor

Bottom View
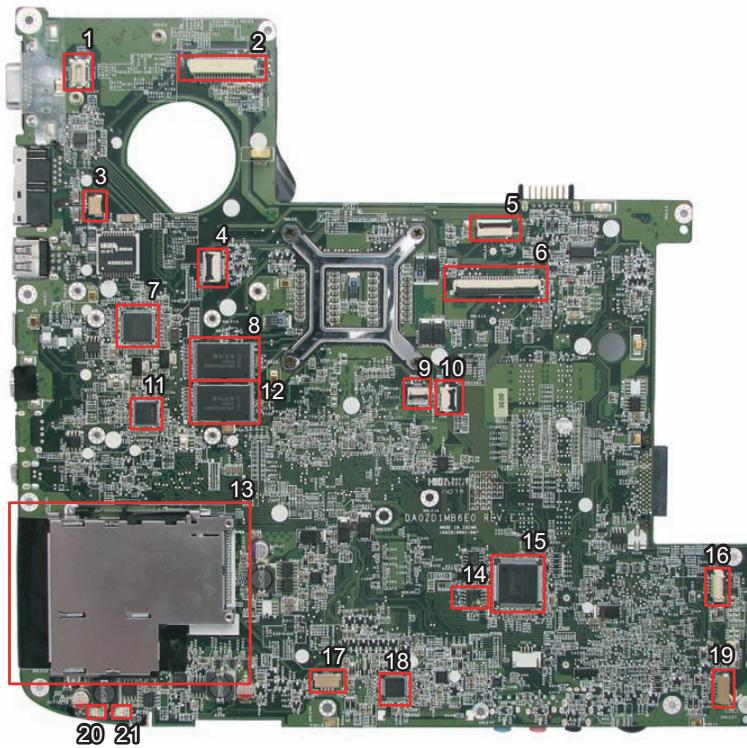
1	CN2		12	U7	DDR2 SDRAM IC
2	CN1	LCD Connector	13	CN9	Card Bus Socket
3	CN3	MDC Connector	14	U11	
4	CN5	Email Board Connector	15	U10 Winbond	Touchpad Connector
5	CN4	Power Board Connector	16	CN16	Subwoofer Connector
6	CN6	Keyboard Connector	17	CN11	MSC Connector
7	U4	Audio Codec	18	U19	
8	U6	DDR2 SDRAM IC	19	CN12	
9	CN7	Bluetooth Connector	20	LED2	HDD LED
10	CN8	Wireless Connector	21	LED3	Battery LED
11	U8				

Your Acer Notebook tour

After knowing your computer features, let us show you around your new Aspire computer.

Front View
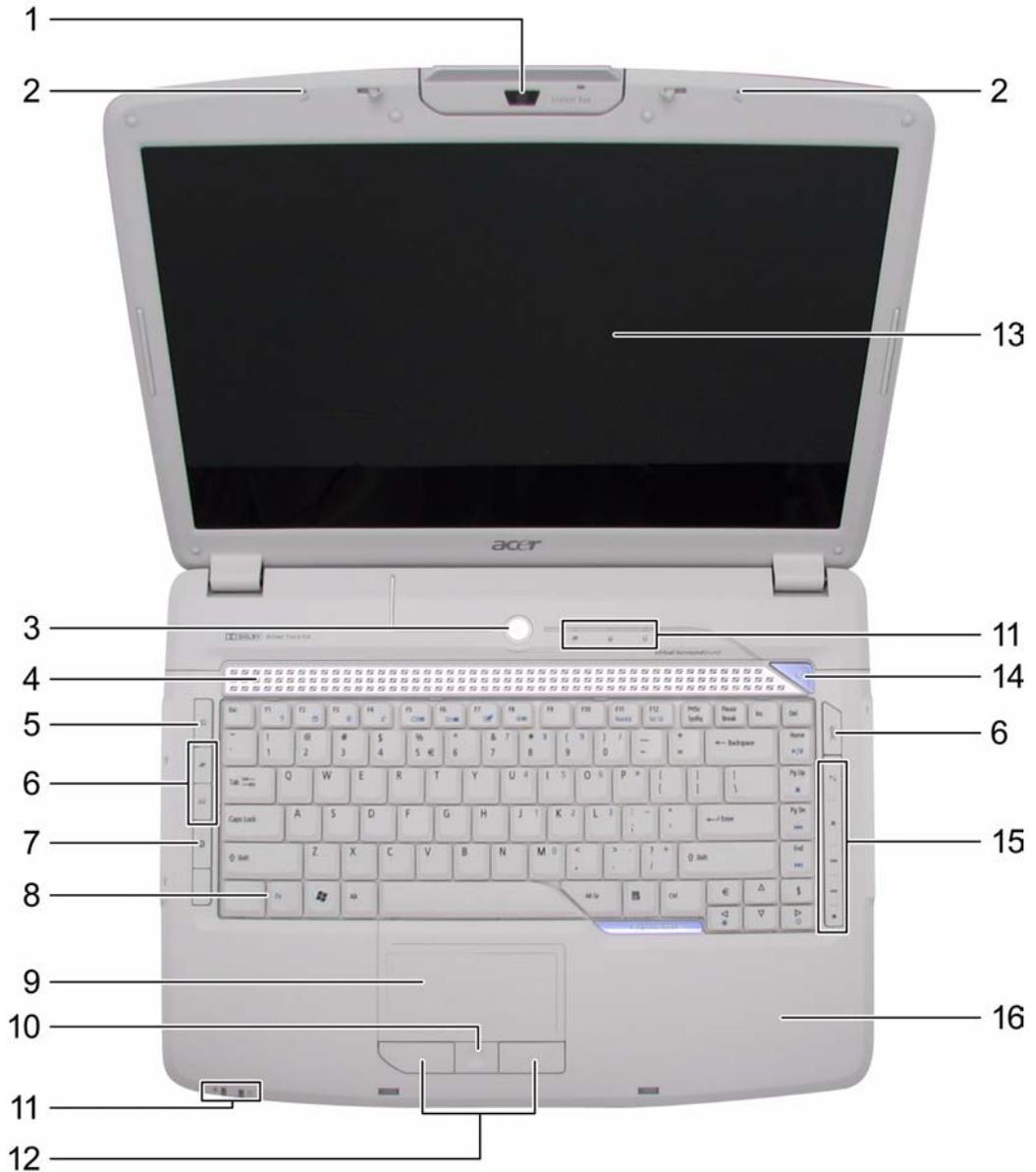
#	Icon	Item	Description
1		Built-in camera	0.3 megapixel web camera for video communication.
2		Microphone	Internal microphone for sound recording.
3	⏻	Power button	Turns the computer on and off.
4		Speaker	Left and right speakers deliver stereo audio output.

5	◯	Wireless communication button/indicator	Enables/disables the wireless function. Indicates the status of wireless LAN communication.
6		WWW/E-mail buttons	Button to launch your internet browser and e-mail reader.
7	✻	Bluetooth® communication button/ indicator	Enables/disables the Bluetooth® function. Indicates the status of Bluetooth communication.
8		Keyboard	For entering data into your computer.
9		Touchpad	Touch-sensitive pointing device which functions like a computer mouse.
10		4-way scroll button	To scroll up, down, left, and right.
11		Status indicators	Light-Emitting Diodes (LEDs) that light up to show the status of the computer's functions and components.
12		Click buttons (left and right)	The left and right buttons function like the left and right mouse buttons.
13		Display screen	Also called Liquid-Crystal Display (LCD), displays computer output.
14	*e*	Empowering button	Launches the Empowering Technology toolbar.
15		Media buttons	To play, pause, record, rewind, fast forward or stop playback / recording.
16		Palmrest	Comfortable support area for your hands when you use the computer.

Closed Front View

#	Icon	Item	Description
1	☀	Power indicator	Indicates the computer's power status.
2	🔋	Battery indicator	Indicates the computer's battery status.
3	⊸≤	Infrared port	Interfaces with infrared devices (e.g, infrared printer and IR-aware computer).
4	M SD xD ⬥ PRO	5-in-1 card reader	Accepts Secure Digital (SD), MultiMediaCard (MMC), Memory Stick (MS), Memory Stick PRO (MS PRO), xD-Picture Card (xD).

5	((↔))	Line-in jack	Accepts audio line-in devices (e.g., audio CD player, stereo walkman).
6		Microphone-in jack	Accepts input from external microphones.
7	SPDIF	Headphones/speaker/ line-out jack with S/PDIF support	Connects to audio line-out devices (e.g., speakers, headphones).
8		Volume control	Increases and decreases the volume.

Left View

#	Icon	Item	Description
1		External display (VGA) port	Connects to a display device (e.g., external monitor, LCD projector).
2		Ethernet (RJ-45)	Connects to an Ethernet 10/100/1000-based network (for selected models).
3		Modem (RJ-11) port	Connects to a phone line.
4		2 USB 2.0 ports	Connect to USB 2.0 devices (e.g., USB mouse, USB camera).
5		HDMI port	Connects to a television or display device with HDMI input.
6	S→	S-video/TV-out (NTSC/ PAL) port	Connects to a television or display device with S-video input.
7		USB 2.0 port	Connect to USB 2.0 devices (e.g., USB mouse, USB camera).
8	1394	4-pin IEEE 1394 port	Connects to IEEE 1394 devices.
9		PC Card slot	Accepts one Type II PC Card.

Right View

#	Icon	Item	Description
1		Optical drive	Internal optical drive; accepts CDs or DVDs (slot-load or tray-load depending on model).
2		Optical disk access indicator	Lights up when the optical drive is active.
3		Optical drive eject button	Ejects the optical disk from the drive.
4		Emergency eject hole	Ejects the optical drive tray when the computer is turned off.
5	⊷	USB 2.0 port	Connect to USB 2.0 devices (e.g., USB mouse, USB camera).
6	🔒	Kensington lock slot	Connects to a Kensington-compatible computer security lock.

Rear view

#	Icon	Item	Description
1	▬▬▬	DC-in jack	Connects to an AC adapter.

Base view

#	Item	Description
1	Battery bay	Houses the computer's battery pack.
2	Battery lock	Locks the battery in position.
3	Battery release latch	Releases the battery for removal.
4	Ventilation slots and cooling fan	Enable the computer to stay cool, even after prolonged use. Note: Do not cover or obstruct the opening of the fan.
5	System fan	Enables the motheboard to stay cool, even after prolonged use. Note: Do not cover or obstruct the opening of the fan.
6	Memory compartment	Houses the computer's main memory.
7	Hard disk bay	Houses the computer's hard disk (secured with screws)

Indicators

The computer has several easy-to-read status indicators.
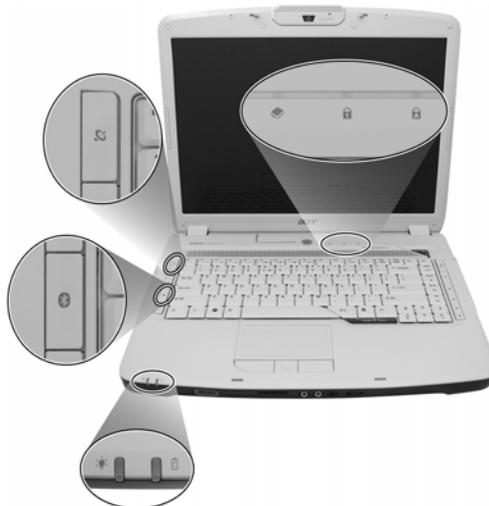
The front panel indicators are visible even when the computer cover is closed up.

Icon	Function	Description
	HDD	Indicates when the hard disc or optical drive is active.
	Num lock	Lights when Num Lock is activated.
	Cap lock	Lights when Cap Lock is activated
	Power	Lights up when the computer is on.
	Battery	Lights up when the battery is being charged.
	Bluetooth	Indicates the status of Bluetooth communication.
	Wireless LAN	Indicates the status of wireless LAN communication.

NOTE: 1. **Charging:** The light shows amber when the battery is charging. 2. **Fully charged:** The light shows green when in AC mode.

Easy-Launch Buttons

To the right of the keyboard there are three easy-launch buttons: Web browser, mail, and one user-programmable button. You can also find an Empowering Key " e located above the keyboard.

Press " e " to run the Acer Empowering Technology. The mail and Web browser buttons are pre-set to email and Internet programs, but can be reset by users. To set the Web browser, mail and programmable buttons, run the Acer Launch Manager.

Launch key	Default application
e	Acer Empowering Technology (user-programmable)
Web browser	Internet browser (user-programmable)
Mail	Email application (user-programmable)
P	User-programmable

Touchpad Basics

The following teaches you how to use the touchpad:

❑ Move your finger across the touchpad (2) to move the cursor.

❑ Press the left (1) and right (4) buttons located beneath the touchpad to perform selection and execution functions. These two buttons are similar to the left and right buttons on a mouse. Tapping on the touchpad is the same as clicking the left button.

❑ Use the fingerprinter (3) to enroll the computer with registered fingerprint. This recognition device helps prevent unauthorized access by others.

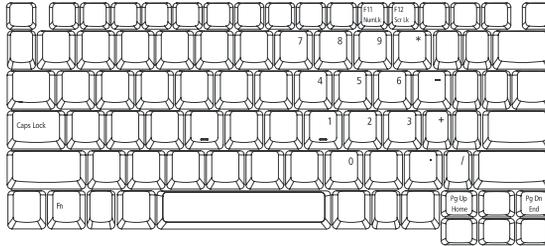| Function	Left Button (1)	Right Button (4)	Main touchpad (2)	Fingerprinter (3)
Execute	Click twice quickly		Tap twice (at the same speed as double-clicking the mouse button)	
Select	Click once		Tap once	
Drag	Click and hold, then use finger on the touchpad to drag the cursor.		Tap twice (at the same speed as double-clicking a mouse button); rest your finger on the touchpad on the second tap and drag the cursor.	
Access context menu		Click once		
Log in with authorized fingerprint				Swipe your finger over the fingerprinter.

NOTE: When using the touchpad, keep it - and your fingers - dry and clean. The touchpad is sensitive to finger movements; hence, the lighter the touch, the better the response. Tapping too hard will not increase the touchpad's responsiveness.

Using the Keyboard

The keyboard has full-sized keys and an embedded keypad, separate cursor keys, one Windows key and twelve function keys.

Lock Keys and embedded numeric keypad

The keyboard has three lock keys which you can toggle on and off.

Lock Key	Description
Caps Lock	When Caps Lock is on, all alphabetic characters typed are in uppercase.
Num lock <Fn>+<F11>	When Num Lock is on, the embedded keypad is in numeric mode. The keys function as a calculator (complete with the arithmetic operators +, -, *, and /). Use this mode when you need to do a lot of numeric data entry. A better solution would be to connect an external keypad.
Scroll lock <Fn>+<F12>	When Scroll Lock is on, the screen moves one line up or down when you press the up or down arrow keys respectively. Scroll Lock does not work with some applications.

The embedded numeric keypad functions like a desktop numeric keypad. It is indicated by small characters located on the upper right corner of the keycaps. To simplify the keyboard legend, cursor-control key symbols are not printed on the keys.

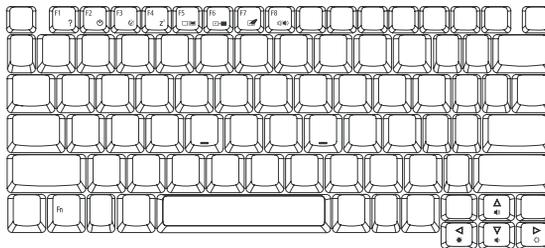| Desired Access	Num Lock On	Num Lock Off
Number keys on embedded keypad	Type numbers in a normal manner.	
Cursor-control keys on embedded keypad	Hold <Shift> while using cursor-control keys.	Hold <Fn> while using cursor-control keys.
Main keyboard keys	Hold <Fn> while typing letters on embedded keypad.	Type the letters in a normal manner.

Windows Keys

The keyboard has one key that performs Windows-specific functions.

Key	Icon	Description
Windows key		Pressed alone, this key has the same effect as clicking on the Windows Start button; it launches the Start menu. It can also be used with other keys to provide a variety of function: + <Tab> Activates next taskbar button. + <E> Opens the My Computer window + <F1> Opens Help and Support. + <F> Opens the Search: All Files dialog box. + <R> Opens the Run dialog box. + <M> Minimizes all windows. <Shift>+ + <M> Undoes the minimize all windows action.
Application key		This key has the same effect as clicking the right mouse button; it opens the application's context menu.

Hot Keys

The computer employs hotkeys or key combinations to access most of the computer's controls like screen brightness, volume output, and the BIOS utility.

To activate hot keys, press and hold the **<Fn>** key before pressing the other key in the hotkey combination.


Hot Key	Icon	Function	Description
<Fn>+<F1>	?	Hot key help	Displays help on hot keys.
<Fn>+<F2>		Acer eSettings	Launches the Acer eSettings in Acer eManager.
<Fn>+<F3>		Acer ePower Management	Launches the Acer ePower Management in Acer Empowering Technology. **See "Acer Empowering Technology" on page 18**.
<Fn>+<F4>	z^z	Sleep	Puts the computer in Sleep mode.

Hot Key	Icon	Function	Description
<Fn>+<F5>		Display toggle	Switches display output between the display screen, external monitor (if connected) and both.
<Fn>+<F6>		Screen blank	Turns the display screen backlight off to save power. Press any key to return.
<Fn>+<F7>		Touchpad toggle	Turns the internal touchpad on and off.
<Fn>+<F8>		Speaker toggle	Turns the speakers on and off.
<Fn>+<↑>		Volume up	Increases the speaker volume.
<Fn>+<↓>		Volume down	Decreases the speaker volume.
<Fn>+<→>		Brightness up	Increases the screen brightness.
<Fn>+<←>		Brightness down	Decreases the screen brightness

Special Key

You can locate the Euro symbol and US dollar sign at the upper-center of your keyboard.

To type:
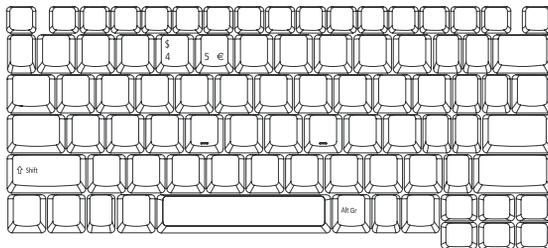
The Euro symbol

1. Open a text editor or word processor.

2. Hold **<Alt Gr>** and then press the **<5>** symbol at the upper-center of the keyboard.

NOTE: Some fonts and software do not support the Euro symbol. Please refer to www.microsoft.com/typography/faq/faq12.htm for more information.

The US dollar sign

1. Open a text editor or word processor.

2. Hold **<Shift>** and then press the **<4>** key at the upper-center of the keyboard.

NOTE: This function varies by the operating system version.

Acer Empowering Technology

Acer's innovative Empowering Technology makes it easy for you to access frequently used functions and manage your new Acer notebook. It features the following handy utilities:

❑ **Acer eNet Management** hooks up to location-based networks intelligently.
❑ **Acer ePower Management** extends battery power via versatile usage profiles.
❑ **Acer ePresentation Management** connects to a projector and adjusts display settings conveniently.
❑ **Acer eDataSecurity Management** protects data with passwords and advanced encryption algorithms.
❑ **Acer eLock Management** limits access to external storage media.
❑ **Acer eRecovery Management** backs up and recovers data flexibly, reliably and completely.
❑ **Acer eSettings Management** accesses system information and adjusts settings easily.
❑ **Acer ePerformance Management** improves system performance by optimizing disk space, memory and registry settings.

For more information, press the < e > key to launch the Empowering Technology toolbar, then click on the appropriate utility and select the Help or Tutorial function.

Empowering Technology password

Before using Acer eLock Management and Acer eRecovery Management, you must initialize the Empowering Technology password. Right-click on the Empowering Technology toolbar and select "Password Setup" to do so. If you do not initialize the Empowering Technology password, you will be prompted to do so when running Acer eLock Management or Acer eRecovery Management for the first time.

Acer eNet Management

Acer eNet Management helps you to quickly and easily connect to both wired and wireless networks in a variety of locations. To access this utility, either click on the "**Acer eNet Management**" icon on your notebook, or start the program from the Start menu. You also have the option to set Acer eNet Management to start automatically when you boot up your PC.

Acer eNet Management automatically detects the best settings for a new location, while offering you the freedom to manually adjust the settings to match your needs.

Acer eNet Management can save network settings for a location to a profile, and automatically switch to the appropriate profile when you move from one location to another. Settings stored include network connection settings (IP and DNS settings, wireless AP details, etc.), as well as default printer settings.

Security and safety concerns mean that Acer eNet Management does not store username and password information.

Acer ePower Management

Acer ePower Management features a straightforward user interface. To launch it, select Acer ePower Management from the Empowering Technology interface.

AC Mode (Adapter mode)

The default setting is "Maximum Performance." You can adjust CPU speed, LCD brightness and other settings, or click on buttons to turn the following functions on/off: Wireless LAN, Bluetooth, CardBus, FireWire (1394), Wired LAN and Optical Device if supported.

DC Mode (Battery mode)

There are three pre-defined profiles - Balanced, Power Saver, and High Performance. You can also define the power plan optimized for your needs.

To create new power plan

1. Select a predefined power plan and click the "🔲" icon shown on the lower left-hand side.

2. Enter the name for the newly created power plan.

3. Select one of the predefined power plan that is closest to what you want.

4. Change the display and sleep settings as desired.

5. Click "OK" to apply the setting.

6. A new power plan is created.

Battery status

For real-time battery life estimates based on current usage, refer to the time shown in the "Remaining Battery Life" field.
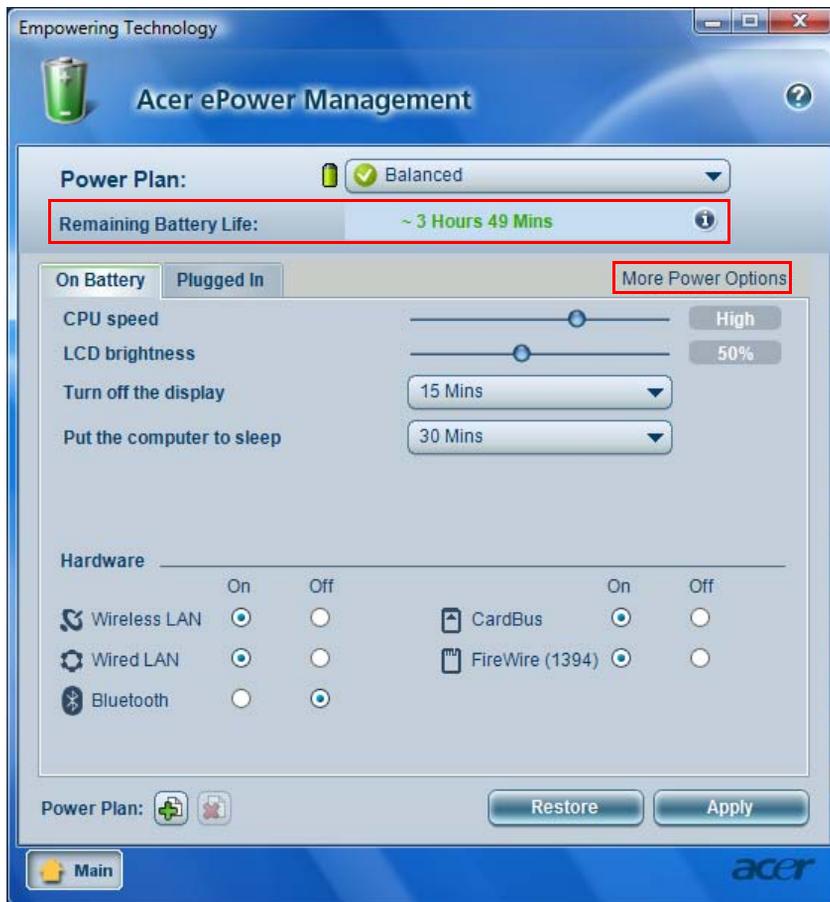
For additional power options, click "**More Power option**".

Acer ePresentation Management

Acer ePresentation Management lets you project your computer's display to an external device or project using the hot key: Fn + F5. If auto-detection hardware is implemented in the system, your system display will be automatically switched out when an external display is connected to the system.
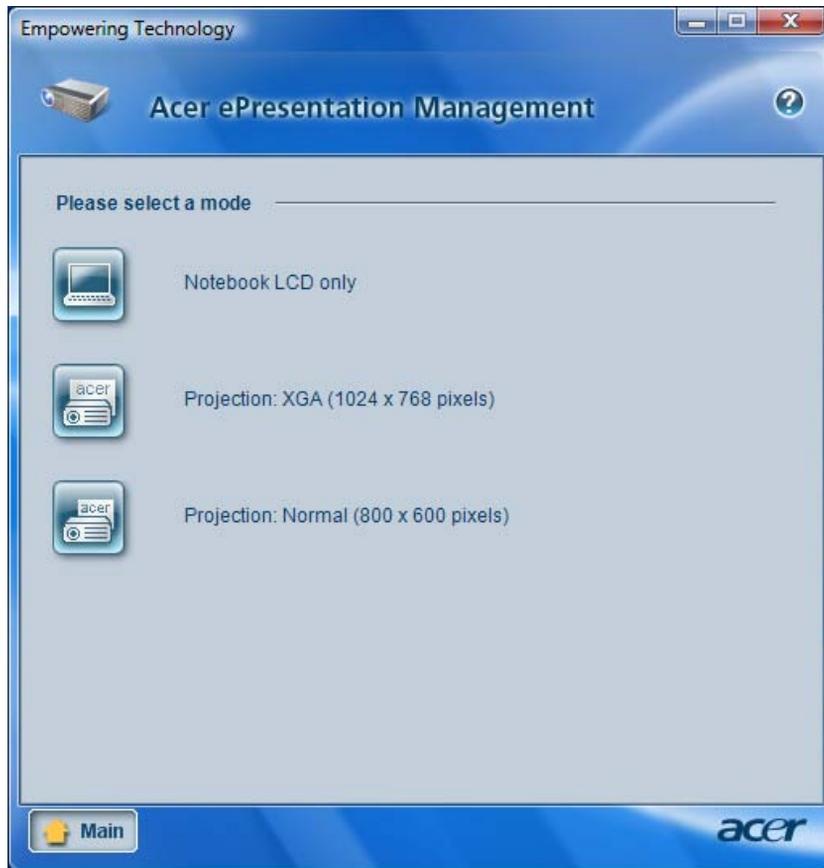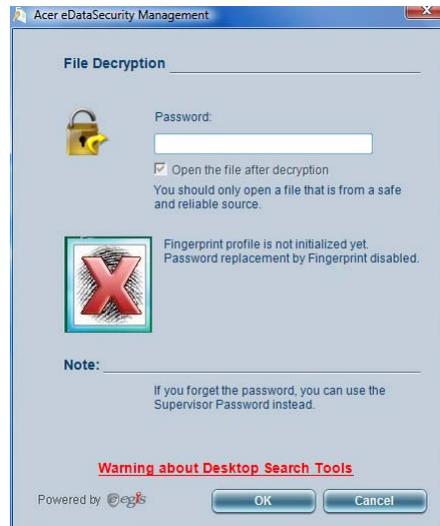
Acer eDataSecurity Management

Acer eDataSecurity Management is handy file encryption utility that protects your files from being accessed by unauthorized persons. It is conveniently integrated with Windows explorer as a shell extension for quick and easy data encryption/decryption and also supports on-the-fly file encryption for MSN Messenger and Microsoft Outlook.

The Acer eDataSecurity Management setup wizard will prompt you for a supervisor password and default encryption. This encryption will be used to encrypt files by default, or you can choose to enter your won file-specific password when encrypting a file.

NOTE: The password used encrypt a file is the unique key that the system needs to decrypt it. If you lose the password, the supervisor password is the only other key capable of decrypting the file. If you lose both passwords, there will be no way to decrypt your encrypted file! **Be sure to safeguard all related passwords!**

Acer eLock Management

Acer eLock Management is a security utility that allows you to lock your removable data, optical and floppy drives to ensure that data cannot be stolen while your notebook is unattended.

❏ Removable data devices - includes USB disk drives, USB pen drives, USB flash drives, USB MP3 drives, USB memory card readers, IEEE 1394 disk drives and any other removable disk drives that can be mounted as a file system when plugged into the system.

❏ Optical drive devices - includes any kind of CD-ROM or DVD-ROM drives.

❏ Floppy disk drives - 3.5-inch disks only.

❏ Interfaces - includes serial ports, parallel port, infrared (IR), and Bluetooth.

To activate Acer eLock Management, a password must be set first. Once set, you can apply locks to any of the devices. Lock(s) will immediately be set without any reboot necessary, and will remain locked after rebooting, until unlocked.

NOTE: If you lose your password, there is no method to reset it except by reformatting your notebook or taking your notebook to an Acer Customer Service Center. Be sure to remember or write down your password.