

NOTEBOOK COMPUTER

RK886EX

USER'S GUIDE

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EMC and Safety Notice

Federal Communications Commission Statement

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Regulatory information / Disclaimers

Installation and use of this RK886EX must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications (including the antennas) made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment.

The manufacturer is not responsible for any radio or television interference caused by unauthorized modification of this device, or the substitution of the connecting cables and equipment other than manufacturer specified. It is the responsibility of the user to correct any interference caused by such unauthorized modification, substitution or attachment. Manufacturer and its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from failing to comply with these guidelines.

IMPORTANT NOTE (CO-LOCATION)

FCC RF Radiation Exposure Statement: This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter.

In order to maintain compliance with the FCC RF exposure guidelines, this equipment should be installed and operated with minimum distance 20cm between the radiator and your body. Use only with supplied antenna.

Unauthorized antenna, modification, or attachments could damage the transmitter and may violate FCC regulations.

This device is restricted to INDOOR USE due to its operation in the 5.15 to 5.25GHz frequency range. According to FCC 15.407(e), requires this product to be used indoors for the frequency range 5.15 to 5.25GHz to reduce the potential for harmful interference to co-channel of the Mobile Satellite Systems.

CE

CE 0984 !

Products with the CE Marking comply with both the EMC Directive (2004/104/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms:

EN 300 328 V.1.6.1 (2004)y

EN 301 489-1 V.1.6.1 (2005) / EN 301 489-17 V.1.2.1 (2002)

EN 301 893 V.1.2.3 (2003)

EN 50371: 2002

EN 60950-1: 2002

EN 55022 / EN 55024

R&TTE (CE) MANUAL REGULATORY REQUIREMENT (WLAN - IEEE 802.11b/g)

802.11b/g Restrictions:

European standards dictate maximum radiated transmit power of 100mW EIRP and frequency range 2.400-2.4835GHz. In France, the equipment must be restricted to the 2.4465-2.4835GHz frequency range and must be restricted to indoor use.

$D=0.0178m$ is the minimum distance between the EUT and human body to meet the E-field strength of 61V/m

UL, TÜV

AC Adapter (TÜV includes EN60950 LVD)

Power Conservation

This computer consumes much less power than conventional computers; however, power consumption may be reduced by properly configuring the Power Management Setups.

It is recommended that the power saving functions be enabled even when not running on battery power.

Power Management generally does not degrade system performance while saving power.

Material Safety and Recycling

All materials used in the construction of this unit are recyclable or environmentally friendly. No CFC or related materials were used in the manufacturing process or inside the product.

Please recycle the packing materials, and at the end of the computer's life, all other materials in accordance with the local regulations.

Please refer "Material and Recycling" for the contents of the materials.

Environmental Information

- The equipment that you bought has required the extraction and use of natural resources for its production. It may contain hazardous substances for the health and the environment.
- In order to avoid the dissemination of those substances in our environment and to diminish the pressure on the natural resources, we encourage you to use the appropriate take-back systems. Those systems will reuse or recycle most of the materials of your end life equipment in a sound way.
- The cross-bin symbol invites you to use those systems
- If you need more information on the collection, reuse and recycling systems, please contact your local or regional waste administration.
- You can also contact us for more information on the environmental performances of our products.

CONTENTS

GETTING STARTED.....	1
UNPACKING.....	1
QUICK OPERATION.....	2
CONTROLS AND INDICATORS.....	3
USEFUL INFORMATION	7
LOCATION.....	7
RUGGEDNESS.....	7
OPERATING SYSTEMS.....	7
AC ADAPTER.....	8
BATTERY	9
BOOT UP AND POST.....	10
STANDBY/HIBERNATE/RESUME.....	11
SHUTDOWN.....	11
DVI.....	11
RTC.....	12
REPLACING MODULES.....	12
COMPONENTS AND FUNCTIONS	14
KEYBOARD	14
FLOPPY DISK DRIVE.....	15
PRINTER CABLE	15
HARD DISK DRIVE	15
CD-ROM DRIVE.....	16
EXPRESS AND PCMCIA CARDS.....	16
DOCKUNDER (OPTIONAL).....	16
OPTIONAL DEVICES.....	21
MEMORY CARD	21
2 ND BATTERY.....	21
LAN AND FAX/MODEM CARD.....	21
WIRELESS LAN CARD.....	21
DVD ROM DRIVE.....	21
CD-RW DRIVE	21
DVD-RW DRIVE	21
2 ND HDD	21
TOUCH SCREEN.....	21
PCMCIA COVER	22
VEHICLE ADAPTER.....	22
DUAL BATTERY CHARGER.....	22
DOCKUNDER	22
SPECIFICATIONS.....	23
CPU.....	23
MEMORY.....	23
DISPLAY.....	23
KEYBOARD	23

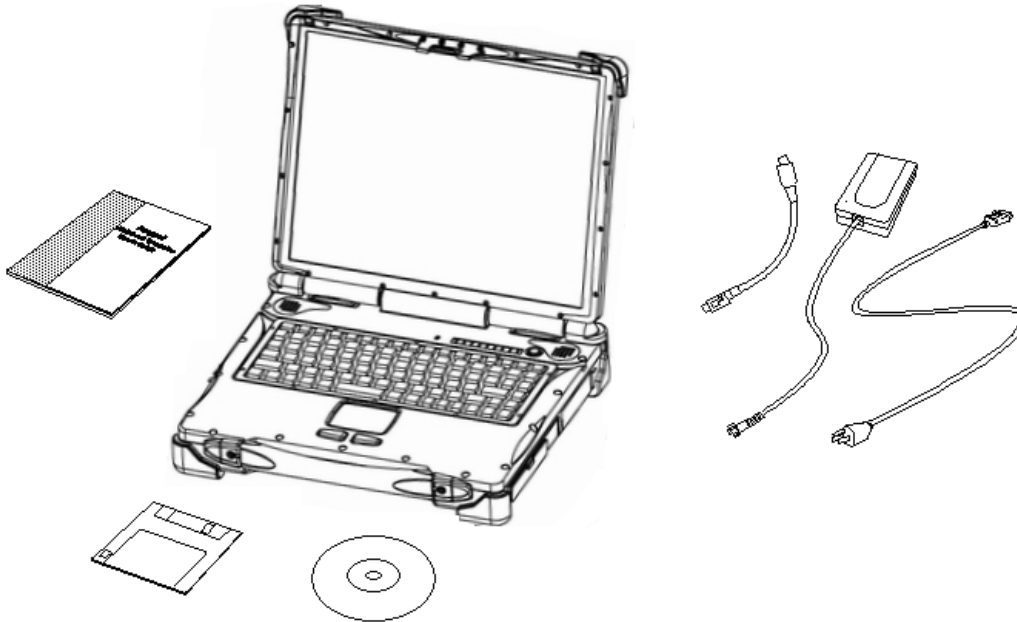
FLOPPY DISK DRIVE	24
HARD DISK DRIVE	24
CD-ROM DRIVE.....	24
TOUCH SCREEN.....	24
I/O PORTS	24
AC ADAPTER.....	25
VEHICLE ADAPTER.....	25
BATTERY	25
SYSTEM UNIT DIMENSIONS AND WEIGHT.....	26
MATERIALS AND RECYCLING	26
ENVIRONMENTAL.....	27
BIOS SETUP	28
MAIN MENU.....	28
IDE CHANNEL 0 MASTER SUB-MENU	29
IDE CHANNEL 0 SLAVE SUB-MENU	30
SATA PORT 0 SUB-MENU.....	31
SATA PORT 1 SUB-MENU.....	32
THE GENERAL HELP WINDOW	33
ADVANCED MENU	34
ADVANCED MENU SELECTIONS	34
SIO SMC227 CONFIGURATION SUB-MENU	36
SECURITY MENU.....	41
FOR MOST FREQUENTLY ALTERED SETUP “RF SECURITY CONTROL” PLEASE REFER FOLLOWING:	43
RF SECURITY CONTROL SUB-MENU	43
TPM STATE MENU	44
BOOT MENU.....	44
EXIT MENU	46
UTILITIES AND DRIVERS	47
CHIPSET	47
VGA UTILITY	47
DISPLAY CAPABILITY	47
AUDIO DRIVER.....	48
USB 2.0.....	48
TOUCH SCREEN DRIVER	48
CD-ROM DRIVER	49
PCMCIA DRIVER.....	49
MINI PCI 1G AX92200 LAN	49
MINI PCI INT8100 LAN	49
MINI PCI-E 1G RTL8111B LAN	49
MINI PCI-E INTEL 3945ABG WLAN	49
FAX/MODEM CARD DRIVER.....	49
WIRELESS MANAGER.....	50
MAINTENANCE / SERVICE.....	51
CLEANING	51
TROUBLESHOOTING	51
RMA SERVICE	51

GETTING STARTED

Unpacking

The following components come with your computer. If anything is missing or damaged please notify the dealer immediately.

- Computer unit
- Removable drive installed on computer (FDD or CD-ROM/DVD)
- AC Adapter
- AC Power Cord
- Utility Diskettes or CD
- User's Guide
- External Keyboard Adapter Cable
- Printer adapter cable
- Carrying Bag



Quick Operation

- Loosen the battery screw, remove the battery insulation sheet, and then reposition the battery for operation.
- Attach the AC adapter and charge battery for at least 10 minutes.

Turn ON the computer by pressing the power switch momentarily.

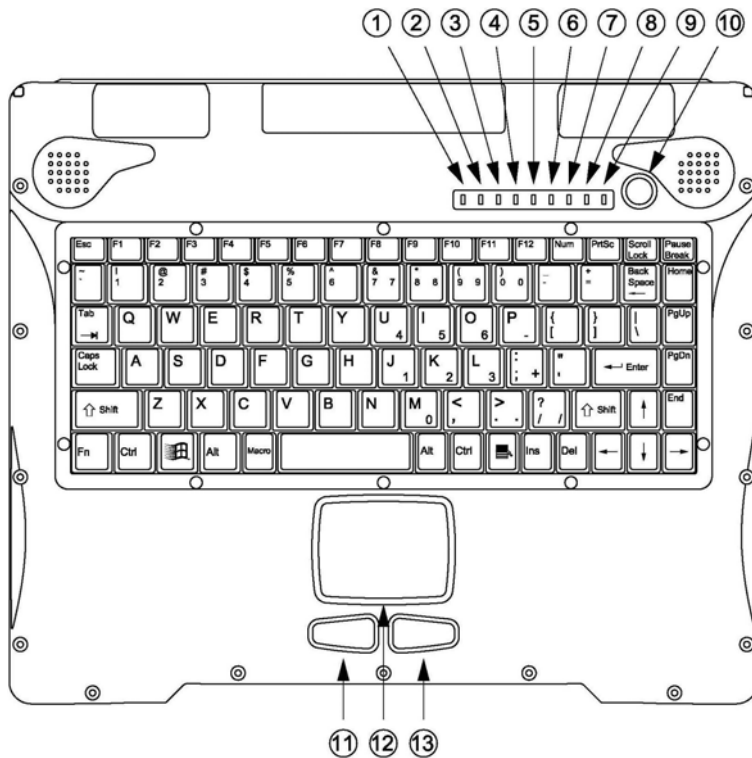
Notice:

- **When ambient temperature is under 0°C, the system may not boot up immediately. System will beep with heater light flashing while heater working. After 13~15 minutes, the system will boot up automatically.**
 - **Under emergency situation, to skip heating and boot up system immediately by pressing power button for >10 seconds (can not guarantee all devices work properly)**
 - Turn OFF the computer using either one of the following procedures:
 1. Press power switch to “Shut down”, “Standby”* or “Hibernate”* dependent on operating system (OS) and power management settings.
 2. Press power switch for 4 seconds for a “Hard” power off. System shuts down immediately without saving any data or parameters.
- *: *Some operating systems may not support these functions.*
3. Click **Start** → **Shut Down** in Windows to turn OFF.

Driver or application software installation may be necessary for further operation.

Controls and Indicators

Controls and Indicators (Upper)

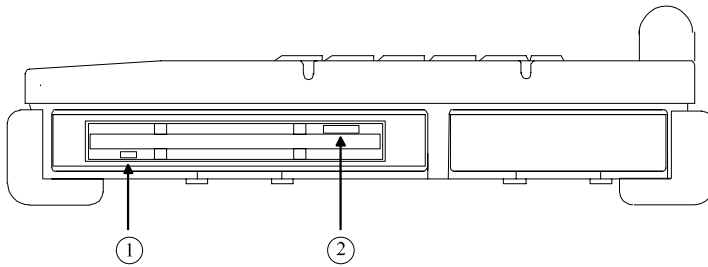


1. Heater
2. BT/WLAN/GPS
3. Keyboard Scroll Lock
4. Keyboard Number Lock
5. Keyboard Caps Lock
6. HDD in use
7. Secondary Battery Charge
8. Primary Battery Charge
9. Power indicator
10. Power switch
11. Touch pad left button

- 12. Touch pad
- 13. Touch pad right button

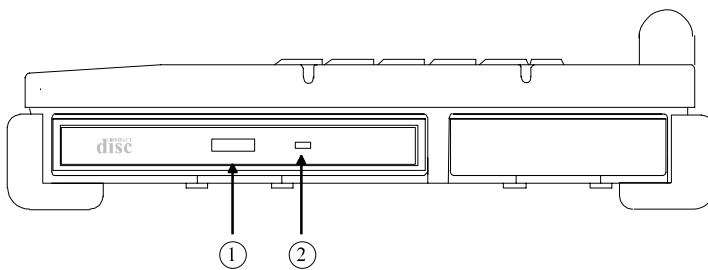
Controls and Indicators (Right)

FDD Configuration:



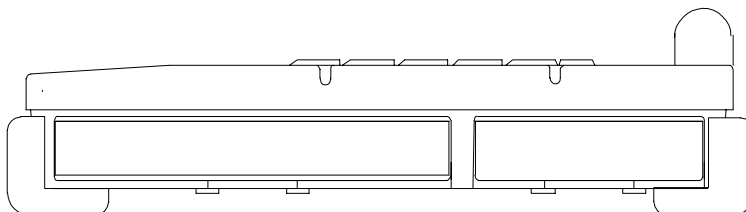
- 1. FDD in use
- 2. Diskette eject button

CD-ROM Drive Configuration:



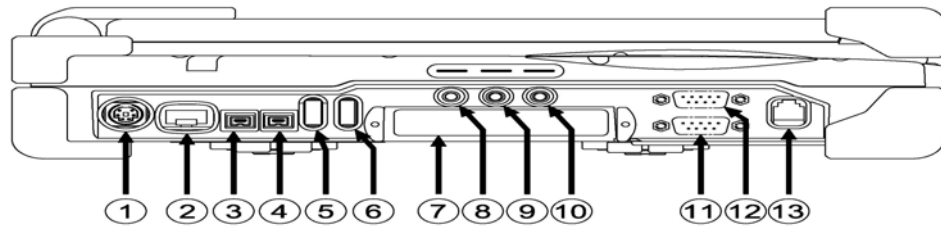
- 1. CD-ROM eject button
- 2. CD-ROM in use

2nd Battery Configuration: (optional)



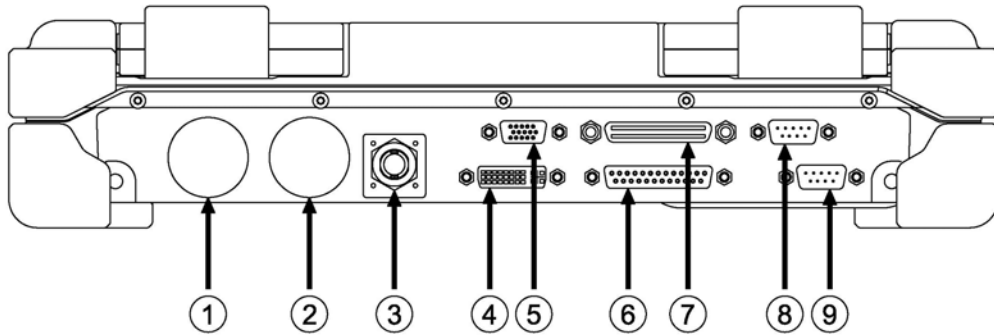
No special control or indicator.

Controls and Indicators (Left)-Standard



1. External Keyboard + PS/2 port
2. LAN Jack
3. IEEE1394 port (Fire Wire)
4. IEEE1394 port
5. USB port (Universal Serial Bus)
6. USB port (Universal Serial Bus)
7. 1x Express and 1x PCMCIA Slots (Option: 2x PCMCIA)
8. External Speaker & Ear phone Jack
9. Line In Jack
10. Microphone Jack
11. Optional COM 3 port
12. Optional COM 4 port
13. Modem Jack/Fiber LAN(Optional)

Controls and Indicators (Rear)



1. Optional Military connector port
2. Optional Military connector port
3. DC Power Jack
4. External DVI port
5. External RGB Monitor Port
6. Printer/External FDD Port*
7. Docking Port
8. Serial Port COM2
9. Serial Port COM1

**: The port is a dual function port and default as printer output. System will detect the device attached then switch to proper output automatically. Hot swap is possible under most conditions. However, if unable to hot swap, please re-boot computer with the new device attached.*

USEFUL INFORMATION

Location

A clean and moisture-free environment is preferred. Make room for air circulation. Avoid areas with:

- Sudden or extreme changes in temperature.
- Extreme heat.
- Strong electromagnetic fields (near television set, motor rotation area, etc.).
- Dust or high humidity.

If it is necessary to work in a hostile environment, please regularly maintain your computer by cleaning dust, water, etc. to keep it in optimal condition.

Ruggedness

The computer is designed with rugged features such as vibration, shock, dust, and rain/water protection. However, it is still necessary to provide appropriate protection while operating in harsh environments.

The computer is designed to withstand rainfall from top with mild wind blowing only. Please keep the keyboard facing up, i.e., normal operating direction, to maintain water resistance. NEVER immerse the unit in water, or spray water at an upside-down system. Doing so may cause permanent damage.

The D-sub connector caps on the rear of the computer are for dust and shock protection. The connectors are sealed internally. Other I/O ports and devices on the left or right must have caps tightly closed or cable inlets sealed while exposed to water or dust.

There are optional gaskets for DB-9 and DB-25 connectors. You may install them to improve rain/dust/moisture resistance on your commercial type cable. Insert the packing into the male connector (with pins) and fasten the screws.

All connectors will be corroded if exposed to water or moisture. Corrosion is accelerated if the system's power is ON. Please take proper water-resistant measures for cable connections.

The DC jack and cables are sealed and may be operated with water splashing while attached. All port covers should be in place when no cable is attached.

Operating Systems

The computer is compatible with most operating systems (OS). However, not all functions are 100% compatible.

For example, ACPI, APM, Smart Battery, etc. are not available on DOS, Windows NT, and other non-Microsoft OS. Consequently “Standby”, “Hibernation”, “Battery Gauge” etc. would not work under such operating systems.

ACPI: Advanced Configurations and Power Interface

APM: Advanced Power Management

For power consumption and heat dissipation consideration, ACPI OS (Windows 2000, XP, etc.) are highly recommended especially Windows XP or newer

Set Power Options as "Portable/Laptop" in Control Panel to fully implement the power management features

AC Adapter

The AC adapter performs two functions:

- It powers the computer from an external AC source.
- It charges the computer battery.

The adapter automatically detects the AC line voltage (110V or 220V) and adjusts accordingly.

The following are recommended when using the AC adapter:

- Use a properly grounded AC outlet.
- Use one AC outlet exclusively for the computer. Having other appliances on the same line may cause interference.
- Use a power strip with built-in surge protection.

Connect the AC adapter:

1. Plug the AC cord to the adapter.
2. Plug the other end of the AC cord into the wall outlet. Make sure the green LED on the adapter turns on.
3. Attach the DC plug into the power jack of the computer; turn the lock ring clockwise to secure it.

AC Adapter Indicator

The green LED indicates that the AC power is ready.

Battery

The computer will automatically switch to battery power when the external power source (AC adapter or optional vehicle adapter) is disconnected.

Battery Power Saving Tips

The computer comes with an intelligent power-saving feature. You may extend the battery life by:

- Setup power saving functions in Operating System Power Management options (e.g. Windows 2000/XP Power Options).
- Lower the intensity of the display by brightness control.
- Use standby option when computer is temporarily not in use.
- Shut down the computer when it will not be in use for long periods of time.

Battery Low

When the battery is nearly exhausted, the computer gives the following “Battery Low” warnings:

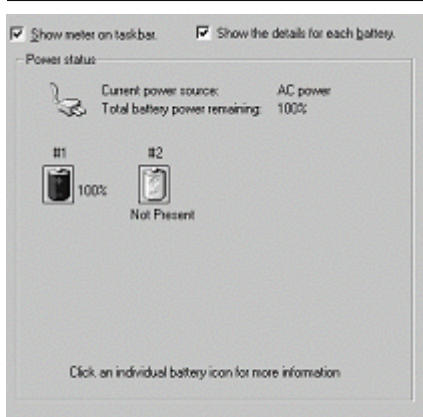
- Windows 2000/XP battery low warning (when operating system is Windows)
- The power LED flashes.

Once the Battery Low warning occurs, please:

1. Save and close the files you are currently working on.
2. Plug in the AC adapter to recharge the battery.

Battery Gauge

In Windows 2000/XP, etc. you may check battery status information from battery gauge. Click the power/battery icon to reveal the battery gauge window.



*Note: Battery characteristic varies depending on factors such as ambient temperature, charging method, load current, aging, etc.
For example, at low temperature the chemicals of the battery are more inactive, thus decreases the output power.
The battery gauge should only be used as a reference. Please do not expect it to show the exact amount of the power remaining.
There is no memory effect on Lithium Ion battery cells. However, discharge the battery to nearly empty every month will help calibrate the internal gauge.*

Charging the Battery

Plug in the AC adapter (or optional vehicle adapter) to start the battery charging. If the battery is already full, the sense circuitry will stop high current charge within several minutes.

There are two LED indicators next to the power indicator for the Primary and Secondary battery respectively. Indicator turns ON when the battery is charging and turns OFF when the battery charge is completed.

To charge the Secondary Battery, simply install it into the computer and attach the AC adapter. The internal charger will charge the Primary and Secondary batteries simultaneously.

Optional Dual Battery Charger can charge Primary and Secondary batteries externally.

Boot Up and POST

The computer turns ON and loads the operating system (such as Windows) into the system memory. This start-up procedure is called "boot up".

The ROM BIOS Power On Self-Test (POST)

Each time the computer powers on, it automatically performs a self-test of its memory and hardware devices.

Standby/Hibernate/Resume

The system can enter standby or hibernate mode by either pressing the power switch or staying idle till timeout.

*Note: Standby/Hibernate/Resume works with both AC adapter and battery.
The power management functions may not work under Windows NT or non-Windows operating systems.*

Shutdown

The following procedure is recommended in shutting down the computer:

1. Save any work you want to keep.
2. Make sure none of the disk drives are active (HDD, FDD, and CD-ROM drive).
3. Remove any diskettes, CD-ROMs, or other media if necessary.
4. Follow the shut down procedure of your operating system.
5. Let the computer shut down or push the power switch to turn OFF.

Failure to shut down the computer properly may result in loss of data or hardware damages.

Automatic shut down is activated at battery exhaust. Be sure to finish your work and save all your data when the battery low warning appears.

DVI

LCD and DVI monitor simultaneous display needs both BIOS and Windows settings

BIOS setting:

Advanced->Bootup display->"EFP" or "CRT+EFP" (EFP=DVI)

The available BIOS options are as follows only:

CRT

LCD

CRT+LCD

EFP

TV

CRT+EFP

(no simultaneous LCD+CRT+EFP)

Windows setting:

Control panel->Intel(R) Extreme Graphics -> select under Device

Display resolution of notebook LCD and DVI monitor must be identical

Note: Only DVI displays during DOS prompt. After entered Windows both LCD and DVI will display

RTC

Battery backed up RTC (Real Time Clock/Calendar) is built in an on-board CMOS (Complementary Metal Oxide Semiconductor) chip. The RTC keeps track of the time and date while the computer is off. The CMOS chip also stores system setup information.

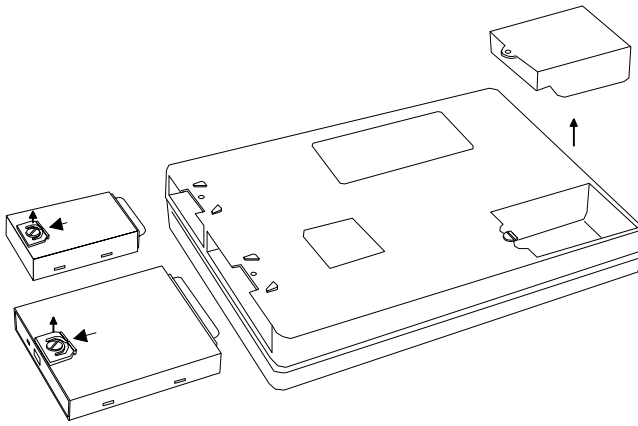
RTC battery is also recharged when AC adapter is attached. Recharge the computer approximately once per month to ensure RTC operation.

Replacing Modules

Caution! You must turn the power OFF before replacing the FDD, CD-ROM, and HDD modules.

To remove the modules:

1. Turn OFF the computer or hibernate.
2. Disconnect all cables from the computer.
3. Use a coin to turn and loose the screws on the modules.
4. Remove the battery from the compartment.
5. Push the latch knob to release the CD-ROM or HDD module and push them outward.
6. Remove the module from the computer.



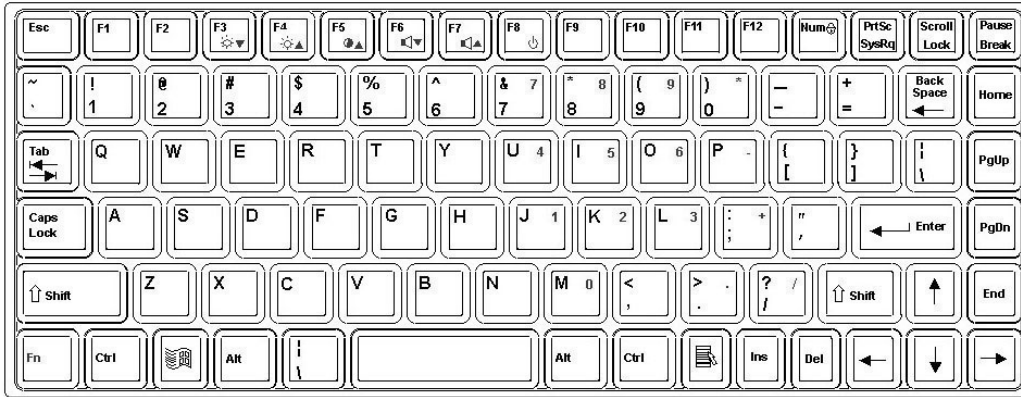
To re-install the modules:

Gently push the module into the slot. Fasten the screw to fix the module.

COMPONENTS AND FUNCTIONS

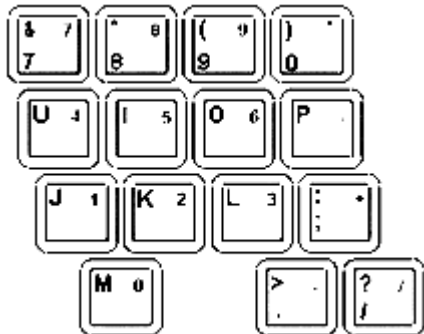
Keyboard

The keyboard is functionally equivalent to a full size desktop keyboard. A sample key layout is shown below.



The Numeric Keypad

The numeric keypad functions like an electronic calculator. It is embedded in the main keyboard, with the numeric figures printed on the upper right of their respective keys. The keypad has keys for the digits 0 through 9, the decimal point (.), addition (+), subtraction (-), multiplication (*), and division (/).



To activate the keypad, press the Num Lock key. The 15 keys shown in the figure switch from alphabetic keys to numeric keys. Press Num Lock again to return to alphabetic.

Keyboard Backlight (optional)

Press [Fn] [F5] key for approximately 1 second turns keyboard backlight ON or OFF.

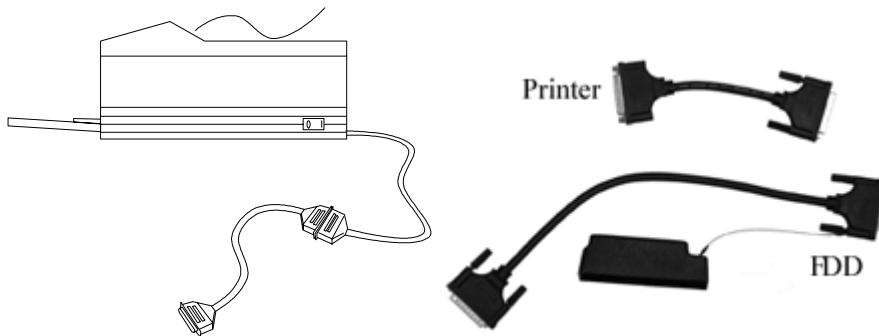
Floppy Disk Drive

The computer comes with a 3.5" 1.44MB floppy disk drive (FDD). The 1.44MB FDD can also read and write 720KB double side double density diskette. It is recommended that high density (2HD marking) diskette been used only.

FDD can be removed and swapped with CD-ROM drive or 2nd battery. When CD-ROM drive or 2nd battery is installed, you may still use FDD by connecting it via the rear DB-25 port.

Printer Cable

For most printers there is no special requirement in connection. However, some printer cables do not contain all 25 wires. To avoid malfunction, the printer adapter cable comes with your computer should be attached to the printer cable. The purpose is to re-connect all the ground pins. Devices equivalent to printer such as scanner, Laplink cable, etc. also need this cable.



Please note do not use the FDD cable as printer adapter cable.

Hard Disk Drive

The Hard Disk Drive (HDD) is a 2.5" type standard SATA interface data storage device.

HDD and FDD, CD-ROM drives are removable. This provides convenience and security. They can ONLY be removed while the power is OFF.

*Note: NEVER drop your HDD, FDD, CD-ROM module or expose them to high temperature, high humidity, or any hazardous environment. NEVER try to disassemble the module.
Static discharge may destroy your device and data. Always pick up the modules by touching the case only.*

CD-ROM Drive

The CD-ROM drive is a standard IDE ATAPI type, which accepts a variety of standard 12cm CDs such as CD-ROM, audio CD, CD-I, Photo CD, video CD, etc.

The following procedure assumes that all the necessary CD-ROM utilities were installed on the computer. For CD-ROM utility installation, please refer “**Utilities and Drivers**”.

Put CD into CD-ROM drive

While the power is ON, push the CD-ROM drive's eject button. The tray will release. Then gently pull the tray out. Put the CD on the holder and push the tray back into the cabinet. Any dirt on the data side of the CD may cause read error. Please do not touch this side when handling CDs.

Read from CD-ROM drive

The CD-ROM drive may be designated as drive D: or higher depending on your configuration. You may access it in DOS or Windows the same way you would for the floppy disk drive or hard disk drive. The CD-ROM is a read-only device. Any command attempting to write onto it will be denied.

Please avoid shock or vibration while the CD-ROM drive is active.

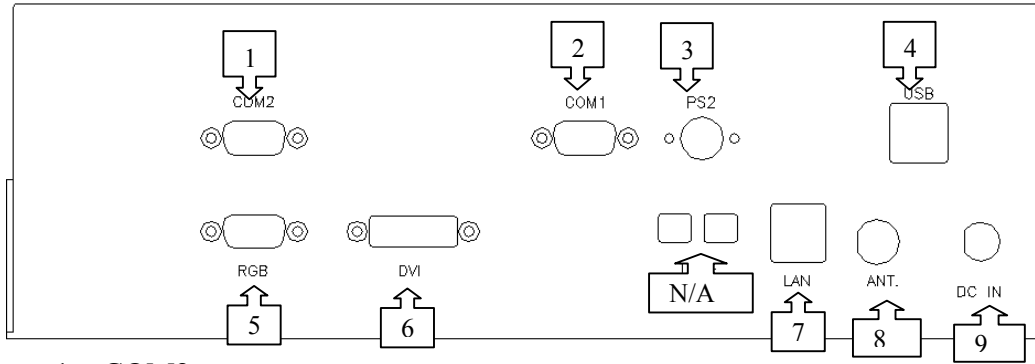
Express and PCMCIA Cards

The computer supports one type-II PCMCIA and one Express card or two type-II PCMCIA cards. To remove the card, push the button on the right of the card to eject it. The eject button can hide into the compartment by pushing it inward gently.

Dock under (optional)

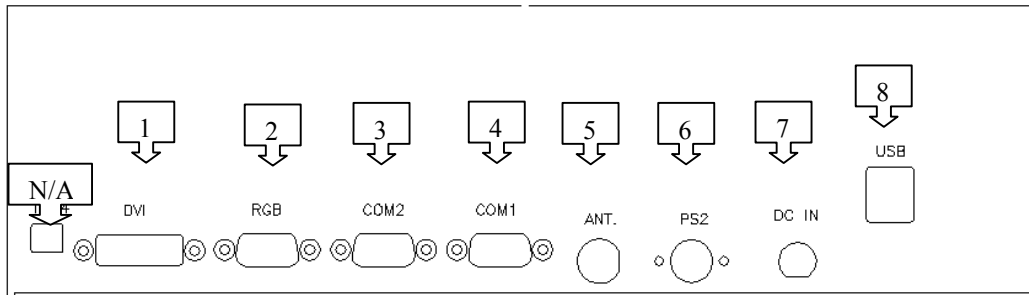
Dock under is utilized for system unit docking. The AC adapter or vehicle adapter attaches directly to Dock under and automatically charges the computer while docked.

Ports (horizontal version, ports on rear)



1. COM2
2. COM1
3. PS/2
4. USB #1 & #2
5. RGB
6. DVI
7. LAN
8. ANT.
9. DC jack

Ports (vertical version, ports on bottom)

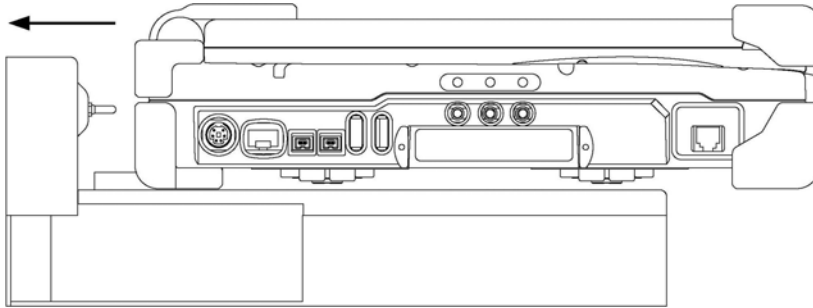


1. DVI
2. RGB

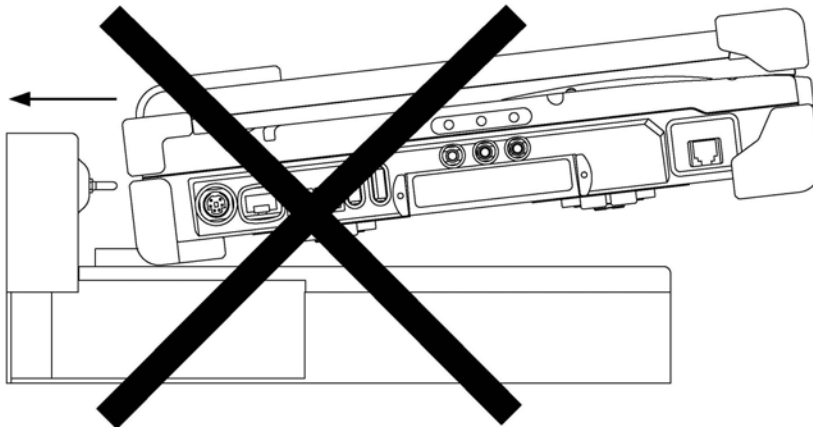
3. COM2
4. COM1
5. ANT.
6. PS/2
7. DC jack
8. USB

Mount the Dockunder:

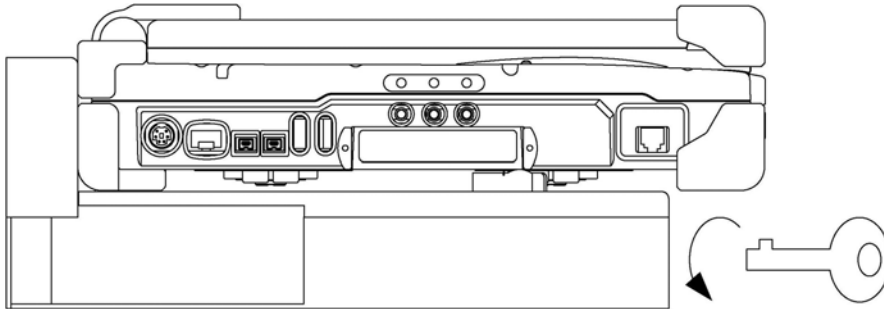
1. Turn OFF the power.
2. Open the rubber cap of the docking connector.
3. Align the docking connector.
4. Push the computer to join the guiding pins. Do not lift the computer up while docking.



Note: Do not lift up the computer while engaging.



5. Lock the computer.



There are 2 PCI slots on the Dockunder. Maximum card dimensions are 260mm (L: length, including L-bracket thickness) x 115mm (W: width, including gold fingers) x 25 mm (H: height). The total power rating of 2 PCI slots is +5V 3A, +3.3V 3A, +12V 300mA, -12V 300mA.

To install expansion card in Dockunder:

1. Unplug the AC adapter.
2. Release and remove the computer.
3. Remove the screws on the upper and lower covers.
 1. Open the upper cover.
 2. Install the expansion card into the slot and fix the L-bracket.
 3. Assemble the upper cover.
4. Attach the computer and perform functions test.

*Note: Please check IRQ conflict before installing cards and drivers.
Never dock or un-dock the computer while power is ON.*

IRQ		DMA	
0	Timer output 0	0	Sound
1	KB	1	Sound
2	8 RTC	2	FDD
9	ACPI (or Free)	3	Reserved (or ECP/EPP)
10	Free (16-bit PCMCIA, or COM3*)		
11	PCI devices or Card Bus 0/1 (Sound, LAN*, 32-bit PCMCIA, etc.)		

- 12 Touch pad (PS/2 mouse)
- 13 Co-processor
- 14 HDD
- 15 CD-ROM drive
- 3 COM2 (or Fax/Modem*, IrDA)
- 4 COM1 (or Touch screen)
- 5 Free (COM4*)
- 6 FDD
- 7 Parallel port 1

*: Optional devices.

OPTIONAL DEVICES

Memory Card

The memory card will expand your memory to facilitate better system performance. The cards are available as following:

512MB,1 GB,2 GB

2nd Battery

A Lithium Ion rechargeable 2nd battery may install into the CD-ROM/FDD compartment. It has the same capacity of primary battery and Smart Battery compliance.

The computer's internal charger can detect 2nd battery and perform charging accordingly.

LAN and Fax/Modem Card

10/100/1000 M Base-T Ethernet LAN card for a wired network and V.90 56K Fax/Modem.

Wireless LAN Card

IEEE 802.11a,b,g wireless LAN card and rugged antenna.

DVD ROM Drive

Swappable with CD-ROM drive for DVD playback. Backward compatible with CD-ROM, VCD, etc.

CD-RW Drive

Swappable with CD-ROM drive for writing CD-R. Backward compatible with CD-ROM, VCD, etc.

DVD-RW Drive

Swappable with CD-ROM drive for DVD playback and writing CD-R. Backward compatible with CD-ROM, VCD, etc.

2nd HDD

Swappable with CD-ROM drive. Set as IDE secondary master drive.

Touch Screen

Resistive touch screens for direct finger touch or pen input instead of mouse or touch pad.

PCMCIA Cover

Besides the attached PCMCIA rubber cover, there is an optional cover with a metal frame that can be fixed using screws. The cover provides protection from dust or water for cabled PCMCIA cards. Users may seal the cable outlet after installation.

Vehicle Adapter

Converts power from car lighters or truck batteries to DC +19V, the same output ratings as AC adapters. It can power the system and charge the batteries simultaneously.

<p><i>Remove or disconnect the adapter when leaving the vehicle to avoid battery exhaustion.</i></p>
--

Dual Battery Charger

This charger provides two slots for the Primary and Secondary battery respectively. It allows charging of both batteries simultaneously. Accepts power from AC adapter or Vehicle adapter. It takes approximately 3 hours to fully charge both batteries.

Dockunder

3 models are available:

Dockunder RT7-H: (no hot docking)
2 PCI slots, serial ports x 2, PS/2, RGB, LAN.
Ports are on the rear.(DVI option)

Hot docking: Docking while computer power is ON.

Dockunder RT7-V: (no hot docking)
2 PCI slots, serial ports x 2, PS/2, RGB.
Ports are on the bottom. (DP/DVI option)

SPECIFICATIONS

CPU

RK886EX: Intel Core2 Duo (Merom)

CPU runs at multiple speeds dependent on CPU type and operating system:
The CPU speed switches automatically by detecting AC adapter/battery operation and busy state.

Memory

System memory Standard: 512MB
 Expandable:4GB (2GBx 2)

Cache memory Internal Level-2 2MB

Video memory 128MB (shared RAM)

Display

The display is a XGA compatible LCD (Liquid Crystal Display) of 1024 x 768 dots (horizontal x vertical) or SVGA 800 x 600 dots with 16, 24 or 32 bit color depth. The computer is capable of displaying 2048 x 1536 dots on the LCD or external monitor.

LCD applies a “Panning” technique to display resolutions higher than 800 x 600 or 1024 x 768 dots. In Panning, you may move the cursor out of the screen boundary, then the display will scroll to show the hidden area.

LCD:

Type: 15.1” Active TFT Color
Resolution: 1024 x 768 pixels (15.1”)
Mode: VGA, EGA, MGA, SVGA, and XGA
Color: 16, 24 or 32-bit color depths on all modes
Characters x Row: 80 x 25

Keyboard

Number of keys: 89
Key travel: 2.5 mm (standard)
 1.5 mm (optional backlight)

Function: Emulates standard 101/102-key keyboard

Floppy Disk Drive

Standard:
Size: 3.5"
Capacity: 1.44MB (formatted)
Rotation: 300 RPM
Transfer Rate: 500KB/sec
Average Access: 94 ms (with settling)

Hard Disk Drive

Type: 2.5"
Interface: Serial ATA

CD-ROM Drive

Speed: 24 x
Interface: (ATAPI)
Data transfer rate: 16.7MB/sec
Modes: CD-ROM mode 1 & 2, CD-Audio, VCD, Multi-session Photo CD
Dimensions: 128mm (W) x 130mm (D) x 12.7mm (H)
Weight: 280g

Touch Screen

Type: Resistive
Interface: Serial
Resolution: >1024x1024

I/O ports

- 2x Serial ports
- External RGB monitor port
- External DVI port

- External PS/2+Keyboard port
- Audio ports (External Speaker/Earphone, Microphone, Line-in)
- RJ11 Phone jack for internal Fax/Modem (optional)
- RJ45 jack for internal LAN card (optional)
- 2 type II or 1 type-III PCMCIA slots
- Printer/External FDD port
- Docking port
- 2xUSB 2.0 port
- 2x1394 port
- 2x optional serial port
- 2x optional military connector port

AC Adapter

Voltage:	AC 90~240 V
Frequency:	50/60 Hz
Output Voltage:	DC 19V
Maximum Power:	90 Watts
Dimension:	130mm (W) x 60mm (D) x 34mm (H)
Weight:	430 g (0.9 lb.)

Vehicle Adapter

Input Voltage	12V/24V (10~32V) Auto-sense
Input Current	2.5A/5.5A max. (12V/24V respectively)
Output Voltage	19V +/-5%
Output Current	2.8A
Wiring	Cigarette lighter/ Truck battery
Application	Car or Truck installation

Battery

Primary Battery:

Type: 9 x 18650 cells Lithium Ion
Capacity: 11.1V 6600mAH
Dimension: 103 mm(W) x 73 mm(D) x 38 mm(H)
Weight: 435 g (0.95 lb.)

2nd Battery (optional):

Type: 9 x 18650 cells Lithium Ion
Capacity: 11.1V 6600mAH
Dimension: 150 mm(W) x 90 mm(D) x 20 mm(H)
Weight: 560 g (1.2 lb.)

System Unit Dimensions and Weight

Width: 339.6mm (13.4")
Depth: 293.5mm (11.5")
Height: 63.7mm (2.5")
Weight: 6.0Kg (13.2 lb. including CD-ROM drive and primary battery)

Note: Weight varies depending on system configurations.

Materials and Recycling

Materials of the computer are as follows:

- Cabinet: Aluminum alloy ADC-12 or A380,
Magnesium alloy AZ91D,
UL grade PC+ABS GE C6200 or TN-3813BW
- Bracket: Aluminum 5052, Steel with Nickel plating, or Stainless Steel S304
- Cushion pad: Rubber
- PCB: FR-4, UL 94V0
- Battery: Rechargeable Lithium Ion, 9 cells per pack

Packing: Carton: Unbleached paper
Cushion: Recyclable EPE
Carrying bag: Recyclable PE Fiber
User's Guide: Recycled/Recyclable paper

Please recycle the parts according to local regulations.

Environmental

Temperature: -20 ~ 50°C (32 ~ 122°F) operating
-40 ~ 70°C (-40 ~ 158°F) storage

Humidity: 5~95% Non-condensing operating
95% maximum storage

Altitude: 0 ~ 12,180 meters (0 ~ 70,000 feet) operating

BIOS SETUP

Press **[F2]** at boot up to enter BIOS setup. Use arrow keys to select options and **[+/-]** to modify them. When finished, move to "Exit" and press **[Enter]** then confirm save by pressing **[Y]**.

Main Menu

Phoenix TrustedCore(tm) Setup Utility							
Main	Advanced	Security	TPM State	Boot	Exit		
System Time: [16:19:20] System Date: [03/02/2007] Legacy Diskette A: [1.44/1.25MB 3½"] • IDE Channel 0 Master [None] • IDE Channel 0 Slave [None] • SATA Port 0 [None] • SATA Port 1 [None] System Memory: 640 KB Extended Memory: 522752 KB					Item Specific Help <Tab>, <Shift-Tab>, or <Enter> selects field		
F1	Help	↑↓	Select Item	-/+	Change Values	F9	Setup Defaults
Esc	Exit	↔	Menu	Enter	Select ► Sub-Menu	F10	Save and Exit

Note: The contents may vary depending on computer configurations.

Main Menu Selections

You can make the following selections on the Main Menu. Use the sub menus for other selections.

Feature	Options	Description
System Time	HH:MM:SS	Set the system time Hour, Minute, Second.
System Date	MM/DD/YYYY	Set the system date Month, Day, Year.

Legacy Diskette A	Disabled		Select floppy type. Note that 1.25 MB 3½" references a 1024 byte/sector Japanese media format. The 1.25MB, 3½" diskette requires a 3-Mode floppy-disk drive.
	360 Kb	5¼"	
	1.2 MB	5¼"	
	720 Kb	3½"	
	1.44/1.25 MB	3½"	
	2.88 MB	3½"	

IDE Channel 0 Master Sub-Menu

Phoenix TrustedCore(tm) Setup Utility			
Main			
IDE Channel 0 Master [None]		Item Specific Help	
Type:	[Auto]	User = you enter parameters of hard-disk drive installed at this connection. Auto = autotypes hard-disk drive installed here. CD-ROM = a CD-ROM drive is installed here. ATAPI Removable = removable disk drive is installed here.	
Multi-Sector Transfers:	[Disabled]		
LBA Mode Control:	[Disabled]		
32 Bit I/O:	[Disabled]		
Transfer Mode:	[Standard]		
Ultra DMA Mode:	[Disabled]		
F1 Help	↑↓ Select Item	-/+ Change Values	F9 Setup Defaults
Esc Exit	↔ Menu	Enter Select ► Sub-Menu	F10 Save and Exit

IDE Channel 0 Master Sub-Menu Selections

You can make the following selections on the IDE Channel 0 Master sub menu.

Feature	Options	Description
---------	---------	-------------

Type	User Auto CD-ROM ATAPI Removable	User = you enter parameters of hard-disk drive installed at this connection. Auto = autotypes hard-disk drive installed here. CD-ROM = a CD-ROM drive is installed here. ATAPI Removable = removable disk drive is installed here.
32 Bit I/O	Disabled Enabled	This setting enables or disables 32 bit IDE data transfers.

IDE Channel 0 Slave Sub-Menu

Phoenix TrustedCore(tm) Setup Utility			
Main		Item Specific Help	
IDE Channel 0 Slave [None]			
Type:	[Auto]	User = you enter parameters of hard-disk drive installed at this connection. Auto = autotypes hard-disk drive installed here. CD-ROM = a CD-ROM drive is installed here. ATAPI Removable = removable disk drive is installed here.	
Multi-Sector Transfers:	[Disabled]		
LBA Mode Control:	[Disabled]		
32 Bit I/O:	[Disabled]		
Transfer Mode:	[Standard]		
Ultra DMA Mode:	[Disabled]		
SMART Monitoring:	Disabled		
F1 Help	↑↓ Select Item	-/+ Change Values	F9 Setup Defaults
Esc Exit	↔ Menu	Enter Select ► Sub-Menu	F10 Save and Exit

IDE Channel 0 Slave Sub-Menu Selections

You can make the following selections on the IDE Channel 0 Slave sub menu.

Feature	Options	Description
---------	---------	-------------

Type	User Auto CD-ROM ATAPI Removable	User = you enter parameters of hard-disk drive installed at this connection. Auto = autotypes hard-disk drive installed here. CD-ROM = a CD-ROM drive is installed here. ATAPI Removable = removable disk drive is installed here.
32 Bit I/O	Disabled Enabled	This setting enables or disables 32 bit IDE data transfers.

SATA Port 0 Sub-Menu

Phoenix TrustedCore(tm) Setup Utility		
Main		Item Specific Help
SATA Port 0 [None]		
Type:	[Auto]	User = you enter parameters of hard-disk drive installed at this connection. Auto = autotypes hard-disk drive installed here. CD-ROM = a CD-ROM drive is installed here. ATAPI Removable = removable disk drive is installed here.
Multi-Sector Transfers:	[Disabled]	
LBA Mode Control:	[Disabled]	
32 Bit I/O:	[Disabled]	
Transfer Mode:	[Standard]	
Ultra DMA Mode:	[Disabled]	
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults Esc Exit ↔ Menu Enter Select ► Sub-Menu F10 Save and Exit		

SATA Port 0 Sub-Menu Selections

You can make the following selections on the SATA Port 0 sub menu.

Feature	Options	Description
---------	---------	-------------

Type	User Auto CD-ROM ATAPI Removable	User = you enter parameters of hard-disk drive installed at this connection. Auto = autotypes hard-disk drive installed here. CD-ROM = a CD-ROM drive is installed here. ATAPI Removable = removable disk drive is installed here.
32 Bit I/O	Disabled Enabled	This setting enables or disables 32 bit IDE data transfers.

SATA Port 1 Sub-Menu

Phoenix TrustedCore(tm) Setup Utility		
Main		Item Specific Help
SATA Port 1 [None]		
Type:	[Auto]	User = you enter parameters of hard-disk drive installed at this connection. Auto = autotypes hard-disk drive installed here. CD-ROM = a CD-ROM drive is installed here. ATAPI Removable = removable disk drive is installed here.
Multi-Sector Transfers:	[Disabled]	
LBA Mode Control:	[Disabled]	
32 Bit I/O:	[Disabled]	
Transfer Mode:	[Standard]	
Ultra DMA Mode:	[Disabled]	
F1 Help	↑↓ Select Item	-/+ Change Values
Esc Exit	↔ Menu	Enter Select ► Sub-Menu
		F9 Setup Defaults
		F10 Save and Exit

SATA Port 1 Sub-Menu Selections

You can make the following selections on the SATA Port 1 sub menu.

Feature	Options	Description
---------	---------	-------------

Type	User Auto CD-ROM ATAPI Removable	User = you enter parameters of hard-disk drive installed at this connection. Auto = autotypes hard-disk drive installed here. CD-ROM = a CD-ROM drive is installed here. ATAPI Removable = removable disk drive is installed here.
32 Bit I/O	Disabled Enabled	This setting enables or disables 32 bit IDE data transfers.

The General Help Window

Pressing <F1> or <Alt-H> on any menu brings up the General Help window that describes in detail the keys and functions for setup.

The scroll bar on the right of any window indicates that there is more than one page of information in the window. Use <PgUp> and <PgDn> to display all the pages. Pressing <Home> and <End> displays the first and last page. Pressing <Enter> displays each page and then exits the window.

Press <Esc> to exit the current window.

Advanced Menu

Phoenix TrustedCore(tm) Setup Utility					
Main	Advanced	Security	TPM State	Boot	Exit
Legacy USB Support: [Enabled] Summary screen: [Disabled] Boot-time Diagnostic Screen: [Enabled] QuickBoot Mode: [Enabled] Extended Memory Testing [Just zero it] IGD – Boot Type: [VBIOS Default] PS/2 Mouse [Auto Detect] PCI Express – Root Port 1: [Enabled] USB – Device 29, Function 7: [Enabled] • SIO SMC227 CONFIGURATION				Item Specific Help	
				Display the diagnostic screen during boot	
F1	Help	↑↓	Select Item	-/+	Change Values
Esc	Exit	↔	Menu	Enter	Select ► Sub-Menu
				F9	Setup Defaults
				F10	Save and Exit

Warning: Incorrect settings may cause system malfunction. To correct it, restore the Setup Defaults with <F9>.

Advanced Menu Selections

You can make the following selections on the Advanced Menu.

Feature	Options	Description
Legacy USB Support	Disabled Enable	Enable support for Legacy Universal Serial Bus
Summary screen	Disabled Enable	Display system configuration on boot
Boot-time Diagnostic Screen	Disabled Enable	Display the diagnostic screen during boot

QuickBoot Mode	Disabled Enable	Allows the system to skip certain tests while booting. This will decrease the time needed to boot the system.
Extended Memory Testing	Normal Just zero it None	Determines which type of tests will be performed on extended memory (above 1M).
IGD – Boot Type	VBIOS Default CRT LFP CRT+LFP TV LFP-SDVO EFP TV-SDVO CRT+LFP-SDVO CRT+EFP	Select the Video Device that will be activated during POST
PS/2 Mouse	Disabled Enable Auto Detect	<p>'Disabled' prevents any installed PS/2 mouse from functioning, but frees up IRQ 12.</p> <p>'Enabled' forces the PS/2 mouse port to be enabled regardless if a mouse is present.</p> <p>'Auto Detect' will enable the PS/2 mouse only if present.</p> <p>'OS Controlled' only displayed if the OS controls the mouse.</p>

PCI Express – Root Port 1	Disabled Enable Auto	Control the PCI Express Port via this setup option. Disabled – Port always disabled. Enabled – Port always enabled. Auto – Only enable if card found. Note that if Root Port 1 is disabled, Root Ports 2-4 will be disabled as well.
USB – Device 29, Function 7	Disabled Enable	Control USB 2.0 functionality through this Setup Item

For most frequently altered setup “SIO SMC227 CONFIDURATION” please refer following:

Warning: *Make sure internal COMx mode settings must be with the same type of the external connected devices. Otherwise it may cause Serial components Damaged in either side. Must be cautious before connected.*

SIO SMC227 CONFIGURATION Sub-Menu

Phoenix TrustedCore(tm) Setup Utility	
Advanced	
SIO SMC227 CONFIGURATION	Item Specific Help

<p>COM1 port: [3F8-IRQ 4] COM1 mode: [RS232] COM2 port: [2F8-IRQ 3] COM2 mode: [RS232] COM3 port: [3E8-IRQ 10] COM3 mode: [RS232] COM4 port: [2E8-IRQ 5] COM4 mode: [RS232] Printer1: [378-IRQ 7] Printer1 mode: [Standatd]</p>	<p>Configure COM1 using device options: [Disabled] No configuration [3F8-IRQ 4] Set the base I/O address for COM1</p>
<p>F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults Esc Exit ↔ Menu Enter Select ► Sub-Menu F10 Save and Exit</p>	

SIO SMC227 CONFIGUARTION Sub-Menu Selections

You can make the following selections on the SIO SMC227 CONFIGURATION sub menu.

Feature	Options	Description
COM1 port	Disabled 3F8-IRQ 4	Configure COM1 using device options: [Disabled] No configuration [3F8-IRQ 4] Set the base I/O address for COM1

COM1 mode	RS485 RS422 RS232 TTL1	Configure UART mode options: [RS485] : External Device [RS422] : External Device [RS332] : External Device [TTL1] : Internal Device
COM2 port	Disabled 2F8-IRQ 3	Configure COM2 using device options: [Disabled] No configuration [2F8-IRQ 3] Set the base I/O address for COM2
COM2 mode	RS485 RS422 RS232 TTL2	Configure UART mode options: [RS485] : External Device [RS422] : External Device [RS232] : External Device [TTL2] : Internal Device

COM3 port	Disabled 3E8-IRQ 10	Configure COM3 using device options: [Disabled] No configuration [3E8-IRQ 10] Set the base I/O address for COM3
COM3 mode	RS485 RS422 RS232 TTL3	Configure UART mode options: [RS485] : External Device [RS422] : External Device [RS232] : External Device [TTL3] : Internal Device
COM4 port	Disabled 2E8-IRQ 5	Configure COM4 using device options: [Disabled] No configuration [2E8-IRQ 5] Set the base I/O address for COM4

COM4 mode	RS485 RS422 RS232 TTL4	Configure UART mode options: [RS485] : External Device [RS422] : External Device [RS232] : External Device [TTL4] : Internal Device
Printer1	Disabled 378-IRQ 4	Configure Printer1 device options: [Disabled] No configuration [378-IRQ 7] Set the base I/O address for Printer1
Printer1 mode	Standard ECP EPP	Configure Printer1 mode options: Standard EPP ECP

Security Menu

Warning: If you forget user/supervisor password, the computer has to send back to manufacturer and replace EEPROM to make it work again.

Phoenix TrustedCore(tm) Setup Utility					
Main	Advanced	Security	TPM State	Boot	Exit
Processor Serial Number [Disabled] Fixed disk boot sector: [Normal] Diskette access: [Supervisor]				Item Specific Help	
USB Interface: [Enabled] AC97 Audio Interface: [Auto] AC97 Modem Interface: [Auto] Cardbus/1394 Interface: [Auto]				Controls detection of Processor Serial No. System must be reset or restarted from power-on for settings to take effect.	
<ul style="list-style-type: none"> • RF Security Control: [Disabled] TPM Support [Disabled] 					
F1 Help		↑↓ Select Item	-/+ Change Values	F9 Setup Defaults	
Esc Exit		↔ Menu	Enter Select ▶ Sub-Menu	F10 Save and Exit	

Security Menu Selections

You can make the following selections on the Security Menu.

Feature	Options	Description
Processor Serial Number	Disabled Enabled	Controls detection of Processor Serial No. System must be reset or restarted from power-on for settings to take effect.
Fixed disk boot sector	Normal Write Protect	Write protects the boot sector on the hard disk to protect against viruses.

Diskette access	Supervisor User	Control access to diskette drives
USB Interface	Disabled Enabled	Control the listed USB Functions by setting the item to the desired value.
AC97 Audio Interface	Disabled Auto	Control Detection of the AC97 Audio Device. Auto = AC97 Audio will be enabled if present, disabled otherwise. Disabled = AC97 Audio will be unconditionally disabled, regardless of presence.
AC97 Modem Interface	Disabled Auto	Control Detection of the AC97 Modem Device. Auto = AC97 Modem will be enabled if present, disabled otherwise. Disabled = AC97 Modem will be unconditionally disabled, regardless of presence.
Cardbus/1394 Interface	Disabled Auto	Cardbus Device Function Disable/Enable
TPM Support	Disabled Enabled	Enable Trusted Platform Module support

For most frequently altered setup “RF Security Control” please refer following:

RF Security Control Sub-Menu

Phoenix TrustedCore(tm) Setup Utility	
Security	
RF Security Control:	Item Specific Help
Wireless Lan: [Disabled]	Wireless Lan Control
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults Esc Exit ↔ Menu Enter Select ► Sub-Menu F10 Save and Exit	

RF Security Control Sub-Menu Selections

You can make the following selections on the RF Security Control sub menu.

Feature	Options	Description
Wireless Lan	Disabled	Wireless Lan Control
	Enabled	Enabled Wireless function

TPM State Menu

Phoenix TrustedCore(tm) Setup Utility					
Main	Advanced	Security	TPM State	Boot	Exit
Current TPM State:		Enabled and Deactivated		Item Specific Help	
Change TPM State:		[No Change]		Change TPM State	
F1	Help	↑↓	Select Item	-/+	Change Values
Esc	Exit	↔	Menu	Enter	Select ► Sub-Menu
				F9	Setup Defaults
				F10	Save and Exit

TPM State Menu Selections

You can make the following selections on the TPM State Menu.

Feature	Options	Description
Change TPM State	No Change Enable & Activate Deactivate & Disable Clear	Change TPM State

Boot Menu

Phoenix TrustedCore(tm) Setup Utility					
Main	Advanced	Security	TPM State	Boot	Exit
Boot priority order:				Item Specific Help	

	<p>Keys used to view or configure devices: Up and Down arrows select a device. <+> and <-> moves the device up or down . <f> and <r> specifies the device fixed or removable . <x> exclude or include the device to boot . <Shift + 1> enables or disables a device. <1 - 4> Loads default boot sequence.</p>																
<table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">F1</td> <td style="width: 15%;">Help</td> <td style="width: 15%;">↑↓</td> <td style="width: 15%;">Select Item</td> <td style="width: 15%;">-/+</td> <td style="width: 15%;">Change Values</td> <td style="width: 15%;">F9</td> <td style="width: 15%;">Setup Defaults</td> </tr> <tr> <td>Esc</td> <td>Exit</td> <td>↔</td> <td>Menu</td> <td>Enter</td> <td>Select ► Sub-Menu</td> <td>F10</td> <td>Save and Exit</td> </tr> </table>	F1	Help	↑↓	Select Item	-/+	Change Values	F9	Setup Defaults	Esc	Exit	↔	Menu	Enter	Select ► Sub-Menu	F10	Save and Exit	
F1	Help	↑↓	Select Item	-/+	Change Values	F9	Setup Defaults										
Esc	Exit	↔	Menu	Enter	Select ► Sub-Menu	F10	Save and Exit										

The system will try to boot from device on top then the 2nd and so on. If there are more than one device in each category, only the device on top of sub-menu can boot up.

Exit Menu

Phoenix TrustedCore(tm) Setup Utility							
Main	Advance	Security	TPM State	Boot	Exit		
Exit Saving Changes Exit Discarding Changes Load Setup Defaults Discard Changes Save Changes					Item Specific Help		
					Exit System Setup and save your changes to CMOS.		
F1	Help	↑↓	Select Item	-/+	Change Values	F9	Setup Defaults
Esc	Exit	↔	Menu	Enter	Select ► Sub-Menu	F10	Save and Exit

Exit Menu Selections

You can make the following selections on the Exit Menu.

Feature	Options	Description
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

UTILITIES AND DRIVERS

Note: Most device drivers are available in Windows 2000/XP. Only when the default driver does not work properly you need to install the factory bundled drivers.

The utility CD includes most drivers of the computer's installed devices. Consult dealer if any driver is missing.

Re-install drivers or perform "Driver Update" to replace the Windows default drivers.

Check readme.txt file on utility CD to get the newest information before starting to install drivers.

Chipset

Windows WIN2000/WINXP Driver Installation:

Insert the Driver CD into the CD-ROM. Click **infnst_autol.exe** in the directory of RK8EX\Driver\Chipset\Xp32 then follow the prompt to complete installation.

VGA Utility

Display Capability

Resolution & Color	LCD	RGB	LCD + RGB
640x 480x 16-bit color	O	O	O
640x 480x 24-bit color	O	O	O
640x 480x 32-bit color	O	O	O
800x 600x 64K color	O	O	O
800x 600x 24-bit color	O	O	O
800x 600x 32-bit color	O	O	O
1024x 768x 16-bit color	O	O	O
1024x 768x 24-bit color	O	O	O
1280x 1024x 16-bit color	O*	O	O*

1280x 1024x 24-bit color	O*	O	O*
1280x 1024x 32-bit color	O*	O	O*
1600x 1200x 16-bit color	O*	O	O*
1600x 1200x 24-bit color	O*	O	O*
1600x 1200x 32-bit color	O*	O	O*
2048x 1536x 16-bit color	O*	O	O*
2048x 1536x 24-bit color	O*	O	O*
2048x 1536x 32-bit color	O*	O	O*

*: By Panning.

The table lists typical display modes only. The system also supports standard video modes with lower resolution and color.

Windows 2000/XP Driver Installation:

Insert the Driver CD into the CD-ROM. Click **win2k_xp.exe** in the directory of RK8EX\Driver\VGA\Xp32 then follow prompt to complete driver installation. Windows 2000/XP may recommend using their driver, but you should confirm changing to the factory bundled driver.

After restart and back to **Settings** window, choose proper **Colors** and **Screen Area**.

Audio Driver

Windows 2000/XP

Insert the Driver CD into the CD-ROM. Click **WDM_A397.exe** in the directory of RK8EX\Driver\Audio\Xp3264 then follow the prompt to complete installation.

USB 2.0

The Windows 2000/XP are not necessary to install the driver.

Touch Screen Driver

Enter BIOS Setup and set COM1 port as “TTL1”. (COM1 has multiple connectivity so it’s necessary to setup. Optional COM4 may be configured as touch screen and doesn’t need BIOS setup.)

Then cancel the prompt of installation wizard to setup the driver from the CD (\RK8EX\Driver\Touchscreen\DP9000\DMC9000 Windows 2000-XP-2003\setup) then follow the prompt to complete installation and restart.

CD-ROM Driver

In Windows 2000/XP, you don't need to install drivers, because it is included in the drivers list.

Only non-Windows OS need the driver

PCMCIA Driver

Windows 2000/XP

The driver is automatically installed under Windows.

Mini PCI 1G AX92200 Lan

Insert the Driver CD into the CD-ROM. Click **Setup.exe** in the directory of E:\AX92200\DRIVER\RTL8110S\windows(612) then Follow the prompt to complete installation.

Mini PCI INT8100 Lan

The Windows 2000/XP are not necessary to install the driver.

Mini PCI-E 1G RTL8111B Lan

Insert the Driver CD into the CD-ROM. Click **setup.exe** in the directory of RK8EX\Driver\PCIE Lan\Xp3264\PCIE_Installshield then follow the prompt to complete installation.

Mini PCI-E Intel 3945ABG Wlan

Insert the Driver CD into the CD-ROM. Click **wireless_TIC.exe** in the directory of RK8EX\Driver\PCIE Wlan\Xp32 then follow the prompt to complete installation.

Fax/Modem Card Driver

Insert the Driver CD into the CD-ROM. Click **setup.exe** in the directory of RK8EX\Driver\MDC\mdc_w2kxp then follow the prompt to complete installation.

Wireless Manager

For flight safety and power saving reason, there is a utility provided easily to enable/disable RF devices of Wireless Lan/GPRS/GPS/Bluetooth in the run time.

Insert the Driver CD into the CD-ROM. Click **setup.exe** in the directory of Utilities\WirelessManager then follow the prompt to complete installation.

Cleaning

ALWAYS turn OFF the power, unplug the power cord and remove the battery before cleaning.

The exterior of the system and display may be wiped with a clean, soft, and lint-free cloth. If there is difficulty removing dirt, apply non-ammonia, non-alcohol based glass cleaner to the cloth and wipe.

An air gun is recommended for cleaning water and dust. For salty water please clean with fresh water then blow-dry with an air gun. Be sure not to turn the computer up side down while there is water being applied.

Troubleshooting

Should the computer fail to function properly, the troubleshooting steps below may be followed.

- Check AC/vehicle adapter, battery, and the power source.
- Minimize the configuration, i.e., remove extra peripherals and devices.
- Remove the modules one by one (HDD, CD-ROM, FDD, Battery, etc.).
- Remove the software suspected.
- Set BIOS fail-safe default.
- Re-install operating system and application software.

RMA Service

If troubleshooting steps are unsuccessful, consult your dealer for service. If it is necessary for you to send in your computer for repairs, a representative from your authorized technical support department will provide you with an RMA#. Only after you have spoken with a technical support representative and received an RMA# should you send in your computer.

Shipping instructions:

1. Remove any personal diskettes, CD's, or other media.
2. Use the original shipping container and packing materials, if possible.
3. If the original packing materials are not available, wrap the equipment with soft material (e.g., PU/ PE form) then put the wrapped equipment into a hard cardboard shipping box.
4. Include a sheet with the following information: (Note: please keep a copy of this sheet

for your records)

- Name
 - Address
 - Unit serial number
 - Place and date of purchase or the original invoice number
 - Date of failure
 - A DETAILED Description of the problems you have encountered
 - A list of the hardware/software configuration, if applicable.
5. Clearly mark the outside of the shipping box with the RMA #. If an RMA # is not present on the shipping box, receiving will be unable to identify it and it might be returned.
 6. Unless prior arrangements have been made, the customer is responsible for all shipping costs. Unauthorized use of the company's shipping accounts is not permitted.

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