WF-22/22L

Brief Installation Guide

MN-168-2A1-10 Rev. 1.01

1. Specifications

■ CPU

- Supports Intel® Celeron™ 300A~533MHz processors (Based on 66MHz PPGA package)
- Supports 66 and 100MHz CPU external clock speeds
- Employs switching type regulators to stabilize CPU operation

■ Chipset

- Intel® 810 chipset (FW82810, FW82801AA and FW82802AB)
- Supports Ultra DMA 33/66 IDE protocol
- Supports Advanced Configuration and Power Management Interface (ACPI)

■ Memory(DRAM)

- Two 168-pin DIMM sockets support SDRAM modules
- Supports up to 256MB (512MB using 128Mb technology)
- Video Memory use UMA

■ System BIOS

- AWARD BIOS
- Supports Plug-and-Play (PnP)
- Supports Advanced Configuration Power Interface (ACPI)
- Supports Desktop Management Interface (DMI)
- Year 2000 compliant

■ Multi I/O Functions

- Floppy port supports up to 2.88MB, and 3 mode floppies
- Ultra DMA/66 bus master IDE supports up to 4 IDE devices (Including LS-120 MB floppy drive)
- Built-in Standard/EPP/ECP parallel port connector
- One built-in 16550 fast UART compatible serial port connector
- One built-in 16550 fast UART compatible serial port header
- Built-in PS/2 keyboard and PS/2 mouse port connectors
- Built-in standard IrDA TX/RX header
- Two built-in USB connectors (Can extend to four USB connectors)
- Built-in VGA connector
- Built-in Audio connector (Line-in, Line-out, MIC-in, Game port)
- Built-in Wake on Ring header
- Built-in 10/100Mbps network chipset and jack (***RJ45 type, WF-22L only***)

■ Miscellaneous

- FlexATX form factor
- Two PCI slots and one AMR slot
- Supports PS/2 keyboard and PS/2 mouse wake-up functions
- **W**ake **O**n **R**ing (WOR)
- Hardware monitoring: Included fan speed, voltages, and system environment temperature
- Board size: 229 * 191mm

2. Block Diagram

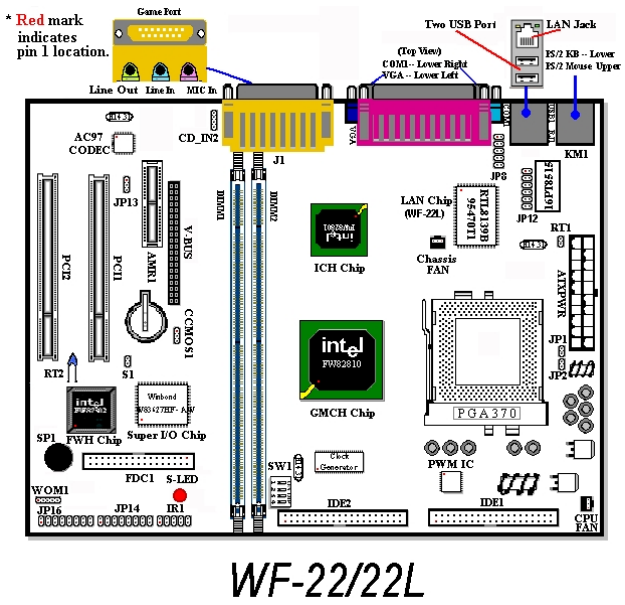


Figure 2-1. WF-22/22L Layout Diagram

3. Connectors Definitions & Jumper Settings

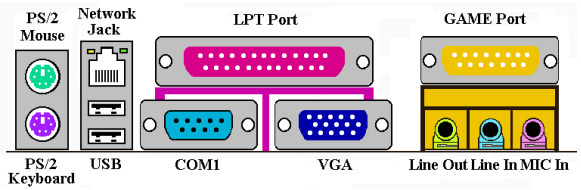


Figure 3-1. WF-22/22L MB Backside Connectors

■ I/O port connectors (Back Pannel)

KM1 Upper: PS/2 mouse connector
KM1 Lower: PS/2 keyboard connector
USB1: **U**niversal **S**erial **B**us connectors
RJ1:10/100 Mbps network jack (***RJ45 type, WF-22L only***)
COM1: Serial port COM1 connector
VGA: VGA output connector
LPT: Parallel port connector
J1 Line Out: Speaker out Jack
J1 Line In: Line in Jack
J1 MIC In: MIC in Jack
J1 Game Port: MIDI/Game port connector

■ I/O port connectors (Onboard)

IDE1: IDE channel 1
IDE2: IDE channel 2
FDC1: Floppy disk connector
ATXPWR: ATX power connector
AMR1: AMR Slot
V-BUS: V-BUS connector
IR1: Infrared remote header
WOR1: Wake on ring header
FAN 1 & 2: Fan power connector
JP8: Extend USB Header
JP12: USB port number selector*1
S1: Chassis open detect header
SW1: CPU standard settings switch
JP1: 100MHz or 66MHz selector*2
JP2: 100MHz or 66MHz selector*2
JP13: CODEC Selector*3
JP14: LEDs header*4
JP16: Function header*5
CD_IN2: Internal CD-ROM audio out cable connection header
CCMOS1: CMOS discharge header
LED1: Stand-By LED*6

■ Others

RT2: Built-in Thermistor for environment temperature detection

■ CMOS Discharge Setting

CCMOS 1-2 close: Operation of normal CMOS data
2-3 close: Clear saved CMOS data

■ Note

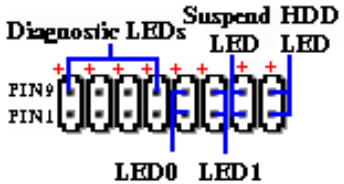
***1:** These jumpers are used to set how many USB ports you will use.

When you use two USB connectors (Onboard USB ports), the JP12 pins 1-2, 3-4, 9-10 and pins 11-12 have to be shorted. If you use the USB-HUB adapter to connect to JP8 for two additional USB ports, you have to set JP12 pins 5-6 and pins 7-8 to be shorted.

***2:** JP1 and JP2 have to be set at the same time. When JP1 and JP2 are set to short, the system bus speed is 66MHz. When JP1 and JP2 set to open, the system bus speed is 100MHz.

***3:** Pin 1-2 short, disable the AMR CODEC. Pin 2-3 short, disable the onboard CODEC.

***4:** The LEDs header (JP14) allows you to connect LEDs show you the status of different situations on the front panel. Pin 1-9, 2-10, 3-11, 4-12 are system diagnostic LEDs. Pin 5-13 is LED0, and shows the Rx/Tx status. Pin 6-14 is LED1, and shows the 10/100Mbps speed. Pin 7-15 is LED1, and is for the suspend LED. Pin 8-16 is HDD LED and is for the HDD active status display.



JP14 Header

Installing the diagnostic LEDs connector

JP14 Pin 1 and Pin 9, Pin 2 and Pin 10, Pin 3 and Pin 11, Pin 4 and Pin 12:

These LEDs will show you the diagnostic situation of your computer. You can use the LEDs status to easily judge the current situation or failure of your system. The following table explains the LEDs display.

Pin number	Name or significance of signal
JP14 Pin 1	Control signal
JP14 Pin 9	Ground
JP14 Pin 2	Control signal
JP14 Pin 10	Ground
JP14 Pin 3	Control signal
JP14 Pin 11	Ground
JP14 Pin 4	Control signal
JP14 Pin 12	Ground

Installing the LAN LED connector

JP14 Pin 5 and Pin 13 (LED0), JP14 Pin 6 and Pin 14 (LED1): These headers have a specific orientation. Connect the two-threaded RX/TX LED connector to the LED0 header at JP14. Connect the two-threaded 10/100Mbps LED connector to the LED1 header at JP14.

Pin number	Name or significance of signal
JP14 Pin 5	RX/TX LED active
JP14 Pin 13	LED Power
JP14 Pin 6	RX/TX LED active
JP14 Pin 14	LED Power

Installing the suspend LED connector

JP14 Pin 7 and Pin 15: This header has a specific orientation. Connect the two-threaded suspend LED connector to the JP14 header on the motherboard.

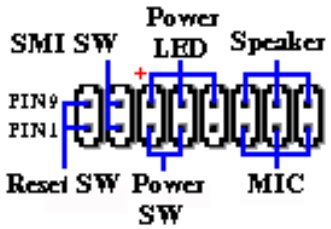
Pin number	Name or significance of signal
JP14 Pin 7	LED Power
JP14 Pin 15	Suspend LED active

Installing the HDD LED connector

JP14 Pin 8 and Pin 16: There is a specific orientation for JP14 pin 8 and pin 16. Connect the two-threaded IDE LED connector to the header on the motherboard

Pin number	Name of the signal or signification
JP14 Pin 8	HDD active
JP14 Pin 16	LED power

***5:** JP16 header contains several functions:



JP16 Header

Pin 1-9 is connected to the system reset switch.
Pin 2-10 is connect to the SMI switch
Pin 11-12-13 is connect to the power LED
Pin 3-4 is connect to the power switch
Pin 5 is no connection
Pin 14-15-16 is connect to the speaker out jack at front panel
Pin 6-7-8 is connect to the MIC jack at front panel

Installing hardware reset switch connector

JP16 Pin 1 and Pin 9: Attach the cable from the case's reset switch on the front panel to this header. Press and hold the reset button for at least one second to reset the system.

Pin number	Name or significance of signal
JP16 Pin 1	Ground
JP16 Pin 9	Reset input

Installing suspend switch connector

JP16 Pin 2 and Pin 10: There is no specific orientation for JP16 pin 2 and pin 10. Connect the two-threads suspend switch connectors on the front panel of the computer case to the correct pins on the header of the motherboard. Since most computer cases do not support this feature (usually only the motherboard will), in most cases you can ignore this connector.

Pin number	Name of the signal or signification
JP16 Pin 2	Ground
JP16 Pin 10	Suspend signal

Note: *If you enable the ACPI function in the BIOS setup, this function will not work.*

Installing the power LED connector

JP16 Pin 11 ~ Pin 13: There is a specific orientation for pins 11~13. Insert the three-threaded power LED cable to JP16 Pin 11~Pin 13. Double-check the orientation of the pins to the header on the motherboard.

Pin number	Name of the signal or signification	Item Name
JP16 Pin 11	+5VDC	POWER LED
JP16 Pin 12	Ground	POWER LED
JP16 Pin 13	Ground	POWER LED

Installing the power switch connector

JP16 Pin 3 and Pin 4: There is no specific orientation for JP16 pin 3 and pin 4. Connect the two-threaded power switch connector on the front panel of the computer case to the correct pins on the motherboard.

Pin number	Name of the signal or signification
JP16 Pin 3	Ground
JP16 Pin 4	Power On/Off Signal

Installing the speaker out jack connector

JP16 Pin 14 ~ Pin 16: There is no specific orientation for JP16 pin 14 to pin 16. Connect the three-threaded speaker cable to the JP16 header pins on the motherboard.

Pin number	Name of the signal or signification
JP16 Pin 14	**R**ight channel signal
JP16 Pin 15	Ground
JP16 Pin 16	**L**eft channel signal

Installing the MIC in jack connector

JP16 Pin 6 ~ Pin 8: There is no specific orientation for JP16 pin 6 to pin 8. Connect the three-threaded speaker cable to the JP16 header pins on the motherboard.

Pin number	Name of the signal or signification
JP16 Pin 6	MIC in signal
JP16 Pin 7	Ground
JP16 Pin 8	MIC in signal

Note: *This MIC input is **MONO** signal input.*

***6:** This LED is called the Stand-By LED. It shows if the motherboard is in the power on state, or is fully powered down. If this LED light is on, that means your motherboard is not fully powered down. You can't disassemble any components, add-on cards, CPU, or RAM modules in this state. You have to fully check and shutdown the system power, before this LED will turn off. Only then can you disassemble any components, add-on cards, CPU, or RAM module.

4. CPU Settings

■ SW1: CPU Standard Settings

External Clock Frequency	SW1			
	DS1	DS2	DS3	DS4
133.6	OFF	OFF	OFF	OFF
129	ON	OFF	OFF	ON
124	OFF	OFF	OFF	ON
119	ON	ON	ON	OFF
114	OFF	ON	ON	OFF
110	ON	OFF	ON	OFF
105	OFF	OFF	ON	OFF
100.2	OFF	ON	OFF	OFF
95	OFF	ON	OFF	ON
90	OFF	ON	ON	ON
83.3	ON	ON	ON	ON
75	ON	OFF	ON	ON
66.8	ON	ON	OFF	OFF

** We don't suggest you use any settings outside of the PCI or chipset specifications, since doing so may compromise the stability of your system.*

5. Quick Installation

We will ***give you a simplified installation procedure,*** in order to allow you to install your motherboard quickly and correctly.

(1) Installing the CPU

Like its predecessor, the Socket 7 Pentium®, installing the Intel® Celeron™ PPGA package processor is easy. Because it uses the "Socket 370" ZIF (**Z**ero **I**nsertion **F**orce) socket, it lets you easily fix the processor on to its position firmly.

When you raise the socket lock lever, you have to loosen the socket lock. Please raise the lever to the end and prepare to insert the processor (Figure 5-1). Next, you need to align the processor pin 1 to the socket pin 1. If you put it in the wrong direction, you will not be able to insert the processor easily, and the processor pins will not fully go into the socket. If that is the case, please change the direction, until it easily and fully inserts into the 370 socket (Figure 5-2).

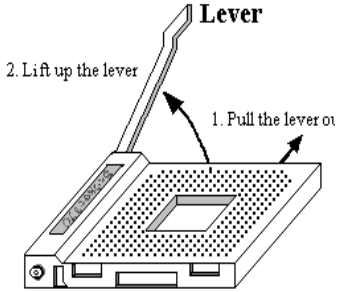


Figure 5-1. Socket 370 and open its lever

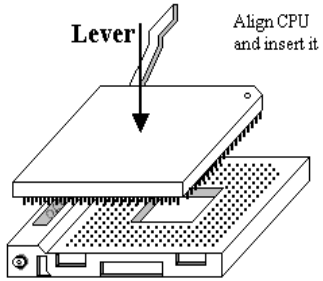


Figure 5-2. Install the CPU into socket 370

When you finish inserting the CPU, push the lever down to its original position, and you should feel the lever lock down on the 370 socket.

(2) Installing system memory

Install the SDRAM module (168 pin DIMM module) into the DIMM sockets (DIMM 1~DIMM2). The maximum memory capacity of this motherboard is 256MB (512MB using 128Mb technology).

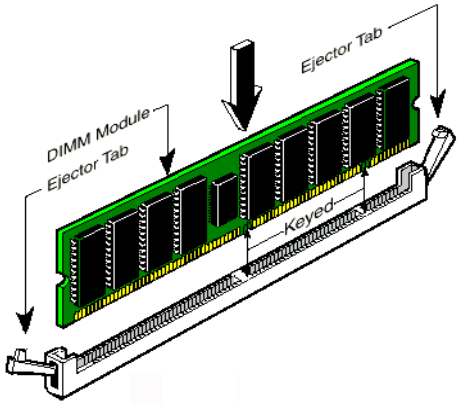


Figure 5-3. Memory module installation

(3) Installing the FDD

FDC1: Connect one end of the 34-pin cable that comes with the drive to the FDD connector, and the other end of the cable to the FDC pin connector on the motherboard.

Note: Be sure that the red line on the cable connects to the first pin of the connectors.

(4) Installing the HDD

IDE1 (Primary IDE): Connect one end of the 40-pin cable that comes with the drive to the HDD connector, and the other end to the IDE1 pin connector on the motherboard.

Note: Be sure that the red line on the cable connects to the first pin of the connectors.

(5) Installing the CD-ROM drive

IDE2 (Secondary IDE): Connect one end of the 40-pin cable that comes with the drive to the CD-ROM connector, and the other end to the IDE2 pin connector on the motherboard.

Note: Be sure that the red line on the cable connects to the first pin on the connector.

(6) Installing the diagnostic LEDs connector

JP14 Pin 1 and Pin 9, Pin 2 and Pin 10, Pin 3 and Pin 11, Pin 4 and Pin 12:

These LEDs will show you the diagnostic situation of your computer. You can use the LEDs status to easily judge the current situation or failure of your system. The following table explains the LEDs display.

(7) Installing the LAN LED connector

JP14 Pin 5 and Pin 13 (LED0), JP14 Pin 6 and Pin 14 (LED1): These headers have a specific orientation. Connect the two-threaded RX/TX LED connector to the LED0 header at JP14. Connect the two-threaded 10/100Mbps LED connector to the LED1 header at JP14.

Pin number	Name of the signal or signification
JP14 Pin 5	RX/TX LED active
JP14 Pin 13	LED Power
JP14 Pin 6	RX/TX LED active
JP14 Pin 14	LED Power

(8) Installing the suspend LED connector

JP14 Pin 7 and Pin 15: This header has a specific orientation. Connect the two-threaded suspend LED connector to the JP14 header on the motherboard.

Pin number	Name of the signal or signification
JP14 Pin 7	LED Power
JP14 Pin 15	Suspend LED active

(9) Installing the HDD LED connector

JP14 Pin 8 and Pin 16: There is a specific orientation for JP14 pin 8 and pin 16. Connect the two-threaded IDE LED connector to the header on the motherboard

Pin number	Name of the signal or signification
JP14 Pin 8	HDD active
JP14 Pin 16	LED power

(10) Installing hardware reset switch connector

JP16 Pin 1 and Pin 9: Attach the cable from the case's reset switch on the front panel to this header. Press and hold the reset button for at least one second to reset the system.

Pin number	Name or significance of signal
JP16 Pin 1	Ground
JP16 Pin 9	Reset input

(11) Installing suspend switch connector

JP16 Pin 2 and Pin 10: There is no specific orientation for JP16 pin 2 and pin 10. Connect the two-threads suspend switch connectors on the front panel of the computer case to the correct pins on the header of the motherboard. Since most computer cases do not support this feature (usually only the motherboard will), in most cases you can ignore this connector.

Pin number	Name of the signal or signification
JP16 Pin 2	Ground
JP16 Pin 10	Suspend signal

Note: *If you enable the ACPI function in the BIOS setup, this function will not work.*

(12) Installing the power LED connector

JP16 Pin 11 ~ Pin 13: There is a specific orientation for pins 11~13. Insert the three-threaded power LED cable to JP16 Pin 11~Pin 13. Double-check the orientation of the pins to the header on the motherboard.

Pin number	Name of the signal or signification	Item Name
JP16 Pin 11	+5VDC	POWER LED
JP16 Pin 12	Ground	POWER LED
JP16 Pin 13	Ground	POWER LED

(13) Installing the power switch connector

JP16 Pin 3 and Pin 4: There is no specific orientation for JP16 pin 3 and pin 4. Connect the two-threaded power switch connector on the front panel of the computer case to the correct pins on the motherboard.

Pin number	Name of the signal or signification
JP16 Pin 3	Ground
JP16 Pin 4	Power On/Off Signal

(14) Installing the speaker out jack connector

JP16 Pin 14 ~ Pin 16: There is no specific orientation for JP16 pin 14 to pin 16. Connect the three-threaded speaker cable to the JP16 header pins on the motherboard.

Pin number	Name of the signal or signification
JP16 Pin 14	**R**ight channel signal
JP16 Pin 15	Ground
JP16 Pin 16	**L**eft channel signal

(15) Installing the MIC in jack connector

JP16 Pin 6 ~ Pin 8: There is no specific orientation for JP16 pin 14 to pin 16. Connect the three-threaded

speaker cable to the JP16 header pins on the motherboard.

Pin number	Name of the signal or signification
JP16 Pin 6	MIC in signal
JP16 Pin 7	Ground
JP16 Pin 8	MIC in signal

Note: *This MIC input is* ***MONO*** *signal input.*

(16) Installing ATX power input connector

ATXPWR: Connect the power supply unit to the correct connectors on the motherboard.

Pin number	Name of the signal or signification	Pin number	Name of the signal or signification
1	+3.3VDC	11	+3.3VDC
2	+3.3VDC	12	-12VDC
3	Ground	13	Ground
4	+5VDC	14	PS_ON
5	Ground	15	Ground
6	+5VDC	16	Ground
7	Ground	17	Ground
8	POWERGOOD	18	-5VDC
9	+5VSB	19	+5VDC
10	+12VDC	20	+5VDC

(17) Installing fan power connector

CPU Fan and Chassis Fan: There is a specific orientation. Connect the three-threaded CPU fan power cable to the CPU Fan connector on the motherboard. Connect the three-threaded chassis fan power cable to the Power Fan connector on the motherboard.

CPU Fan and Power Fan	
Pin number	Name of the signal or signification
1	GND
2	+12V
3	Fan Speed Sense

(18) Wake on modem header

WOM1: If you have an internal modem adapter (or AMR modem adapter) that supports this feature, then you can connect the specific cable from the internal modem adapter to this header.

Pin number	Name or significance of signal
1	+5VSB
2	No connection
3	Sense Input
4	Ground
5	No connection

(19) RT1 header and RT2 thermistor

The RT1 header is for you to connect an additional thermistor to detect the temperature in the location of your choice. You can buy the thermistor at an electronics store, ask for a 10KΩ thermistor (NTC type) which should be OK. Please don't use too long of a lead wire for the thermistor. The RT2 is a thermistor used to detect the temperature in a specified location. It is may also be called a system temperature detector.

(20) Installing the IR1 header

IR1: There is a specific orientation for pins 1 through 5. Attach the connector from the IR KIT or IR device to the IR header.

Pin number	Name of the signal or signification
1	+5V
2	No connection
3	IR_RX
4	Ground
5	IR_TX

(21) Installing PS/2 keyboard to the connector

Watch the pin position and the orientation

KM1 lower connector: There is an orientation pin. Connect your PS/2 keyboard connector to the connector on the backside of the motherboard.

(22) Installing PS/2 mouse to the connector

Watch the pin position and the orientation

KM1 upper connector: There is an orientation pin. Connect your PS/2 mouse connector to the connector on the backside of the motherboard.

(23) USB Port Connectors

Watch the pin position and the orientation

This motherboard provides two USB ports. Attach the USB connector from the individual device to these connectors.

You can attach USB devices such as a, scanner, digital speakers, monitor, mouse, keyboard, hub, digital camera, joystick etc. to one of each USB connector. You must make sure your operating system supports this feature and you may need to install an additional driver for individual devices. In Please refer to your device user's manual for detailed information.

(24) JP8 Header: Additional USB Plugs Header

This header is for connection the additional USB plug used. You can use the special cable come with system vendor, then it can provides you additional two USB plugs, you can fix these USB plugs on the front panel or back panel. That's depend on chassis designed and customer request.

Pin number	Name or significance of signal
1	VCC0
2	Data +
3	Ground 0
4	Data -
5	Ground
6	Ground
7	Data1 -
8	Ground 1
9	Data1 +
10	VCC1

(25) Installing the RJ-45 cable to the network jack

Watch the pin position and the orientation
(RJ45 type, WF-22L only)

This jack is for connecting the RJ-45 cable from the local area network hub to your computer. We suggest you use the category 5 UPT (**U**nshielded **T**wisted **P**air) or STP (**S**hielded **T**wisted **P**air) cable to make this connection. The connection length from the hub to the computer is best to be kept under 100M.

The green LED (active as LED0) shows the connection situation. If the network active well, this LED will light

on. The yellow LED (active as LED1) shows if the data is active or not. If the computer is translating or receiving data from the network, this LED will flicker.

(26) Installing the printer connector to the parallel port connector

Watch the pin position and the orientation

LPT: There is an orientation pin. Connect the DB-25 pin cable that comes with the hardware device to the LPT connector on the motherboard

(27) Installing the serial device to the COM1 port

Watch the pin position and the orientation

COM1: There is an orientation pin. Connect the DB-9 pin connector that comes with the serial hardware device

(28) Installing the VGA monitor connector to the VGA port connector

Watch the pin position and the orientation

VGA: This DIN 15 pin Female connector is for a VGA output signal to the monitor. You can connect the plug from the monitor to this connector. If you don't move your system often, we suggest you fasten the two screws from the plug with this connector. It will assure the quality of your display.

(29) Installing the Line Out, Line In and MIC In Connector

Line Out connector: You can connect an external stereo speaker signal input plug to this connector, or you can connect the plug from here to the stereo audio equipment AUX signal input socket. Remember, the motherboard does not have a built in amplifier to drive the speakers. You have to use speakers with a built in amplifier. Otherwise, you may only hear a faint sound, if any at all, from the speakers.

Line In Connector: You can connect the TV adapter audio output signal, or external audio sources such as a CD walkman, video camcorder or VHS recorder. Connect the audio output signal plug on these devices to this connector. Your audio software can control the input level for the line-in signal.

MIC In Connector: You can connect the plug from the microphone to this connector. Do not connect other audio (or signal) sources to this connector.

(30) Installing the MIDI/GAME device to the game port connector

Watch the pin position and the orientation

Game Port: You can connect your joystick, game pad, or other simulation hardware devices. DIN 15-pin plugs in to this connector. Please refer to the "further connection" notes of the device's user's manual for further details.

(31) Installing the MR adapter to the AMR slot

Watch the pin position and the orientation

MR Adapter: If you want to use the MR modem adapter as your default modem device, you need to install the modem riser adapter into this slot. Remember you also need to install the corresponding driver and utility for the modem riser adapter. Otherwise, it may not function normally.

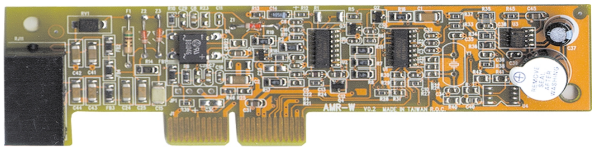


Figure 5-4. MR Adapter

(32) Installing the TV-Out adapter to the V-BUS connector (Optional)

Watch the pin position and the orientation

V-BUS: You can install the V-BUS adapter to get the video output capability. When you install the V-BUS adapter, you can get two video output capabilities. One is general video output and the other is S-Video output (Super-Video output). S-video output will give you the best display quality on your TV monitor. Of course, your TV monitor must have the S-Video input jack for S-Video cable connection. This card supports both PAL and NTSC systems for various purposes.

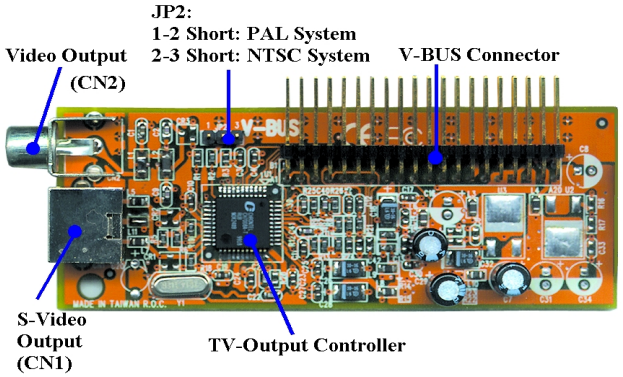
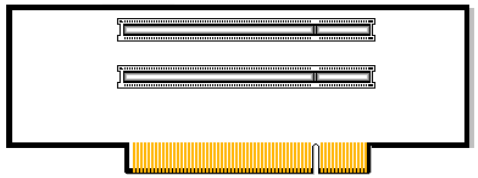


Figure 5-5. V-Bus Adapter

(33) Installing the RS-W card to the PCI1 slot

Watch the pin position and the orientation

RS-W Card: This card allows you to expand your PCI slots. If your system needs the additional PCI slot, you can use this RS-W card. But your chassis has to meet the requirements of the additional two PCI slots plate on the backside panel of the chassis. Otherwise, you can't make these two slots available on the chassis' backside. It may also not connect to any outside devices.



RS-W Card

Figure 5-6. RS-W Card

(34) Installing the DFP adapter to the V-BUS connector

Watch the pin position and the orientation

DFP: Moving into the 21ST century, digital flat panel display (FPD) will be ubiquitous, linked to everyday electronic appliances from desktop computers to DVD players to set-top boxes. By the turn of this century, we'll either own a digital FPD monitor, or know someone that does. Inevitably, as prices drop far enough, large screen, all-digital TVs will be the display of choice to maximize the all-digital video viewing experience. But to make all this happen, the consumer electronics and PC industry must adopt a digital interface standard to link digital video/graphics sources to digital FPD. When the video is kept digital from source-to-FPD, the system is "all-digital".

For this all-digital trend, the WF-22 can be equipped with the SiI 154 chipset (Optional). The SiI 154 uses PanelLink® Digital technology to support displays ranging from VGA (25MHz, 640*480) to SXGA (112MHz, 1280*1024) which are ideal for desktop and specialty applications. It supports VESA® P&D™ and DFP (Digital Flat Pannel) Hot Plug Detection plus the RxDetect feature. The SiI 154 operates with all PanelLink® receivers and leads the way in promoting the digital display interface as a standard feature in all PCs by enabling all multimedia accelerators with a flexible 12 or 24-bit interface in a cost-effective package. Featuring a 12-bit dual-edge clock interface that supports resolutions up to SXGA, the SiI 154 is designed to work with feature-rich, high-end multimedia accelerators that typically don't have enough pins available to support a 24-bit interface.

It's fully digital interface is designed to drive the **F**lat **P**anel **D**isplay (FPD), not an analog interface. You will get the better display quality than an analog interface. Figure 1-1 below shows the difference between digital and analog interface display quality. You can see why we chose this chipset.

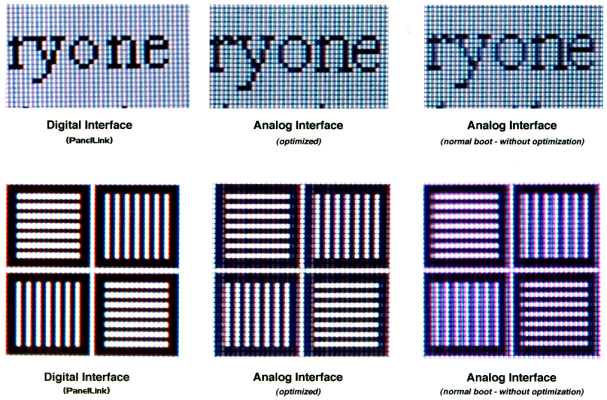


Figure 5-7. Quality of Digital and Analog Interface Display Comparison

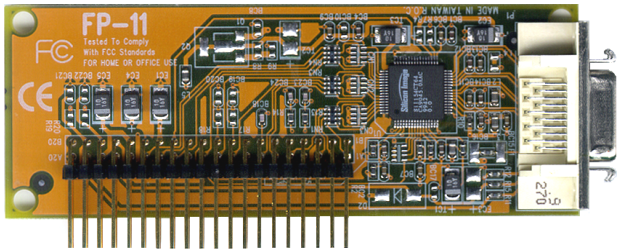


Figure 5-8. The DFP Adapter

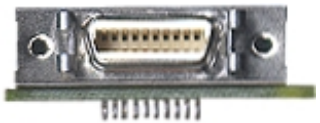


Figure 5-9. The Connector for the DFP Adapter

You can install the V-DFP adapter to get digital flat panel video output capability.

(35) Installing the USB-HUB adapter

USB-HUB: You can extend your USB port to up to four, if you use USB-HUB adapter. You need to install the USB-HUB adapter into the JP8, and use its cable to extend two additional USB ports.

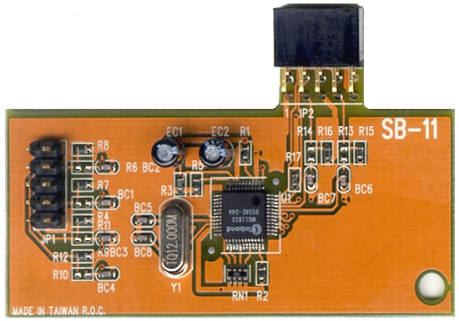


Figure 5-10. The USB-HUB Adapter

(36) BIOS Setup

When you power on your computer, you will see the following message appear briefly at the bottom of the screen during POST:

PRESS DEL TO ENTER SETUP

If you want to configure the BIOS, you can press the **DEL** key immediately to enter the BIOS setup menu.

Note: Don't change the parameters inside the BIOS unless you absolutely know what you are doing.