A320S SERIES NOTEBOOK OPERATOR'S MANUAL

11-Sep-01

A320S Notebook Operator's Manual

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Rev.01   **a**

Class B Regulations

Federal Communications Commission Radio Frequency Interference Statement

NOTE:

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 design 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.

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Please note:

1. The use of a non-shielded interface cable with this equipment is prohibited.

2. A shielded AC power cord must be used with this equipment.

Products with the CE Marking comply with both the EMC Directive (89/336/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:

- ● EN50081-1: Electromagnetic compatibility-Generic emmision standard

    - ● EN55022: conducted Emission, Radiated Emission

    - ● EN61000-3-2: Current Harmonic

    - ● EN61000-3-3: Voltage Flicker

- ● EN50082-2: Electromagnetic compatibility-Generic immunity standard

    - ● IEC1000-4-2: Electrostatic Discharge

    - ● IEC1000-4-3: Radiated Susceptibility

    - ● IEC1000-4-4: Electrical Fast Transients

    - ● IEC1000-4-5: Surge Test

    - ● IEC1000-4-6: Conducted Susceptibility

    - ● IEC1000-4-11: Voltage Dip and Interruption

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Record of Changes

CHANGE NO.	DATE	TITLE OR BRIEF DESCRIPTION	ENTERED BY
00	25 July, 2000	Initial Release	
01	06, Dec, 2000	Add Windows 2000	

Preface

A320S Notebook Operator's Manual

This is the A320S Series Notebook Operation Guide.

Contents

This manual contains information for personnel using the A320S Series notebook computer. Readers should have a basic understanding of Windows 98 operating system installed on the computer when reading this document. With the exception of the SETUP configuration program, which is part of the system firmware, this manual does not explain any of the software or devices used with the system. Supplemental manuals or text-based documents on the hard disk supply information about any software included with the system.

Audience

All operators using the notebook in or out of the field should read and become familiar with this manual.

Organization

This manual has three chapters.

Chapter 1 introduces the notebook pointing out its major features.

Chapter 2 explains daily operation.

Chapter 3 gives detailed information about configuring the notebook.

Chapter 4 introduces the notebook Maintenance.

Supplemental Reading

For further information about this computer and computing in general, use these references:

- A320S Series Service Manual for detailed troubleshooting and repair instructions for serious hardware problems associated with the A320S Series notebook.

- Various software manuals offer detailed instructions about individual programs run on the notebook.

Specifications (reference only)

	Standard	Optional
CPU	Intel Pentium III 500 MHz	Intel Pentium III 500MHz or above
Display	1. 12.1-inch color LCD, 64K color TFT, super VGA 2.13.3-inch color LCD, XVGA TFT	12.1-inch for Sun-Light Readable 12.1-inch Touch Screen
Input Devices	• 87-key shower proof and dust-proof rubber keyboard • Embedded two-button Track Pad • Microphone Port	Backlight option
Output Device	• Speaker Port	
Communication ports	• One RS-232 serial port • One Centronics parallel port, support EPP/ECP • One external monitor port • One external PS/2 keyboard/Mouse port • One Port Replicator port • One external power supply port • One infrared port, IrDA compliance • One USB port • One 1394 Port • One Lan Port • One Modem Port	
Battery pack	• Removable & rechargeable main LI-ion battery pack with the functions of on-line charge and hot swap (while Bay 1 battery coexists), total 71 watts	• Removable & rechargeable Bay 1 LI-ion battery pack in Bay 1, total 47 watts

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Power adapter	• AC: 100-240 V, 50-60 Hz , 54 watts • Vout 22.5V, -2%~+3%, 2.4A, CV mode • Vout 23.5V~10V, 2.1A~3.5A, , CP mode	• 9-20 VDC direct input without charging function • 22.8-32 VDC external car adaptor/ charger
Oprating		• W indows 98/Windows 2000 • Windows NT
Temperature	• Operating: 0°C to +45°C	• Option: -20°C to +50°C (tested)
Storage devices	• Removable shock proof damaped 2.5" IDE HDD, capacity > 2.1GB • Optional removable 3.5" 1.44MB FDD, to install in Bay 1 internally	• Removable shock proof damaged 2.5" IDE HDD, capacity > 4.0, 6.4GB • (Swap with either CD-ROM module or Bay 1 battery pack); connected to parallel port with optional cable externally • Optional CD-ROM module to be installed in Bay 1
Open Size:	310mm (31 cm) W 68mm (6.8 cm) H 255mm (25.5 cm) D	
Weight	11.24 lbs (5.1kg)	

Safety Summary

1. Read these instructions before using or working on this computer.

2. Follow all warnings and instructions in this manual or marks on the computer and its components.

3. Avoid submerging the system unit in liquids.

4. avoid stacking papers or other flammable objects on top of, underneath, or next to the system unit.

5. Use only batteries supplied with the system.

6. Make sure any external power source connected to the adapter or system conforms with adaptor or system ratings.

7. The external power adapter has a three-pronged grounding plug. If an adapter is needed to plug the system into a power source, make sure the system is properly grounded.

8. Arrange all cables so that they are out of traffic and unobstructed by personnel or equipment.

9. Avoid using extension cords with this product. If an extension cord is needed, make sure it is rated for at least 10 amperes.

10. Make sure amperage drawn by all items plugged into an outlet with this system does not exceed 15 amperes.

11. Do not put any objects except those designed for use with this system inside the computer.

12. Observe proper electrical safety precautions when performing system maintenance.

13. Replace any cables with identically rated cables as those included with the original equipment.

14. Improper handling of the battery can cause personal injury or fires. Do not attempt to disassemble or replace individual cells in the battery pack. Do not expose the battery to open flames. Do not short the positive and negative ends together even if the battery is fully discharged. Keep the battery away from children.

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Chapter 1
System Overview

1-1   Introduction

A320S Series notebook computer is a new generation notebook computer. It is a high-end rugged notebook computer which is an industrial notebook with some rugged features such as vibration, shock, drop and drip-proof. It is designed for using in vehicle or in the harsh environment.

The A320S Series notebook computer implements the new technologies in the industrial market. Large display panel, high capacity hard disk drive, PCI bus and CD-ROM, etc. An Intel Pentium III 500 MHz CPU is the heart of this notebook computer. This chapter introduces and explains the A320S Series notebook and its computer parts.

1-2   System Description

The A320S Series computer is a compact fully portable notebook computer. It operates as a stand alone system for most applications.

It offers superior performance under harsh environmental and operating conditions. It is fully compatible with the IBM PC/AT standard.

1-3   System Configuration

This section presents and explains possible notebook hardware configurations. Refer to the nameplate on the notebook bottom for that system's configuration.

1-3.1 Standard Configuration

Table 1-1 lists the major common features of the standard A320S systems.

The specifications in this table may be different from yours due to the optional items. Please refer to the detailed specifications Including the standard and optional configuratons on page d.

Table 1-1 Standard A320S Notebook Computer **1-3.2 Options and**

Feature	Description
CPU	Intel Pentium III 500 MHz or above
Storage device	Removable 2.5-inch 6.4 GB hard disk drive (or above) Removable 3.5-inch 1.44 MB Floppy disk drive
Display	1. 12.1-inch color LCD, 64K color TFT, super VGA 2. 13.3-inch color LCD, XGA TFT 1024 X 768 resoulation, integrated power conserve mode
Power source	Rechargeable removable Li-ion battery (or other type)
Keyboard	87key shower proof rubber keyboard, Embedded two button track pad
PCMCIA	Two PCMCIA sockets (type II or one type III compatible)
I/O Devices	One RS-232 serial port One Centronics parallel port, support EPP/ECP One external monitor port One external PS/2 keyboard/Mouse port One Port Replicator port One external power supply port One infrared port, IrDA compliance One USB port One 1394 port One Lan Port One Modem Port

Accessories

- External FDD

- LED-Backlight Keyboard

    The LED-Backlight keyboard function keys is Fn+F8.

- CD-ROM/DVD ROM

- Modem Module

- Lan Module

1-3.2.1 Carrying Bag

The carrying bag makes carrying the notebook and its peripherals easier. It has compartments for up to four diskettes, this manual, the power supply, and all notebook cables.

1-3.3 System Identification

The nameplate listing system information is at the bottom of the notebook. It contains:

- Factory configuration

- Model number

- Serial number

1-4 Unpacking

Use this checklist to make sure all items included with the notebook are present in good condition.

- Notebook computer

- Rechargeable battery pack

- AC adapter

- Power cord

- Operation Manual

- A320S DRIVER CD

If any items are missing or damaged, please contact the supplier.

1-5 Notebook Features

Figures from 1-1 through 1-11 identify the major notebook parts, indicators, and controls.

Figure 1-1   A320S Notebook, Front View

1-5.1 Cover

The notebook cover (Item 1, Figure 1-1) houses the display unit and its control devices.

1-5.2 Display

The display have three types, one is 12.1" TFT 16 bit color LCD display (Item 2, Figure 1-1) is selected in A320S Series notebook computer. The resolution of this LCD display is 800 X 600 pixels (SVGA standard). But the connection mechanism from LCD display to motherboard is designed flexibly for different venders of LCD displays and different types. The other is 13.3" TFT 24 bit color LCD display , the resolution is 1024 X 768.

1-5.3 Power Switch

The power switch (Item 5, Figure 1-1) turns the notebook power on and off.
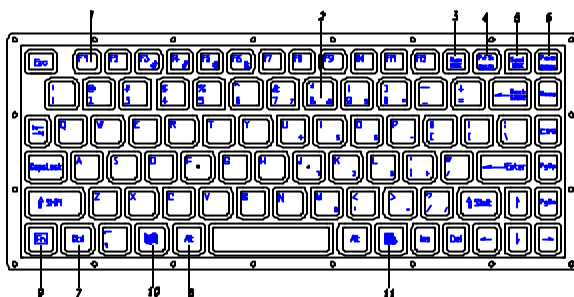
1-5.4 Keyboard

The keyboard (Item 3, Figure 1-1), is the primary tool for typing data and commands into the notebook.

1-5.4.1 Function Keys

The function keys give special commands defined by software. The notebook BIOS also uses function keys to set some configuration parameters.

The rubber keyboard has twelve function keys numbered from F1 through F12 (Item 1, Figure 1-2) and Fn (Item 9, Figure 1-2).

1-5.4.2 Embedded Numeric Keypad

Figure 1-2   Rubber Keyboard

(Item 2, Figure 1-2) These keys act like calculator keys when the NUM LOCK light is on. When the numeric keypad is active, the notebook disables the alphabet keys doubling as numeric keypad keys.

1-5.4.3 Num Lock

The Num Lock key (Item 3, Figure 1-2) activates and deactivates the embedded numeric keypad. When the numeric keypad is active, the NUM LOCK indicator comes on and the alphabetic abilities of the embedded numeric keyboard are disabled.

1-5.4.4 Prt Sc/Sys Rq

The Prt Sc/Sys Rq key (Item 4, Figure 1-2) sends a print message to an attached printer to create a hard copy of data shown on the screen or makes other system requests depending on the running software.

1-5.4.5 Scroll Lock

The scroll lock key (Item 5, Figure 1-2) works with some software to freeze the display.

1-5.4.6 Pause/Break

The Pause/Break key (Item 6, Figure 1-2) temporarily or permanently stops a program .

1-5.4.7 Ctrl and Alt Keys

 (Item 7, Item 8, Figure 1-2) Some software programs use these keys in conjunction with other typewriter keys to perform special functions. See the associated software manual for details.

1-5.4.8 Cursor Control Keys
(Figure 1-3) Ten keys around the keyboard right edge work with many programs to enhance editing and cursor placement. See the software manuals for their proper operation.   The   cursor   control   keys   are:

● Insert (Item 1, Figure 1-3) ●End (Item 6, Figure 1-3)
● Delete (Item 2, Figure 1-3)

● → (Item 7, Figure 1-3)
● Home (Item 3, Figure 1-3) ●PgUp ● ↓ (Item 8, Figure 1-3)
(Item 4, Figure 1-3) ● ↑ (Item 9, Figure 1-3)
●PgDn (Item 5, Figure 1-3) ● ← (Item 10, Figure 1-3)
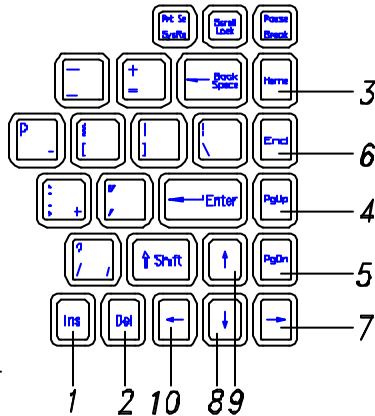
1-5.4.9 Windows Keys

On the A320S Series keyboard, you can find one Windows Logo key (⊞, Item 10, Figure 1-2) and one Application key (Item 11, Figure 1-2). The two keys are used with other keys to perform software specific functions.

Figure 1-3   Cursor Control Keys

1-5.5 Pointing Device

Track pad is used as the pointing device of the A320S Series notebook computer. Using finger to control the movement of cursor. The advantages of track pad are easily to clean and control the direction. The pointing device (Item 4, Figure 1-1) moves the cursor about the screen to help work with data.

The track pad consists of three major components:

- Track pad (Item 1, Figure 1-4)

- Right input button (Item 2, Figure 1-4)

- Left input button (Item 3, Figure 1-4)
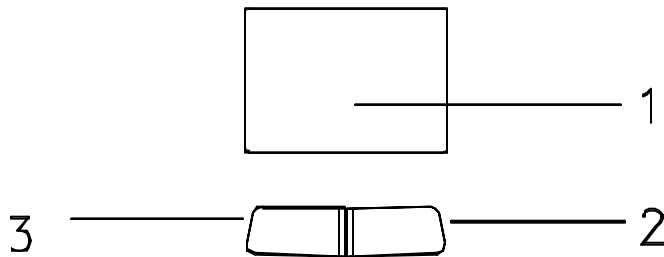
1-5.6 Volume Control

The volume control is adjusted from the combination of function keys Fn+F3 (↓) and Fn +F4 (↑).

The "Hot Key Beep" functions of the Fn+F3, Fn+F4 will not be supported to avoid the interface on the normal **Figure 1-4   Track Pad Pointing Device** sound effect.

The system does not support Fn+F3, Fn+F4 volume control function under DOS.

1-5.7 Brightness Control

The brightness control is adjusted from the combination of function keys Fn+F5 (Dimmer) and Fn+F6 (Brighter). Please press and hold Fn key, then repeat Fn key or F6 key to adjust the brightness.

If the user presses Fn+F5 or Fn+Fn+F6 to adjust the LCD brightness, and continues adjusting it when it is already set to the the minimum or maximum, it will still keep on beeping every time F5 or F6 is pressed down.

1-5.8 Keyboard Backlight

The Backlight of the Keyboard is toggle from combination of function keys Fn+F8.

1-5.9 CRT/LCD/Simulscan Toggle

The CRT/LCD/Simulscan toggle is changed from the combination of fucntion keys Fn+F9.

1-5.10 Panel On/Off

The Panel on/off is toggle from the combination of function keys Fn+F10.

1-5.11 Standby Mode

The system enter standby mode press the function keys Fn+F11.

1-5.12 Suspend Mode

The system enter suspend mode press the function keys Fn+F12.

1-5.13 Status Row

The status row (Figure 1-5) shows the current operating condition of several key notebook components. Figure 1-5 shows a close-up view.

| SCROLL LOCK | CAPS LOCK | NUM LOCK | HDD FDD CD | BAT. PRST BAY1 LOW | PRST BAT. | AC/IN CHARGE | POWER ON SUSPEND |
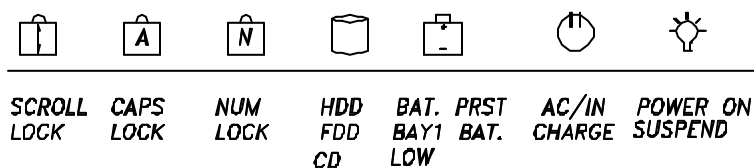
1. A.When the power is on, then Power LED (Green) is on .

Figure 1-5 A320S Status Row

2. A.When the AC power adaptor is connected, then the AC IN LED (Green) is on in power on stage.

   B.When charging is in progress, then the CHARGE LED (Orange) is on in power on and off stage. When the battery is fully charged, the CHARGED LED (Orange) goes out.

3. A.When any battery pack is present, then the BATTERY LED (Green) is on in power on stage.

   B.When the battery pack enters battery low status, then the BATTERY LOW LED (Orange) is on.

4. A.When the HDD, FDD or CD-ROM drive is active, then the HDD/FDD/CD LED (Orange) is on.

5. The "Num Lock" key activates and deactivates the embedded numeric keypad. When the numeric keypad is active, the "Num Lock" indicator come on and the alphabetic of the embedded numeric keypad are disabled.

6. Press "Caps Lock" key will Charge the state of "Caps Lock" indicator between on and off, if the Caps Lock indicator goes on, represents the all English alphabet keys work in Upper Case state, otherwise the keys work in Lower Case state.

7. The "Scroll Lock" key works with some software to freeze the display. Then the cursor can move about the screen without the top bottom or any lines in between moving.

1-5.14 Battery Pack

Battery Pack is an assembly of the batteries, a battery pack connector board in an enclosed plastic case.

The primary battery is Li-ion type. The capacity of each cell is 1500mAH or more. 3.6V, 12 cells are used in one pack. The output voltage of battery pack is 10.8VDC, so the battery pack provides 64.8 watts or more to notebook computer.

Battery pack connector board provides interface between battery cells and DC/DC board.

1-5.15 Low Battery Indication

When all the batteries voltages are under the low battery status, the speaker will beep and the Battery LED is on (Orange).

If Bay 1 battery is in battery low status, system just only have battery low LED indicate in orange, if primary battery is in battery low status system will have battery low beep indication.

1-5.16 Battery Charger

The A320S Series battery can be charged during power on and power off. The A320S Series has two types of battery packs: the first is primary 12 pcs/pack battery, the secondary is 8 pcs/pack battery. The battery charge status is as follows:

1. Primary battery always have first charge priority.

2. The charge time is approximately six hours for power on and power off charge.

1-5.17 CHARGE LED Indicator Status

1. When you insert the battery pack into the system and the AC power adapter is already connected, the CHARGE LED (Orange) flashes three seconds or more and then stays during the charge period.

2. When you connect the AC power adapter to the system, and the battery pack is already inserted, the CHARGE LED (Orange) flashes three seconds or more and then stays on during the charge period.

3. When no battery pack is installed or the AC power adapter is not connected, the CHARGE LED (Orange) is off.

4. For over charge protection battery pack has self protection to inhibit the charge progress if the battery cell voltage over 4.05±0.1V, that means, if primary battery voltage is higher than 16V, it may can't be charged and if Bay 1 battery voltage is higher then 12V will have same result.

5. There have no any sound indicator when battery pack is installed or uninstalled.

1-5.18 Diskette Drive and CD-ROM
(Item 2, Figure 1-6) The notebook has space for a 1.44 MB, 3.5-inch diskette drive and CD-ROM drive. The space can put removable FDD drive or CD-ROM drives.

The diskette drive allows permanent data storage in a compact, transferable media. Data stored on diskettes can be easily passed from one machine to another.

The A320S Series diskette drive accepts 3.5-inch double-density (720 KB) and high density (1.44 MB) diskettes.
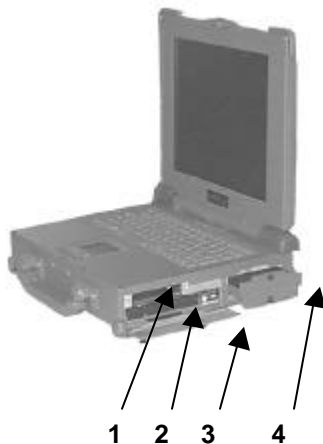
1-5.19 PCMCIA Slot and Diskette Drive and CD-ROM Door
The PCMCIA slot and diskette drive and CD-ROM door (Item 3, Figure 1-6) protects the PCMCIA interfaces and diskette drive from damage in harsh environments.
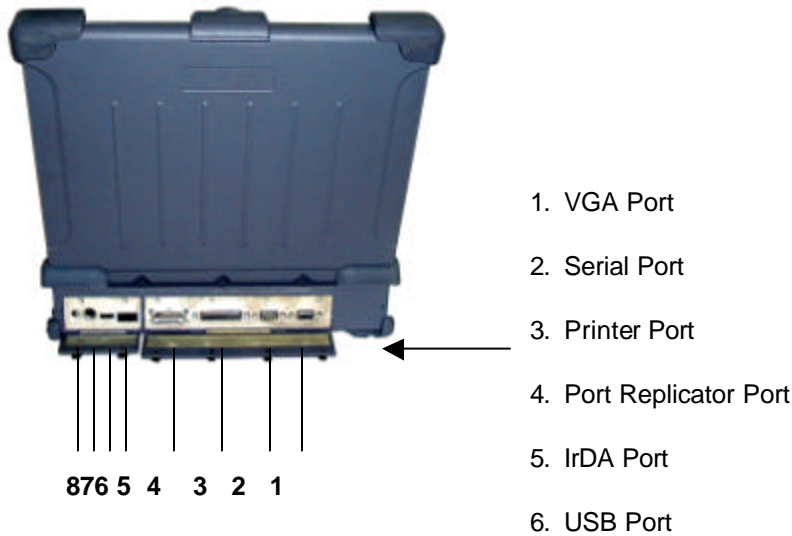
1-5.20 PCMCIA Slots
The notebook has two PCMCIA slots, (Item 1, Figure 1-6). Each supports a two Type-II PCMCIA card. Together,

Figure 1-6 Diskette Drive and CD-ROM

they support one Type-III PCMCIA card.

1-5.21 VGA Port

This 15-pin (Item 1, Figure 1-7) analog port is for connecting in external monitor.

1. VGA Port

2. Serial Port

3. Printer Port

4. Port Replicator Port

5. IrDA Port

6. USB Port

1-5.22 Serial Port

One serial ports (Item 2, Figure 1-7) are 9-pin D-type connectors for the A320S Series notebook. They are RS-232C interface set to the COM1 addresses.

1-5.23 Printer Port

The printer port   ***Figure 1-7 Rear Side View***
(Item 3, Figure 1-7)
is a 25-pin D-type
interface. Usually this interface supports a parallel printing device.

1-5.24 Port Replicator Port

The Port Replicator Port (Item 4, Figure 1-7) is an 80-pin interface. Expend two SIO, two USB, two PS/2, PIO, VGA port.

1-5.25 IrDA Port

This infrared port (Item 5, Figure 1-7) complies IrDA, which allow you to connect your notebook to an IR device wirelessly.

1-5.26 USB Port

The USB port (Item 6, Figure 1-7) transfers at 1.2 or 1.5 Mbit/sec.

1-5.27 Keyboard/Mouse Port

The Keyboard/Mouse port (Item 7, Figure 1-7) for IBM PS/2 keyboard/Mouse.

1-5.28 External Power Source Port

If the notebook will be in use for a long continuous period, connect an external power source to the notebook here (Item 8, Figure 1-7).

1-5.29 External Power Adapter

The A320S external power adapter converts 100-240V, 50-60 Hz to 22.5VDC, 2.4A, 54 watts for the notebook & expansion unit.

1-5.30 Reed Switch

The system uses a reed switch to provide a " cover-close" signal for the operating systems to perform power management functions, which are defined by the user.