ENDAT-5701/5901

All-In-One motherboard

User's Manual

Rev. 2x

For 5701 PCB ver.1F or later

For 5901 PCB ver.2xor later

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Installation Notice

The manufacturer recommends using a grounded plug to ensure proper motherboard operation. Care should be used in proper conjunction with a grounded power receptacle to avoid possible electrical shock. All integrated circuits on this motherboard are sensitive to static electricity. To avoid damaging components from electrostatic discharge, please do not remove the board from the anti-static packing before discharging any static electricity to your body, by wearing a wrist-grounding strap. The manufacturer is not responsible for any damage to the motherboard due to improper operation.

Specification:

MODEL		ENDAT-5701	ENDAT-5901
CPU		Pentium 75-550MHz, INTEL MMX, AMD K5/K6/K6-2/K6-3, IDT C6, Rise MP6, IBM Cyrix 6x86 CPU	
System Chipset		VIAChipset	
VGA Chipset		Built-in, With Share Memory Architecture	
LCD Feature (Optional)		Optional Support TFT/ DSTN LCD	
LAN Chipset		Realtek 8139A/B 10BaseT/100 BaseT(Boot ROM Optional)	
Audio Feature (Optional)		via AV Card kit	
TV-Out (Optional)		via AV Card kit	
FLASH Disk		Socket for DiskOnChip	
System Memory		Upto 512MB(PC66/PC100)	
IDE Interface		PCI IDE Support Ultra DMA33/66	
Multi I/O		Supports 4 Serial and 1 Parallel Ports COM1, 3, 4 with +5V/+12V Power Supports RS422/485 for COM2 (Optional)	
External Cache		512KB Burst Cache	
IrDA / USB Port		Yes(Pin Header)	
Expansion Slot		Extension for PCI/ISA Bus	
AD Selector	PCI 1	AD24 LAN (INT.A,B,C,D)	
	PCI 2	AD23 FREE (INT.B,C,D,A)	
	PCI 3	AD22 FREE (INT.C,D,A,B)	
	PCI 4	AD21 FREE (INT.D,A,B,C)	
Location of Expansion Slot		At the 7th of Standard AT MB	At the 6th of Standard AT MB
Keyboard / Mouse Jack		Two Mini Din Jack and Pin Header	
Pin Header for		Keyboard / Mouse / VGA / Multi I/O ports	
Power Connector		PS/2 and ATX Type	
Form Factor		WD/LPX (220x220mm)	PC/AT (223x220mm)

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Chapter 1. Introduction

The ENDAT-5701 and ENDAT-5901 All-In-One motherboard uses VIA chipsets built-in VGA onboard supports TFT/DSTN Flat Panel and Audio, built-in Realtek 8139xx LAN chipset with RJ45 Jack for 10BaseT/100BaseT. Our board offers the highest performance PC specifications in the industry. The ENDAT-5701 and ENDAT-5901 runs with the Intel Pentium P54C/P55C, AMD K5/K6, K6-2/K6-3, IDT C6, Rise MP6 or IBM/Cyrix 6x86 CPU upto 550MHz.

The motherboard is fully compatible with industry standards, adding many technical enhancements and is fully compatible with thousands of software applications developed for IBM PC/AT compatible computers. The control logic provides high-speed performance for the most advanced multi-user, multitasking applications available today. "Tomorrows PC technology is here today".

1-1. Features

Basic Feature:

- Supports all Socket-7/Super-7 Processors Including 64-bit Intel Pentium™, Pentium™ MMX, AMD 6K86™, IDT C6, Rise MP6 and IBM/Cyrix 6x86 CPUs Clock base on 60MHz~100MHz "Front Side Bus", supports upto 550MHz
- PC-98/99 Compatible using VIA VT82C686A south bridge chip
- Pipelined burst synchronous SRAM (PBSRAM) cache support, maximum 512KB pipeline burst SRAM cache
- Supports 64-bit DRAM interface synchronous with host CPU (66/100MHz) or internal Memory Clock (100MHz)
- Supports up to 512MB memory with two 168 pin DIMM socket (PC-100/66 DIMM)
- Independent clock stop controls for CPU/SDRAM, Internal AGP and PCI bus
- On board built-in PCI BUS master IDE control, supports up to five PCI bus and floppy drive controller

- PCI-2.2 compliant, 32 bit 3.3V PCI interface with 5V tolerant inputs
- Onboard socket for DiskOnChip supports M-System products
- Onboard LAN Adapter supports 10BaseT/100BaseT, (On board) BOOTROM optional
- Support for 4 COM ports, STD. RI(RS-232), COM1,3,4 with +12V/+5V DC Power selectable and one SPP/EPP/ECP Parallel port.
- Supports Ultra DMA 33/66 EIDE
- Onboard support for 4 high-speed UARTS (W/16550 FIFO) and multi-mode
- Parallel port for standard, enhanced (EPP) and high-speed (ECP) mode
- Onboard built-in USB functions
- Onboard built-in 2x AGP VGA BUS adapter, AGP v2.0 compliant for 1x and 2x transfer modes
- 188 pin expansion slot for both PCI and ISA BUS signals
- AWARD BIOS FLASH ROM (2Mbits)
- IR function can be Enabled/Disabled by BIOS
- Onboard LAN adapter can be Enabled/Disabled by jumper settings.

Optional Features

- Supports with RS232/RS422/RS485 interface for COM2
- Supports LCD feature with TFT/DSTN Panel
- Supports Audio function with AV Card Kit
- Supports TV-Out feature

1-2. Unpacking

The motherboard comes securely packaged in a sturdy cardboard shipping carton. In addition to the User's Manual, the motherboard package includes the following items:

- ENDAT-5701/ENDAT-5901 All-In-One Motherboard
- HDC/FDC Cables
- TV-Out Cable (Optional)
- Audio Kit (Optional)
- Serial port kit for 2 ports
- IDE Driver includes: Drivers for Windows 3.1, Windows NT 3.x/4.x, Windows 95, 98, 2000, Novell Netware and AWARD FLASH ROM utilities.
- VGA utilities and software drivers
- Driver utilities for LAN adapter

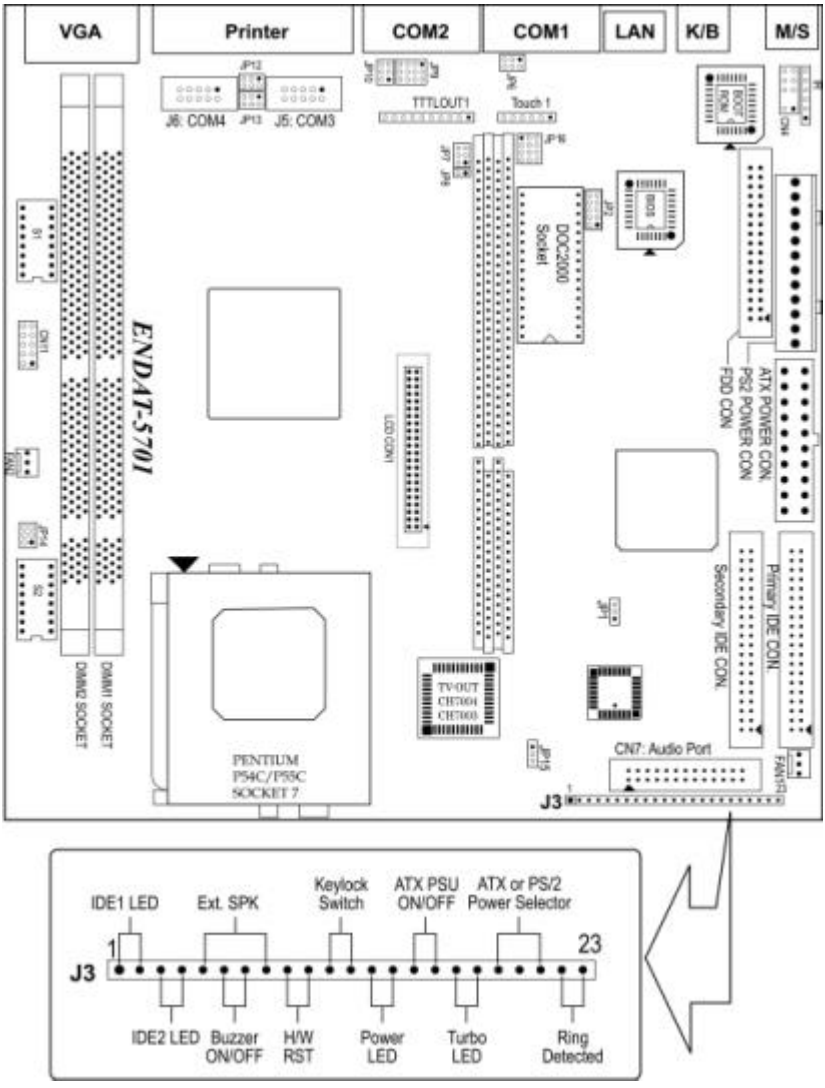
If any of these items are missed or damaged, please contact the dealer from whom you purchased the motherboard. Save the shipping materials and carton in the event that you want to ship or store the board in the future.

Note: Leave the motherboard in its original packing until you are ready to install it!

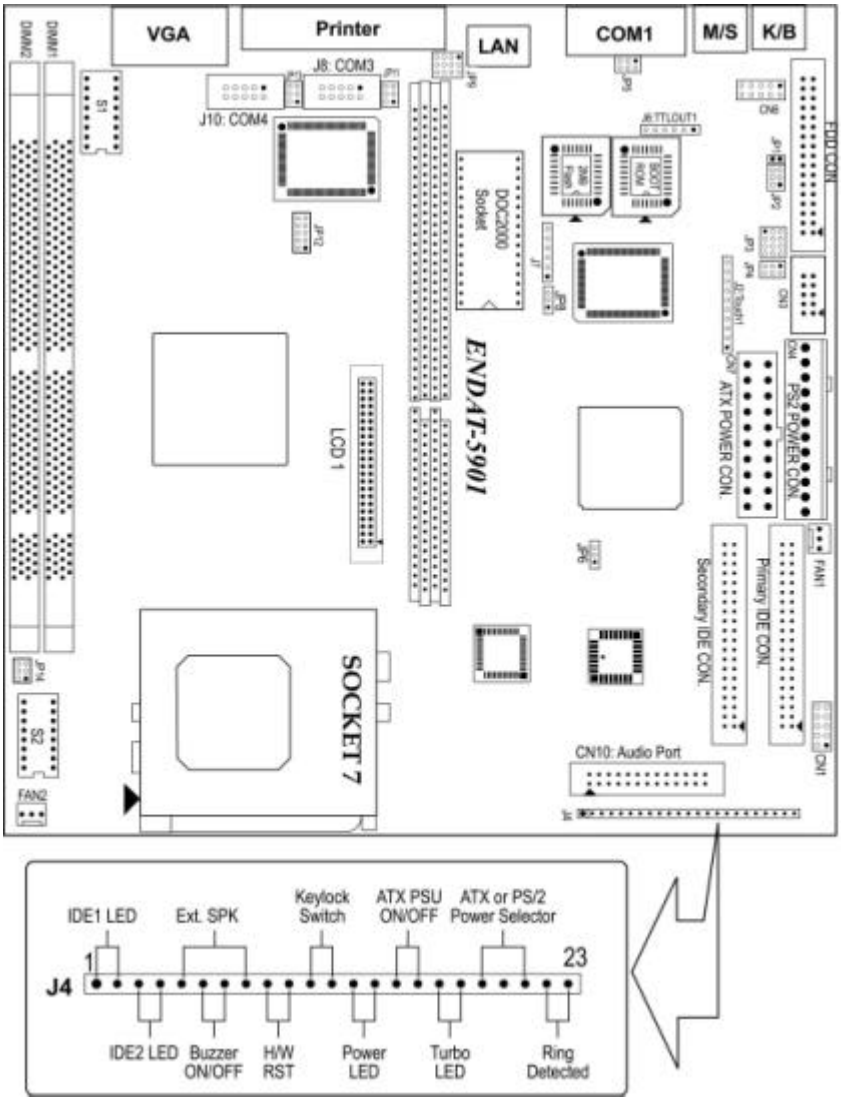
1-3. Electrostatic Discharge Precautions

Make sure you properly ground yourself before handling the motherboard, or other system components. Electrostatic discharge can easily damage the components. Note: You must take special precaution when handling the motherboard in dry or air-conditioned environments.

1-4. Motherboard Layout (ENDAT-5701)



1-5. Motherboard Layout (ENDAT-5901)



Chapter 2. Setting up the Motherboard

This chapter describes how to set up the motherboard and get ready for operation.

- Installing the CPU upgrade
- Installing DIMM memory. Make sure the correct CPU operating voltage, jumper settings and frequency.
- Double-check the insertion and orientation of the CPU before applying power. Improper installation will result in permanent damage to the CPU.

2-1. Jumpers and Connectors (ENDAT-5701)

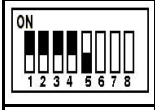
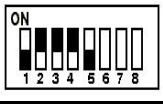
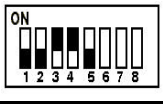
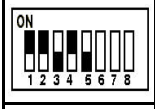
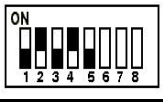
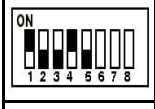
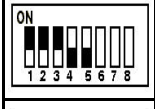
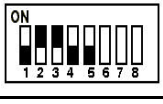
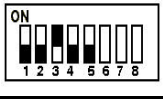
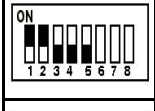
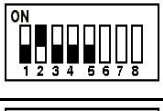
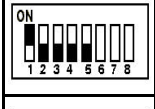
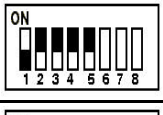
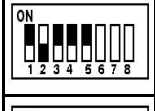
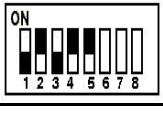
Jumpers/Connectors Overview:

Function	Jumpers/Connectors
CPU: CPU Clock Frequency	Switch 1 (S1: SW1-SW4)
CPU Vcore Voltage	Switch 2 (S2: SW1-SW5)
CPU Ratio	Switch 2 (S2: SW6-SW8)
Connector for Cooling Fan	FAN1,FAN2
Power Supply: Type (ATX or PS/2)	CN2(ATX);CN1(PS/2)
Power Good	JP15
ATX or PS/2 Power Selector	J3 Pin 19, 20, 21
ATX Power On/Off Switch	J3 Pin 15, 16
Audio /TV-Out Output Port Connector	CN7
LAN Adapter Disable/Enable	JP4
PCI INT selector for Expansion Slot	JP16
COM3 Port	J5
COM4 Port	J6
COM3/COM4 IRQ Setting	BIOS Defined
COM Ports Power Selector (COM1, 3,4)	JP6, JP12, JP13

Function	Jumpers/Connectors
RS232/RS422/RS485 Selector (COM2)	JP7, JP8, JP9, JP10
TTL Output Pin Header (For COM2)	TTLOut1
Touch Panel Pin Header	Touch1
DiskOnChip Memory Address	JP2
LCD Connector	LCD_CON1
Clear CMOS	JP1
PS/2 Keyboard Jack	CN6
PS/2 Mouse Jack	CN2
PS/2 Mouse/KB Pin Header	CN4
IR	IR1
USB Header	CN11
FDD Connector	CN5
IDE 1	J1
IDE 2	J2
Header for Case Panel	J3
IDE 1 LED	**J3** Pin 1, Pin 2
IDE 2 LED	**J3** Pin 3, Pin 4
External Speaker	**J3** Pin 5, Pin 8
Buzzer On/Off	**J3** Pin 6, Pin 7
Hardware Reset Switch	**J3** Pin 9, Pin 10
Key Lock Switch	**J3** Pin 11, Pin 12
Power LED	**J3** Pin 13, Pin 14
ATX Power Supply On/Off Switch	**J3** Pin 15, Pin 16
Turbo LED for Case (for case only, no function)	**J3** Pin 17, Pin 18
ATX or PS/2 Power Selector	**J3** Pin 19, Pin 20, Pin 21
Ring-Detected	**J3** Pin 22, Pin 23

Note: The cooling fan and heat sink are required for Pentium processors. Please pay close attention to the direction of the CPU and cooling fan when install.
Position the cooling ventilator directly facing the regulator heat sink, which is located beside the CPU socket. This will reduce the overheating of the regulator and increase the reliability of the system.

ENDAT-5701 CPU Vcore Setting: Switch2 (S2: SW1-SW5)

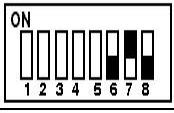
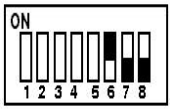
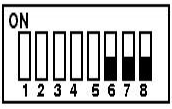
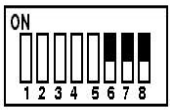
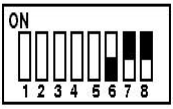
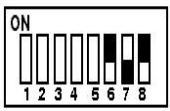
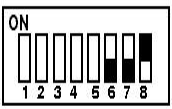
	**VCORE=3.5V**						**VCORE=3.4V**				
	S1	S2	S3	S4	S5		S1	S2	S3	S4	S5
	ON	ON	ON	ON	OFF		OFF	ON	ON	ON	OFF
	VCORE=3.3V						**VCORE=3.2V**				
	S1	S2	S3	S4	S5		S1	S2	S3	S4	S5
	ON	OFF	ON	ON	OFF		OFF	OFF	ON	ON	OFF
	**VCORE=3.1V**						**VCORE=3.0V**				
	S1	S2	S3	S4	S5		S1	S2	S3	S4	S5
	ON	ON	OFF	ON	OFF		OFF	ON	OFF	ON	OFF
	**VCORE=2.9V**						**VCORE=2.8V**				
	S1	S2	S3	S4	S5		S1	S2	S3	S4	S5
	ON	OFF	OFF	ON	OFF		OFF	OFF	OFF	ON	OFF
	**VCORE=2.7V**						**VCORE=2.6V**				
	S1	S2	S3	S4	S5		S1	S2	S3	S4	S5
	ON	ON	ON	OFF	OFF		OFF	ON	ON	OFF	OFF
	VCORE=2.5V						**VCORE=2.4V**				
	S1	S2	S3	S4	S5		S1	S2	S3	S4	S5
	ON	OFF	ON	OFF	OFF		OFF	OFF	ON	OFF	OFF
	**VCORE=2.3V**						**VCORE=2.2V**				
	S1	S2	S3	S4	S5		S1	S2	S3	S4	S5
	ON	ON	OFF	OFF	OFF		OFF	ON	OFF	OFF	OFF
	**VCORE=2.1V**						**VCORE=2.0V**				
	S1	S2	S3	S4	S5		S1	S2	S3	S4	S5
	ON	OFF	OFF	OFF	OFF		OFF	ON	ON	ON	ON
	**VCORE=1.95V**						**VCORE=1.90V**				
	S1	S2	S3	S4	S5		S1	S2	S3	S4	S5
	ON	OFF	ON	ON	ON		OFF	OFF	ON	ON	ON
	VCORE=1.85V						**VCORE=1.80V**				
	S1	S2	S3	S4	S5		S1	S2	S3	S4	S5
	ON	ON	OFF	ON	ON		OFF	ON	OFF	ON	ON

Please make sure the CPU Vcore voltage and setting as mention above for your system. The wrong setting may cause system damaged the CPU or system not working.

For ENDAT-5901 Rev.1D or later.

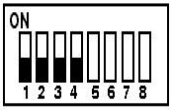
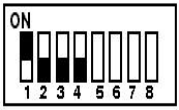
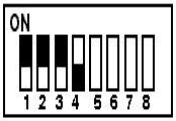
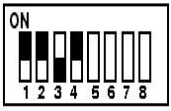
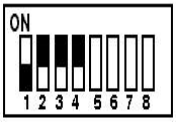
For ENDAT-5701 Rev.1F or later.

ENDAT-5701 CPU Ratio Setting: Switch2(S2:SW6-SW8)

	S2 = **2.5**x				S2 = **3.0**x		
	6	7	8		6	7	8
	ON	ON	OFF		OFF	ON	OFF
	S2 = **2.0**x / **6.0**x				S2 = **1.5**x / **3.5**x		
	6	7	8		6	7	8
	ON	OFF	OFF		OFF	OFF	OFF
	S2 = **4.5**x				S2 = **5.0**x		
	6	7	8		6	7	8
	ON	ON	ON		OFF	ON	ON
	S2 = **4.0**x				S2 = **5.5**x		
	6	7	8		6	7	8
	ON	OFF	ON		OFF	OFF	ON

☛ **Please make sure the CPU Ratio and setting is followed as mention above for your system. The wrong setting may cause the system not working**

ENDAT-5701 CPU CLOCK Setting: Switch1(S1:SW1-SW4)

	CPU = **60**MHz PCI CLK=30MHz					CPU = **66.8**MHz PCI CLK=33.4MHz	
	1	2	3	4		1	2	3	4
	OFF	OFF	OFF	OFF		ON	OFF	OFF	OFF
	CPU = **68.5**MHz PCI CLK=35MHz					CPU = **75**MHz PCI CLK=37.5MHz			
	1	2	3	4		1	2	3	4
	OFF	ON	OFF	OFF		OFF	OFF	OFF	ON
	CPU = **97**MHz PCI LK=26.67MHz					CPU = **83.3**MHz PCICLK=27.76MHz			
	1	2	3	4		1	2	3	4
	OFF	OFF	ON	OFF		ON	OFF	ON	OFF
	CPU = **95.25**MHz PCI LK=31.75MHz					CPU = **100**MHz PCI CLK=33.33MHz			
	1	2	3	4		1	2	3	4
	OFF	ON	ON	OFF		ON	ON	ON	OFF
	CPU = **105**MHz PCI CLK=35MHz					CPU = **110**MHz PCI CLK=36.67MHz			
	1	2	3	4		1	2	3	4
	ON	ON	OFF	ON		OFF	OFF	ON	ON
	CPU = **115**MHz PCI CLK=38.33MHz					CPU = **120**MHz PCI CLK=40MHz			
	1	2	3	4		1	2	3	4
	ON	OFF	ON	ON		OFF	ON	ON	ON

☛ **Please make sure the CPU Clock and setting is followed as mention above for your system. The wrong setting may cause the system not working.**

JP1: CMOS Data Clear:

Pin 1-2 *	Normal
Pin 2-3	Clear CMOS Data

JP2: DiskOnChip Memory Address Selector

JP2		Memory Address
1-2	**7-8**	0C800H-0C9FFH
1-2	**9-10**	0CC00H-0CDFFH
3-4	**7-8**	0DCCCH-0D1FFH
3-4	**9-10**	0D400H-0D5FFH
5-6	**7-8**	0D800H-0D9FFH**(Default)**

JP4: On-board LAN Disable/Enable

Pin 1-2 *	Enable On-Board LAN
Pin 2-3	Disable On-Board LAN

JP6 (COM1) / JP12 (COM3) / JP13 (COM4) Voltage Selector:

Pin No.	JP6(COM1)	JP12(COM3)	JP13(COM4)
1-2	+5V	+12V	+12V
*3-4	STD RS-232	STD RS-232	STD..RS-232
5-6	+12V	+5V	+5V

JP7, JP8, JP9, JP10: RS232 / 422 / 485 Selector for COM2

TYPE	JP7	JP8	JP9	JP10
RS-232 *	1-2	Open	1-2, 4-5, 7-8, 9-10	Open
RS-422	3-4	Close	2-3, 5-6, 8-9, 11-12	1-2, 4-5
RS-485	5-6	Close	2-3, 5-6, 8-9, 11-12	2-3, 5-6

- Make sure the port mode is set up correctly before installing any peripherals.

JP15: On-board Power Good Selector

Pin 1-2 *	Using External Power Good
Pin 2-3	Using On Board Power Good

FAN1, FAN2: CPU / 2nd Cooling Fan Connector

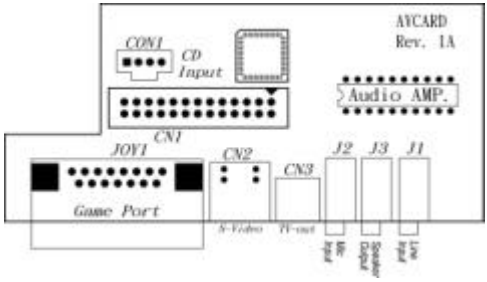
Pin No.	Function
Pin 1	Sensor Pin.
Pin 2	+12V
Pin 3	GND

J3' s Pin15;16;19;20;21: For ATX Power Supply

Close Pin 19-20	Using PS/2 AT Power Supply
Close Pin 20-21	Using ATX Power Supply
Pin 15; Pin 16	On/Off Switch for ATX Power

CN7: Audio Output Port connector via AV Card Kit (Optional)

The AV Card Kit Adapter supports Sound, TV-OUT, S-Video and Game Port. Please close pin13-14 to disable onboard Audio features if the AV Card Kit is not inserted onto the **CN7** connector.



J3: Case Panel connection

Pin No.	Description		
1, 2	IDE 1 LED	Pin 1 = -	Pin 2 = +
3, 4	IDE 2 LED	Pin 3 = -	Pin 4 = +
5, 8	External Speaker		
6, 7	Onboard Buzzer		
9, 10	Reset Switch		
11, 12	Key Lock Switch		
13,14	Power LED Indicator		
15, 16	Power On/Off Switch (for ATX Power only)		
17, 18	Turbo LED(for case only, no function)		
19, 20, 21	19-20 for AT Power	20-21 for ATX Power	
22, 23	Modem Ring Detected / Wake on LAN		

LCD_CON1 (Only for Support LCD Version)

Pin No.	Description	Pin No.	Description
1	VBL	2	VBL
3	GND	4	GND
5	VDDLCD(+3.3V)	6	VDDLCD(+3.3V)
7	ENPVEE	8	GND
9	FPD23	10	FPD22
11	FPD17	12	FPD16
13	FPD11	14	FPD10
15	FPD9	16	FPD8
17	FPD21	18	FPD20
19	FPD15	20	FPD14
21	FDP7	22	FPD6
23	FPD5	24	FPD4
25	FPD19	26	FPD 18
27	FPD13	28	FPD12
29	FPD3	30	FPD2
31	FPD1	32	FPD0
33	GND	34	GND
35	SHFCLK	36	FLM
37	M_DE	38	LP
39	GND	40	VCCUPBKL
41	VCCUPBKL	42	KEY.
43	VDDLCD(+5V)	44	VDDLCD(+5V)

☛ Please make sure the Pin 1 location before inserting the LCD connector.

18Bit TFT DSTN / 16Bit DSTN LCD Panel Mapping

18Bit TFT	16Bit DSTN	18Bit / 18+18 TFT	Pin No.
NC	N.C.	FPD23	9
NC	N.C	FPD22	10
NC	N.C	FPD21	17
NC	N.C.	FPD20	18
NC	N.C	FPD19	25
NC	N.C	FPD18	26
B0	N.C	FPD17	11
B1	N.C	FPD16	12
G0	UD7	FPD15	19
G1	UD6	FPD14	20
R0	UD5	FPD13	27
R1	UD4	FPD12	28
B2	UD3	FPD11	13
B3	UD2	FPD10	14
B4	UD1	FPD9	15
B5	UD0	FPD8	16
G2	LD7	FPD7	21
G3	LD6	FPD6	22
G4	LD5	FPD5	23
G5	LD4	FPD4	24
R2	LD3	FPD3	29
R3	LD2	FPD2	30
R4	LD1	FPD1	31
R5	LD0	FPD0	32

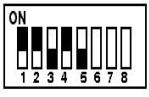
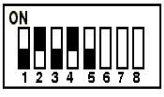
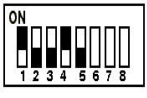
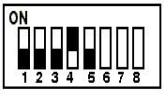
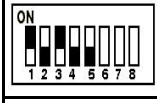
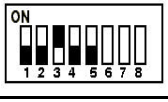
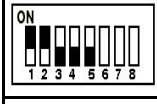
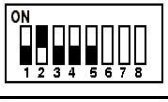
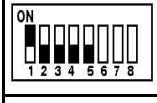
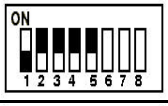
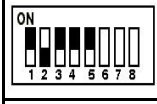
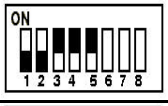
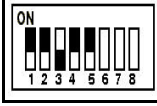
2-2. Jumpers and Connectors (ENDAT-5901)

Function	Jumpers/Connectors
CPU: CPU Clock Frequency	Switch 1 (S1: SW1-SW4)
CPU Ratio	Switch 2 (S2: SW6-SW8)
CPU Vcore Voltage	Switch 2 (S2: SW1-SW5)
Connector for Cooling Fan	FAN1; FAN2
Power Supply: Type (ATX or PS/2)	CN7(ATX) ; CN4(PS/2)
Power Good	JP15
ATX or PS/2 Power Selector	**J4** Pin 19, Pin 20, Pin 21
ATX Power on/off Switch	**J4** Pin 15, Pin 16
Audio/TV-Out Output Port Connector	CN10
Touch Panel Pin Header	J6
LCD Connector	LCD_CON1
TTL Output Pin Header	J2
LAN Adapter Disable/Enable	JP8
COM2/COM3/COM4	CN3, J8, J10
PCI INT selector for Expansion Slot	JP9
COM Ports Power Selector(COM1/3/4)	JP5, JP11, JP13
COM3/COM4 IRQ Setting	BIOS Defined
RS232/RS422/RS485 Selector	JP1, JP2, JP3,JP4
DiskOnChip Memory Address	JP12
Clear CMOS	JP6
PS/2 Keyboard Header	CN6 : PIN 1-3-5-7
PS/2 Mouse Header	CN6 : PIN 2-4-6-8
IR	J7
USB Header	CN1
IDE 1 Connector	J1

Function	Jumpers/Connectors
IDE 2 Connector	J2
FDD Connector	CN2
Header for Case Panel	J4
IDE 1 LED	**J4** Pin 1, Pin 2
IDE 2 LED	**J4** Pin 3, Pin 4
External Speaker	**J4** Pin 5, Pin 8
Onboard Buzzer	**J4** Pin 6, Pin 7
Reset Switch	**J4** Pin 9, Pin 10
Key Lock Switch	**J4** Pin 11, Pin 12
Power LED Indicator	**J4** Pin 13, Pin 14
ATX Power On/Off Switch	**J4** Pin 15, Pin 16
Turbo LED (for case only, no function)	**J4** Pin 17, Pin 18
ATX or PS/2 Power Selector	**J4** Pin 19, Pin 20, Pin 21
Modem Ring Detected / Wake on LAN	**J4** Pin 22, Pin 23

Note: The cooling fan and heat sink are required for Pentium processors. Please pay close attention to the direction of the CPU and cooling fan when install. Position the cooling ventilator directly facing the regulator heat sink, which is located beside the CPU socket. This will reduce the overheating of the regulator and increase the reliability of the system.

ENDAT-5901 CPU Vcore Setting: Switch 2 (S2: SW1-SW5)

	VCORE=3.5V S1 S2 S3 S4 S5 ON ON ON ON OFF		**VCORE=3.4V** S1 S2 S3 S4 S5 OFF ON ON ON OFF
	VCORE=3.3V S1 S2 S3 S4 S5 ON OFF ON ON OFF		**VCORE=3.2V** S1 S2 S3 S4 S5 OFF OFF ON ON OFF
	**VCORE=3.1V** S1 S2 S3 S4 S5 ON ON OFF ON OFF		**VCORE=3.0V** S1 S2 S3 S4 S5 OFF ON OFF ON OFF
	**VCORE=2.9V** S1 S2 S3 S4 S5 ON OFF OFF ON OFF		**VCORE=2.8V** S1 S2 S3 S4 S5 OFF OFF OFF ON OFF
	VCORE=2.7V S1 S2 S3 S4 S5 ON ON ON OFF OFF		**VCORE=2.6V** S1 S2 S3 S4 S5 OFF ON ON OFF OFF
	**VCORE=2.5V** S1 S2 S3 S4 S5 ON OFF ON OFF OFF		**VCORE=2.4V** S1 S2 S3 S4 S5 OFF OFF ON OFF OFF
	**VCORE=2.3V** S1 S2 S3 S4 S5 ON ON OFF OFF OFF		**VCORE=2.2V** S1 S2 S3 S4 S5 OFF ON OFF OFF OFF
	**VCORE=2.1V** S1 S2 S3 S4 S5 ON OFF OFF OFF OFF		**VCORE=2.0V** S1 S2 S3 S4 S5 OFF ON ON ON ON
	**VCORE=1.95V** S1 S2 S3 S4 S5 ON OFF ON ON ON		**VCORE=1.90V** S1 S2 S3 S4 S5 OFF OFF ON ON ON
	**VCORE=1.85V** S1 S2 S3 S4 S5 ON ON OFF ON ON		**VCORE=1.80V** S1 S2 S3 S4 S5 OFF ON OFF ON ON

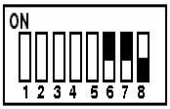
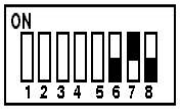
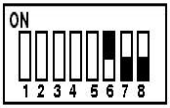
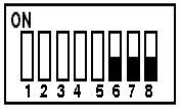
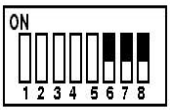
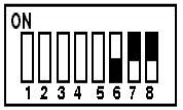
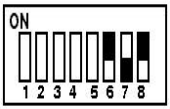
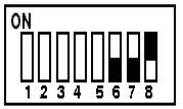
☛ **Please make sure the CPU Vcore voltage and setting as mention**

above for your system. The wrong setting may cause CPU damage or system not working.

For ENDAT-5901 Rev.1D or later.

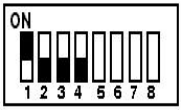
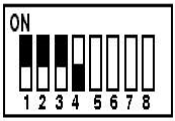
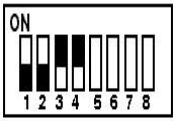
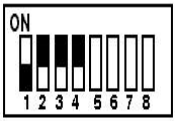
For ENDAT-5701 Rev.1F or later.

ENDAT-5901 CPU Ratio Setting: Switch2 (S2:SW6-SW8)

	S2 = **2.5**x				S2 = **3.0**x		
	6	7	8		6	7	8
	ON	ON	OFF		OFF	ON	OFF
	S2 = **2.0**x / **6.0**x				S2 = **1.5**x / **3.5**x		
	6	7	8		6	7	8
	ON	OFF	OFF		OFF	OFF	OFF
	S2 = **4.5**x				S2 = **5.0**x		
	6	7	8		6	7	8
	ON	ON	ON		OFF	ON	ON
	S2 = **4.0**x				S2 = **5.5**x		
	6	7	8		6	7	8
	ON	OFF	ON		OFF	OFF	ON

☛ **Please make sure the CPU Ratio and setting is followed as mentio n above for your system. The wrong setting may cause the system not working**

ENDAT-5901 CPU CLOCK Setting: Switch1(S1:SW1-SW4)

	CPU = **60**MHz PCI CLK=30MHz					CPU = **66.8**MHz PCI CLK=33.4MHz					
	1	2	3	4		1	2	3	4		
	OFF	OFF	OFF	OFF		ON	OFF	OFF	OFF		
	CPU = **68.5**MHz PCI CLK=35MHz					CPU = **75**MHz PCI CLK=37.5MHz					
	1	2	3	4		1	2	3	4		
	OFF	ON	OFF	OFF		OFF	OFF	OFF	ON		
	CPU = **97**MHz PCI LK=26.67MHz					CPU = **83.3**MHz PCICLK=27.76MHz					
	1	2	3	4		1	2	3	4		
	OFF	OFF	ON	OFF		ON	OFF	ON	OFF		
	CPU = **95.25**MHz PCI LK=31.75MHz					CPU = **100**MHz PCI CLK=33.33MHz					
	1	2	3	4		1	2	3	4		
	OFF	ON	ON	OFF		ON	ON	ON	OFF		
	CPU = **105**MHz PCI CLK=35MHz					CPU = **110**MHz PCI CLK=36.67MHz					
	1	2	3	4		1	2	3	4		
	ON	ON	OFF	ON		OFF	OFF	ON	ON		
	CPU = **115**MHz PCI CLK=38.33MHz					CPU = **120**MHz PCI CLK=40MHz					
	1	2	3	4		1	2	3	4		
	ON	OFF	ON	ON		OFF	ON	ON	ON		

☛ Please make sure the CPU Clock and setting is followed as mention above for your system. The wrong setting may cause system not working.

JP1, JP2, JP3, JP4: RS232 / 422 / 485 Selector for COM2

	JP1	JP2	JP3	JP4
RS-232*	1-2	Open	1-2, 4-5, 7-8, 9-10	Open
RS-422	3-4	Close	2-3, 5-6, 8-9, 11-12	1-2, 4-5
RS-485	5-6	Close	2-3, 5-6, 8-9, 11-12	2-3, 5-6

- Make sure the port mode is set up correctly before installing any peripherals.

JP5 (COM1) / JP11 (COM3) / JP13 (COM4) Voltage Selector:

	JP5(COM1)	JP11(COM3)	JP13(CPM4)
1-2	+5V	+12V	+12V
***3-4**	STD.RI	STD.RI	STD.RI
5-6	+12V	+5V	+5V

JP6: CMOS Data Clear

Pin 1-2 *	Normal
Pin 2-3	Clear CMOS Data

JP8: On-board LAN Disable/Enable

Pin 1-2 *	Enable On-Board LAN
Pin 2-3	Disable On-Board LAN

JP12: DiskOnChip Memory Address Selector

JP12		Memory Address
1-2	**7-8**	0C800H-0C9FFH
1-2	**9-10**	0CC00H-0CDFFH
3-4	**7-8**	0DCCCH-0D1FFH
3-4	**9-10**	0D400H-0D5FFH
5-6	**7-8**	0D800H-0D9FFH**(Default)**

JP15: On-board Power Good Selector

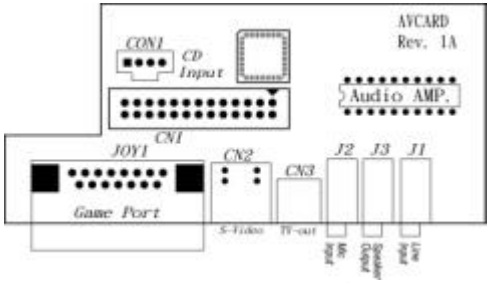
Pin 1-2 *	Using External Power Good
Pin 2-3	Using On Board Power Good

FAN1, FAN2: CPU / 2ND Cooling Fan Connector

Pin No.	Function
1	Sensor Pin.
2	+12V
3	GND

CN10: Audio Output Port connector via AV Card Kit (Optional)

The AV Card Kit Adapter supports Sound, TV-OUT, S-Video and Game Port. Please close pin13-14 to disable onboard Audio features if the AV Card Kit is not inserted onto the **CN10** connector.



J4' s Pin15;16;19;20;21: For ATX Power Supply

Close Pin 19-20	Using PS/2 AT Power Supply
Close Pin 20-21	Using ATX Power Supply
Pin 15; Pin 16	On/Off Switch for ATX Power

J4: Case Panel connection

Pin No.	Description		
1, 2	IDE 1 LED	Pin 1 = -	Pin 2 = +
3, 4	IDE 2 LED	Pin 3 = -	Pin 4 = +
5, 8	External Speaker		
6, 7*	Onboard Buzzer		
9, 10	Reset Switch		
11, 12	Key Lock Switch		
13,14	Power LED Indicator		
15, 16	ATX Power On/Off Switch		
17, 18	Turbo LED (for case only, no function)		
19, 20, 21	19-20 for AT*	20-21 for ATX	
22, 23	Modem Ring Detected / Wake on LAN		

LCD_CON1 (Only for Support LCD Version)

Pin No.	Description	Pin No.	Description
1	VBL	2	VBL
3	GND	4	GND
5	VDDLCD(+3.3V)	6	VDDLCD(+3.3V)
7	ENPVEE	8	GND
9	FPD23	10	FPD22
11	FPD17	12	FPD16
13	FPD11	14	FPD10
15	FPD9	16	FPD8
17	FPD21	18	FPD20
19	FPD15	20	FPD14
21	FDP7	22	FPD6
23	FPD5	24	FPD4
25	FPD19	26	FPD 18
27	FPD13	28	FPD12
29	FPD3	30	FPD2
31	FPD1	32	FPD0
33	GND	34	GND
35	SHFCLK	36	FLM
37	M_DE	38	LP
39	GND	40	VCCUPBKL
41	VCCUPBKL	42	KEY
43	VDDLCD(+5V)	44	CDDLCD(+5V)

☛ Please make sure the Pin **1** location is set up correctly before inserting the LCD connector.

18Bit TFT / 16Bit DSTN LCD Panel Mapping

18Bit TFT	16Bit DSTN	18Bit / 18+18 TFT	Pin No.
NC	N.C.	FPD23	9
NC	N.C.	FPD22	10
NC	N.C.	FPD21	17
NC	N.C.	FPD20	18
NC	N.C.	FPD19	25
NC	N.C.	FPD18	26
B0	N.C.	FPD17	11
B1	N.C.	FPD16	12
G0	UD7	FPD15	19
G1	UD6	FPD14	20
R0	UD5	FPD13	27
R1	UD4	FPD12	28
B2	UD3	FPD11	13
B3	UD2	FPD10	14
B4	UD1	FPD9	15
B5	UD0	FPD8	16
G2	LD7	FPD7	21
G2	LD6	FPD6	22
G4	LD5	FPD5	23
G5	LD4	FPD4	24
R2	LD3	FPD3	29
R3	LD2	FPD2	30
R4	LD1	FPD1	31
R5	LD0	FPD0	32
	16Bit DSTN	TFT PD Pins	Pin No.

2-3. Installing Memory

The motherboard offers two 168pin DIMM sockets supporting up to 512MB of memory. The DIMM memory can be 66MHz or 100MHz (PC-100).

2-4. Shared VGA Memory

The ENDAT-5701 / ENDAT-5901 is using built-in AGP VGA controller with share memory architecture (SMA) - **AGP mode with 4MB/8MB** or **PCI mode with 2MB** of system memory. The amount of video memory on motherboard determines the number of colors and the video graphic resolution.

2-5. Installing Riser Card

Installing Riser Card (Max. 3 PCI Slot on Riser Card)

PCI Slot	INT	ADSEL
PCI 1	A,B,C,D	AD24(Onboard LAN)
PCI 2	B,C,D,A	AD23
PCI 3	C,D,A,B	AD22
PCI 4	D,A,B,C	AD21

There are two different riser cards that can be fitted to ENDAT-5701/ENDAT-5901 All-In-One motherboard. The first one is a 98pin ISA only Bus riser card (traditional ISA Bus riser card), the second one is a 188pin PCI/ISA riser card.

Please note: PCI/ISA riser cards jumper settings have to be matched with the motherboard INT/AD select. The default INT/AD select for ENDAT-5701/5901 All-In-One motherboard is listed on the above table. However it could be revised by changing the JP16(5701) / JP9(5901) setting for INT(routing).

Caution: Do not insert PCI Bus Add-On cards directly into the on-board expansion slot!

2-6. Assigning IRQs for Expansion Cards

Some expansion cards require an IRQ (Interrupt request vector) to operate. Generally, each IRQ must be exclusively assigned to specific use. In a standard design, there are 16 IRQ available with 11 of them already in used by other part of the system.

Both ISA and PCI expansion cards may need to use IRQ. Cards installed in the ISA Expansion Bus has the first priority to use the available system IRQs. Any remaining IRQ then, may be assigned to this PCI Bus. Microsoft's Diagnostic (MSD.EXE) utility included in the Windows directory can be used to see their map. Make sure that there are no two devices using the same IRQ in the system. Otherwise this will cause the system to hang up or give unexpected results. To simplify the process, this motherboard complies with the Plug and Play (PnP) specifications, which was developed to allow automatic system configuration. Whenever a PnP-compliant card is added to the system, PnP cards and IRQs are automatically assigned if available. If the system has both Legacy and PnP ISA cards installed. IRQs are assigned to PnP cards from those not used by Legacy cards. The PCI and PnP configuration in the BIOS setup utility can be used to indicate which IRQs have being used by Legacy cards. For older Legacy cards that do not work with the BIOS, you can contact your vendor for an ISA configuration utility.

An IRQ number is automatically assigned to PCI expansion cards after those used by Legacy and PnP ISA cards. In the PCI Bus design, the BIOS is automatically assigned an IRQ to a PCI slot that has a card in it which requires an IRQ. To install a PCI card, you need to set the correct "ADSEL" and "INT" (interrupt) assignment. Please refer to "Chapter 2-5" Installing a Riser Card for detail assignments.

IRQ	Status	Assignment
0	Used	Timer
1	Used	Keyboard
2	Used	Second 8259
3	Used	COM2
4	Used	COM1
5	Used	COM3 / SoundBlaster

IRQ	Status	Assignment
6	Used	Floppy Disk
7	Used	LPT1
8	Used	RTC
9	Used	Redirected IRQ2 / SoundBlaster
10	Used	COM4 (Optional)
11	Used	LAN Adapter (on board)
12	Used	PS/2 Mouse
13	Used	Coprocessor
14	Used	Hard Disk (IDE 1)
15	Used	Reserved (IDE 2)

2-7. Assigning DMA Channels for ISA Cards

Since ISA cards, both Legacy and PnP may also need to use a DMA (direct memory access) channel, DMA assignments for this motherboard are handled the same way as the IRQ assignment process described above. You can select a DMA channel in the PCI and PnP configuration section of the BIOS setup utility. In the BIOS setup, you should choose "Yes" for those IRQ's and DMA's you wish to reserve for Legacy cards.

Chapter 3. AWARD BIOS SETUP

Use the CMOS setup program to modify the system parameters to reflect the environment installed in your system and to customize the system as desired. Press the <DEL> key to enter into the CMOS setup program when you turn on the power. Settings can be accessed via arrow keys. Press <Enter> to choose an option to configure the system properly.

In the main menu, press F10 or "SAVE & EXIT SETUP" to save your changes and reboot the system. Choose "EXIT WITHOUT SAVING" to ignore the changes and exit the setup procedure. Pressing <ESC> at anywhere during the setup will return to the main menu.

"THE BIOS FEATURE SETUP", "CHIPSET FEATURE SETUP" and "PCI CONFIGURATION SETUP" requires board knowledge on PC/AT system architecture and VIA MVP3 chipset specification. They intend to be used by well-trained technicians and experienced users. Incorrect setup could cause system malfunctions.

3-1. Quick Setup

In most cases, you can quickly configure the system by using the following procedure. The manufacturer highly recommends that you use "Quick Setup" for setting CMOS to avoid any unpredictable results.

1. Choose "STANDARD CMOS SETUP" from the main menu, to configure the date and time, hard disk type, floppy disk drive type etc.
2. Choose "LOAD SETUP DEFAULTS" from the menu for loading the defaults from the "BIOS Feature Setup" and "Chipset Feature Setup" which is set by the manufacturer for the most stable normal configuration.
3. Press F10 or "SAVE & EXIT SETUP" to save the changes and reboot the system.

3-2. Description of the BIOS Setup Option

Please make clear the means of those option parameters. Improper settings will cause the system to hang up or perform poorly. Most items are clearly understood from the screen prompt. The manufacturer highly recommends that "Default" settings have been used to avoid any unpredictable results.

3-3. BIOS Feature Setup

ROM PCI/ISA BIOS (2A5LHU4A)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC

Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CFFFF Shadow	: Disabled
Quick Power On Self Test	: Enabled	D0000-D3FFF Shadow	: Disabled
Boot Sequence	: A,C,SCSI	D4000-D7FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D8000-DBFFF Shadow	: Disabled
Boot Up Floppy Seek	: Disabled	DC000-DFFFF Shadow	: Disabled
Boot Up NumLock Status	: On	Cyrix 6x86/MII CPUID	: Enabled
Gate A20 Option	: Normal		
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		

3-4. Details of the Chipset Feature Setup

ROM PCI/ISA BIOS (2A5LHU4A)
CHIPSET FEATURE SETUP
AWARD SOFTWARE, INC

Bank 0/1 DRAM Timing	: SDRAM 8/10ns	
Bank 2/3 DRAM Timing	: SDRAM 8/10ns	
SDRAM Cycle Length	: 2	
DRAM Read Pipeline	: Enabled	
Sustained 3T Write	: Enabled	
Cache R/CPU W Pipeline	: Enabled	
Cache Timing	: Fast	
Video BIOS Cacheable	: Enabled	
System BIOS Cacheable	: Enabled	
Memory Hole	: Disabled	
Init Display First	: AGP	
Frame Buffer Size	: 8M	
AGP Aperture Size	: 128M	
OnChip USB	: Disabled	
OnChip Sound	: Enabled	

Bank 0/1, 2/3 DRAM Timing

This field is set by the system board manufacturer, which is depending on whether the board has paged DRAMs or SDRAMs.

SDRAM Cycle Length

This item sets the CAS latency timing.

DRAM Read Pipeline

You may select Enabled for this field when PBSRAMs are installed. Pipelining improves system performance.

Cache R/CPU W Pipeline

This item allows you to enable or disable the cache timing.

Video BIOS Cacheable

When enabled, the Video BIOS cache will cause access to video BIOS addressed at C0000H to C7FFFH to be cached, if the cache controller is also enabled.

System BIOS Cacheable

Enabling this selection allows access to the system BIOS ROM addressed F0000H-FFFFFH to be cached, provided the cache controller is enabled.

Memory Hole At 15Mb Addr.

In order to improve performance, certain space in memory is reserved for ISA cards. This memory must be mapped into the memory space below 16MB.

Init Display First

Setting the initiate display type with "PCI" or "AGP" mode

Frame Buffer Size

Allocate the share memory size from system memory for Video

AGP Aperture Size

Selecting the size of Accelerated Graphics Port (AGP) aperture. The Aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation. See www.apgforum.org for AGP information.

OnChip USB

Select "Enabled" if your system contains a Universal Serial Bus (USB) controller and you have a USB peripheral. The "Assign IRQ for USB" has to be set to Enabled on "PnP/PCI Configuration" (when the USB be used.)

On Chip Sound

Setting the On Chip sound feature to disabled or enabled

3-5. Details of Power Management Setup

ROM PCI/ISA BIOS (2A5LHU4A)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC

ACPI Function	: Disabled	Primary INTR	: ON
Power Management	: User Define	IRQ3 (COM2)	: Primary
PM Control by APM	: Yes	IRQ4 (COM1)	: Primary
Video Off Method	: V/H Sync + Blank	IRQ5 (LPT 2)	: Primary
Video off After	: Suspend	IRQ6 (FDD)	: Primary
MODEM Use IRQ	: 3	IRQ7 (LPT 1)	: Primary
Doze Mode	: Disable	IRQ8 (Alarm)	: Disabled
Suspend Mode	: Disable	IRQ9 (Rsv)	: Secondary
HDD Power Down	: Disable	IRQ10 (Rsv)	: Secondary
Soft-Off by PWRBTN	: Instant-Off	IRQ11 (Rsv)	: Secondary
** PM Events **		IRQ12 (PS/2)	: Primary
VGA	: OFF	IRQ13 (CoPro)	: Primary
LPT & COM	: LPT/COM	IRQ14 (HDD)	: Primary
HDD & FDD	: ON	IRQ15 (Rsv)	: Disabled
PCI Master	: OFF		

Power Management

This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

1. Doze Mode
2. Suspend Mode
3. HDD Power Down

There are four selections for Power Management, three of which have fixed mode settings:

Disable (Default)	No Power Management. Disables all four modes
Min. Power Saving	Minimum power management. Doze Mode = 1 hr., Standby Mode = 1 hr., Suspend Mode = 1 hr., and HDD power down = 15 min.

Max. Power Saving	Maximum power management – **Only Available for SL CPU's.** Doze Mode = 1 min., Standby Mode = 1 min., Suspend Mode = 1 min., And HDD power down = 1 min.
User Defined	Allows you to set each mode individually. When enabled, each of the ranges are from 1 min. to 1 hr. except for HDD power down, which ranges from 1 min. to 15 min. and disable

PM Control by APM

When enabled, an Advanced Power Management device will be activated to enhance the Maximum Power saving mode and to stop the CPU internal clock. If Advance Power Management (APM) is installed on your system, selecting "Yes" gives better power savings. If the Maximum Power Saving is not enabled, this will be preset to NO.

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 to write blank to the video buffer
Blank Screen	This option only writes blank to the video buffer
DPMS	Select this option if your monitor supports the Display Power Management Signaling (DPMS) standard of the Video Electronics Standard to select video power management values

MODEM Use IRQ

This determines the IRQ in which the MODEM can be used.

Soft-Off by PWRBTN

When Enabled, turning the system off with the on/off button places the system in a very low-power-usage state, with only enough circuitry receiving power to detect power button activity or Resume by Ring activity.

HDD Power Down

When enabled and after the "Set time of system inactivity", the hard disk drive will be powered down while all other devices remain active.

Doze Mode

When enabled and after the "Set time system inactivity", the CPU clock will run at a slower speed while all other devices operate at full speed.

Suspend Mode

When enabled, after the "Set time of system inactivity", all devices except the CPU will be shut off.

3-6. PCI Configuration Setup

This section describes the configuration of the PCI bus system. PCI is a system that allows I/O device to operate at speeds nearing the speed of the CPU itself, when communicating with its own special components. This section covers some very technical items. It is strongly recommended that only experienced users make any changes to the default settings.

ROM PCI/ISA BIOS (2A5LHU4A)
PNP/PCI CONFIGURATION
AWARD SOFTWARE, INC

PNP OS Installed	: Yes	CPU to PCI Write Buffer	: Enabled
Resources Controlled By	: Manual	PCI Dynamic Bursting	: Enabled
Reset Configuration Data	: Disabled	PCI Master 0 WS Write	: Enabled
		PCI Delay Transaction	: Enabled
IRQ-3 Assigned to	: Legacy ISA	PCI #2 Access #1 Retry	: Enabled
IRQ-4 Assigned to	: Legacy ISA	AGP Master 1 WS Write	: Enabled
IRQ-5 Assigned to	: PCI/ISA PnP	AGP Master 1 WS Read	: Disabled
IRQ-7 Assigned to	: Legacy ISA		
IRQ-9 Assigned to	: PCI/ISA PnP	Assign IRQ For USB	: Disabled
IRQ-10 Assigned to	: PCI/ISA PnP	Assign IRQ For VGA	: Disabled
IRQ-11 Assigned to	: PCI/ISA PnP		
IRQ-12 Assigned to	: PCI/ISA PnP		
IRQ-14 Assigned to	: PCI/ISA PnP		
IRQ-15 Assigned to	: PCI/ISA PnP		
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		

PNP OS Installed

Select "Yes" if the system operating environment is Plug-and-Play software (e.g. Windows95).

Resource Controlled By

The Award Plug and Play BIOS has the capability to automatically configuring the all of device with Plug and Play function.

Reset Configuration Data

Normally, you can leave this field Disabled. If you have installed new add-on device and the system configuration has caused a serious conflict that the operating system cannot boot, then, select enabled to reset Extended System Configuration Data (ESCD) when exit setup.

IRQ3/4/5/7/9/10/11/12/14/15 Assigned to

When resources are controlled manually, assign each system interrupt as one of the following types, depending on the type of device using the interrupt:

Legacy ISA Devices is compliant with the original PC/AT bus specification; it requires a specific interrupt (such as IRQ4 for serial port). PCI/ISA PnP Devices is compliant with the Plug and Play standard, no matter if it is originally designed for PCI or ISA bus architecture.

DMA0/1/3/5/6/7 Assigned to

When resources are controlled manually, assign each system DMA channel as one of the following types, depending on the type of device using the interrupt:

Legacy ISA Devices is compliant with the original PC AT bus specification; it requires a specific interrupt (such as IRQ4 for serial port). PCI/ISA PnP Devices compliant with the Plug and Play standard, no mater if it is designed for PCI or ISA bus architecture.

CPU to PCI Write Buffer

When enabled, up to four D words of data can be written to the PCI bus without interrupting the CPU. When disabled, a write buffer is not used and the CPU read cycle will not be completed until the PCI bus signals is ready to receive the data.

PCI Delay Transaction

The chipset has an embedded 32-bit posted write buffer to support delay transaction cycles. Select Enabled to support compliance with PCI specification version 2.1.

3-7. System Environment

Provide some information such as CPU temperature, speed of cooling fan and usage voltage of CPU for user.

3-8. Integrated Peripherals

ROM PCI/ISA BIOS (2A5LHU4A)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC

OnChip IDE Channel 0	: Enabled	Onboard Parallel Mode	: ECP
OnChip IDE Channel 1	: Enabled	ECP Mode use DMA	: 3
IDE Prefetch Mode	: Enabled		
HDD Block Mode	: Enabled	Onboard serial Port 3	:3E8H
Primary Master PIO	: Auto	Serial Port 3 Use IRQ	:IRQ5
Primary Slave PIO	: Auto	Onboard serial Port 4	:2E8H
Secondary master PIO	: Auto	Serial Port 4 Use IRQ	:IRQ10
Secondary Slave PIO	: Auto		
Primary Master UDMA	: Auto	Onboard Legacy Audio	: Enabled
Primary Slave UDMA	: Auto	Sound Blaster	:Enabled
Secondary Master UDMA	: Auto	SB I/O Base Address	: 220H
Secondary Slave UDMA	: Auto	SB IRQ Select	: IRQ 9
		SB DMA Select	: DMA1
Onboard FDD Controller	: Enabled	MPU-401	: Enabled
Onboard Serial Port 1	: 3F8/IRQ4	MPU-401 I/O Address	: 330-333H
Onboard Serial Port 2	: 2F8/IRQ3	Game Port (200-207H)	: Enabled
UART 2 Mode	: Standard		
Onboard Parallel Port	: 378/IRQ7		

OnChip First/Second IDE Channel

This chipset contains a PCI IDE interface with support for two IDE channels. Select Enabled to activate the first and/or second IDE interface. Select Disabled to deactivate this interface, if a first and/or second add-in IDE interface is installed.

IDE Prefetch Mode

Enable pre-fetch for IDE drive interface that supports its faster drive access. If disk drive errors appear, change the setting to omit the drive interface where the errors occur. Depending on the configuration of IDE subsystem, this field may not appear, and does not appear when the Internal PCI/IDE field is "Disabled".

IDE HDD Block Mode

This allows hard disk controller to use the fast block mode to transfer data to and from hard disk drive (HDD). Select Enabled only if hard drives support block mode.

IDE Primary/Secondary Master/Slave PIO

The four IDE IPO (Programmed Input/Output) fields allow setting a PIO mode (0-4) for each of the four IDE devices which the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In auto mode, the system automatically determines the best mode for each device.

IDE Primary/Secondary Master/Slaver UDMA

Ultra DMA/33 implementation is possible only if your IDE hard drive support it and the operating environment includes a DMA drive (Windows 95 OSR2 or a third-party IDE bus master driver). If the hard drive and system software both support Ultra DMA/33, select Auto enable BIOS support.

Onboard FDD Controller

This should be enabled if system has a floppy disk drive (FDD) installed on the system.

Onboard Serial Port 1/ Port 2 / Port 3 / Port 4

This item allows determining the I/O address and IRQ of the onboard serial port.

UART 2 Mode

This item allows determining which Infrared (IR) function of onboard I/O chip.

Onboard Parallel Port

This item allows determining the I/O address of onboard parallel port.

Onboard Parallel Mode

Select an operating mode for the onboard parallel port. Normal EPP (Extended Parallel Port), ECP (Extended Capabilities Port) ECP+EPP PC AT parallel port Bi-directional port Fast, buffered port Fast, buffered and Bi-directional port. Select Normal, unless it is sure that the hardware and software both support EPP or ECP mode.

Chapter 4. VGA, LCD, DOC, IDE Feature

4-1. AGP-BUS VGA Feature

The on-board built-in Graphic Controller is a highly integrated display control device that incorporates a 64-bit 3D/2Dgraphic engine and video accelerator with advanced DVD video and optional TV out capability. It provides a flexible and high performance solution for graphics and video playback acceleration for various color depth and resolution modes.

The onboard built-in VGA is a fully integrated CRT and TV 64-bit 2D/3D Accelerator. The high performance graphics engine offers high speed 3D image processing in full compliance and compatibility with IBM® VGA and VESA ™ extended VGA. As an integrated controller, it allows unprecedented cost and performance advantages by eliminating the need for an external frame buffer while at the same time gaining local access to a larger amount of memory. Many functions can now be eliminated that previously consumed large amounts of bandwidth.

The onboard VGA equipped with a single-cycle 3D GUI Engine, pipelines 3D rendering process architecture in hardware, providing real-time interactions with solid 3D models in CAD/CAM, 3D modeling, and 3D games. It supports all key 3D rendering operations, including: Guard shading for smooth object surfaces, texture mapping for realistic object textures, 16-bit hardware Z-buffering for fast 3D depth calculations, and Alpha Blending for transparency effects.

The onboard VGA controller supports a full AGP implementation internally to remain compatible with existing software and programming models. However, since the engine is integrated it enjoys a higher bandwidth and lower latency than is possible with discrete solutions. AGP operations can include direct access of the system memory by the 2D/3D engine to provide increased texture memory.

To meet the requirements of a PC98 graphics adapter in a multimedia PC, the onboard VGA controller supports planar video format for MPEG-1, MPEG-2, and

DVD-video playback. The dual video playback is capable of overlaying windows for videoconferencing and multimedia displays. By using an extended 16-bit capture / ZV port the onboard VGA controller can support DTV resolution. This port can operate as either an input for video capture or as an output for video display. The onboard VGA controller is capable of supporting three simultaneous displays: CRT (analog monitor), Flat Panel (digital monitor), and video (standard television display), each with a different "window" or desktop.

- High Performance single cycle GUI
- Highly Integrated RAMDAC™and Triple Clock Synthesizer
- Full Feature High Performance 3D Graphics Engine
- High speed internal AGP Bus Mastering data bus supporting DVD video playback & 3D
- Hardware implementation of motion compensation
- Dual Video Windows for Videoconferencing
- TrueVideo®and DirectVideo™Hardware Support
- Versatile Motion Video Capture/Overlay/Playback Support
- Flexible Frame Buffer Memory Interface
- Advanced Power Management Features
- CRT Power Management (VESA™DPMS)
- PC98 Hardware Support

4-2. LCD Flat Panel Feature

The on-board flat panel interface is designed to support industry standard TFT and DSTN panels. The Flat Panel interface can also be used to drive external LVDS or PanelLink™transmitters.

The high performance VGA Controller provides full hardware level VGA compatibility. At reset, the onboard flat panel is in hardware level VGA mode and all of the standard VGA subsections (Display Controller, VGA Graphics Controller, and Attribute Controller) are enabled.

The onboard flat panel supports LVDS and PanelLink™, providing a low voltage, high speed, low EMI, serial DC-balanced differential data to the LCD panel.

The flat panel interface provides or supports the following functions for various panels:

- Generates flat panel interface signals like **FLM, LP, SCLK**, and **DE**
- Generates different video data formats to directly drive different types of panels
- Vertical and horizontal expansion of video displays to LCD panel resolution
- Vertical and horizontal centering
- Panel power sequence

4-3. PCI Bus Audio Adapter Features

The Chipset built-in SoundBlaster Pro Hardware and Direct Sound Ready AC97 Digital Audio Controller

- Dual full-duplex direct sound channels between system memory and AC97 link
- PCI Master interface with scatter / gather and bursting capability
- 32byte FIFO of each direct sound channel
- Host based sample rate converter and mixer
- Standard v1.0 or v2.0 AC98 Codec interface for single or cascaded AC97 Codec's from multiple vendors
- Loopback capability for re-directing mixed audio streams into USB and 1394 speakers
- Hardware SoundBlaster Pro for Windows DOS box and real-mode DOS legacy compatibility
- Plug and Play with 4 IRQ, 4 DMA and 4 I/O space options for SoundBlaster Pro and MIDI hardware
- Hardware assisted FM synthesis for legacy compatibility
- Complete software driver support for Windos-95, Windows-98 and Windows-NT

4-4. DiskOnChip Feature

On board reserved is a 32-pin Socket for DiskOnChip 2000, it is a unique data storage solution to offer a better, faster and more cost effective Flash Disk for applications.

The DiskOnChip 2000 provides a Flash Disk (as BIOS expansion) that does not require any additional bus, slot or connector. Simply insert the DiskOnChip 2000 into a 32-pin socket on your motherboard. With minimal installation costs, you have a bootable Flash Disk. DiskOnChip 2000 has built-in TrueFFS (True Flash File System) technology, which provides full Read/Write disk emulation.

TrueFFS provides hard disk compatibility at both the sector and file level. It works in a variety of operating system environments, such as DOS, Win95, WinCE, WinNT, Psos+ and QNX.

You have to set the correct memory address for DiskOnChip by **JP2(for 5701);JP12 (for 5901)**. The driver utilities are placed onto CD-ROM

JP2(5701) / JP12(5901)		**Memory Address**
Pin 1-2	Pin 7-8	0C800H - 0C9FFH
Pin 1-2	Pin 9-10	0CC00H – 0CDFFH
Pin 3-4	Pin 7-8	0DCCCH – 0D1FFH
Pin 3-4	Pin 9-10	0D400H - 0D5FFH (Default)
Pin 5-6	Pin 7-8	0D800H - 0D9FFH

4-5. Driver Utility Installation Guide

The directory of driver utilities on the CD-ROM:

For System chipset : "4in1"
Audio Drivers : "686audio"
AGP VGA Drivers : "Mvp4"
PCI IDE / UDMA Drivers :"4in1"

LAN Drivers : "Rtl8139"
DOC Utilities : "Docutl"

When finished with the Windows platform (95/98/2000/NT) installation, please install the relative VIA driver (**4in1)** utilities for compliance of the compatibility with hardware environment.

We strongly recommended using the 4-in-1 driver to install your system as 4-in-1 driver will automatically detect and update the necessary drivers.

This driver will automatically detect and install the latest utilities: **IDE Busmaster**

VIA AGP Driver: Install the VIA AGPVxD driver to enable VIA chipset work with AGP bus function.

IRQ Routing Driver 1.3a: Using the VIA fixing utility to fix all VIA South bridge with Windows

VIA INF Driver 1.02: To enable VIA chipset to recognizing some legacy or PCI devices

LAN Driver: Install the LAN driver for on-board LAN adapter. Please refer to Chapter 5-9 the Realtek 8139 LAN Driver Installation Procedure.

VGA Driver: Install the VGA driver for on-board AGP VGA adapter

Please download or check from VIA Web-site: www.via.com.tw **if you prefer to install the drivers individually or you need more information.**

Chapter 5. LAN Adapter

The on-board LAN adapter use of Single Chip Fast Ethernet Controller, that is highly integrated and requires no "glue" logic external memory on board. It runs in the bus master mode and directly sending/receiving Ethernet packet to/from memory. The On-board LAN adapter can directly fetch the system CPU. Also, it can transfer data Directly between I/O devices and system memory in the 32-bit bus master mode that provides low CPU utilization.

It complies with the IEEE 802.3u standard, IEEE802.3 standard and PCI Local Bus version 2.1 and transmits data on the network at 100 Mbps or 10 Mbps. It also operates in full-duplex mode that **doubles the network speed up to 20/200 Mbps when working with Fast Switching Hub.** Built-in one RJ-45 port for connection of 100Base-TX Fast Ethernet or 10Base-T Ethernet network, and automatically senses the connection type.

5-1. Features

- Full compliancy with PCI Rev. 2.1
- Complies with the Ethernet/IEEE 802.3u 100Base-TX and 10 Base-T industry standard
- Supports full-duplex operations, thus doubling the network speed up to 20Mbps on 10 Base-T Ethernet or 200Mbps on 100 Base-TX Fast Ethernet when setting in full duplex mode
- Two LED indicators to report network status
- One RJ-45 connector with Auto-sense cable type of 10 or 100Mbps network operation
- Supports PCI clock speed up to 33MHz, capable of zero wait states
- Supports optional Remote Boot ROM socket
- Provides a comprehensive setup program for displaying the adapter configuration and includes diagnostic on board or network tests.
- Complete drivers for Novell, ODI, SCO UNIX, LAN Manager, Windows NT and Windows 95/98 Packet driver etc

5-2. UTP Cable / RJ-45 Jack Definition

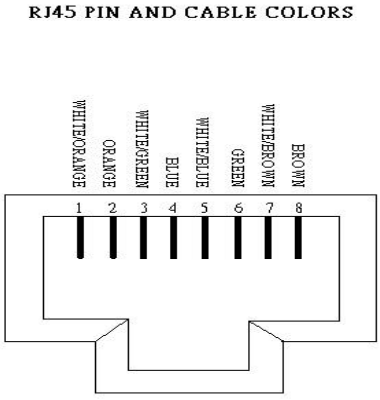
Straight through twisted pair cable is typically used to connect a hub to a server or workstation. In a straight through connection, Pin 1 at the server, Pin 2 at the hub connects to Pin 2 at the server, and so on. Figure A-1 shows the locations of pins on a standard RJ-45 plug on a twisted-pair cable.

Table A-1 shows the wiring in a straight-through twisted-pair cable (Pins 4,5,7 and 8 are not used).

Twisted Pair Number	Pin Number	Signal Description	To	Pin Number	Signal Description
1	1 2	TD+ TD-	→	1 2	TD+ TD-
2	3 6	RD+ RD-	→	3 6	RD+ RD-

RJ-45 Connector Pin Assignments

Figure A-1 shows the RJ-45 Connector pin assignments



5-3. Connecting 100Base-TX Fast Ethernet Network

The system board provides an RJ-45 port for connection to 100Base-TX Fast Ethernet or 10Base-T Ethernet Network with a single connection over unshielded twisted-pair (UTP). The adapter automatically operates at 10Mbps or 100Mbps when the appropriate 10/100Base hub be connected.

To connect the adapter to 100Base-TX Fast Ethernet Network, you need a twisted-pair Category 5 cable with RJ-45 modular jacks at both ends. This cable can have a maximum length of 300 feet (100 meters).

5-4. Connecting 10Base-T Ethernet Network

To connect the adapter to a 10Base-T Ethernet Network, you need a twisted-pair Category 3, 4 or 5 cables with RJ-45 modular jacks at both ends. This cable can have a maximum length of 300 feet (100 meters).

5-5. 10MBase/100Mbase Installation Notice

- 100Mbps network must be shielded twisted-pair (STP) or Category 5 unshielded twisted-pair cable. Do not use a Category 3 or 4 cable for 100Mbps-network operation, it could cause data loss. Category 3 or 4 cable is good for 10Mbps network only.
- Category 5 cable is also good for 10Mbps operation. Use UTP Category 5 cable for the versatility to operate the network at either 100Mbps or 10Mbps speed without changing cable.
- Two pairs of wiring are required.
- Depending on building codes, different insulation materials may be required. Plenum-rated or TEFLON-coated wiring maybe required in some areas where fire proofing is required.
- The wire gauge should be between 18 and 26 AWG (Most telephone installations use 24-gauge wiring).

- UTP cable should meet the following requirements:
  1. Solid copper
  2. Nominal capacitance: less than 16pF/ft
  3. Nominal impedance: 100 ohms
  4. Nominal attenuation: less than 11.5db

Automatic Selection of the Media Type

While the driver installs, it automatically detects the media type based on the type of cable connected. Once you change the cable type, you must reinstall the driver to execute auto-detect again.

If the driver cannot detect which cable is connected or whether a cable is connected, look at cabling network driver (Ex. Modify net.cfg file parameters–force line speed=10 or 100).

10/100 Auto – Negotiation (N-Way)

Depending on the hub or connected device, the LAN adapter can automatically run at the appropriate speed, by using N-way, a feature that complies with the IEEE802.3 standard. It also works with any of the other IEEE-compliant products.

5-6. Remote BOOT ROM Installation Guide

A BOOT ROM allows the computer to boot up over the network, instead of using the local operating system device. This enables the system to be a diskless workstation environment.

1. Make sure the BOOT ROM is properly oriented. Incorrect orientation may damage the chip!
2. Use the utility of RSET8139.exe to enable the BOOT ROM.
3. Reboot the system to use the BOOT ROM function.

BOOT ROM Type:

Once the PCI system detects the presence of a BOOT ROM chip on the adapter during boot-up, it will automatically set a working configuration. Supports 64K FLASH EPROMs for an upgrade BOOT ROM.

5-7. LED Indicators

The system board comes with two LED indicators on the edge of the motherboard that indicates the network system status. If you experience any problems with the adapter, first make sure the appropriate driver is loaded, the proper cable is connected to the RJ-45 port and the hub complies with the adapter specification, such as 10Mbps 10Base-T or 100Mbps 100Bast-TX. Finally, recheck the LEDs.

FUDUP (Full Duplex) Indicator

When indicator is ON, it indicates Full-duplex mode: otherwise, it is OFF. The adapter supports full duplex at 10 or 100Mbps. If the switch-hub supports the N-way feature and full duplex, the system automatically runs in full duplex mode.

Tx/Rx (Transmit/Receiver) Indicator

This indicator flashes to display that there is network activity – indicating transmission or reception data from the network.

5-8. The Setup Program

The package includes a diskette containing the setup program. This program allows you to verify the configuration and isolation of faults.

The adapter's I/O port address and interrupt request levels (IRQ) are set by the BIOS. Other default settings can be changed for situations as shown below.

Problem (RESET8139.exe) provides the following function:

- Displays the current configuration of the adapter
- Performs network diagnostic tests to verify the operation of the adapters basic functions, and the adapters ability to communicate over the network with another adapter.
- Provides set up for new configuration to make a change specify settings: Remote BOOT ROM, Flow Control and Full-Duplex mode Enable/or Disable

Full duplex operation is set automatically if the Full-duplex option is set to Disable. Please follow the prompt instructions to set-up or change the system configuration.

Note: Before running the setup program, make sure the adapter' s driver is not loaded, otherwise unpredictable results may arise!

The setup program can be set the on board configuration to provide diagnostic testing. It is for testing the basic function verification, EEPROM data Access, loopback operation, and the ability to communicate over the network with another adapter.

To access this program, insert the Driver Diskette into the floppy disk drive and then type the following at the DOS prompt:

- A:\REST8139.EXE <ENTER>

1. View Current Configuration

This allows you to find the PCI Fast Ethernet adapter current configuration in your system.

2. Set Up New Configuration

Select New Set Up Configuration option from the main menu

The option settings can be changed, the table shown as below:

Option	Default Setting	Other Available Settings
Full-duplex	Disabled → Auto Selection	Enable – Forces to full duplex operation
Flow Control	TX Enable, RX Enable	TX Disable, RX Disable

Note: Before setting the adapter for full duplex, make sure the hub switch is also set to full duplex. Before you activate the switching hub to server connection, make sure the hub switch and adapter are configured for full duplex.

3. Run Diagnostics

Running diagnostic tests perform basic function verification for on board LAN adapters. The basic Diagnostic tests include:

- **EEPROM Test**: EEPROM data read/write test

- **Diagnostics On Board**: Performs on board basic function verification
- **Diagnostics On Network**: To run this test on the network, you will need another computer set up as a Responder to receive packets from the adapter being tested and echo them back to the adapter. This checks the adapter's ability for communication over the network with another adapter to receive and transmit network packets.

4. Software Installation

Installing Network Drivers

You must install a network driver to allow the adapter to work with your network operating system.

The system board provides various network drivers on the driver diskette. The following provides the installation procedures for different network drivers.

Note: Please install the "VIA PATCH FILE" first if you want to link your LAN with Windows 98

For detailed information of each OS installation, please refer to the README(.TXT) file on the driver diskette.

Software Installation Examples

Before installing the driver programs, please refer to each directory that contains a README file, which provides detailed installation instructions, or to execute the HELP8139.EXE help file viewer in DOS. The utility will then present with a screen showing the information about how to install the network driver. Driver needed for the adapter to work with the operating system.

5-9. The Realtek 8139 LAN Driver Installation Procedure:

Please note: The LAN Driver installation has to be done after completing Win 95/98/2000 installation.

When completed with the WIN 95/98 installation, please click "My Computer" to start your LAN driver installation (procedure listed as below):

My Computer → Control Panel → System → Device Manager→ ? Other Devices → ?

PCI Ethernet Controller → Properties → Driver → Update Drive → Yes (Recommended) → Next → Other Locations → Browse → A:\Rtsnt.100\Exe\Win95 → OK → Finish

After finishing the above procedure, the screen will show "copy the files from?"

Please type A:\Rtsnt.100\Exe\Win95=> OK and select "OK", the system will ask you to insert Win95 driver diskette to update new driver.

After finishing the above steps, please shut down your system and re-boot the system.

Appendix A: FLASH Memory Utility

Using this utility to update the system BIOS from a disk file to the on board Flash memory. Be aware the improper change of the system BIOS will cause the system to malfunction.

Using utility as follows:

1. Insert the FLASH memory utility distribution floppy diskette in drive A:
2. At the DOS prompt, type A:>AWDFLASH and press <Enter>

FLASH MEMORY WRITE v7.21 Copyright 1993, Award Software, Inc
For VIA MVP3-W877TF-2A5LEU4BC-0 Flash Type – SST 29EE020 / 5V File Name to Program:
Error Message: Do you want to save BIOS settings (Y/N)

3. Enter the name of the system BIOS disk file into the "File Name to Program" field

The following message appears in the "Error Message" field

4. Do you want to save BIOS (y/n)?
5. To update the FLASH memory from the system BIOS disk file, type Y
6. After complete updating, please re-boot the system
7. For upgrade BIOS procedure, please refer to our web site:
   http://www.unicorn-computer.com.tw

Appendix B: Connector Pin Assignment

PS/2 Keyboard / Mouse Pin Header Connector

(ENDAT-5701: CN4; ENDAT-5901: CN6)

Pin No.	PS/2 Keyboard Description	Pin No	PS/2 Mouse Description
1	K/B_Data	2	Mouse_Data
3	N.C	4	N.C
5	Grounded	6	Grounded
7	+5V DC	8	Mouse_VCC
9	K/B_Clock	10	Mouse_Clock

COM1 or COM3, COM2 or COM4 for standard RS232 defined

Pin No.	Description	Pin No.	Description
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	RI
5	GND		

Printer (LPT) Port

Pin No.	Description	Pin No.	Description
1	STB#	10	ACK#
2	PD0	11	BUSY
3	PD1	12	PE
4	PD2	13	SLCT
5	PD3	14	AFD#
6	PD4	15	ERR#
7	PD5	16	INIT#
8	PD6	17	SLIN#
9	PD7	18-25	GND

VGA Connector

Pin No.	Description	Pin No.	Description
1	RED	9	GND
2	GREEN	10	GND
3	BLUE	11	N.C
4	N.C	12	DDC DAT
5	GND	13	H.Sync
6	GND	14	V.Sync
7	GND	15	DDC CLK
8	GND		

TOUCH Panel Controller via COM1

Pin No.	Description	Pin No.	Description
1	VCC	4	-RTS1
2	TXD1	5	GND
3	RXD1	6	GND

TTL Output via COM2

Pin No.	Description	Pin No.	Description
10	VCC	5	TXD2
9	GND	4	-RTS2
8	-R12	3	RXD2
7	-DTR2	2	-DSR2
6	-CTS2	1	-DCD2

External Speaker Connector (5701:J3; 5901:J4)

Pin No.	Description
2	SPK
4	N.C
6	GND
8	Vcc

LCD Panel 18Bit / 16Bit TFT/DSTN Mapping

Signal	16Bit DSTN	18Bit/18+18 TFT	Pin No.
B0	N.C.	FPD23	9
B1	N.C.	FPD22	10
G0	N.C	FPD21	17
G1	N.C.	FPD20	18
R0	N.C.	FPD19	25
R1	N.C.	FPD18	26
B2	N.C.	FPD17	11
B3	N.C.	FPD16	12
G2	UD7	FPD15	19
G3	UD6	FPD14	20
R2	UD5	FPD13	27
R3	UD4	FPD12	28
B4	UD3	FPD11	13
B5	UD2	FPD10	14
B6	UD1	FPD9	15
B7	UD0	FPD8	16
G4	LD7	FPD7	21
G5	LD6	FPD6	22
G6	LD5	FPD5	23
G7	LD4	FPD4	24
R4	LD3	FPD3	29
R5	LD2	FPD2	30
R6	LD1	FPD1	31
R7	LD0	FPD0	32

LCD Connector1: (CON1)

Pin No.	Description	Pin No.	Description
1	VBL	2	VBL
3	GND	4	GND
5	VDDLCD(+3.3v)	6	VDDLCD(+3.3v)
7	ENPVEE	8	GND
9	FPD23	10	FPD22
11	FPD17	12	FPD16
13	FPD11	14	FPD10
15	FPD9	16	FPD8
17	FPD21.	18	FPD20
19	FPD15	20	FPD14
21	FPD7	22	FPD6
23	FPD5	24	FPD4
25	FPD19	26	FPD18
27	FPD13	28	FPD12
29	FPD3	30	FPD2
31	FPD1	32	FPD0
33	GND	34	GND
35	SHFCLK	36	FLM
37	M_DE	38	LP
39	GND	40	VCCUPBKL
41	VCCUPBKL	42	KEY
43	VDDLCD(+5V)	44	VDDLCD(+5V)

Audio Output Port Connector (5701:CN7; 5901:CN10)

Pin No.	Description	Pin No.	Description
1	A_BIT_CLK	2	TV_COMP
3	A_SD_IN	4	TV_LUMA
5	A_SD_IN2	6	TV_CRMA
7	A_SD_OUT	8	GND
9	A_RESET	10	GND
11	A_SYNC	12	GND
13	SPEAKER	14	AUDIO ENABLE/DISABLE
15	VCC3	16	+12V
17	JBCY	18	JAB2
19	JBCX	20	JAB1
21	JACY	22	JBB2
23	JACX	24	JBB1
25	JMS0	26	JMSI

FDD Connector

Pin No.	Description	Pin No.	Description
1,3,5,7	GND	14	DSA#
9,11,13	GND	16	MOB#
15,17,19	GND	18	DIR
21,23,25	GND	20	STEP#
27,29,31	GND	22	WD#
33	GND	24	WE#
2	RWC#	26	TRAK0
4,6	N.C	28	WP#
8	INDEX#	30	RDATA#
10	MOA#	32	HEAD#
12	DSB#	34	DSKCHG#

IDE1, IDE2 Connector

Pin No.	Description	Pin No.	Description
2,19,22	GND	13	IDE data2
24.26.30	GND	14	IDE data13
40	GND	15	IDE data1
20,21,28	N.C	16	IDE data14
29,32,34	N.C	17	IDE data0
1	IDE reset	18	IDE data15
3	IDE data7	23	IDE Write
4	IDE data8	25	IDE Read
5	IDE data6	27	IDE Ready
6	IDE data9	31	IDE IRQ
7	IDE data5	33	IDE A1
8	IDE data10	35	IDE A0
9	IDE data4	36	IDE A2
10	IDE data11	37	IDECS1#
11	IDE data3	38	IDESC3#
12	IDE data12	39	HDLED0#

HDD LED (5701:J3; 5901: J4)

Pin No.	Description
1	LED +
2	LED -

Keylock / Power – LED (5701:J3; 5901: J4)

Pin No.	Description
1	Power LED
3	Power LED
5	GND
7	Keylock
9	GND

External Speaker Connector (5701:J3; 5901:J4)

Pin No.	Description
2	SPK
4	N.C
6	GND
8	Vcc

USB PORT 1/2 : (5701:CN11; 5901: CN1)

Pin No.		Description
1	2	USB VCC
3	4	USB DATA-(0,1)
5	6	USB DATA+(0,1)
7	8	USB_GND
9	10	USB_GND

IR Connector (5701:IR1; 5901: J7)

Pin 1	GND	**Pin 4**	IRRX
Pin 2	VCC	**Pin 5**	IRTX
Pin 3	GND	**Pin 6**	VCC

Expansion Slot to PCI/ISA Pin Assignment

Pin No.	Description A	Description B	Description E	Description F
1	-IOCHK	GND	GND	GND
2	SD7	RSTDRV	GND	GND
3	SD6	VCC	-PCINT2	-PCINT4
4	SD5	IRQ9	-PCINT3	-PCINT1
5	SD4	-5V	VCC	VCC
6	SD3	DRQ2	KEY	KEY
7	SD2	-12V	VCC	VCC
8	SD1	0WS	-PCIRST	PCLKF
9	SD0	+12V	-GNT3	GND
10	IOCHRDY	GND	-REQ3	GNT1
11	AEN	-SMEMW	GND	GND
12	SA19	-SMEMR	PCLKE	-REQ1
13	SA18	-IOW	GND	AD31
14	SA17	-IOR	AD30	AD29
15	SA16	-DACK3	PCLKG	N.C
16	SA15	DRQ3	KEY	KEY
17	SA14	-DACK1	-GNT2	-REQ2
18	SA13	DRQ1	AD28	AD27
19	SA12	REFRESH	AD26	AD25
20	SA11	SYSCLK	AD24	-CBE3
21	SA10	IRQ7	AD22	AD23
22	SA9	IRQ6	AD20	AD21
23	SA8	IRQ5	AD18	AD19
24	SA7	IRQ4	N.C.	N.C
25	SA6	IRQ3	KEY	KEY
26	SA5	-DACK2	N.C	N.C
27	SA4	TC	AD16	AD17
28	SA3	BALE	-FRAME	-IRDY
29	SA2	VCC	-CBE2	-DEVSEL
30	SA1	OSC	-TRDY	-PLOCK
31	SA0	GND	-STOP	-PERR

Pin No.	Description C	Description D	Description G	Description H
1	-SBHE	-MEMCS16	N.C	-SERR
2	LA23	-IOSC16	N.C	AD15
3	LA22	IRQ10	-CBE1	AD14
4	LA21	IRQ11	PAR	AD12
5	LA20	IRQ12	GND	GND
6	LA19	IRQ13	KEY	KEY
7	LA18	IRQ14	GND	GND
8	LA17	-DACK0	AD13	AD10
9	-MEMR	DRQ0	AD11	AD8
10	-MEMW	-DACK5	AD9	AD7
11	SD8	DRQ5	-CBE0	AD5
12	SD9	-DACK6	AD6	AD3
13	SD10	DRQ6	AD4	AD1
14	SD11	-DACK7	AD2	AD0
15	SD12	DRQ7	KEY	KEY
16	SD13	VCC	VCC	VCC
17	SD14	MASTER	VCC	VCC
18	SD15	GND	GND	GND
19			GND	GND

LIMITED WARRANTY:

Standard one year limited warranty on all our ENDAT series all-in-one motherboards and embedded board. Products that become defective during the warranty period shall be repaired, or subject to manufacturer' s option, replaced. The limited warranty applies to normal proper usage of the hardware and does not cover products that have been modified or subjected to unusual electrical or physical stress. Unicorn Computer Corp is not liable to repair or replace defective goods caused by improper using or use of unauthorized parts. The following situations will be charged:

1. The products during the warranty but defective caused by improper using or artificial external pressure and result in the components damages. According to the damage situation, the manufacturer has the rights to decide to repair or not. The manufacturer will charge the parts/repair cost and the returning shipping charge.
2. The products out of warranty will charge the parts/repair cost and the returning shipping charge as per the repair status.
3. The manufacturer has the rights to decide to repair or not based on the stock of parts for the products which are phased out of the production.
4. Please e-mail or fax the RMA Service Request Form when have the defective products.

RMA SERVICE REQUEST FORM

When requesting RMA service, please fill out this "RMA Service Request Form". This form needs to be shipped with your returns. Service cannot begin until we have this information.

RMA NO.:

Company:	Person to Contact:
Phone No:	Purchase Date :
Fax No. :	Applied Date :
Return Shipping Address:	

Model No.	Serial No.	Problem Code	Remark

- **Issue Code of defect.**

01	Second Times R.M.A.	11	Memory Socket Bad
02	No Screen (No Boot)	12	Hang Up Hardware
03	VGA (Display) Fail	13	Hang Up Software
04	CMOS Data Lost	14	PCB Problem
05	FDC Fail	15	CPU Socket Bad
06	HDC Fail	16	LAN Fail
07	Bad Slot	17	Audio Fail
08	BIOS Problem	18	Serial Port Fail
09	Keyboard Controller Fail	19	Parallel Port Fail
10	Cache RAM Problem	20	Others

Please specify the following when returning the RMA boards:

(1) Hardware Configuration (2) OS or Software (3) Testing Program

_____

Authorized Signature