FWA-3140 Series

USER'S Manual

FWA-3140

Rackmount Internet Security Platform with 4 Front LAN Ports/ Dual PCI Expansion Slots/ LCD Display

Advantech

Internet Security Platform

Copyright Notice

CE Notification

The FWA-3140, developed by Advantech Co., Ltd., has passed the CE test for environment specifications when shielded cables are used for external wiring. We recommend the use of shielded cables.

1st Edition
Printed in Taiwan March 2004

Product warranty

Advantech warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for two year from the date of purchase.

This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorized by Advantech, or which have been subject to misuse, abuse, accident or improper installation. Advantech assumes no liability under the terms of this warranty as a consequence of such events.

Because of Advantech's high quality-control standards and rigorous testing, most of our customers never need to use our repair service. If an Advantech product is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, you will be billed according to the cost of replacement materials, service time and freight. Please consult your dealer for more details.
If you think you have a defective product, follow these steps:

1. Collect all the information about the problem encountered. For example, CPU speed, Advantech products used, other hardware and software used, etc. Note anything abnormal and list any on-screen messages you get when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information readily available.
3. If your product is diagnosed as defective, obtain an RMA (return merchandise authorization) number from your dealer. This allows us to process your return more quickly.
4. Carefully pack the defective product, a fully-completed Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.
5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

Packing List

Before installation, ensure that the following materials have been received:

• One FWA-3140 Internet Security Platform

• One box of accessories

• One warranty certificate

• One CD-ROM for user manual (PDF file)

If any of these items are missing or damaged, contact your distributor or sales representative immediately.

Technical Support and Sales Assistance

If you have any technical questions about the FWA-3140 or any other Advantech products, please visit our support website at:

• **http://www.advantech.com.tw/support**

For more information about Advantech's products and sales information, please visit:

• **http://www.advantech.com.**

Contents

Figures

1

General Information

1.1 Introduction

Conceived as a powerful rackmount Internet Security platform, the FWA-3140 was specifically designed for Internet secure connectivity. Designed with the Intel® Pentium® 4 processor, it provides high performance and meets the requirements of Internet security appliances. The system supports Compact Flash for OS and Internet security applications. This avoids service disruption caused by hard disk mechanical / magnetic failures. In addition, the FWA-3140 can support system memory up to 2 GB DDR memory. Both Compact Flash and memory can be accessed and replaced for software upgrades through an easily removable cover. Designed with the Plug-and-Serve concept in mind, the FWA-3140 offers four 10/100/1000 Mbps auto-sensing LAN ports in the front panel. There are two LED Indicators which monitor power and HDD activities. For easy access, the front panel has a 9-pin, RS-232 serial port for local system management, maintenance and diagnostics. The FWA-3140 provides optional 3.5" IDE HDD and 2 PCI slots. It is FCC and CE compliant. Please see the FWA-3140 user manual for more details.

1.2 Features

- 1U rackmount Internet security platform
- Socket 478 Intel® Pentium® 4
- Dual 32-bit/33 MHz PCI expansion slots
- Four 10/100 Fast Ethernet or 10/100/1000 Gigabit Ethernet ports
- Console port for local setting
- Hard drive mounting bracket for 3.5" drive
- LCD display module
- LAN Bypass function

1.3 Specifications

- **Processor System:**
  CPU: Intel Pentium 4 , 3.06G Hz
  Max. Speed: 533/400 MHz FSB
  L2 Cache: 512/256KB
  Chipset: Intel 845GV, ICH4
  BIOS: Award 2 Mb Flash
- **Memory:** Support DDR 266/200, Max. Capacity 2 GB, Socket 184-pin DIMM x 2
- **Ethernet:** 10/100 Fast Ethernet or 10/100/1000 Gigabit Ethernet, RJ-45 x 4

- **Drive Bay:** 3.5”HDD x1
- **Management:** Console RS-232 x1
- **Cooling:** Fan (15 CFM) x2, Blower x1
- **Miscellaneous:** Power Switch, 2 LED indicators for Power/HDD, CompactFlash Socket x1, LCD Display Module x1
- **Adapter Power Requirement:**

  Input: ATX PS, AC 90 ~ 264 V @ 47 ~ 63 Hz, full range

  Output: 250W
- **Operating Environment:**

  Operating: Temperature 0 ~ 40 °C (32 ~ 104 °F), Humidity 5 ~ 85 %

  Non-Operating: Temperature -20 ~ 75 °C (-4 ~ 167 °F), Humidity 5 ~ 95 %
- **Dimensions** (W x H x D):

  1U: 426 x 44.4 x 360 mm (16.7” x 1.7” x 15.7”)
- **Weight:** 4.5 Kg (9.9 lb)

1.4 Dimensions

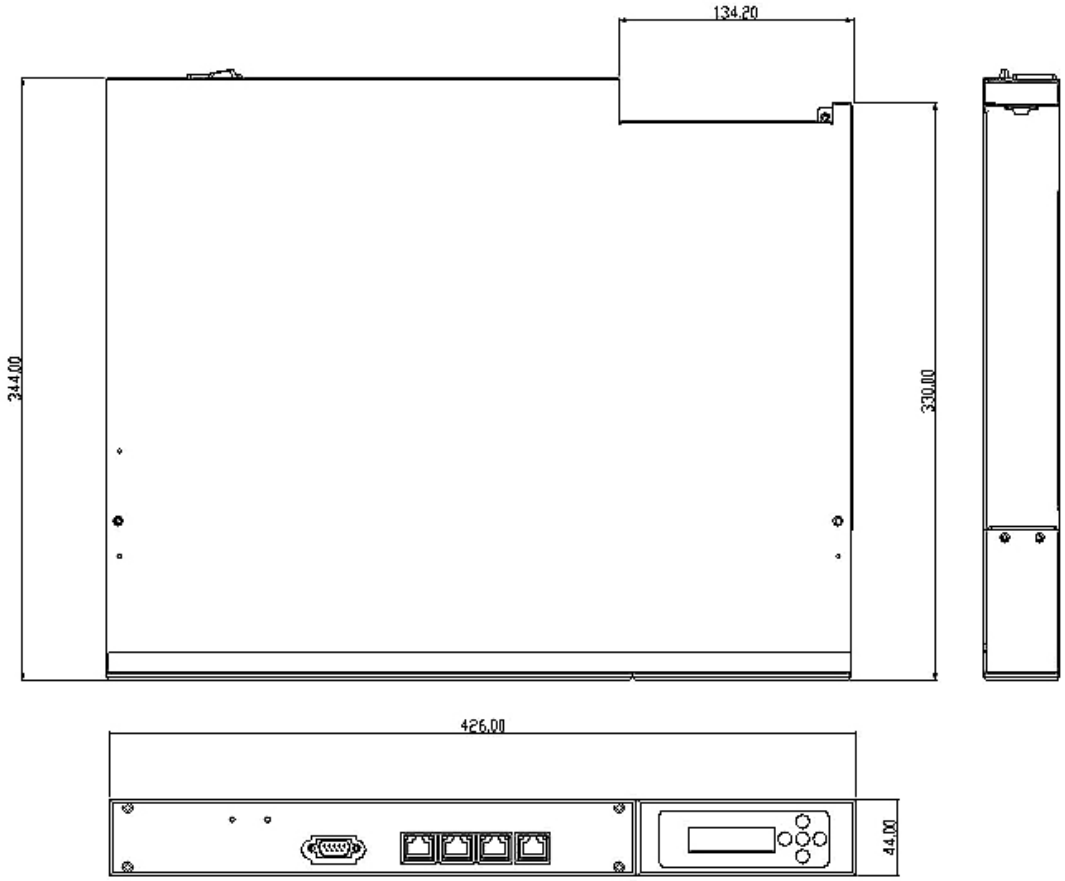


Figure 1-1: FWA-3140 dimensions.

Figure 1-2: Outlook of FWA-3140

1.5 Model List

• **FWA-3140 A:** 1U rackmount Internet security platform, Dual 32-bit/33 MHz PCI expansion slots, LCD display module, Four 10/100 Fast Ethernet ports supporting one LAN Bypass function.

• **FWA-3140 B:** 1U rackmount Internet security platform, Dual 32-bit/33 MHz PCI expansion slots, LCD display module, two 10/100 Fast Ethernet and two 10/100/1000 Gigabit Ethernet ports supporting one LAN Bypass function.

• **FWA-3140 C:** 1U rackmount Internet security platform, Dual 32-bit/33 MHz PCI expansion slots, LCD display module, four 10/100/1000 Gigabit Ethernet ports.

2

System Setup

Setting up your FW-3140 requires only a screwdriver and a small amount of time. Before you begin, you should also gather together all of the device you plan to install, as well as the CPU, RAM, HDD, and etc.

The front panel of FWA-3140 includes a LCD display module, four Ethernet ports, a RS-232 console port, and two LEDs where one is power LED and another is HDD LED. On the rear panel, there is a power switch located on the top right hand corner.

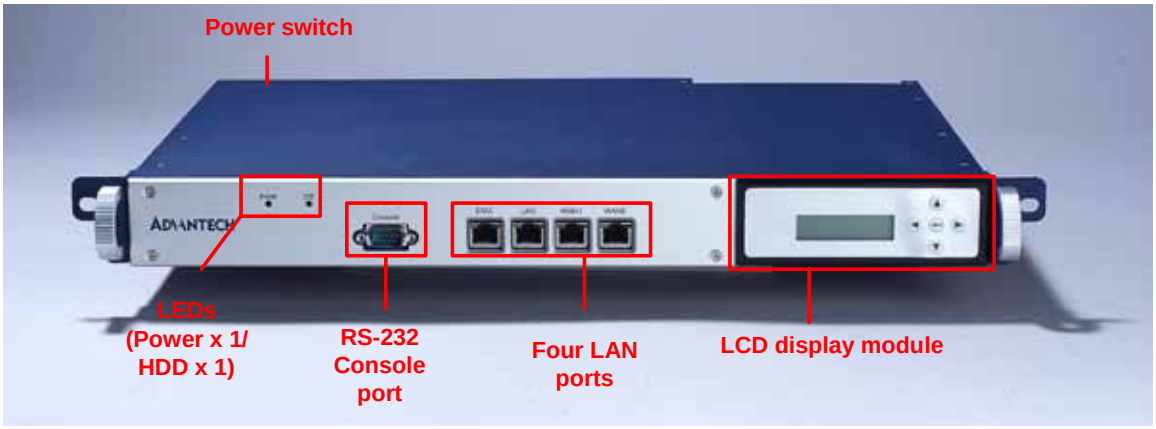


Figure 2-1: Front view of FWA-3140

2.1 Removing the cover

There are screws which secure the cover to the chassis. They are along the sides, near the top. Remove them, and then slide the cover to the rear of the chassis.

Figure 2-2: Removing the cover

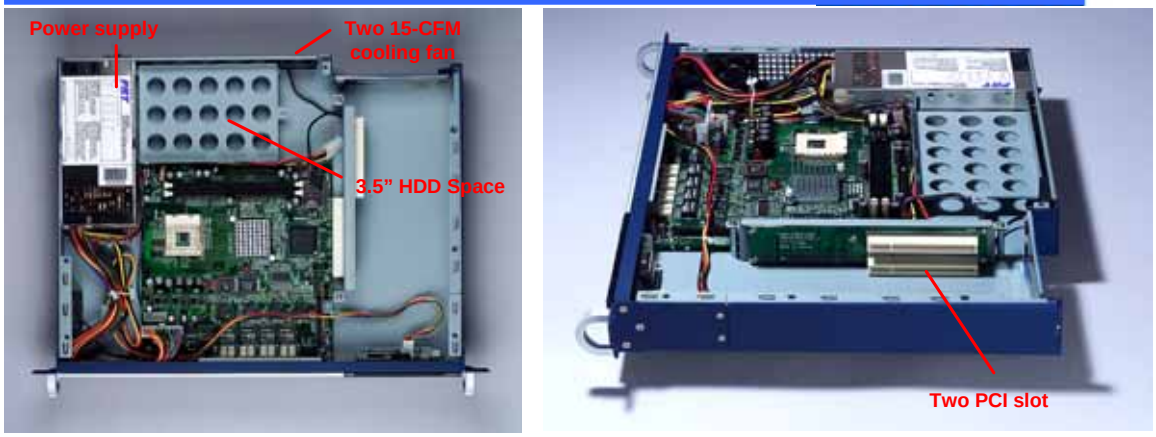


Figure 2-3: Top view of FWA-3140

2.2 Installing Central Processing Unit (CPU)

1. Locate the 478-pin CPU ZIF socket on the motherboard. And pull the Socket actuation lever to the 90-degree directly.
2. Position the CPU above the socket that its marked corner (golden cut edge on the CPU upper corner) matches the base of the socket lever. Insert the CPU into the socket. (Do not force the CPU into the socket.) Then push down the socket lever to secure the CPU.
3. Apply the thermal tape to provide better heat conduction between your CPU and cooling fan. Position the cooling fan on top of the CPU. Align and snap the four hooks of the retention mechanism to the holes on each corner of the module base.
4. Make sure the CPU fan power connector is plugged to the motherboard fan power connector, than installing CPU is completed.

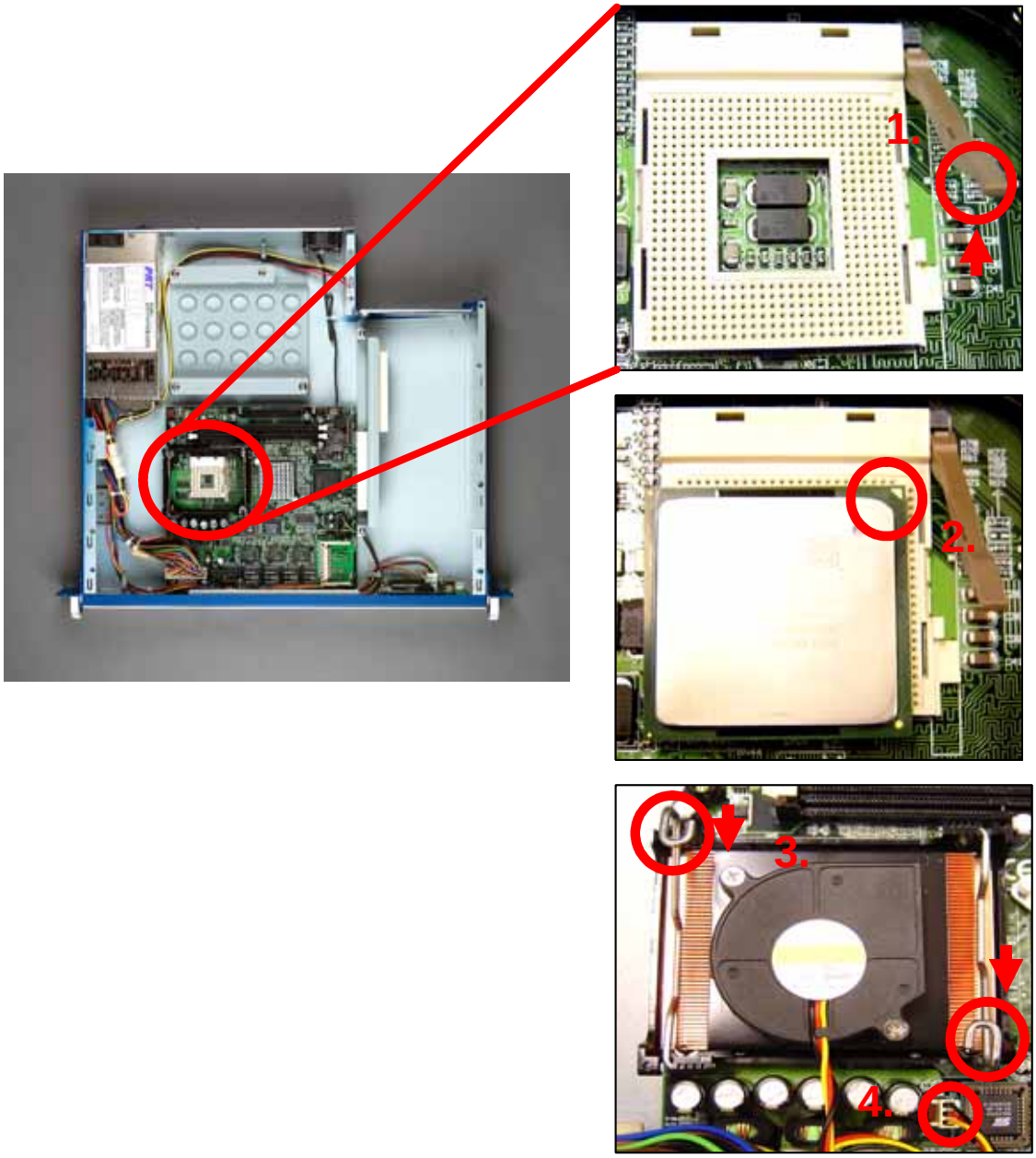


Figure 2-4: Installing Central Processing Unit steps

2.3 Installing Memory Module

Please note that FSB 533 Pentium 4 processor will support DDR333/DDR266 memory module and FSB 400 Pentium 4 processor will only support DDR266 memory module.

1. Unlock a DIMM socket by. Align the notch of the DIMM memory module to match on the socket and insert the DIMM into the socket until the DIMM is properly seated.

2. Press the retaining clips inward to lock the DIMM memory module. Installing memory module is completed.

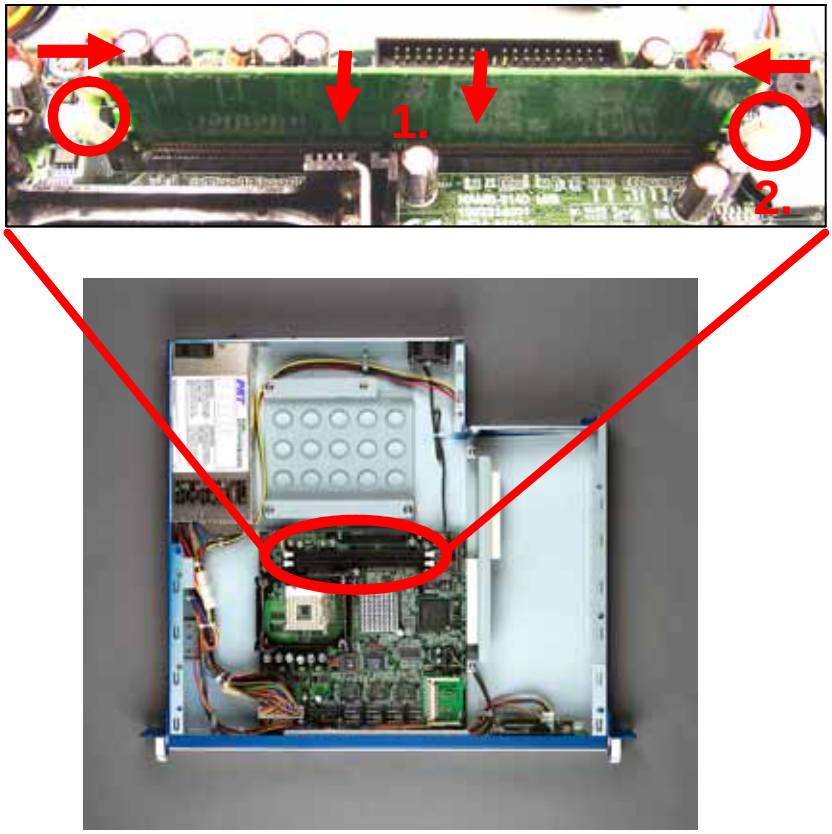


Figure 2-5: Installing Memory Module steps

2.4 Installing Hard Disk Drive

1. Unscrew each side of the HDD supporting frame on the chassis and pull it out.
2. Put the HDD above the HDD supporting frame and position the screws accordingly.
3. Screw each side of the HDD supporting frame to fix on the chassis.
4. Connect the IDE cable included in the accessory box to the connector on the HDD. Make sure that the RED wire on the ribbon should be connected to PIN 1 of HDD.
5. Connect power connector to the HDD. Installing Hard Disk Drive is completed.

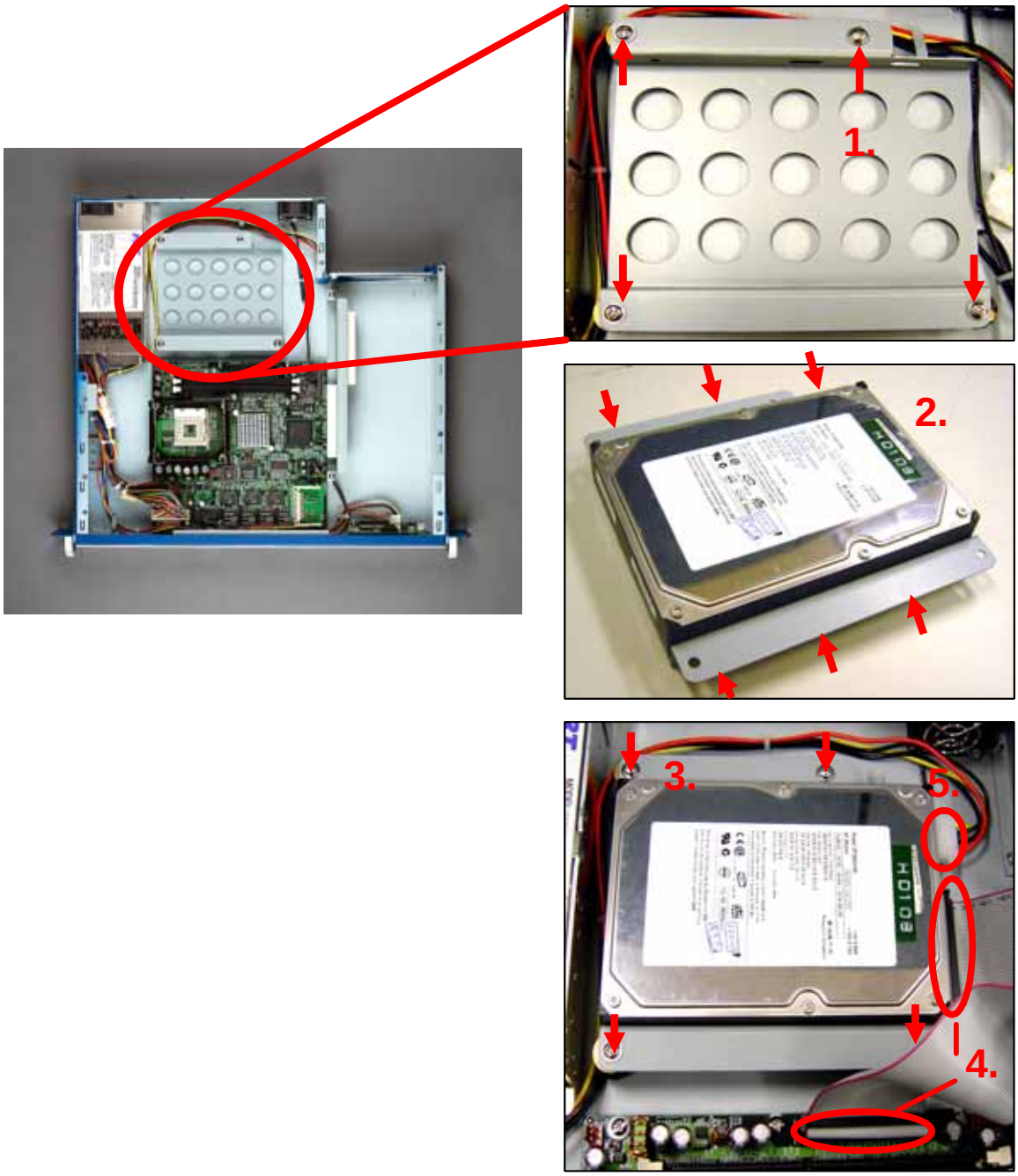


Figure 2-6: Installing Hard Disk Drive steps

2.5 Installing Compact Flash

1. Position a CompactFlash disk accordingly in the CompactFlash disk socket and push it inward. Installing CompactFlash disk is completed.

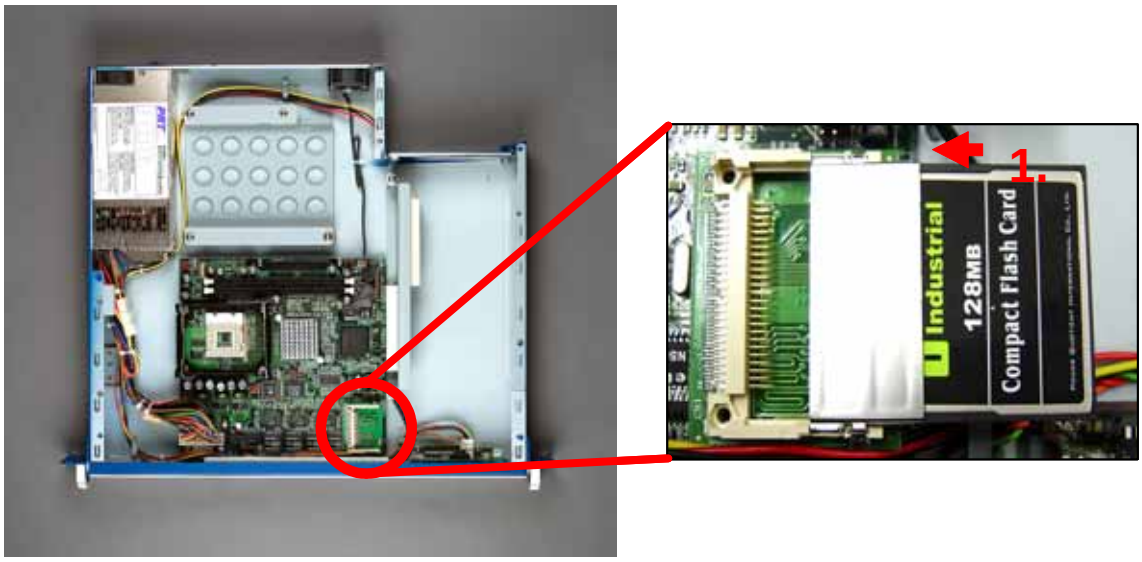


Figure 2-7: Installing Compact Flash steps

2.6 Setting LAN Bypass function

FWA-3140 provides LAN Bypass function showed as Figure 2-8. When system shuts down, LAN1-LAN2 will connect directly to avoid network broken.

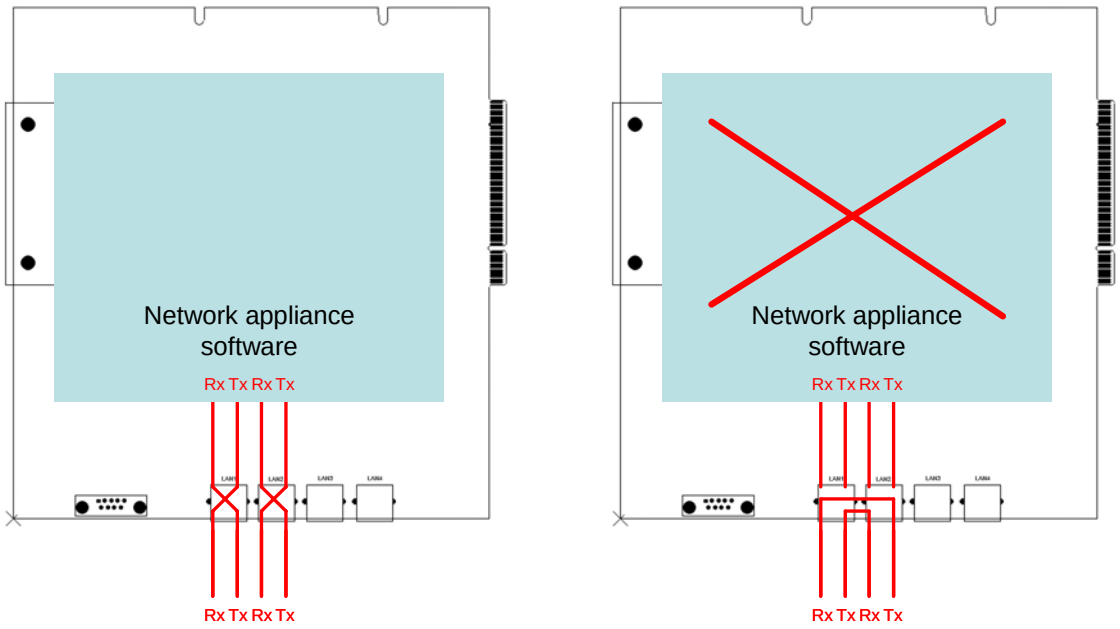


Figure 2-8: The illustration of LAN Bypass function

The jump "J4" allows you to set LAN Bypass function. (See J4 pins assignment in APPENDIX A.1 NAME-3140 MOTHER BOARD)

Pins 1-3: Monitor network mechanism with watchdog timer
Pins 3-5: Turn off LAN Bypass
N. C.: Turn on LAN Bypass

Pins 2-4: Set LAN Bypass enable automatically when system shut down
Pins 4-6: Set LAN Bypass enable / disable via BIOS

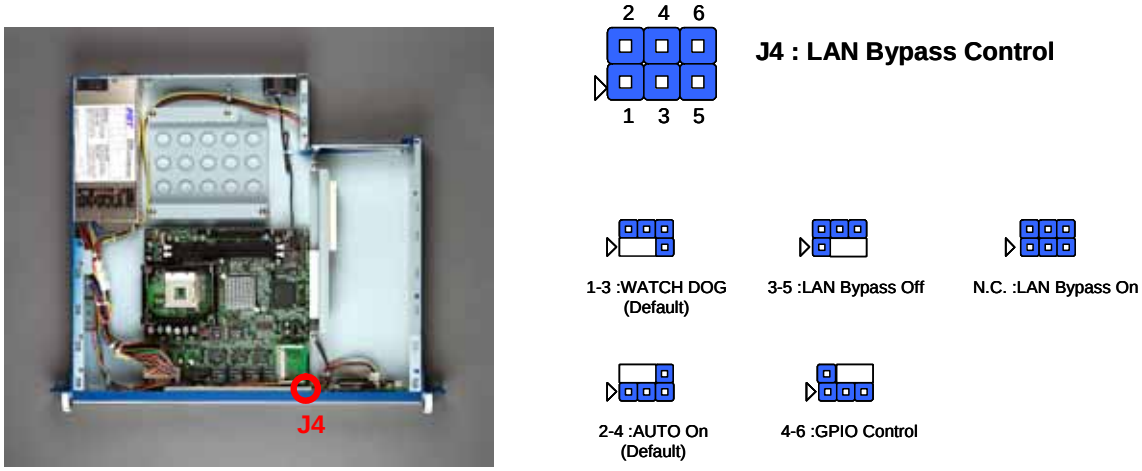


Figure 2-9: LAN Bypass function jumps

When jumper keeps on pins 4-6, follow below steps to set LAN Bypass function via BIOS.

1. Turn on FWA-3140 platform. Then hold down the <Delete> key during the boot process to enter BIOS menu.
2. Move to "LAN Bypass Control" Item
3. Press <PageUp> or <PageDown> key to change the condition option of "LAN Bypass Control" Item. Condition option [Enabled]: Set LAN Bypass function enable. Condition option [Disabled]: Set LAN Bypass function disable.
4. Press <F10> to save and exit BIOS menu.

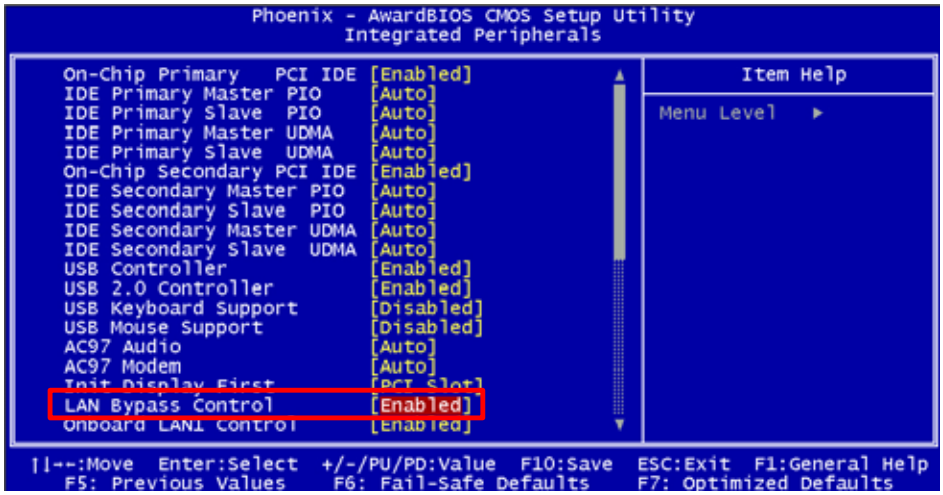


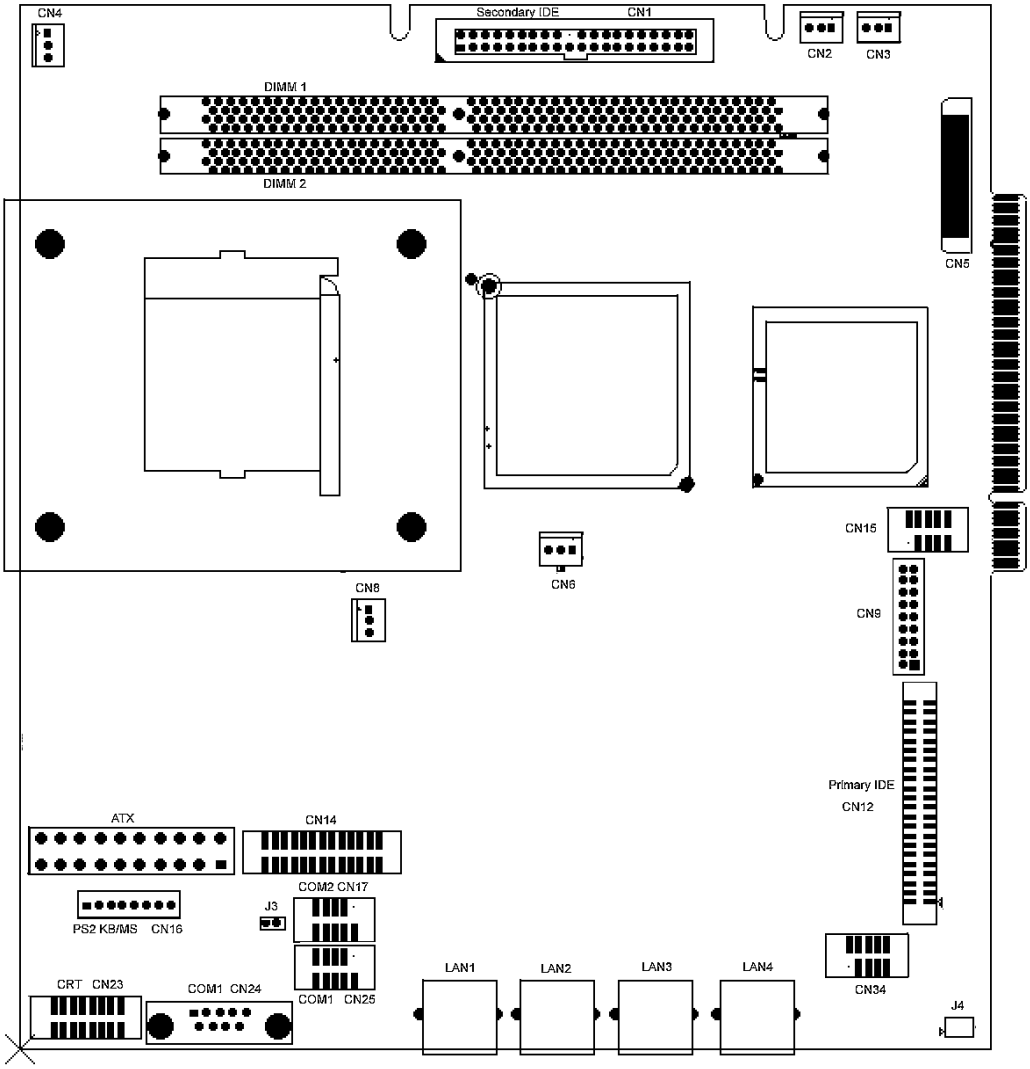
Figure 2-10: Setting LAN Bypass function from BIOS

A

Pin Assignments

APPENDIX

A.1 NAME-3140 Mother Board



1. CONNECTORS

CONNECTOR	*DESCRIPTION*
CN1 / CN12	Secondary / Primary IDE Bus Connector
CN2 / CN4	FAN power Connector
CN3 /CN6 / CN8	FAN power Connector
CN5	Floppy Connector
CN9	Switch and LED
CN14	Parallel Port Connector
CN15 / CN34	USB Port Connector
CN16	PS/2 KB and Mouse Connector
CN17 / CN24 / CN25	Com Port Connector
CN23	CRT Connector
J3	Clear CMOS
J4	LAN Bypass Control
ATX	ATX Power Connector

2. PIN ASSIGNMENTS

CN1 / CN12			
PIN	*NAME*	*PIN*	*NAME*
1	IDE_RST	2	GND
3	D7	4	D8
5	D6	6	D9
7	D5	8	D10
9	D4	10	D11
11	D3	12	D12
13	D2	14	D13
15	D1	16	D14
17	D0	18	D15
19	GND	20	NC
21	#RE0	22	GND
23	#IOW	24	GND
25	#IOR	26	GND
27	RDY	28	NC
29	DAck	30	GND
31	IR0	32	NC
33	ADDR1	34	66DET
35	ADDR0	36	ADDR2
37	#CS0	38	#CS1
39	#HD_ACT	40	GND
41	Vcc	42	Vcc
43	GND	44	NC

CN5			
PIN	*NAME*	*PIN*	*NAME*
1	Vcc	2	INDEX#
3	Vcc	4	DRVSLT#
5	Vcc	6	DSKCHG#
7		8	
9		10	MTRON#
11		12	DRTSLT#
13	DRVDEN0	14	STEP#
15	GND	16	WRTDALT#
17	GND	18	WRTGATE#
19	GND	20	TRACK0#
21	GND	22	WRTPRT#
23	GND	24	RDDATA#
25	GND	26	SIDESLT#

CN9			
PIN	*NAME*	*PIN*	*NAME*
1	Power SW	2	Power SW
3	Reset SW	4	Reset SW
5	Power LED	6	Power LED
7	Standby	8	Standby
9	LAN1 LED	10	LAN1 LED
11	LAN2 LED	12	LAN2 LED
13	LAN3 LED	14	LAN3 LED
15	LAN4 LED	16	LAN4 LED
17	IDE LED	18	IDE LED

CN14			
PIN	*NAME*	*PIN*	*NAME*
1	STB	2	#AFD
3	PD0	4	#ERR
5	PD1	6	#SLIN
7	PD2	8	GND
9	PD3	10	GND
11	PD4	12	GND
13	PD5	14	GND
15	PD6	16	GND
17	PD7	18	GND
19	#ACK	20	GND
21	Busy	22	GND
23	PE	24	GND
25	SLCT	26	GND

ATX			
PIN	*NAME*	*PIN*	*NAME*
1	3.3V (+)	2	3.3V (+)
3	GND	4	5V (+)
5	GND	6	5V (+)
7	GND	8	NC
9	5V STB	10	12V (+)
11	3.3V (+)	12	12V (-)
13	GND	14	PS-ON
15	GND	16	GND
17	GND	18	5V (-)
19	5V (+)	20	5V (+)

CN2 / CN4	
PIN	*NAME*
1	GND
2	Power
3	NC

CN3 / CN6 / CN8	
PIN	*NAME*
1	GND
2	Power
3	FANIO

CN15 / CN34	
PIN	*NAME*
1	Vcc
2	Vcc
3	Data-
4	Data-
5	Data+
6	Data+
7	GND
8	GND
9	GND
10	NC

CN17 / CN25	
PIN	*NAME*
1	DCD
2	DSR
3	SIN
4	RTS
5	SOUT
6	CTS
7	DTR
8	RI
9	GND
10	NC

CN16	
PIN	*NAME*
1	GND
2	Vcc
3	MSDAT
4	MSCLK
5	GND
6	Vcc
7	KBDAT
8	KBCLK

CN24	
PIN	*NAME*
1	DCD
2	SIN
3	SOUT
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

CN23			
PIN	*NAME*	*PIN*	*NAME*
1	VGA_R	2	NC
3	VGA_G	4	GND
5	VGA_B	6	NC
7	NC	8	V_SDAT
9	GND	10	HSYNC
11	GND	12	VSYNC
13	GND	14	V_SCLK
15	GND	16	NC

J4			
PIN	*FUNCTION*	*PIN*	*FUNCTION*
13	Watch dog (Default)	24	AUTO ON (Default)
35	LAN Bypass OFF	46	GPIO Control
NC	LAN Bypass ON		