

WCP-640

All-in-One Socket 370 Single-Board Computer
with LCD, Ethernet,
PC/104, and PISA Bus Edge

User's Manual

Chapter 1

Specifications
and
Components Setup

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Manual edition 1.0, March 2000

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1 Introduction of WCP-640

The WCP-640 is a high-performance single-board computer (SBC) supported by powerful Socket 370 processors. With a PCI flat panel controller, a PCI 100Base-Tx Ethernet interface, and a 100MHz frontside bus, WCP-640 surpasses any other SBC in its class. In addition, the onboard SSD interface supports M-systems DiskOnChip 2000 series up to 288MB. This compact board(only 7.1"x5") offers all the functions of a single-board industrial computer.

Its on-board I/O features include two serial ports, one multi-mode parallel (ECP/EPP/SPP) port, an IrDA- compatible infrared port, two USB (Universal Serial Bus) ports, standard floppy drive connectors, and a keyboard and PS/2 mouse connector. The built-in high-speed EIDE controller supports Ultra DMA 33/66 mode. Up to two IDE devices can be connected, including large hard disks, CD-ROM drives, tape backup drives, and more. To enhance its expansiveness, one 16-bit ISA PC/104 connector is also mounted on board.

In addition, the board features a synchronous switching regulator and advanced power and system management functions. It complies with the APM V1.2 and ACPI V1.0 standards and supports three types of power saving features: Doze mode, Standby mode, and Suspend mode. One Dual Inline Memory Module (DIMM) slot supports 3.3V SDRAM memory up to 128MB. The onboard watchdog timer can automatically reset the system or generate an interrupt when the system hangs due to the program malfunction.

Certainly, WCP-640 is an easy-to-expand yet highly integrated multimedia SBC that combines video, and network functions on a CD-ROM drive size form factor, with up to 1024 x 768 resolution (64K colors, 1024 x 768 with 16M colors for the C&T 69030 VGA chip) and built-in 2MB SDRAM display memory.

1.1 Specifications and Features

1.1.1 Processor :

- Socket 370 on board
- Supports Intel Socket 370 Celeron, and Pentium III Processors

1.1.2 BIOS

- Award 256KB Flash BIOS

1.1.3 Chipsets On Board:

- **VIA VT82C693A and VT82C596B System Chips, support for Bus frequencies up to 133MHz**
- **Built-in I/O and Winbond 83977EF I/O chip supporting:**
 - (1) Enhanced IDE: up to two IDE devices. Supports Ultra DMA 33/ 66 mode with data transfer rate up to 66MB/sec.
 - (2) FDD interface: 34-pin header supporting up to two floppy disk drives
 - (3) Parallel port: One bi-directional parallel port supporting SPP/ ECP/ EPP modes
 - (4) Serial port: COM1 for RS-232; COM2 for RS-232/422/485
 - (5) PS/2 KB/Mouse : 6-pin Mini-DIN supporting PS/2 keyboard and mouse; one 5-pin header box supporting one internal keyboard
 - (6) USB : One 5x 2 header supporting two USB connectors
 - (7) Bus Interface: PISA interface supporting PCI and ISA slots on backplane
 - (8) PC/104 connector: one
- **C&T SVGA/LCD controller supports 36-bit LCD panels and CRT simultaneously**
- **RTL8139C Chip , 100 Base-Tx Fast Ethernet Controller supporting one RJ45 LAN connector**

1.1.4 Power Supply, Voltage and Battery :

- **Support for AT/ATX power**
Supporting PC97, LAN wake up, and modem ring-in functions. I/O peripheral devices supporting power saving and standby / Doze / suspend modes. ACPI 1.0 and APM 1.2 compliant
- **Input Voltage: Vcc: +5V(4.75V~5.25V); +12V(11.4V~12.6V)**
- **Lithium Battery for data retention up to 10 years**
- **Maximum Power Requirement: 6.2A at 5V; 0.6A at +12V**

1.1.5 Memory , Data Storage:

- **One 168-pin DIMM socket on board, supporting up to 256 Mbytes PC-133 SDRAM**
- **DiskOnChip:** 32-pin DIP package M-Systems' DiskOnChip 2000' supporting up to 288 MB capacities.

1.1.6 I/O Expansion :

- one RJ45 LAN connector
- 2 serial ports: one COM1 for RS-232 and one COM2 for RS-232/422/485
- PISA Bus: Supporting PCI and ISA slots on backplane
- PC/104 connector for flexible expansion capabilities
- One USB port, one IrDA port, one Printer port, and one PS/2 keyboard and mouse port

1.1.7 Other Hardware Features:

- **Watchdog timer selectable by software programming :**
Can generate a system reset, or IRQ15. Supports software selectable timeout interval.
- **AT/ATX Power Form Factor**
- **Board Dimension: 7.1" x 5" (180mm x 128mm)**

1.2 The WCP-640 Package

Before installation, make sure that the following items have been included in the package:

- WCP-640 All-in-One Single-Board Computer
- Quick Installation Guide
- Cables to match with connectors on board (See “Appendix D” for cable types to be provided in package)
- CD-ROM, which contains the following folders:
 1. VIA
 2. LAN
 3. VGA
 4. Tools
 5. Manual
 6. Readme

If any of these items is missing or damaged, contact your dealer at once. Save the shipping materials and carton in case you want to ship or store the board in the future

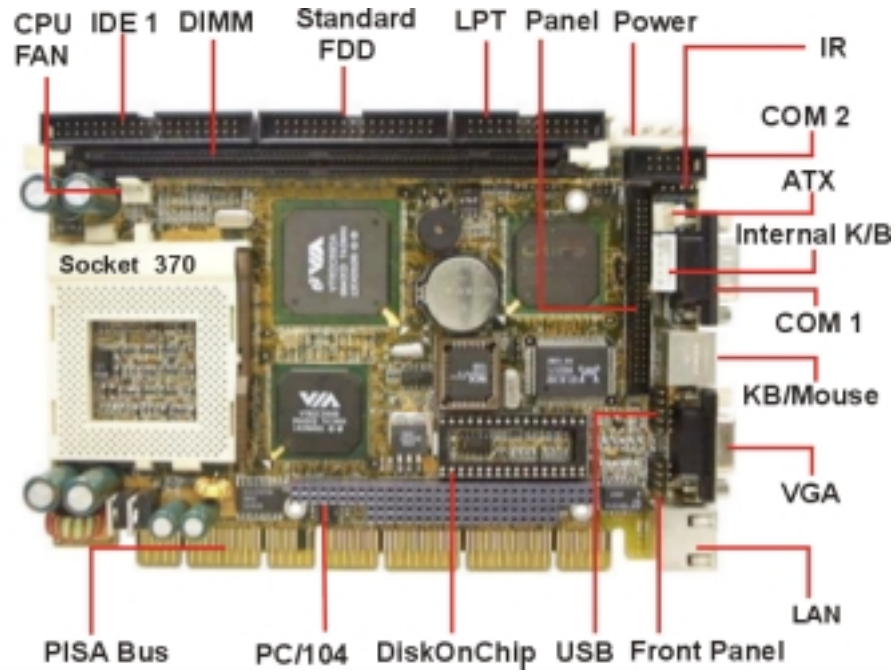
Leave the board in its original packing until you are ready to install it.

Precautions

Electrostatic discharge may damage the WCP-640 board. Make sure you ground yourself before handling the WCP-640 board or other system components.

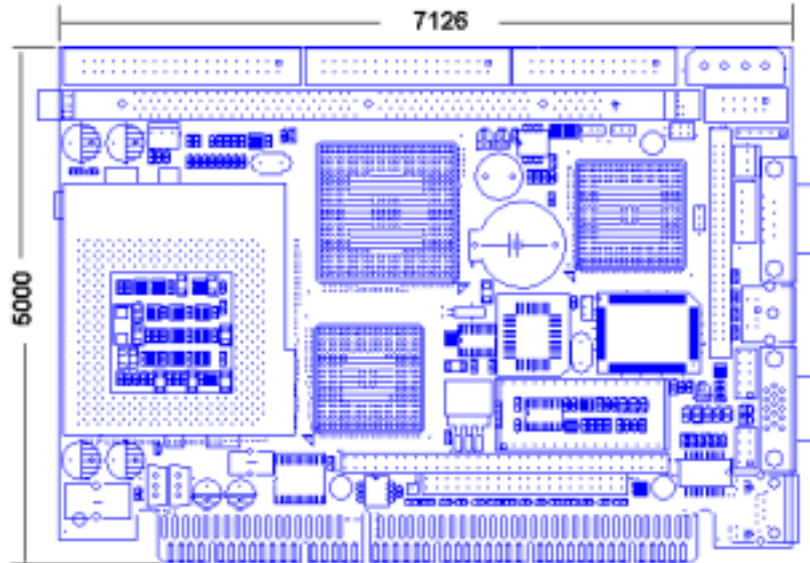
- Do not remove the anti-static packaging until you are ready to install the WCP-640 board.
- Ground yourself before removing any system component from its protective anti-static packaging. To ground yourself, grasp the expansion slot covers or other unpainted parts of the computer chassis.
- Handle the WCP-640 board by its edges and avoid touching its components.

1.3 The Board – WCP-640



1.4 Board Dimensions

Board dimensions are shown in inch.



End of Specifications and Features

2 Components Setup

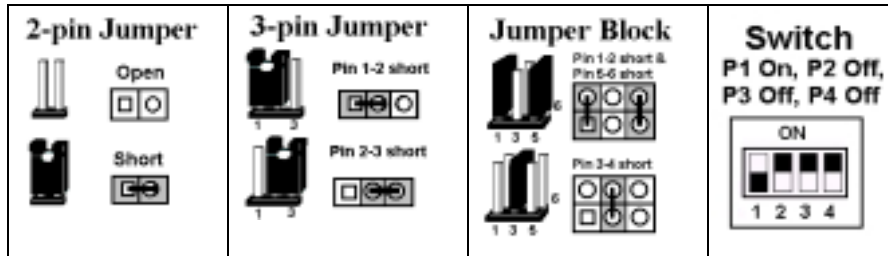
This chapter describes how to set up the WCP-640 board, including instructions on setting jumpers and connecting peripherals, switches, and indicators. Be sure to read all the safety precautions before you begin the installation procedure.

2.1 About Jumpers, Switches, and Connectors

The board has a number of jumpers and switches that allow you to configure your system to suit your applications. In addition, the connectors on the board link it to external devices such as hard disk drives, COM ports, and floppy drives.

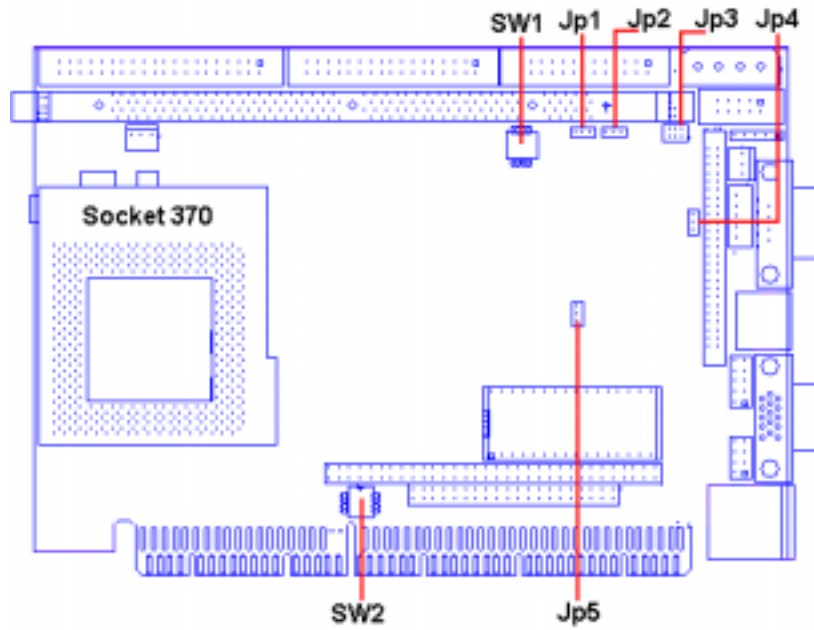
Jumpers are used on this board to select various settings and features. A jumper consists of several metal pins and a small metal cap (often protected by a plastic cover) that slides over the pins to connect them. To close a jumper you connect the pins with the cap. To open a jumper you remove the cap. 2-pin jumper has two settings: open and closed (shorted). 3-pin jumper can have pins 1-2 or 2-3 connected. A jumper block can be set to odd-to-even pin connections (example: pins 1-2 shorted or pins 5-6 shorted). *The jumper pin number is labeled on the printed circuit board.*

In addition to jumper settings, some of this board's functions are adjusted through the DIP switches. The types of jumper and switch diagrams used in this manual are shown below. The black block in the graphic represents the switch's position.



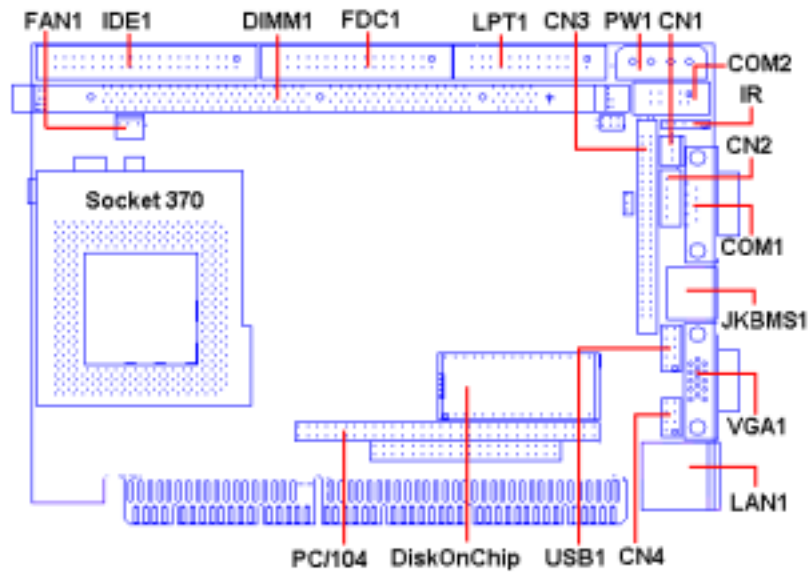
2.2 Locating Jumpers and Switches

Jumper	Function	Jp/Sw	Function
Jp1	Watch dog timer action select	Jp5	LCD Voltage select
Jp2	Real-Time clock select		
Jp3	COM2 RI pin voltage select	Sw1	Panel Type select
Jp4	Clock Signal select	Sw2	DOC Address select



2.3 Locating Connectors

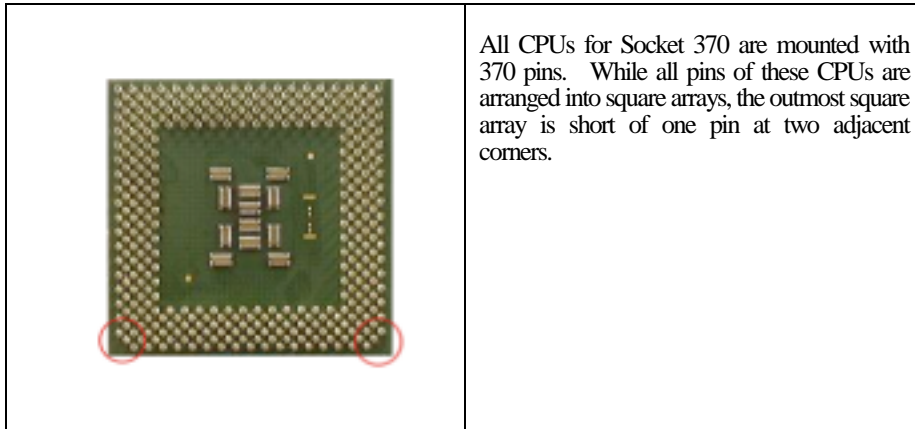
Conn	Function	Conn	Function
CN1	ATX power control connector	FAN1	CPU fan power connector
CN2	Internal Keyboard connector	USB1	USB ports connector
CN3	Flat panel display connector	IR	IR connector
CN4	Front panel connector	IDE1	IDE Connector
CN5	PC/104 ISA-bus connector	COM1	Serial port for RS232
LAN1	100/10Base-T Ethernet conn.	COM2	Serial port for RS/232/422/485
LPT1	Parallel port connector	PW1	Main power connector
FDC1	Floppy drive connector	VGA1	CRT Display connector
JKBMS1	Keyboard and PS/2 mouse conn.	DIMM1	DIMM slot



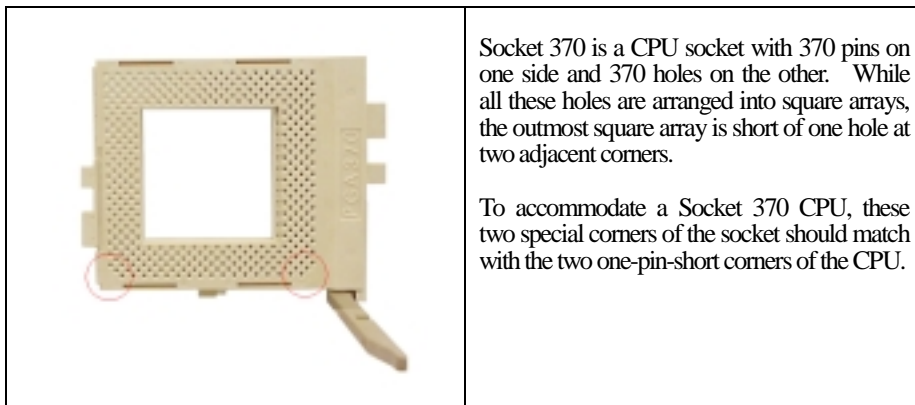
2.4 Installing CPU

WCP-640 supports Intel Celeron and Pentium III CPUs, with built-in autodetect Vcore voltage function on Chip VT82C596B. Therefore, what users have to do is to identify their specific processor for the socket 370 on board and insert it correctly. As soon as power is on, WCP-640 will autodetect the proper voltage for the CPU and start to run it in your system. Users will no longer bother to adjust the CPU voltage themselves. Yet they should also remind themselves that overclocking the CPU is not allowed on WCP-640 either.

2.4.1 Identifying the CPU



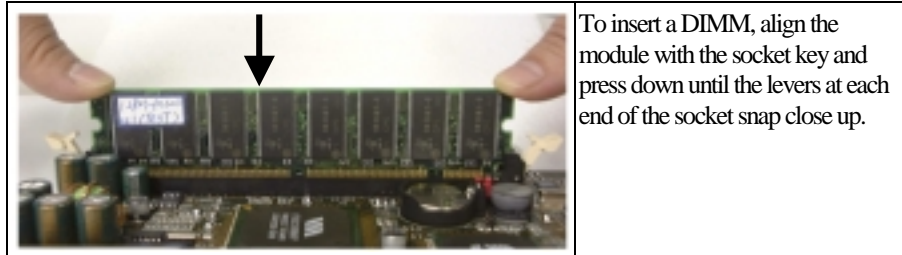
2.4.2 Identifying Socket 370



2.5 Installing DRAM (DIMMs)

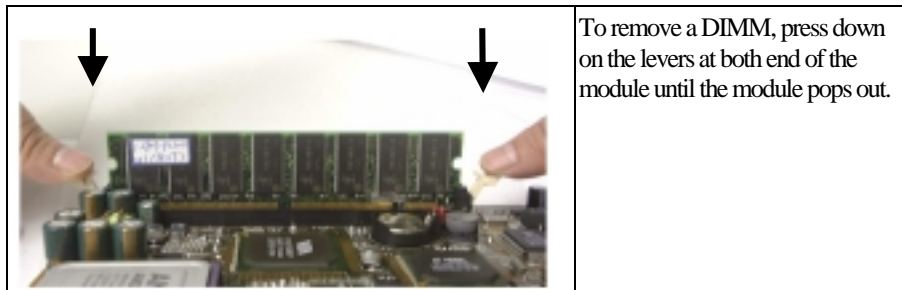
The WCP-640 provides a socket for a 168-pin dual inline memory module (DIMM). The socket uses 3.3V unbuffered synchronous DRAM (SDRAM). DIMMs are available in capacities of 16, 32, 64, or 128 MB. The WCP-640 board can accept both regular and PC-133 SDRAM DIMMs (with or without parity). However, if a CPU with a frontside bus of higher than 66MHz is used, the WCP-640 can only accept a PC-100/133 SDRAM DIMM.

☛ To insert a DIMM:



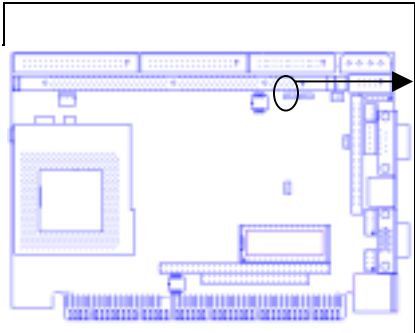
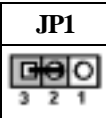

There is only one direction for installing a module in the socket. Do not attempt to force the module into the socket incorrectly.

☛ To remove a DIMM:

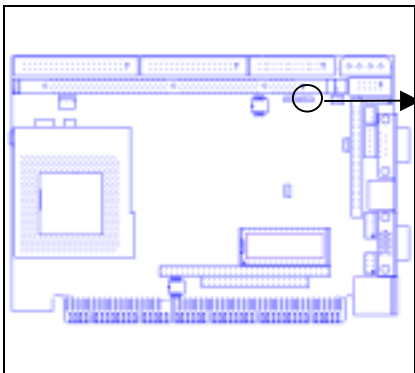
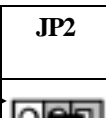



2.6 Jumpers and Switches Setup

JP1: Watchdog Timer Action Select

	JP1	Action Select	When the watchdog timer activates (CPU processing has come to a halt), it can reset the system or generate an interrupt on IRQ15.
		System reset (default)	
		IRQ15	

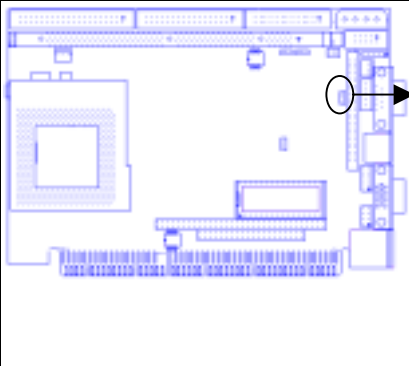


JP2: Real-Time Clock

	JP2	Real-Time Clock	When JP2 pins 2-3 are shorted, the CMOS data (including date, time, hard disk drive configuration, floppy disk drive type, and passwords) will be cleared. After clearing the CMOS data, be sure to again short pins 1-2, or the system will not work properly.
		Normal operation (default)	
		Clear CMOS data	

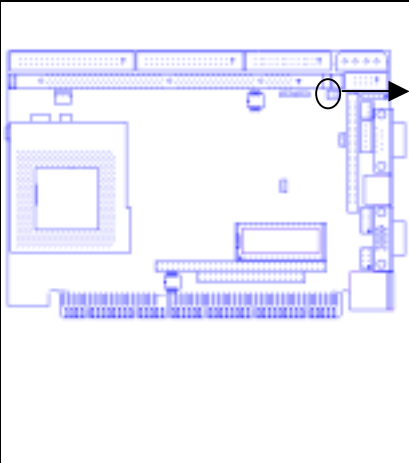
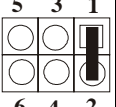
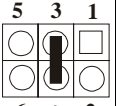
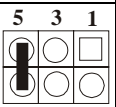
☉ To clear CMOS:

1. Turn off the power supply.
2. Remove the power cable from the PW connector.
3. Locate JP2 and short pins 2-3 for a few seconds.
4. Return JP2 to its normal setting (i.e. shorting pins 1-2).
5. Connect the power cable to the PW connector.
6. Turn on the power supply.
7. Press "DEL" key to enter BIOS Setup and specify a new password or CPU speed.

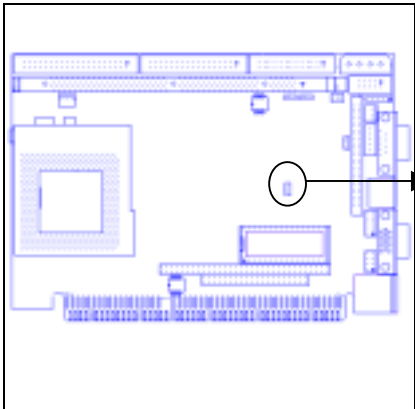


JP4: LCD Clock Signal Select

	<p>JP4</p> 	<p>Clock Signal Select</p> <p>SHFCLK (default)</p>	<p>You can use a shift clock (SHFCLK) or a Panel Clock signal (PCLK) by setting JP4 for a different LCD panel application.</p>
		<p>PCLK</p>	

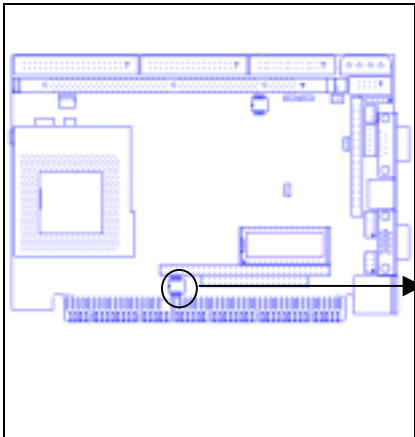





JP3: COM2 RI Pin Voltage Select

	<p>JP3</p> 	<p>RI pin voltage</p> <p>RI# (Default)</p>	<p>You can select the COM2 (9-pin D-sub connector) port as RI, +5V, or +12V by setting JP3.</p>
		<p>+5V</p>	
		<p>+12V</p>	

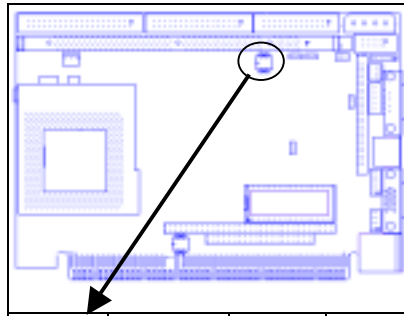
JP5: LCD Panel Driving Voltage Select

		LCD Voltage 3.3V (default)	You can select the LCD Panel driving voltage by setting JP5. Note: An incorrect voltage setting may damage the flat panel.
		+5V	

SW2: DOC Address Select

		DOC Address DOC Disabled	You can select the DiskOnChip address by setting SW2. The DOC occupies an 8Kbyte window in the upper memory address range of D0000 to E9FFF. These addresses might be already occupied by the ROM BIOS of other peripheral boards. Please select the appropriate memory address to avoid memory conflicts.
		D0000 (default)	
		D4000	
		D8000	
		DC000	

SW1: Flat Panel Type Select



The WCP-640 board supports 16 panel types. You can select the type by setting SW1.

Please select the following settings for your panel.

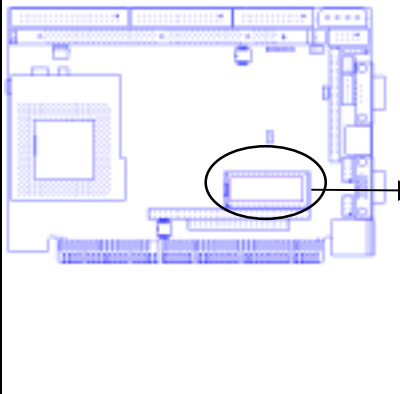
Note: You also can set the panel type with the VGA vendor utility. If you do so, then these switch settings will not be used.

SW1	Panel Type	SW1	Panel Type	SW1	Panel Type	SW1	Panel Type
	1024 x 600 TFT		800 x 600 Dual Scan STN		800 x 600 TFT		1024 x 768 Dual Scan STN
	1024 x 600 Dual Scan STN		800 x 600 Dual Scan STN		1024 x 768 TFT		1024 x 768 Dual Scan STN
	1280 x 1024 Dual Scan STN		800 x 600 TFT		640 x 480 18-bit TFT		1280 x 1024 TFT
	1024 x 768 TFT		800 x 600 TFT		640 x 480 Sharp TFT		1024 x 768 Dual Scan STN

2.7 Connectors Setup

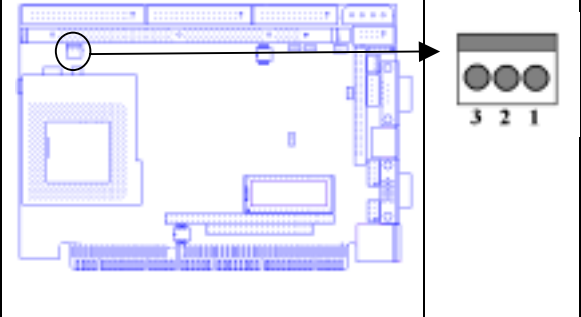

DiskOnChip Socket

The DiskOnChip 2000 family of products provides a single chip solid-state flash disk in a standard 32-pin DIP package. It can be plugged directly into the socket onto the WCP-640 board, eliminating the need for mechanical disk drives, bulky ribbon cables, and connectors. The DiskOnChip 2000 family of products is available in capacities ranging from 2MB up to 288MB, unformatted. The DiskOnChip 2000 uses the M-systems' Flash File System (TrueFFS) management technology that allows flash components to fully emulate a hard disk.

	Pin Name	Description	Pin No.	Direction
	A0-A12	Address bus	4-12, 23, 25-27	Input
	A13-A16	Address bus	2, 3, 28, 29	Input
	D0-D7	Data bus	13-15, 17-21	I/O
	CE/	Chip Enable	22	Input
	OE/	Output Enable	24	Input
	WE/	Write Enable	31	Input
	NC	Not connected	1,30	
	VCC	Power	32	
	GND	Ground	16	

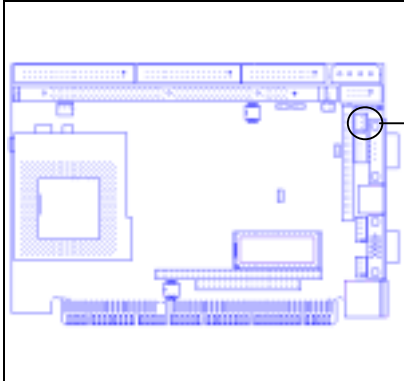
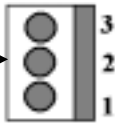
Fan 1: Fan Connector

This 3-pin connector supports fans of 12V DC/500mA (6W) or less with a minimum of 3,500RPM.

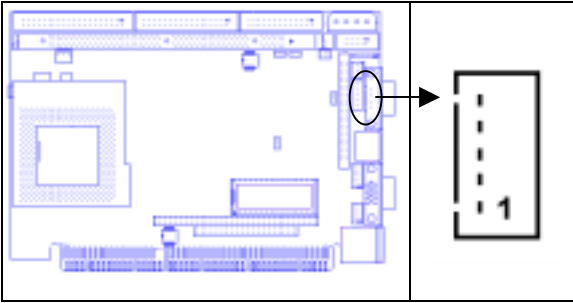
		Pin Assignments	
		1.	Ground
		2.	+12V
		3.	N/C

The CPU and board will overheat if there is insufficient airflow across the CPU.

CN1: ATX Power Control Connector

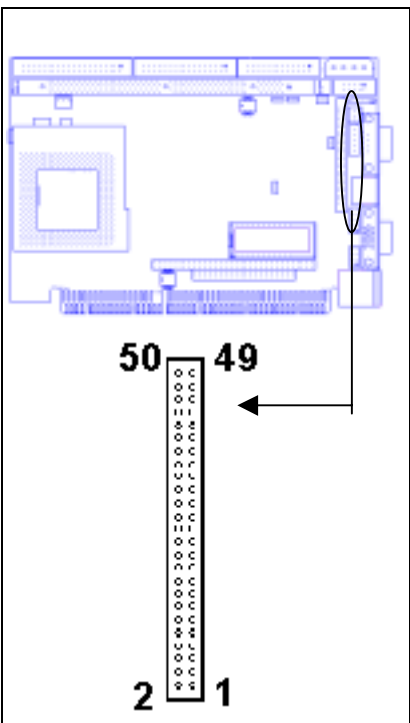
		Pin Assignments	
		1.	5V Standby
		2.	Power on/off control signal
		3.	Ground

CN2: Internal Keyboard Connector



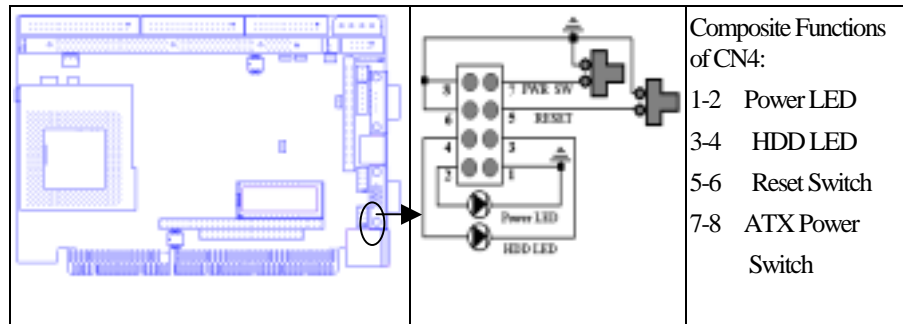
Pin Assignments	
1.	KBClk
2.	KBData
3.	NC
4.	GND
5.	Vcc

CN3: Flat Panel Display Connector



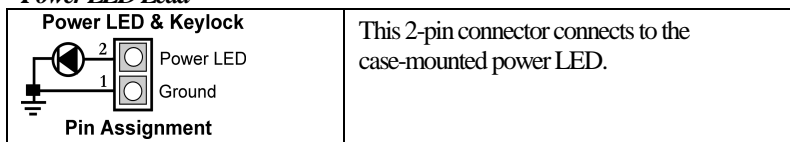
Pin	Signal	Pin	Signal	Pin	Signal
1.	+12V	17.	P8	33.	P24
2.	+12V	18.	P9	34.	P25
3.	Ground	19.	P10	35.	SHFCLK
4.	Ground	20.	P11	36.	FLM
5.	+5V/+3V	21.	P12	37.	M
6.	+5V/+3V	22.	P13	38.	LP
7.	ENAVEE	23.	P14	39.	Ground
8.	Ground	24.	P15	40.	ENABKL
9.	P0	25.	P16	43.	P28
10.	P1	26.	P17	44.	P29
11.	P2	27.	P18	45.	P30
12.	P3	28.	P19	46.	P31
13.	P4	29.	P20	47.	P32
14.	P5	30.	P21	48.	P33
15.	P6	31.	P22	49.	P34
16.	P7	32.	P23	50.	P35

CN4: Front Panel Connector

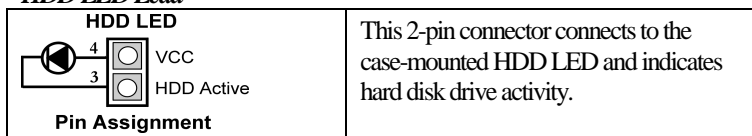


You may want to install external LED and switches to monitor and control the WCP-640 board. These features are optional. Install them only if you need them.

Power LED Lead

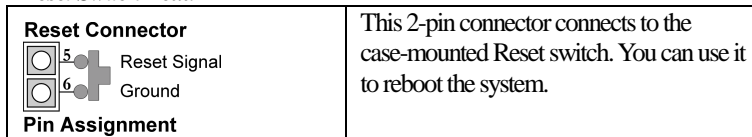


HDD LED Lead

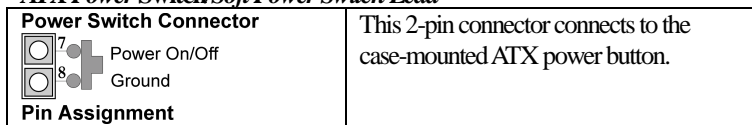


If the LED does not light up, try reversing the plug.

Reset Switch Lead

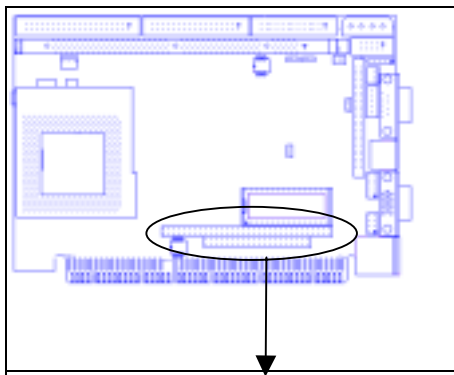

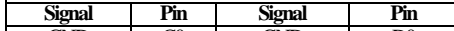
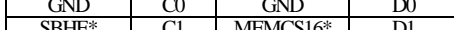
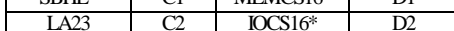
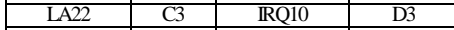


ATX Power Switch/Soft Power Switch Lead



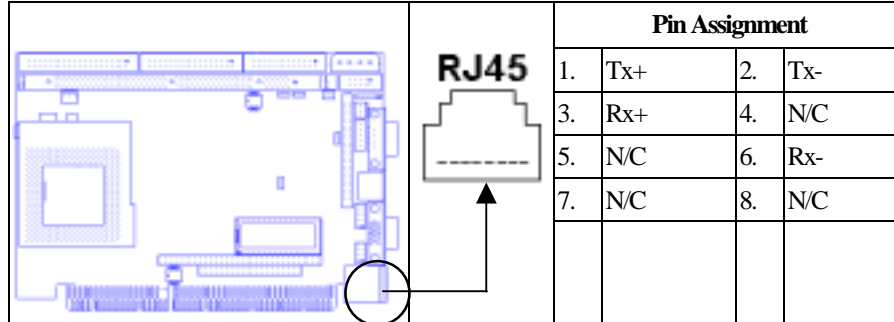
CN5: PC/104 Connector

CN5 is a standard PC/104 bus connector, and is fully occupied with the signals of the "ISA" (PC/AT) bus. It offers full architecture, hardware and software compatibility with the ISA bus and can accept ultra-compact (3.6" x 3.8") stackable modules. Please see how to install the PC/104 module in Appendix A.

				Signal	Pin	Signal	Pin
				IOCHCHK	A1	GND	B1
				SD7	A2	RESET	B2
				SD6	A3	+5V	B3
				SD5	A4	IRQ9	B4
				SD4	A5	NC	B5
				SD3	A6	NC	B6
				SD2	A7	NC	B7
				SD1	A8	0 wait state	B8
				SD0	A9	+12	B9
				IOCHRDY	A10	GND	B10
				AEN	A11	SMEMW#	B11
Signal	Pin	Signal	Pin	SA19	A12	SMEMR*	B12
GND	C0	GND	D0	SA18	A13	IOW*	B13
SBHE*	C1	MEMCS16*	D1	SA17	A14	IOR*	B14
LA23	C2	IOCS16*	D2	SA16	A15	DACK3*	B15
LA22	C3	IRQ10	D3	SA15	A16	DRQ3	B16
LA21	C4	IRQ11	D4	SA14	A17	DACK1*	B17
LA20	C5	IRQ12	D5	SA13	A18	DRQ1	B18
LA19	C6	IRQ15	D6	SA12	A19	REFRESH*	B19
LA18	C7	IRQ14	D7	SA11	A20	SYSCLK	B20
LA17	C8	DACK0*	D8	SA10	A21	IRQ7	B21
MEMR*	C9	DRQ0	D9	SA9	A22	IRQ6	B22
MEMW*	C10	DACK5*	D10	SA8	A23	IRQ5	B23
SD8	C11	DRQ5	D11	SA7	A24	IRQ4	B24
SD9	C12	DACK6*	D12	SA6	A25	IRQ3	B25
SD10	C13	DRQ6	D13	SA5	A26	NC	B26
SD11	C14	DACK7*	D14	SA4	A27	TC	B27
SD12	C15	DRQ7	D15	SA3	A28	BALE	B28
SD13	C16	+5V	D16	SA2	A29	+5V	B29
Signal	Pin	Signal	Pin	Signal	Pin	Signal	Pin
SD14	C17	MASTER*	D17	SA1	A30	OSC	B30
SD15	C18	GND	D18	SA0	A31	GND	B31
NC	C19	GND	D19	GND	A32	GND	B32

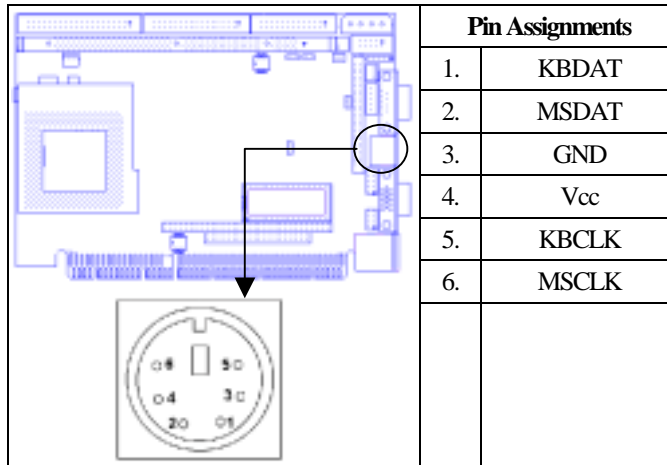
LAN1: 100Base-Tx Ethernet Connector

The WCP-640 board includes a standard 100Base-Tx Ethernet RJ-45 connector. The onboard Realtek RTL8139C fast Ethernet controller supports 10Mb/s and 100 Mb/s N-way auto-negotiation operations.



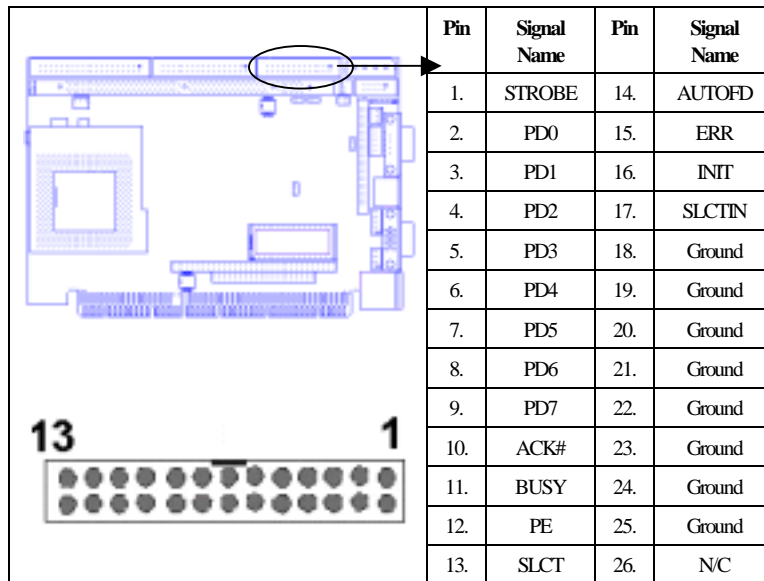
JKBMS1: Keyboard and Mouse Connector

The WCP-640 provides a connector that supports a keyboard and a PS/2 style mouse. You need an adapter cable to connect to a keyboard and a PS/2 mouse. The cable has a miniDIN connector on one end and keyboard and PS/2 mouse connectors on the other. In embedded applications, a keyboard is usually not used.



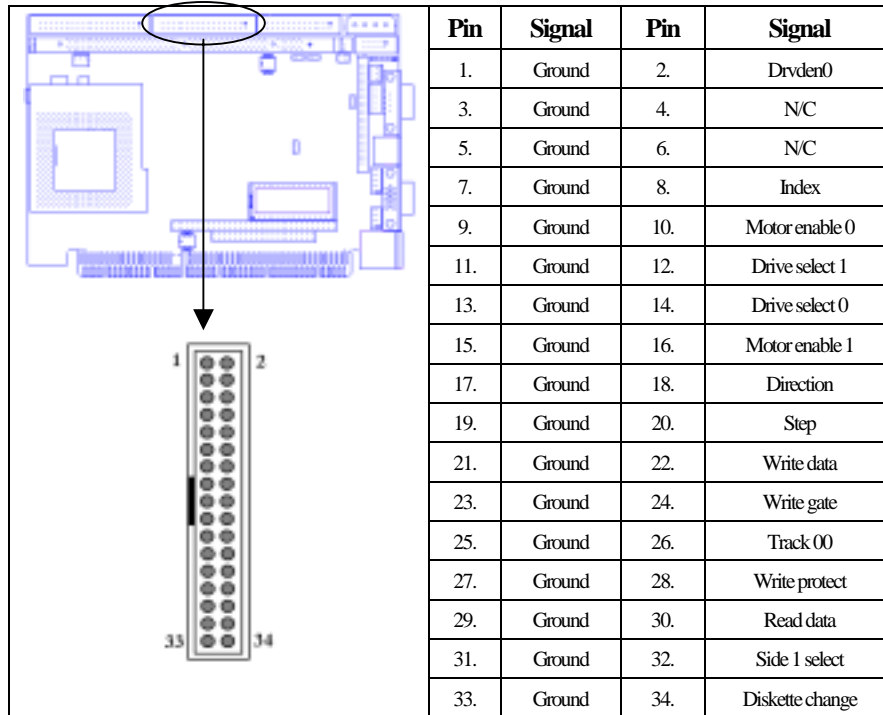
LPT1: Parallel Port Connector

The WCP-640 board includes an onboard parallel port, accessed through LPT1. You need an adapter cable if you use a traditional DB-25 connector. The cable has a 26-pin connector on one end and a DB-25 connector on the other. The port is designated as LPT1 and can be disabled or changed to LPT2 or LPT3 in the BIOS “Integrated Peripherals” setup. You also can select the ECP/EPP Mode in the BIOS “Integrated Peripherals” setup.



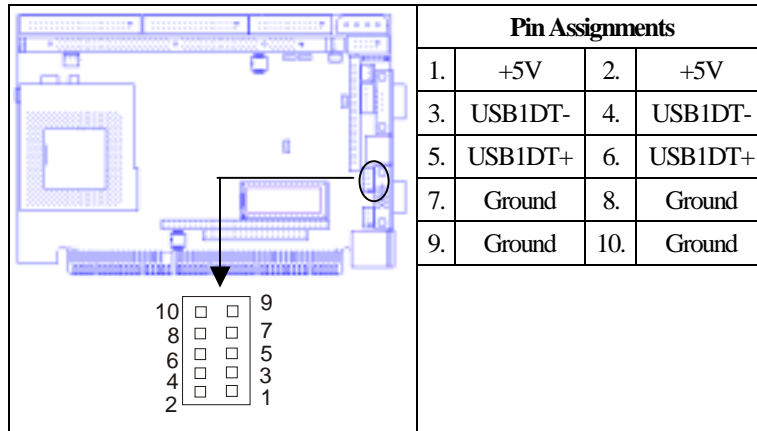
FDC1: Floppy Drive Connector

Connect the single end of a floppy disk drive cable to this 34-pin connector block. Connect the other ends of the cable to one or more floppy disk drives. The connector with twisted wires always connects to drive A; the connector with straight wires connects to drive B.



USB1: USB Connector

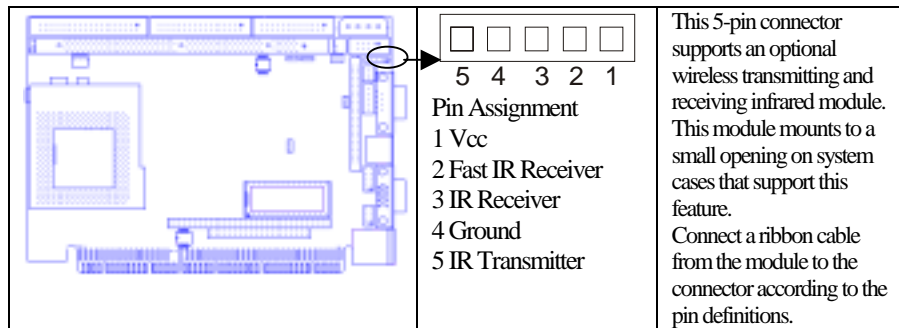
The WCP-640 provides two USB (Universal Serial Bus) interfaces which give complete plug and play, hot attach/detach for up to 127 external devices. You need an adapter cable to support two USB connectors. The cable has a 10-pin connector on one end and two USB connectors on the other. The USB interfaces comply with USB specification Rev. 1.0, and can be disabled in the system BIOS setup.



Pin Assignments			
1.	+5V	2.	+5V
3.	USB1DT-	4.	USB1DT-
5.	USB1DT+	6.	USB1DT+
7.	Ground	8.	Ground
9.	Ground	10.	Ground

IR: Ir Connector

The Ir connector can be configured to support a wireless infrared module. With this module and application software such as Laplink or a Win95/98 direct cable connection, you can transfer files to or from laptops, notebooks, PDAs, and printers. This connector supports HPSIR (115.2Kbps, 2 meters) and ASK-IR (56Kbps). Connect an infrared module to the IrDA connector and enable the infrared function in the BIOS setup.



Pin Assignment	
1	Vcc
2	Fast IR Receiver
3	IR Receiver
4	Ground
5	IR Transmitter

This 5-pin connector supports an optional wireless transmitting and receiving infrared module. This module mounts to a small opening on system cases that support this feature. Connect a ribbon cable from the module to the connector according to the pin definitions.

IDE1: IDE Connector

This connector supports IDE hard disks and CD-ROM drives. After connecting the single end of the provided IDE ribbon cable to the board, connect the two plugs at the other end to your hard disks or CD-ROM drives. If you install two hard disks from the same connector, you must set the second drive to Slave mode. You can configure two hard disks to Master mode by using one ribbon cable on the primary IDE connector and another on the secondary IDE connector.

	Pin	Signal	Pin	Signal	Pin	Signal
	1.	Reset	16.	Data 14	31.	IRQ14
	2.	Ground	17.	Data 0	32.	N/C
	3.	Data 7	18.	Data 15	33.	Address 1
	4.	Data 8	19.	Ground	34.	Detect
	5.	Data 6	20.	N/C	35.	Address 0
	6.	Data 9	21.	DREQ	36.	Address 2
	7.	Data 5	22.	Ground	37.	Select 0
	8.	Data 10	23.	IOW#	38.	Select 1
	9.	Data 4	24.	Ground	39.	Active
	10.	Data 11	25.	IOR#	40.	Ground
	11.	Data 3	26.	Ground		
	12.	Data 12	27.	IRDY		
	13.	Data 2	28.	Ground		
	14.	Data 13	29.	DACK#		
15.	Data 1	30.	Ground			

End of Components Locations and Setup

Appendix A: Programming the Watchdog Timer

The WCP-640 provides a watchdog timer that resets the CPU or generates an interrupt if processing comes to a stop. This function ensures greater system reliability in industrial stand-alone and unmanned environments.

In order to enable the watchdog timer, you have to output the value of the watchdog timer interval to the controller. The value range is from 01H to FFH, and the related time watchdog timer interval is 1 sec to 255 sec.

Data	Timer interval
00	Disabled
01	1 sec
02	2 sec
*	*
*	*
FF	255 sec

If you want to disable the watchdog timer, just set the timer interval value to 00H.

After setting the timer interval value, the watchdog timer begins to count down. You have to refresh the watchdog timer, so that the watchdog timer will return to its initial value; otherwise, your system will reset after a time-out. The following program shows how to set the watchdog timer: ASSEMBLY LANGUAGE	DOS DEBUG
--	-----------

Program 1: Initializing the watchdog controller

MOV DX,3F0H MOV AL,87H OUT DX,AL OUT DX,AL	O 3F0 87 O 3F0 87
MOV AL,07H OUT DX,AL MOV DX,3F1H MOV AL,08H OUT DX,AL	O 3F0 07 O 3F1 08

Program 2: Writing a watchdog timer interval value

MOV DX,3F0H ; Set timer interval value to 16 seconds MOV AL,F2H OUT DX,AL MOV DX,3F1H MOV AL,XXH ; Timer interval *** see note *** OUT DX,AL MOV DX,3F0H MOV AL,AAH OUT DX,AL	O 3F0 F2 O 3F1 XX O 3F0 AA
---	----------------------------------

This XX value range is from 01H to FFH, and the related watchdog timer interval is 1 sec. to 255 sec. (as in the previous description).

Using the Demo Program

- Update the system BIOS as follows:
 1. Run Program 1.
 2. Run Program 2 (load the timer interval of 1EH, 30 seconds).
 3. Run your Application Program #1. **(Be sure your Application Program will finish within 30 seconds.)**
 4. Run Program 1.
 5. Run Program 2 (change the timer interval value to 3CH, 60 seconds).
 6. Run your Application Program #2. **(Be sure your Application Program will finish within 60 seconds.)**
 7. Run Program 1.
 8. Run Program 2 (reload the timer interval value of 3CH, 60 seconds).
 9. Run Program 1.
 10. Run Program 3 **(Load the timer interval of 00H, and disable the watchdog timer function)**

Appendix B: DiskOnChip 2000 Installation

When installing or removing the DiskOnChip (DOC), be sure to first touch a grounded surface to discharge any static electricity from your body.

► **Use the following procedure to install the DiskOnChip:**

1. Align pin 1 on the DiskOnChip with pin 1 of the socket.
2. Push the DiskOnChip into the socket carefully until it is fully seated.
3. Check to make sure the DiskOnChip is installed securely, and there are no bent pins.

Caution: *The DiskOnChip may be permanently damaged if installed incorrectly!*

4. Set the jumper switch (SW4) for the memory address of the DOC.

The memory shadow function sometimes will create conflicts with the memory window. You should disable the memory shadow from the BIOS Setup if the DOC cannot be accessed.

5. To install the DiskOnChip as drive C on a system without a hard disk, set the CMOS setup of drive C to “not installed” (indicating that no physical magnetic disk is installed), and reboot the computer. The DiskOnChip 2000 will install as drive C. The DiskOnChip needs to be formatted with the system files in order for it to be a bootable drive. See “Configuring the DiskOnChip as the BOOT device” below.
6. To install the DiskOnChip as drive D on a system with a hard disk, just reboot the system, and the DiskOnChip will install as drive D.
7. To install the DiskOnChip as Drive C on a system with a hard disk, see below “Configuring the DiskOnChip as the first drive”.

Configuring the DiskOnChip 2000 as the Boot Device

In order to configure the DiskOnChip as the boot device, the operating system files need to be copied into it. Copying the operating system files into DiskOnChip should be done like in any other hard disk. The following is an example of a typical initialization process:

1. Set the DiskOnChip as a regular drive in your system (not a boot drive).
2. Install a bootable floppy diskette in drive A and boot the system.
3. At the DOS prompt, type *SYS C:* to transfer the DOS system files to the DiskOnChip (assuming the DiskOnChip is installed as drive C).
4. Copy any files needed into the DiskOnChip.
5. Remove the floppy diskette and reboot the system. The system will boot from the DiskOnChip, and will allow you to run and access any files that have been copied into the DiskOnChip.

Configuring the DiskOnChip 2000 as the First Drive

You can configure the DiskOnChip to be installed as the last drive (default), or as the first drive in the system. When configured as the last drive, the DiskOnChip is installed as disk D if there is another hard drive installed, and as drive C if no other hard disk is installed. When configured as the first drive, the DiskOnChip is always installed as drive C. The DiskOnChip is shipped from the factory, configured to install as the last drive.

☛ **To configure the DiskOnChip to be installed as the first drive, proceed as follows:**

1. Boot the system and make sure the DiskOnChip is installed correctly as drive D.
2. At the DOS prompt type:

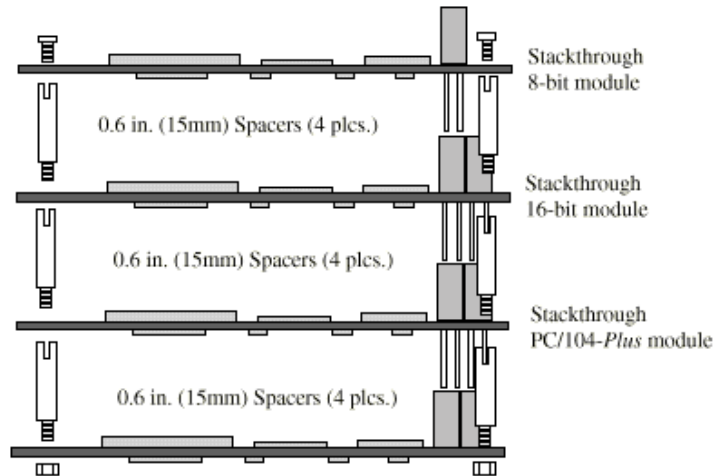
`DUPDATE D: /FIRST /S:DOC2000.EXB`

After re-booting the system, the DiskOnChip will appear as drive C:

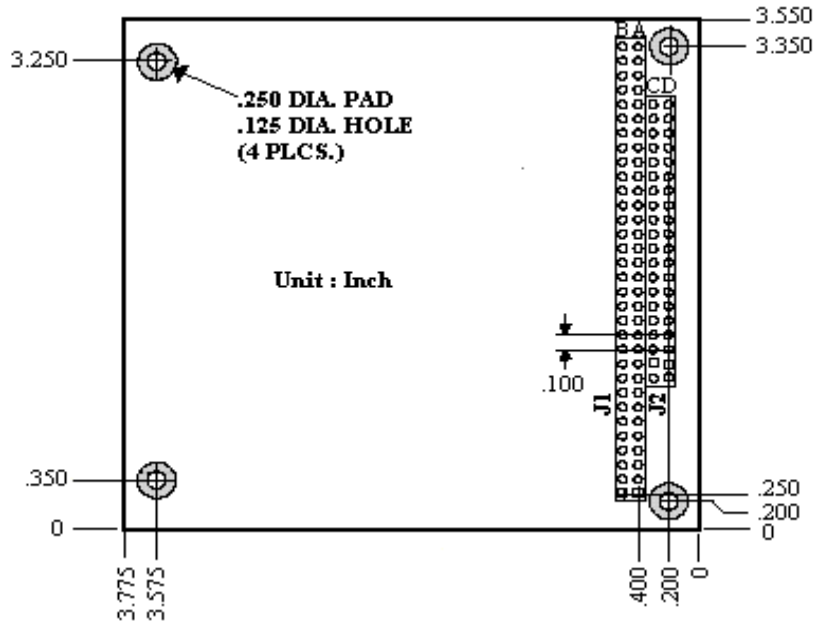
Appendix C: Installing PC/104 Modules

The WCP-640 provides the standard PC/140 connector to give you the flexibility to attach PC/104 module.

- **Please follow these steps to install the PC/104 modules to the WCP-640:**
1. Set all jumpers or switches for the WCP-640. Once the PC/104 module is installed you may have difficulty setting these.
 2. Seat the PC/104 module male connector into the WCP-640 CN12.
 3. Use the spacers and screws to secure the PC/104 module onto the WCP-640.



PC/104 : Module Dimensions



Appendix D: Optional Cables

Part number	Cable Description	WCP-640 Connector	Terminating Connector
46-I000X3-00	Auxiliary Power cable	CN1	Male ATX power control connector
46-I000PM-00	Printer+COM Port cable	LPT1 COM2	25-pin Female DSUB + 9-pin male DSUB
46-IDEFDC-01	Dual 3.5" Floppy cable + 35" IDE cable	IDE1+FDC1	34-pin Dual floppy + 40-pin 2.54mm Dual IDE
46-I000KP-00	Keyboard & PS/2 Mouse	JKBMS1	5-pin mini-circular DIN 6-pin circular DIN
46-I00USB-00	USB port cable	USB1	Two-channel USB port

User's Guide for WCP-640 Compact Disk

CD-WCP-640 contains folders of drivers, utilities and manuals for the WCP-640 Industrial PC:

1. VGA: This folder contains VGA driver programs to support the following operation systems:

- (1) Win95
- (2) Win98
- (3) WinNT3x
- (4) WinNT4x

To set up VGA driver for specific OS, you should boot your system first, and enter its "Device Manager" to install the driver into the system itself.

The driver programs contained in the VGA folder are not autorun programs.

2. LAN: This folder contains LAN driver of RTL8139C DMI Instrumentation to support the following operation systems:

- (1) Win95
- (2) Win98
- (3) Win2000
- (3) WinNT
- (4) Linux
- (5) SCO 4.x/5.x
- (6) SCO UnixWare 7.x

To set up LAN driver of RTL8139C DMI, click direct to the autorun program "DMI", and the program will automatically guide you through the whole setup with respect the operation system you are running.

3. VIA4in1: This folder contains VIA 4-in-1 drivers for Win9X and WinNT.

4. Tools: This folder contains one Award BIOS update program :

Awdflash: This program is for Award BIOS updating for Windows9x and WinNT.
To execute this program, please refer to BIOS update procedures provided by your IPC vendor or in the IPC manual.

5. Manual: This folder holds the User's Manual












6. Quicksetup: This folder holds the WCP-640 quick setup illustrations with PDF file format.

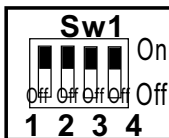
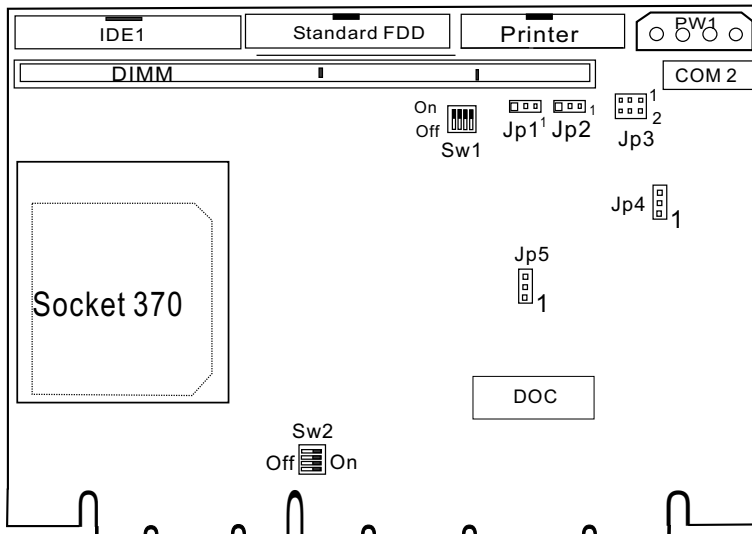
7. Readme: Readme is the Readme file shown hereby.



Filename: 640Readme
Directory: C:\EngManual\WCP640\640Text
Template: C:\Documents and Settings\Ken.KEN2000\Application
Data\Microsoft\Templates\Normal.dot
Title: User's Guide of WBL661 Compact Disk
Subject:
Author: Ken Liu
Keywords:
Comments:
Creation Date: 6/15/2000 10:40 AM
Change Number: 9
Last Saved On: 9/5/2000 11:52 AM
Last Saved By: Ken
Total Editing Time: 48 Minutes
Last Printed On: 9/5/2000 1:41 PM
As of Last Complete Printing
Number of Pages: 1
Number of Words: 234
Number of Characters: 1,180


WCP-640

Switches and Jumpers Setting

Jp1 Watch Dog Timer Action Select	Jp2 Real Time Clock Select	Jp3 COM 2 RI Pin Voltage	Jp4 Clock Signal Select	Jp5 LCD Voltage Select
 2-3 closed for system reset (Default)	 1-2 closed for Normal operation (Default)	 1-2 for RI (Default)	 1-2 for SHFCLK (Default)	 2-3 for +3.3V (Default)
 1-2 closed for IRQ15	 2-3 closed for Clearing CMOS	 3-4 for +5V	 2-3 for PCLK	 1-2 for +5V
		 5-6 for +12V		

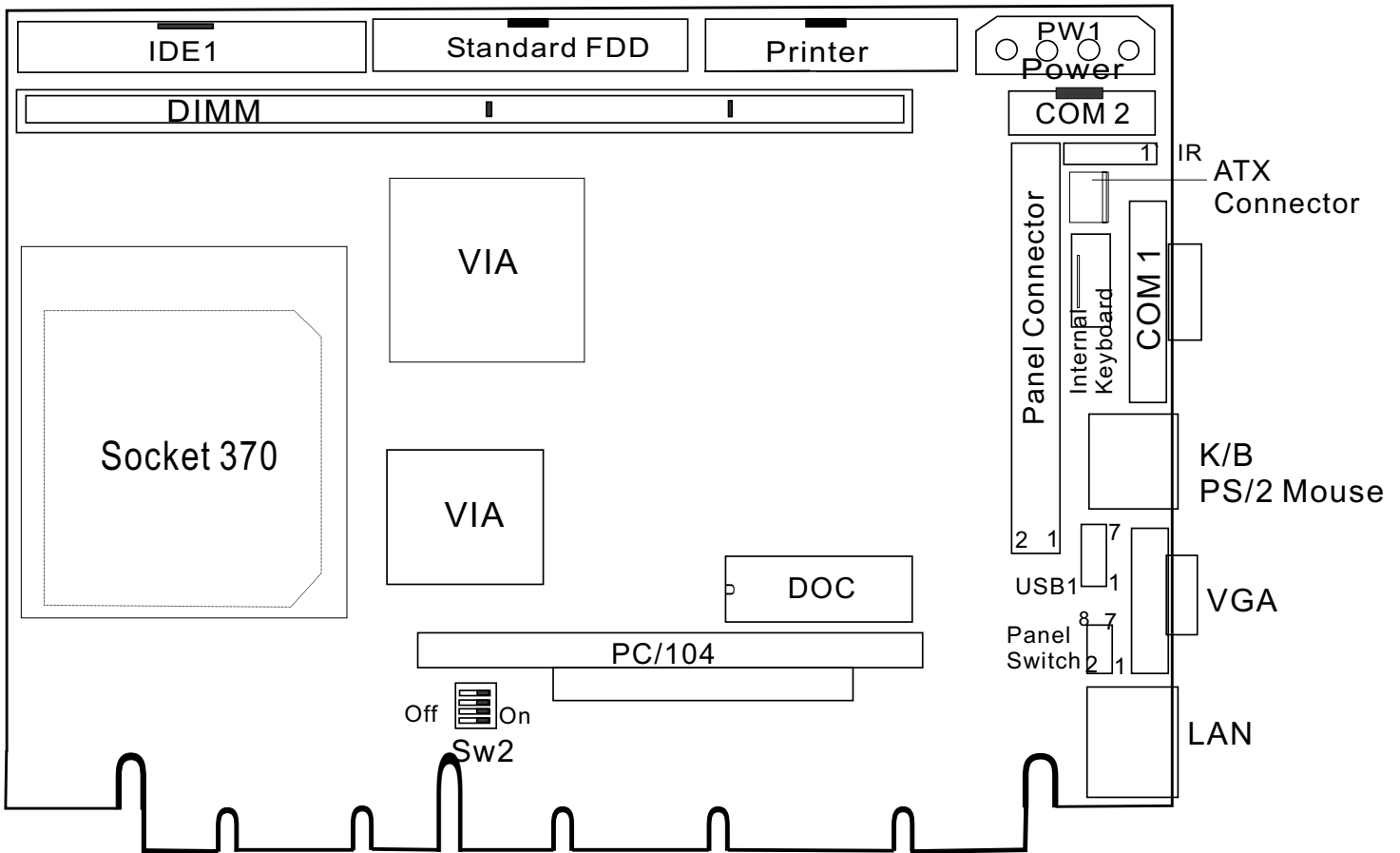


Panel Type	Sw1	Panel Type																
 On Off Off Off Off Off Off Off <table border="1"> <tr><td>1024x600 TFT</td></tr> <tr><td>1024x600DSTN</td></tr> <tr><td>1280x1024 DSTN</td></tr> <tr><td>1024x768 TFT</td></tr> <tr><td>800x600 DSTN</td></tr> <tr><td>800x600 DSTN</td></tr> <tr><td>800x600 TFT</td></tr> <tr><td>800x600 TFT</td></tr> </table>	1024x600 TFT	1024x600DSTN	1280x1024 DSTN	1024x768 TFT	800x600 DSTN	800x600 DSTN	800x600 TFT	800x600 TFT	 On Off Off On Off Off Off On On Off Off On Off On Off On On On Off On Off Off On On On Off On On Off On On On On On On On <table border="1"> <tr><td>800x600 TFT</td></tr> <tr><td>1024x768 TFT</td></tr> <tr><td>640x480 18-bit TFT</td></tr> <tr><td>640x480 Sharp TFT</td></tr> <tr><td>1024x768 DSTN</td></tr> <tr><td>1024x768 DSTN</td></tr> <tr><td>1280x1024 TFT</td></tr> <tr><td>1024x768 DSTN</td></tr> </table>	800x600 TFT	1024x768 TFT	640x480 18-bit TFT	640x480 Sharp TFT	1024x768 DSTN	1024x768 DSTN	1280x1024 TFT	1024x768 DSTN	
1024x600 TFT																		
1024x600DSTN																		
1280x1024 DSTN																		
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800x600 TFT																		
800x600 TFT																		
1024x768 TFT																		
640x480 18-bit TFT																		
640x480 Sharp TFT																		
1024x768 DSTN																		
1024x768 DSTN																		
1280x1024 TFT																		
1024x768 DSTN																		

Sw2	DOC Address					
 On Off Off Off Off Off Off Off <table border="1"> <tr><td>DOC Disabled</td></tr> <tr><td>D0000 (Default)</td></tr> <tr><td>D4000</td></tr> <tr><td>D8000</td></tr> <tr><td>DC000</td></tr> </table>	DOC Disabled	D0000 (Default)	D4000	D8000	DC000	
DOC Disabled						
D0000 (Default)						
D4000						
D8000						
DC000						

WCP-640

Connectors Location and Installation



CN4 : Panel Switch

	7-8	ATX Power SW
	5-6	Reset SW
	3-4	HDD LED
	1-2	Power LED

- Notes: (1) Power Connector ((PW1) is for both AT power and ATX power.
 (2) To take ATX power supply, insert one end of ATX Cable to
 CN1 ATX Connector and another end to ATX Connector on Backplane.



**All-in-One Socket 370 Single-Board Computer
with LCD, Ethernet,
PC/104, and PISA Bus Edge**

User's Manual

Chapter 2

AWARD BIOS Setup

Contents

3	Award BIOS Setup.....	1
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	Chipset Features Setup	10
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	PNP/PCI Configuration	16
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	Save & Exit Setup	24
	Exit Without Saving.....	25

3 Award BIOS Setup

The ROM chip of your WCP-640 board is configured with a customized Basic Input/Output System (BIOS) from Award Software Inc. The BIOS is a set of permanently recorded program routines that give the system its fundamental operational characteristics. It also tests the computer and determines how the computer reacts to instructions that are part of programs.

The BIOS is made up of code and programs that provide the device-level control for the major I/O devices in the system. It contains a set of routines (called POST, for Power-On Self Test) that check out the system when you turn it on. The BIOS also includes CMOS Setup programs, so no disk-based setup program is required. CMOS RAM stores information for:

- Date and time
- Memory capacity of the main board
- Type of display adapter installed
- Number and type of disk drives installed

The CMOS memory is maintained by a battery installed on the WCP-640 board. By using the battery, all memory in CMOS can be retained when the system power switch is turned off. The system BIOS also supports easy way to reload the CMOS data when you replace the battery or the battery power lose.

3.1 Quick Setup

In most cases, you can quickly configure the system by choosing the following main menu options:

1. Choose "LOAD SETUP DEFAULTS" from the main menu. This loads the setup default values from the BIOS Features Setup and Chipset Features Setup screens.
2. Choose "STANDARD CMOS SETUP" from the main menu. This option lets you configure the date and time, hard disk drive type, floppy disk drive type, primary display, and more.
3. In the main menu, press F10 ("Save & Exit Setup") to save your changes and reboot the system.

3.2 Entering the CMOS Setup Program

Use the CMOS Setup program to modify the system parameters to reflect the options installed in your system and to customize your system. For example, you should run the Setup program after you:

- Receive an error code at startup
 - Install another disk drive
 - Use your system after not having used it for a long time
 - Find the original setup missing
 - Replace the battery
 - Change to a different type of CPU
 - Run the Award Flash program to update the system BIOS
- Run the CMOS Setup program after you turn on the system. On-screen instructions explain how to use the program.

❶ **Enter the CMOS Setup program’s main menu as follows:**

1. Turn on or reboot the system. After the BIOS performs a series of diagnostic checks, the following message appears:
“Press DEL to enter SETUP”
2. Press the key to enter the CMOS Setup program. The main menu appears:

ROM PCI/ISA BIOS (2A6LGW0K)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	SAVE & EXIT SETUP
LOAD BIOS DEFAULTS	EXIT WITHOUT SAVING
LOAD SETUP DEFAULTS	
Esc : Quit	↑↓→← : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color
Time, Date, Hard Disk Type...	

3. Choose a setup option with the arrow keys and press <Enter>. See the following sections for a brief description of each setup option.

In the main menu, press F10 ("SAVE & EXIT SETUP") to save your changes and reboot the system. Choosing "EXIT WITHOUT SAVING" ignores your changes and exits the program. Pressing <ESC> anywhere in the program returns you to the main menu.

3.3 Menu Options

The main menu options of the CMOS Setup program are described in the table below and in the following sections of this chapter.

Option	Function
STANDARD CMOS SETUP	Configure the date & time, hard disk drive type, floppy disk drive type, primary display type, and more.
BIOS FEATURES SETUP	Configure advanced system options such as enabling/disabling cache memory and shadow RAM.
CHIPSET FEATURES SETUP	Configure advanced chipset register options such as DRAM timing.
POWER MANAGEMENT SETUP	Configure power management features such as timer selects.
PNP/PCI CONFIGURATION	Configure Plug 'n' Play IRQ assignments and PCI slots.
LOAD BIOS DEFAULTS	Loads BIOS default values. Use this option as a diagnostic aid if your system behaves erratically.
LOAD SETUP DEFAULTS	Loads optimized BIOS settings.
INTEGRATED PERIPHERALS	Configure onboard I/O functions.
SUPERVISOR PASSWORD	Configures the system so that a password is required when the system boots or you attempt to enter the CMOS setup program. When you log in with this password, you will be able to enter all menus in the CMOS Setup program.

WCP-640 AWARD BIOS Setup

Option	Function
USER PASSWORD	Configures the system so that a password is required when the system boots or you attempt to enter the CMOS setup program. When you log in with this password, you will be able to enter the CMOS Setup main menu, but you cannot enter other menus in the CMOS Setup program.
IDE HDD AUTO DETECTION	Automatically detects IDE hard disk drives and enters parameters into the Standard CMOS Setup.
SAVE & EXIT SETUP	Save changes of values to CMOS and exit the CMOS setup program.
EXIT WITHOUT SAVING	Abandon all CMOS changes and exit the CMOS setup program.

Standard CMOS Setup

☉ Use the Standard CMOS Setup option as follows:

1. Choose "STANDARD CMOS SETUP" from the main menu. The following screen appears:

```
ROM PCI/ISA BIOS
(2A65LGWOK)
STANDARD CMOS SETUP
```

Date (mm:dd:yy) : Fri, Jan 1 1999	
Time (hh:mm:ss) : 10 : 40 : 23	
HARD DISKS	TYPE SIZE CYLS HEAD PRECOMP LANDZ SECTOR MODE
Primary Master	: Auto 0M 0 0 0 0 0 AUTO
Primary Slave	: Auto 0M 0 0 0 0 0 AUTO
Drive A : 1.44M, 3.5 in.	
Drive B : None	
Video	: EGA/VGA
Halt On	: All, But Keyboard
Base Memory: 640K Extended Memory: 130048K Other Memory: 384K <hr/> Total Memory: 131072K	
ESC : Quit	↑↓→← : Select Item
F1 : Help	(Shift)F2 : Change Color
	PU/PD/+/- : Modify

2. Use the arrow keys to move between fields. Modify the selected field using the PgUp/PgDn/+/- keys. Some fields let you enter numeric values directly.

Option	Description
Date (mn/date/year)	Type the current date.
Time (hour:min:sec)	Type the current time (24-hour clock).
Hard Disks	Choose from "Auto", "User", or "None". If your drive is not one of the predefined types, choose "User" and enter the following drive specifications: cylinders, heads, WPcom, L-Zone, sectors, and mode. Consult the documentation received with the drive for the values that will give you optimum performance.

WCP-640 AWARD BIOS Setup

Option	Description
Drive A Drive B	Choose: 360K / 5.25" 1.2M / 5.25" 720K / 3.5" 1.44M / 3.5" 2.88M/3.5" or None
Video	Choose: MONO, CGA40, CGA80, or EGA/VGA
Halt On	Controls whether the system stops in case of an error detected during power up. Choose: All Errors No Errors All, But Keyboard (the default) All, But Diskette All, But Disk/Key

3. After you have finished with the Standard CMOS Setup program, press the <ESC> key to return to the main menu.

BIOS Features Setup

- ☉ Use the BIOS Features Setup option as follows:
1. Choose "BIOS FEATURES SETUP" from the main menu. The following screen appears:

ROM PCI/ISA BIOS (2A6LGW0K)
 BIOS FEATURES SETUP
 AWARD SOFTWARE, INC.

Anti-Virus Protection : Disabled CPU Internal Cache : Enabled External Cache : Enabled CPU L2 Cache ECC Checking : Enabled Quick Power On Self Test : Disabled Boot Sequence : C,A,SCSI Swap Floppy Drive : Disabled Boot Up Floppy Seek : Enabled Boot Up NumLock Status : On IDE HDD Block Mode : Enabled Memory Parity/ECC Check : Disabled Typematic Rate Setting : Disabled Typematic Rate (Chars/Sec) : 6 Typematic Delay (Msec) : 250 Security Option : Setup PCI/VGA Palette Snoop : Disabled OS Select For DRAM > 64MB : Non-OS2	Video BIOS Shadow : Enabled C8000-CBFFF Shadow : Disabled CC000-CFFFF Shadow : Disabled D0000-D3FFF Shadow : Disabled D4000-D7FFF Shadow : Disabled D8000-DBFFF Shadow : Disabled DC000-DFFFF Shadow : Disabled ESC : Quit ↑↓→← : Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults
---	---

2. Use the arrow keys to move between items and to select values. Modify the selected fields using the PgUp/PgDn keys. Press the <F1> “Help” key for information on the available options:

Item	Description
Anti-virus Protection	When enabled, any attempt to write to the boot sector and partition table will halt the system and cause a warning message to appear. If this happens, you can use an anti-virus utility on a virus-free, bootable floppy disk to reboot and clean your system. The default setting is Disabled.
CPU Internal Cache	Enables the CPU internal cache. The default setting is Enabled.
External Cache	Enables the external cache. The default setting is Enabled.
Quick Power On Self Test	Speeds up POST after turning on the computer. When enabled, this setting will shorten or skip some check items during POST.
Boot Sequence	By default, the BIOS attempts to first boot from drive A: and then, if unsuccessful, from drive C:. You can change this sequence from A, C, D~F, CD-ROM, SCSI, LS120, or ZIP.
Swap Floppy Drive	Swaps the drive designation for A: and B: floppy disk drives.
Boot Up Floppy Seek	When enabled, the BIOS will check whether there is a floppy disk drive installed. The default setting is Enabled.
Boot Up Num Lock Status	Choose On or Off. On puts the numeric keypad in Num Lock mode at boot-up. Off puts the numeric keypad in arrow key mode at boot-up.
Memory Parity/ECC Check	This item is used to enable or disable the onboard DRAM parity/ECC check function.
Typematic Rate Setting	Choose Enabled or Disabled. Enable this option to adjust the keystroke repeat rate. Adjust the rate via Typematic Rate Delay and Typematic Rate.
Typematic Rate (Chars/Sec)	Choose the rate at which a character keeps repeating.
Typematic Delay (Msec)	Choose the delay between holding down a key and when the character begins repeating.

WCP-640 AWARD BIOS Setup

Item	Description
Security Option	<p>Choose Setup or System. This lets you specify whether a password is required every time the system boots or only when an attempt is made to enter the CMOS Setup program.</p> <p>“Setup” – The password prompt only appears if you attempt to enter the CMOS Setup program.</p> <p>“System” – The password prompt appears each time the system is booted.</p> <p><i>Note: The password function is disabled by default. For a description of enabling the password function, refer to the section “Supervisor Password & User Password” later in this chapter.</i></p>
PCI/VGA Palette Snoop	Enabling this item informs the PCI/VGA card to keep silent when palette register is updated.
OS Select for DRAM>64MB	Set to OS/2 if your system is using OS/2 and has a memory size of more than 64MB.
Video BIOS Shadow	When enabled, the ROM BIOS on the video display card is copied into system DRAM to enhance performance. The default setting is Enabled.
Shadow Option Group	When enabled, the ROM on the expansion card with the specific addresses is copied into system DRAM. It will also reduce the memory available by between 640KB and 1024KB. The default setting for this feature is Disabled.

3. After you have finished with the BIOS Features Setup, press the <ESC> key to return to the main menu.

Chipset Features Setup

Use this option to enable/disable features of the main board's chipset registers. The chipset manages bus speed and access to system memory resources such as DRAM. It also coordinates the communications between the conventional ISA bus and the PCI bus. *These items should never need to be changed.* The default settings have been chosen because they provide the best operating conditions for your system.

The first chipset settings deal with CPU access to DRAM. The default timings have been carefully chosen and should only be altered if data is lost. Such a scenario might occur if your system has mixed-speed DRAM chips installed, so that greater delays may be required to preserve the integrity of data held in the slower memory chips.

Change these settings only if you are thoroughly familiar with the chipset.

☛ Use the Chipset Features Setup option as follows:

1. Choose "CHIPSET FEATURES SETUP" from the main menu. The following screen appears:

```
ROM PCI/ISA BIOS (2A6LGW0K)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.
```

<pre>Bank 0/1 DRAM Timing :SDRAM 8/10ns SDRAM Cycle Length :3 DRAM Clock :HCLK-33M Memory Hole :Disabled Read Around Write :Disabled Concurrent PCI/Host :Disabled System BIOS Cacheable :Disabled Video RAM Cacheable :Disabled OnChip USB : Enabled USB Keyboard Support : Disabled COM2 connect RS232/422 : RS232</pre>	<pre>Spread Spectrum :Disabled ESC : Quit ↑↓→← : Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults</pre>
--	---

2. Move between items and select values by using the arrow keys. Modify the selected fields using the PgUp/PgDn keys. For information on the various options, press the <F1> key.

Item	Description
Bank 0/1 DRAM Timing	This item is used to set DRAM timing parameters for SDRAM and EDO DRAM. The System BIOS will automatically detect which kind of DRAM is installed. When SDRAM is installed, there are six selections: SDRAM 8ns, SDRAM 10ns, Normal, Medium, Fast, and Turbo mode. When EDO RAM is installed, there are six selections: FP/EDO 60ns, FP/EDO 70ns, Normal, Medium, Fast, and Turbo mode. The default setting is Normal.
SDRAM Cycle Length	The values in this field were set according to the specification of the installed SDRAM type. The default value is 3 clocks. If your system has stability problems, change 3 to 2.
DRAM Clock	This item provides two choices for DRAM Clock: HOST clock or Host clock -33M
Memory Hole	Choose Disabled/15M-16M. When enabled, lets you reserve a system memory area of 15M - 16M for special ISA cards. The chipset accesses code/data of these areas from the ISA bus directly. Normally, these areas are reserved for memory-mapped I/O cards.
Read Around Write	To enable this item will optimize DRAM read & write. If a memory read is addressed to a location where a memory write is held in a buffer content, the memory read will not be sent to DRAM then.
Concurrent PCI/Host	Disabled, the CPU bus will be occupied(BPRI asserted) during the entire PCI operation. Enabled, the CPU bus is only requested before ADS#assertion
System BIOS Cacheable	Choose Enabled/Disabled. When enabled, caching of the system BIOS at F0000h-FFFFFh is allowed, enhancing system performance. However, if any program writes to this memory area, a system error may occur.

WCP-640 AWARD BIOS Setup

Item	Description
Video RAM Cacheable	Choose Enabled/Disabled. When enabled, caching of the video RAM at C0000h-F7FFFh is allowed, enhancing system performance. However, if any program writes to this memory area, a system error may occur.
OnChip USB	Enables/disables USB interface.
USB Keyboard Support	Enabled/Disabled USB Keyboard Support.
COM2 connect RS232/422	Configures the COM2 port to RS232 or RS422/485 protocol.
Spread Spectrum	Enable/Disable the clock generator spread spectrum.

3. After you have finished with the Chipset Features Setup, press the <ESC> key to return to the main menu.

Power Management Setup

The Power Management Setup controls the board's "green" features. To save energy, these features shut down the video display and hard disk drive.

☉ Use the Power Management Setup option as follows:

1. Choose "Power Management Setup" from the main menu. The following screen appears:

ROM PCI/ISA BIOS (2A6LGW0K)			
POWER MANAGEMENT SETUP			
AWARD SOFTWARE, INC.			
ACPI function : Disabled Power Management : User Define PM Control By APM : Yes Video Off After : Suspend-> Off Video Off Method : V/H SYNC+Blank MODEM Use IRQ : 3 Soft-Off by PWRBTN : Instant-Off HDD Power Down : Disabled Doze Mode : Disabled Suspend Mode : Disabled ** PM Events ** VGA : Off LPT & COM : LPT/COM HDD & FDD : ON DMA/Master : Off Modem Ring Resume : Disabled RTC Alarm Resume : Disabled Wake Up On LAN : Disabled	Primary INTR : ON IRQ3 (COM 2) : Primary IRQ4 (COM 1) : Primary IRQ5 (LPT 2) : Primary IRQ6 (Floppy Disk) : Primary IRQ7 (LPT1) : Primary IRQ8 (RTC Alarm) : Disabled IRQ9 (IRQ2 Redir) : Secondary IRQ10 (Reserved) : Secondary IRQ11 (Reserved) : Secondary IRQ12 (PS/2 Mouse) : Primary IRQ13 (Coprocessor) : Primary IRQ14 (Hard Disk) : Primary IRQ15 (Reserved) : Disabled		
		ESC : Quit ↑↓→← : Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults	

3. Move between items and select values by using the arrow keys. Modify the selected fields using the PgUp/PgDn keys. For information on the various options, press the <F1> key.

Item	Description
ACPI Function	Enables/disables the ACPI function.
Power Management	Choose Disable, User Define, Min Saving, or Max Saving. User Define: Lets you specify when the HDD and system will shut down. Min Saving: Predefined timer value of 1 hour. Max Saving: Predefined timer value of 1 minute.
PM Control by APM	Choose Yes/No for Advanced Power Management. If APM is used, you must run POWER.EXE under DOS v6.0 or higher.
Video Off Option	Choose the video off condition.
Video Off Method	This determines the manner in which the monitor is blanked. V/H SYNC+Blank: This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer. Blank screen: This option only writes blanks to the video buffer. If you don't have a "green monitor, use this item. DPMS: This option allows the BIOS to control the video card if it has the DPMS features.
MODEM Use IRQ	Choose the IRQ used by the modem.
Soft-Off by PWRBTN	Choose Instant-Off or Delay 4 Sec. Instant-Off: Causes the power to turn off immediately when you press the power button. Delay 4 Sec.: Causes the system to go to Suspend mode when you press the power button for less than 4 seconds. When you hold the button down for more than 4 seconds, the power goes off.
HDD Power Down	Sets the time for the HDD power down mode or disables it.
Doze Mode	Sets the time for Doze mode or disables it.
Suspend Mode	Sets the time for Suspend mode or disables it.
PM Events of VGA, LPT/COM, HDD/FDD	Enables or disables the detection of the COM port, LPT, HDD, and VGA activities for power down rate transition.

WCP-640 AWARD BIOS Setup

Item	Description
Modem Ring Resume	Choose Enable or Disable. When enabled, the system will turn on when the modem rings or by an instruction from a network server. <i>Note: This item will not appear when your system is using an AT power supply.</i>
RTC Alarm resume	Choose Enable or Disable. When enabled, the system will turn on at the specified date and time. <i>Note: This item will not appear when your system is using an AT power supply.</i>
Wake Up On LAN	To enable/Disable Wake Up On LAN function..
Primary INTR	Sets the detection of IRQ3-15 interrupt events on/off; any events occurring will awaken a system that has been powered down.

3. After you have finished with the Power Management Setup, press the <ESC> key to return to the main menu.

PNP/PCI Configuration

This option is used to configure Plug 'n' Play IRQ assignments and route PCI interrupts to designated ISA interrupts.

☉ Use the PCI Configuration Setup option as follows:

1. Choose "PCI Configuration Setup" from the main menu. The following screen appears:

ROM PCI/ISA BIOS (2A6LGW0K)
PNP/PCI CONFIGURATION
AWARD SOFTWARE, INC.

<p>PNP OS Installed : No Resources Controlled By : Manual Reset Configuration Data : Disabled</p> <p>IRQ-3 assigned to : Legacy ISA IRQ-4 assigned to : Legacy ISA IRQ-5 assigned to : PCI/ISA PnP IRQ-7 assigned to : Legacy ISA IRQ-9 assigned to : PCI/ISA PnP IRQ-10 assigned to : PCI/ISA PnP IRQ-11 assigned to : PCI/ISA PnP IRQ-12 assigned to : PCI/ISA PnP IRQ-14 assigned to : Legacy ISA IRQ-15 assigned to : Legacy ISA DMA-0 assigned to : PCI/ISA PnP DMA-1 assigned to : PCI/ISA PnP DMA-3 assigned to : PCI/ISA PnP DMA-5 assigned to : PCI/ISA PnP DMA-6 assigned to : PCI/ISA PnP DMA-7 assigned to : PCI/ISA PnP</p>	<p>CPU to PCI Write Buffer : Enabled PCI Dynamic Bursting : Enabled PCI Master 0 WS Write : Enabled PCI Delay Transaction : Enabled PCI#2 Access #1 Retry : Disabled</p> <p>Assign IRQ For USB : Enabled Assign IRQ For VGA : Disabled</p> <hr/> <p>ESC : Quit ↑↓→← : Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults</p>
--	---

3. Move between items and select values by using the arrow keys. Modify the selected fields using the PgUp/PgDn keys. For information on the various options, press the <F1> key.

Item	Description
PNP OS Installed	Choose Yes or No. When Yes is selected, the OS will assign an IRQ.
Resources Controlled By	Choose Auto or Manual. This option specifies whether resources are controlled by automatic or manual configuration.
Reset Configuration Data	Choose Enable or Disable. “Enable” – PNP configuration data is reset in BIOS. “Disable” – PNP configuration data is retained in BIOS.
IRQ-x Assigned to	Choose Legacy ISA or PCI/ISA PnP. Determines whether the IRQ is assigned to the ISA bus and thus is not available to any PCI slot.
DMA-x Assigned to	Choose Legacy ISA or PCI/ISA PnP. Determines whether the DMA is assigned to the ISA bus and thus is not available to any PCI slot.
CPU to PCI Write Buffer	Enables or disables CPU to PCI write buffer.
PCI Dynamic Bursting	Enables or disables PCI dynamic bursting.
PCI Master 0 WS Write	Enables or disables PCI master 0 WS write.
PCI Delay Transaction	Choose Enabled/Disabled if you have an ISA card compatibility problem. When enabled, this option lets you control the Delayed Transaction function of the chipset. This function is used to meet the latency of the PCI cycles to or from the ISA bus.
PCI#2 Access #1 Retry	This item is used to enable or disable PCI#2 access #1 retry.
Assign IRQ for USB	Choose Enabled/Disabled to specify whether USB uses an IRQ or not.
Assign IRQ For VGA	Choose Enable or Disable. Specifies whether the VGA uses an IRQ or not.

3. After you have finished with the PCI Configuration Setup, press the <ESC> key to return to the main menu.

Load BIOS Defaults

This option loads the troubleshooting default values permanently stored in the BIOS ROM. This is useful if you are having problems with the main board and need to debug or troubleshoot the system. The loaded default settings do not affect the Standard CMOS Setup screen.

```
ROM PCI/ISA BIOS (2A6LGW0K)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.
```

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION SETUP	
LOAD BIOS DEFAULTS	LOAD BIOS Defaults (Y/N)? Y
LOAD SETUP DEFAULTS	SAVING

Esc : Quit
F10 : Save & Exit Setup

↑↓→← : Select Item
(Shift)F2 : Change Color

Time, Date, Hard Disk Type...

To use this feature, highlight it on the main screen and press <Enter>. A line will appear on the screen asking if you want to load the BIOS default values. Press the <Y> key and then press <Enter> if you want to load the BIOS defaults.

Load Setup Defaults

This option loads optimized settings stored in the BIOS ROM. The auto-configured settings do not affect the Standard CMOS Setup screen.

ROM PCI/ISA BIOS (2A6LGW0K)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	LOAD SETUP Defaults (Y/N)? Y
LOAD BIOS DEFAULTS	LOAD SETUP SAVING
LOAD SETUP DEFAULTS	
Esc : Quit	↑↓→← : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color
Time, Date, Hard Disk Type...	

Integrated Peripherals

Use this setup to configure onboard I/O functions.

☉ **Use the Integrated Peripherals option as follows:**

1. Choose "Integrated Peripherals" from the main menu. The following screen appears:

```
ROM PCI/ISA BIOS (2A6LGW0K)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

OnChip IDE Channel0      : Enabled
OnChip IDE Channel1      : Enabled
IDE Prefetch Mode        : Enabled
IDE Primary Master PIO    : Auto
IDE Primary Slave PIO    : Auto
IDE Primary Master UDMA  : Auto
IDE Primary Slave UDMA   : Auto
KBC Input Clock          : 8 Mhz
On Board FDC Controller  : Enabled

Onboard Serial Port 1    : 3F8/IRQ4
Onboard Serial Port 2    : 2F6/IRQ3
UART Mode Select         : Normal

Onboard Parallel Port    : 378/IRQ7
Parallel Port Mode       : SPP

Watch Dog Timer Select   : Disabled

ESC : Quit           ↑↓→← : Select Item
F1  : Help           PU/PD/+/- : Modify
F5  : Old Values    (Shift)F2 : Color
F6  : Load BIOS Defaults
F7  : Load Setup Defaults
```

2. Move between items and select values by using the arrow keys. Modify the selected fields using the PgUp/PgDn keys. For information on the various options, press the <F1> key.

Item	Description
OnChip IDE First/Second Channel	Enables/disables the first/second onboard PCI IDE.
IDE Prefetch Mode	Enables/disables the IDE prefetch mode.
Hot Key Power On	If this item is enabled, Hot Keys Ctrl-(F1 to F12) can be used as Power On Key.
KBC input clock	To choose keyboard clock: 6/8/12/16 MHz
On Board FDC Controller	to Enable/Disable this function.
Onboard Serial Port 1 and 2	Enables/disables the onboard serial port 1 and 2, respectively.
Onboard Parallel Port	Enables/disables the onboard parallel port.
Parallel Port Mode	To choose the parallel port mode: SPP; ECP; EPP; ECP+EPP
Watch Dog timer Select	To select Watch Dog Timer wait state time: 10/20/30/40 sec./1/2/4 min./Disabled

3. After you have finished with the setup, press the <ESC> key to return to the main menu.

Supervisor/User Password

The password options let you prevent unauthorized system boot-up or unauthorized use of CMOS Setup. The Supervisor Password allows both system and CMOS Setup program access; the User Password allows access to the system and the CMOS Setup Utility main menu.

The password functions are disabled by default. You can use these options to enable a password function or, if a password function is already enabled, change the password.

To change a password, first choose a password option from the main menu and enter the current password. Then type your new password at the prompt. The password is case sensitive and you can use up to 8 alphanumeric characters. Press <Enter> after entering the password. At the Next prompt, confirm the new password by typing it and pressing <Enter> again.

ROM PCI/ISA BIOS (2A6LGW0K)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION SETUP	LOAD BIOS DEFAULTS
LOAD BIOS DEFAULTS	LOAD SETUP DEFAULTS
Enter Password:	
SAVING	
Esc : Quit	↑↓→← : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color
Time, Date, Hard Disk Type...	

After you use this option to enable a password function, use the “Security Option” in “BIOS Features Setup” to specify whether a password is required every time the system boots or only when an attempt is made to enter the CMOS Setup program.

IDE HDD Auto Detection

If your system has an IDE hard disk drive, you can use this utility to detect its parameters and enter them into the Standard CMOS Setup automatically.

This utility will detect as many as four IDE drives if your system configuration supports that many. In sequence, a set of parameters for each drive will appear in the box. To accept the entries displayed, press the <Y> key. To skip to the Next drive, press the <N> key. If you accept the value, the parameters will appear listed beside the drive letter on the screen, and the program will attempt to detect the parameters for the Next drive. If you press the <N> key to skip rather than accept a set of parameters, zeroes are entered after that drive letter.

Any entries accepted will be automatically entered on the line for that drive in the standard CMOS setup. Any entries skipped are ignored and nothing is entered for that drive in standard CMOS setup.

The onboard IDE controller supports Enhanced IDE and has two connectors that support a total of four IDE devices.

☉ Enable the Auto Detect Hard Disk function as follows:

1. Choose "IDE HDD AUTO DETECTION" in the main menu and press <Enter>. The following screen appears:

```
ROM PCI/ISA BIOS (2A6LGW0K)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.
```

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master :								
Select Primary Master Option (N=Skip) : N								
OPTIONS	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE	
2(Y)	4310	524	255	0	8911	63	LBA	
1	4312	8912	15	65535	8911	63	NORMAL	
3	4312	557	240	65535	8911	63	LARGE	

Note: Some OSes (SCO-UNIX before V5.0) must use "NORMAL" for installation

ESC : Skip

2. Press <ESC> to exit to the main menu.

If you are setting up a hard disk drive that supports LBA mode, three lines will appear in the parameter box. Choose the line that lists LBA or an LBA drive. Do not choose Large or Normal.

Save & Exit Setup

This function automatically saves all CMOS vales before leaving Setup.

ROM PCI/ISA BIOS (2A6LGW0K)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION SETUP	SAVING
LOAD BIOS DEFAULTS	
LOAD SETUP DEFAULTS	
Save to CMOS and Exit (Y/N) ? Y	
Esc : Quit	↑↓→← : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color
Time, Date, Hard Disk Type...	

Exit Without Saving

Use this function to exit Setup without saving the CMOS values.

ROM PCI/ISA BIOS (2A6LGW0K)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	SETUP
LOAD BIOS DEFAULTS	SAVING
LOAD SETUP DEFAULTS	
Esc : Quit	↑↓→← : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color
Time, Date, Hard Disk Type...	

End of Award BIOS Setup



**All-in-One Socket 370 Single-Board Computer
with LCD, Ethernet,
PC/104, and PISA Bus Edge**

User's Manual

Chapter 3

**Drivers
and
Utilities Setup**

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4 Drivers and Utilities

The WCP-640 Drivers and Utilities CD-ROM contains the following folders:

- VIA : VIA 4-in-1 drivers
- VGA: VGA drivers
- LAN: Ethernet driver
- Tools: Award BIOS Flash Utility
- Manuals: User's Manual for WCP-640
- Readme: User's Guide for the CD-ROM

This chapter describes installing software from the Drivers and Utilities CD-ROM. You may have received floppy disks instead of a CD-ROM, in which case you will need to insert Disk 1 into your floppy disk drive and run the software from the floppy disks.

4.1 Installing the VIA 4-in-1 Drivers

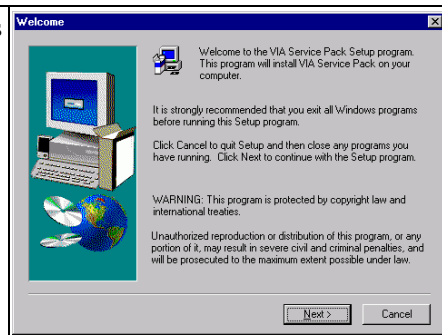
The VIA 4-in-1 driver is suitable for the WCP-640 chipset using Windows 95, 98, or NT. This driver will install the IDE Busmaster, VIA AGP, IRQ Routing, and VIA ACPI Registry.

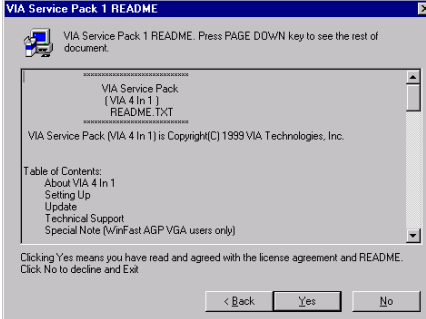
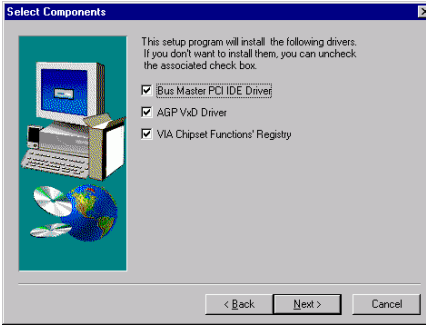
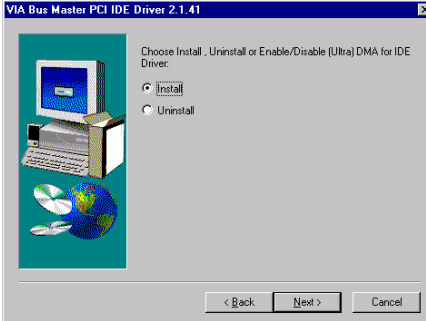
If you are using Windows 98 SE, you do not need to install the 4-in-1 driver as the IRQ Routing Driver and the ACPI Registry are already incorporated into the operating system. Users with Windows 98 SE may update the IDE Busmaster and AGP drivers by installing them individually.

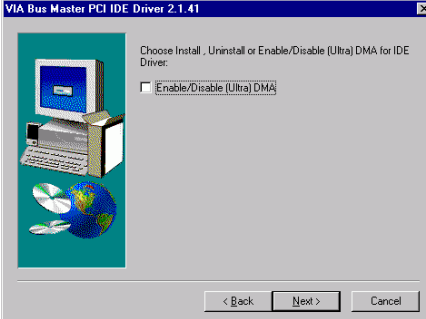
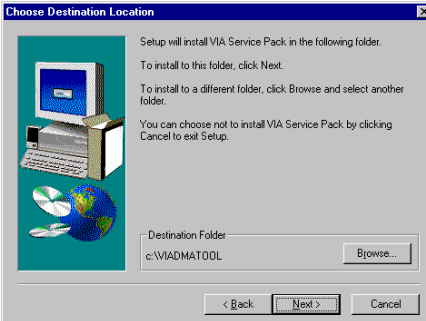

Installation for Windows 95/98

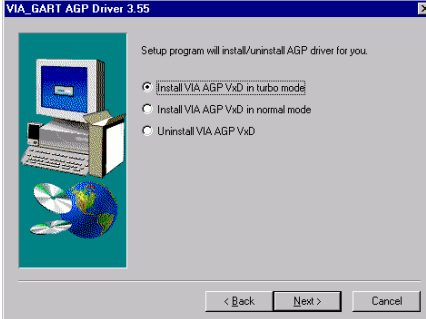
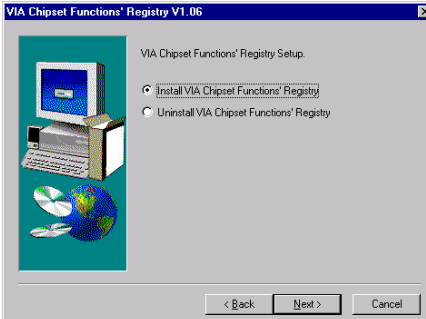
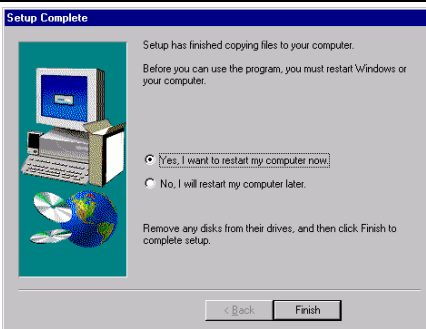
- Install the drivers for Windows 95/98 as follows:

1. Insert the Drivers and Utilities CD into the CD-ROM drive (example E:) and run the setup.exe program from the directory (E:\VIA) of this CD. The setup screen will appear. Click **“Next”** to continue.



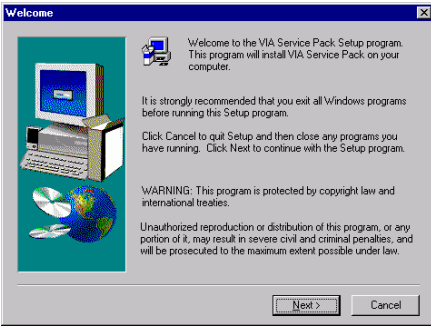
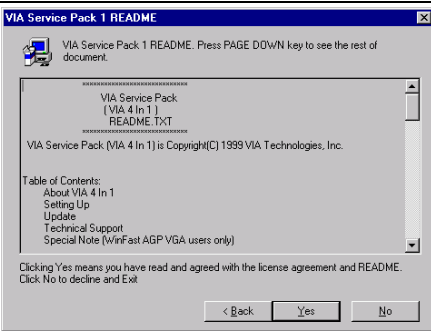
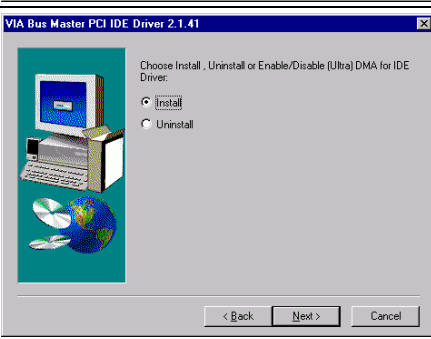
<p>2. Click “Yes” when you have read and agree with the license and README.</p>	 <p>The screenshot shows a dialog box titled "VIA Service Pack 1 README". It contains a scrollable text area with the following content: "VIA Service Pack (VIA 4 In 1) README.TXT", "VIA Service Pack (VIA 4 In 1) is Copyright(C) 1999 VIA Technologies, Inc.", and a "Table of Contents" with items: "About VIA 4 In 1", "Setting Up", "Update", "Technical Support", and "Special Note (WinFast AGP VGA users only)". Below the text area, it says "Clicking Yes means you have read and agreed with the license agreement and README. Click No to decline and Exit." At the bottom, there are three buttons: "< Back", "Yes", and "No".</p>
<p>3. Select all items and click “Next”.</p>	 <p>The screenshot shows a dialog box titled "Select Components". It contains a list of components to be installed, each with a checked checkbox: "Bus Master PCI IDE Driver", "AGP VxD Driver", and "VIA Chipset Functions' Registry". To the left of the list is an icon of a computer monitor and keyboard. Below the list, there are three buttons: "< Back", "Next >", and "Cancel".</p>
<p>4. If your HDD supports Ultra DMA mode, select “Install” and click “Next” to install the IDE driver. You can also uninstall the IDE driver from here.</p>	 <p>The screenshot shows a dialog box titled "VIA Bus Master PCI IDE Driver 2.1.41". It contains a list of options for the IDE driver: "Install" (selected with a radio button), "Uninstall", and "Enable/Disable (Ultra) DMA for IDE Drives". To the left of the list is an icon of a computer monitor and keyboard. Below the list, there are three buttons: "< Back", "Next >", and "Cancel".</p>

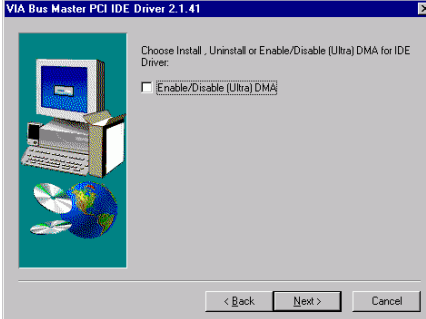
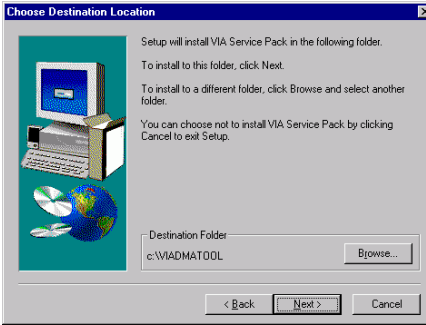

<p>5. Select “Enable/Disable (Ultra) DMA” and click “Next”.</p>	
<p>6. Click “Next” to install to the default folder. To install to a different folder, click “Browse” and select another folder.</p>	
<p>7. Select the program folder and click “Next” to continue.</p>	

<p>8. Select “Install VIA AGP VxD in turbo mode” and click “Next”.</p>	
<p>9. Select “Install VIA Chipset Functions’ Registry” and click “Next”.</p>	
<p>10. Click “Finish” to reboot your system.</p>	

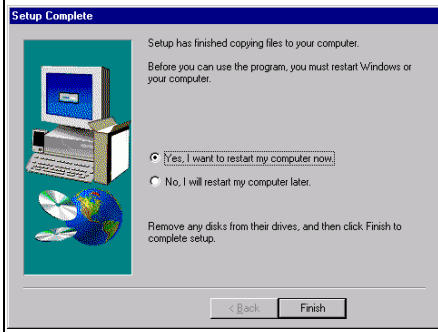
Installation for Windows NT

➤ Install the drivers for Windows NT as follows:

<p>1. Insert the Drivers and Utilities CD into the CD-ROM drive (example E:) and run the setup.exe program from the directory (E:\VIA) of this CD. The setup screen will appear. Click “Next” to continue.</p>	
<p>2. Click “Yes” when you have read and agree with the license and README.</p>	
<p>3. If your HDD supports Ultra DMA mode, select “Install” and click “Next” to install the IDE driver. You can also uninstall the IDE driver from here.</p>	

<p>4. Select “Enable/Disable (Ultra) DMA” and click “Next”.</p>	
<p>5. Click “Next” to install to the default folder. To install to a different folder, click “Browse” and select another folder.</p>	
<p>6. Select the program folder and click “Next” to continue.</p>	

7. Click **“Finish”** to reboot your system.

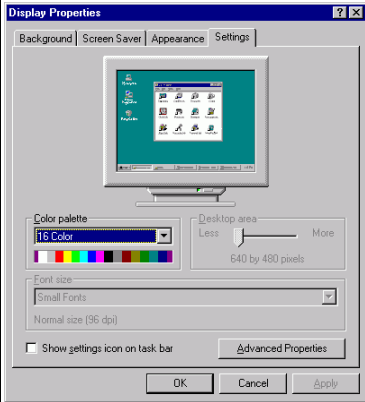
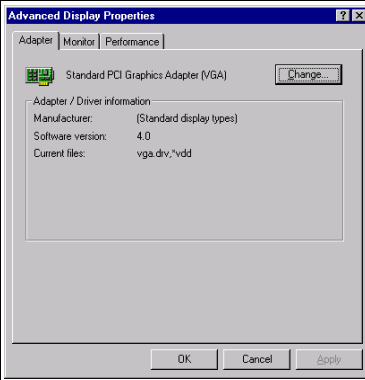



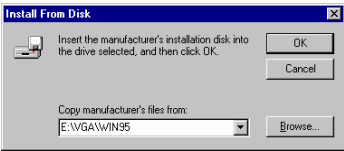
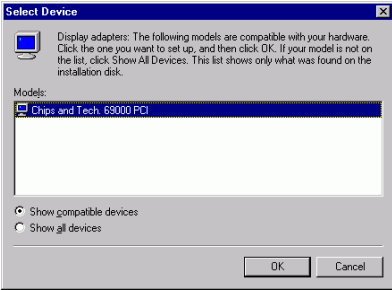
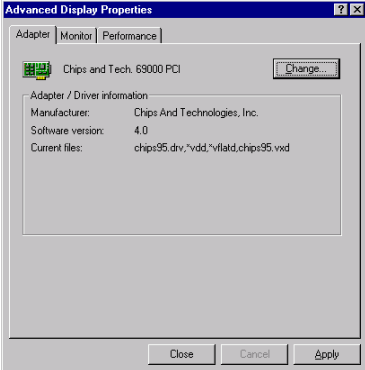
4.2 Installing the VGA Drivers

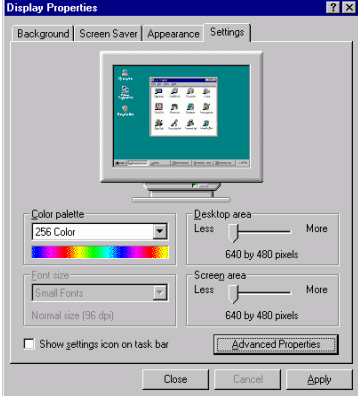
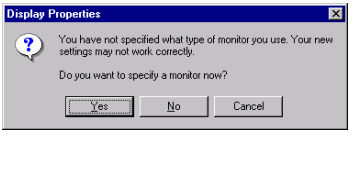
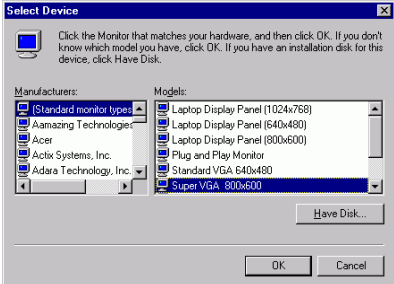
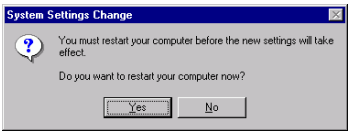
The WCP-640 uses a C&T 69000/69030 VGA chipset. It supports many popular flat panel and CRT displays. With a C&T 69000 VGA chipset, 2MB of memory can drive the display with resolutions up to 1024 x 768 with 64K colors. With a C&T 69030 VGA chipset, 4MB of memory can drive the display with resolutions up to 1024 x 768 with 16M colors.

Installation for Windows 95/98

☉ Please install the drivers for Windows 95/98 as follows:

<p>1. Click “Start”, go to “Settings” and click “Control Panel”. Choose the “Display” icon and double-click the icon. Select the “Settings” tab, then click “Advanced Properties”. The <i>Advanced Display Properties</i> screen appears.</p>	
<p>2. Select the “Adapter” tab and click “Change” to continue.</p>	

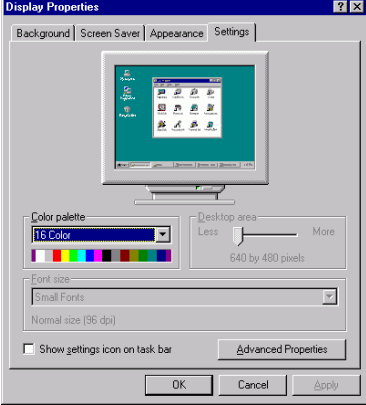
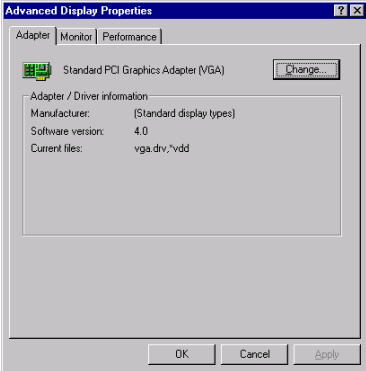
<p>3. In the <i>Select Device</i> dialog box, click “Have Disk”.</p>	
<p>4. Insert the Drivers and Utilities CD into the CD-ROM drive (example E:). Click Browse to find the INF file. For Windows 95, the “chips95.inf” file is located at E:\vga\win95; for Windows 98, the “chips98.inf” file is located at E:\vga\win98.</p>	
<p>5. Select the highlighted item and click “OK”.</p>	
<p>6. Click the “Apply” button.</p>	


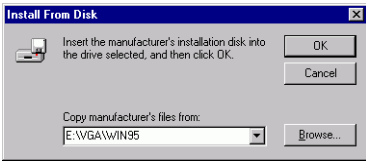
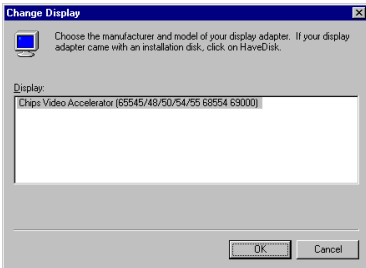
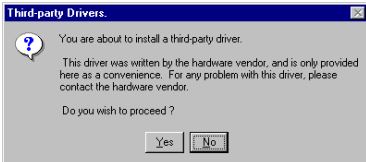
<p>7. In the Display Properties dialog box, click “Apply”.</p>	
<p>8. Click “Yes” to specify a monitor. You also select “No” to specify a monitor later after the setup is complete and you have rebooted.</p>	
<p>9. Choose the display type that you have and click “OK”.</p>	
<p>10. Click “Yes” to restart the system for the new settings to take effect.</p>	

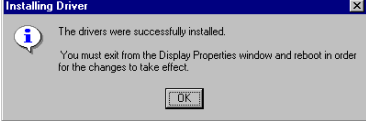
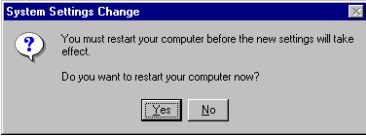
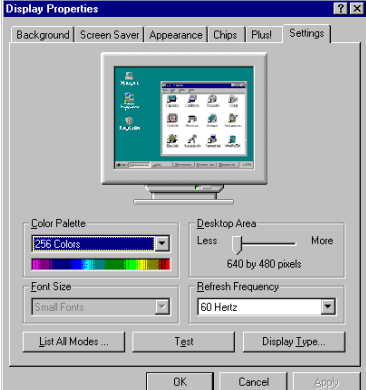
Installation for Windows NT

Before you start to install the drivers for Windows NT 4.0, you should install the Windows NT 4.0 Service Pack 3 or later. If you don't have the Windows NT 4.0 Service Pack 3 or later, please contact your software vendor or download it from Microsoft's web site.

➤ Please install the drivers for Windows NT as follows:

<p>1. Click “Start”, go to “Settings” and click “Control Panel”. Choose the “Display” icon and double-click the icon. Select the “Settings” tab, then click “Advanced Properties”. The <i>Advanced Display Properties</i> screen appears.</p>	
<p>2. Select the “Adapter” tab and click “Change” to continue.</p>	

<p>3. In the <i>Select Device</i> dialog box, click “Have Disk”.</p>	
<p>4. Insert the Drivers and Utilities CD into the CD-ROM drive (example E:). Click Browse to find the INF file. For Windows NT, the “chipsnt.inf” file is located at E:\vga\winNT.</p>	
<p>5. Select the highlighted item and click “OK”.</p>	
<p>6. Click “Yes” to proceed.</p>	

<p>7. Click “OK” to complete the installation.</p>	 <p>The screenshot shows a dialog box titled "Installing Driver" with an information icon. The text inside reads: "The drivers were successfully installed. You must exit from the Display Properties window and reboot in order for the changes to take effect." There is an "OK" button at the bottom.</p>
<p>8. Click “Yes” to restart the system for the new settings to take effect.</p>	 <p>The screenshot shows a dialog box titled "System Settings Change" with a question mark icon. The text inside reads: "You must restart your computer before the new settings will take effect. Do you want to restart your computer now?" There are "Yes" and "No" buttons at the bottom.</p>
<p>9. After the system has restarted, repeat step 1. Adjust the display resolution and color. Click “Test” to see the result. If the setting is correct, then click “OK” to save the setting.</p>	 <p>The screenshot shows the "Display Properties" dialog box with the "Settings" tab selected. It features a preview window showing a desktop with icons. Below the preview, there are settings for "Color Palette" (set to 256 Colors), "Font Size" (set to Small Fonts), "Desktop Area" (set to 640 by 480 pixels), and "Refresh Frequency" (set to 60 Hertz). There are buttons for "List All Modes...", "Test", "Display Type...", "OK", "Cancel", and "Apply".</p>

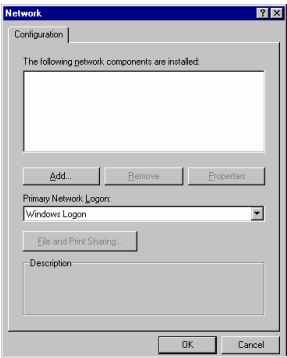
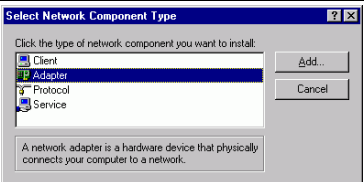
4.3 Installing the Ethernet Drivers

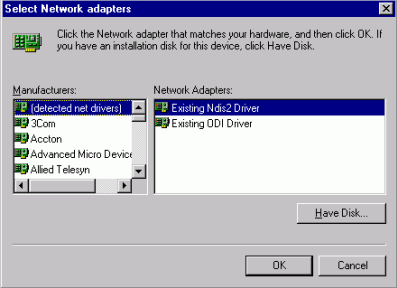

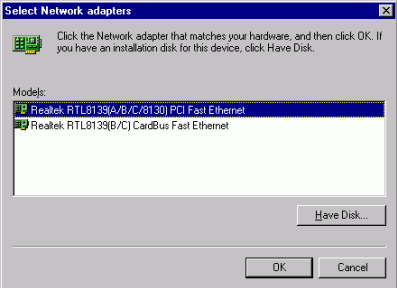
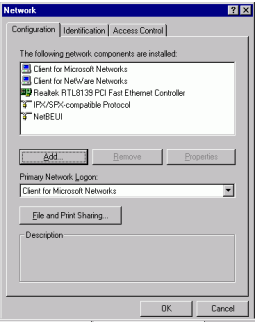
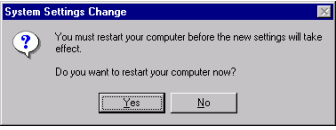
The WCP-640 has a high-performance Ethernet chipset that provides 32-bit performance, PCI bus master capability, full compliance with the IEEE 802.3u 100Base-T specification, and IEEE 802.3x Full Duplex Flow Control. It supports the Advanced Configuration Power Management Interface (ACPI), PCI power management for modern operating systems that is capable of Operating System Directed Power Management (OSPM) to achieve the most efficient power management. It also supports remote wake-up in both ACPI and APM environments.

The Ethernet port provides a standard RJ-45 jack. The WCP-640 system BIOS incorporates network boot ROM image files for the network boot feature. It can be enabled or disabled by setting the “Integrated Peripherals” option in BIOS Setup.

Installation for Windows 95/98


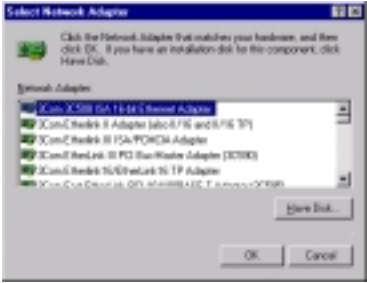
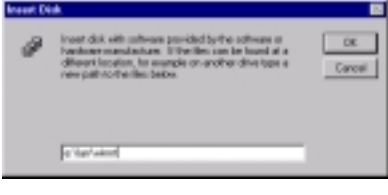
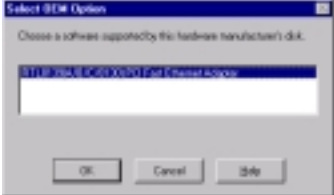
☉ Please install the drivers for Windows 95/98 as follows:


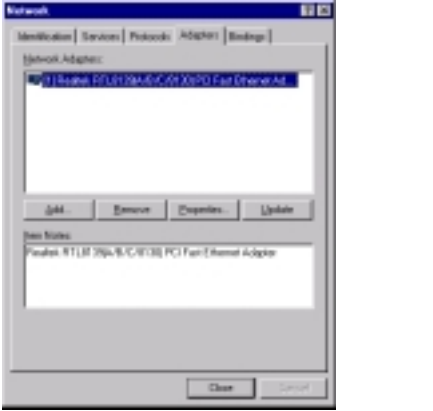
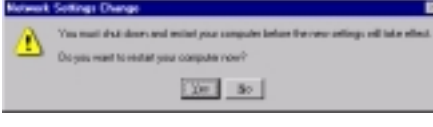
<p>1. Click “Start”, go to “Settings” and click “Control Panel”. Choose the “Network” icon and double-click the icon. The Configuration screen will appear. Click “OK” to continue.</p>	
<p>2. Select “Adapter” and click “Add”.</p>	

<p>3. Click “Have Disk” to continue.</p>	
<p>4. Insert the Drivers and Utilities CD into the CD-ROM drive (example E:). Click Browse to find the INF file. The file is located at E:\lan\win9598.</p>	
<p>5. Select “Realtek RTL8139 (A/B/C/8130) PCI Fast Ethernet” and click “OK”.</p>	
<p>6. Set the configuration of the related items and click “OK”.</p>	
<p>7. Click “Yes” to restart the system for the new settings to take effect.</p>	

Installation for Windows NT

☉ Please install the drivers for Windows NT as follows:

<p>1. Click “Start”, go to “Settings” and click “Control Panel”. Choose the “Network” icon and double-click the icon. The Configuration screen will appear. Click “Add” to continue.</p>	
<p>2. Click “Have Disk” to continue.</p>	
<p>3. Insert the Drivers and Utilities CD into the CD-ROM drive (example E:). Click Browse to find the INF file. The file is located at E:\lan\winnt.</p>	
<p>4. Select “Realtek RTL8139 (A/B/C/8130) PCI Fast Ethernet” and click “OK”.</p>	

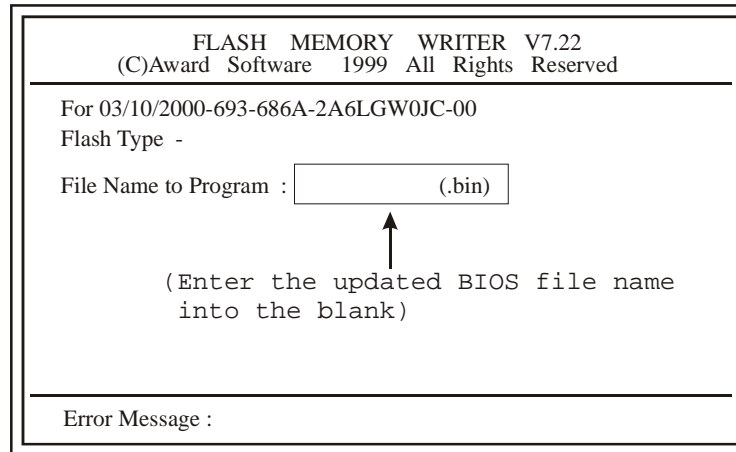
<p>5. Select “(1) Auto” for the Duplex Mode and click “OK”.</p>	
<p>6. Setting the configuration of the related items and click “OK”.</p>	
<p>7. Click “Yes” to restart the system for the new settings to take effect.</p>	

4.4 Using the BIOS Flash Utility

The BIOS of the WCP-640 mainboard can be updated by using the Award Flash Utility. A new version of the BIOS can be downloaded from the vendor's Web site.

➊ Update the system BIOS as follows:

1. Boot the system from the DOS prompt without loading any memory manager (such as HIMEM, EMM386, Qemm386...).
2. Insert the Drivers and Utilities CD into the CD-ROM drive (example E:) and execute the awdfash.exe program from the directory (E:\tools) of this CD. You will see a prompt like that below:



3. Enter the update BIOS file name (Example: WCP640A1.bin)
4. After loading the new BIOS code, the utility will prompt you to save the original BIOS code to disk. Press "Y" to store it as "BIOS.BIN".
5. After the old BIOS has been successfully saved, press "Y" to replace the BIOS.

Important! Do not interrupt or turn off system power during BIOS flashing.

6. Reboot the system and run the setup program again.

When you update the BIOS, if the updated BIOS date is older than the current BIOS date, you must disable the "System BIOS Cacheable" option in the Chipset Features Setup.

End of Drivers and Utilities