ENDAT-3205M/S

User's Manual

Rev. 2C

For 3205M PCB ver. 1D or later
3205S PCB ver: 1B or later

11/02/2005

Copyright Notice

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:

This manual covers three different layout models, and the respective board layouts are shown in chapter 1-4 and 1-5. Please refer to the following description to make sure which model on hand before using.

Model	ENDAT-3205M	ENDAT-3205S
Form Factor	Mini-ITX 170 mm x 170 mm (6.69"x6.69")	
CPU Supporting	Embedded VIA Low Power Consumption C3 series (FAN required) / Eden Series (FAN-less)	Socket370 Intel Tualatin/ Pentium3/Celeron/VIA C3
LAN Adapter	Realtek 8139D or Intel 82551QM 10/100 Based LAN	Realtek 8139D only for both of LAN chip, LAN2 is optional
IDE Connector	2 x 40pin IDE connectors support UDMA 33/66/100, 1 x 44pin connector support Slim type HDD (share to IDE1)	2 x 40pin IDE connectors support UDMA 33/66/100, 1x CF socket by optional
FDD Connector	1 x FDD connector	N/A
AC97' Audio	Phone Jack + Pin Header	Phone Jack + Pin Header
Cash Drawer	Wafer only	Wafer only
System Chipset	VIA VT8606 + VIA VT82C686B	
DIMM Socket	One DIMM Socket supports 512MB	
VGA Adapter	VIA ProSavage4 AGP4x 2D/3D Graphic Controller w/ SMA 8/16/32MB	
Display ratio	4:3 and 16:9	
LCD Supporting	8, 16, 24bit CSTN/ DSTN LCD panel with TTL interface 9, 12, 18, 24, 36 TFT LCD Panel with TTL interface 18, 24, 36bit LVDS interface (24bit LVDS is optional)	
I/O Port	4 x COMs w/+5V, +12V selector /1 x Parallel port	
Digital IO	6 bit Digital Input (optional)/ 2 bit Output	
WDT	1 to 255 seconds S/W programmable by optional feature	
RS-422/485	Optional via COM2	
Expansion Slot	1x120Pin PCI connector + Intel Embedded ATX edge connector for three PCI slot expansion via riser card	
USB Port	4 x USB1.1 onboard	
Power Supply	ATX power support	

TABLE OF CONTENTS

Chapter 1. Introduction

In order to cope with the challenges of the system heating issues and demand of much more diminutive embedded system in diverse application, ENDAT-3205M system board provides the ultimate solution by integrating with VIA's technology low power consumption VIA C3 series (FAN required) CPUs and VIA Eden (FAN-less) series CPUs. ENDAT-3205M not only provide the ideal solution for Hi-End POS system, but also can be adapted in various applications such as kiosks, networking systems, controlling terminals and other embedded systems.

To provide higher performance solution, The ENDAT-3205S system board provides the ultimate design support the INTEL Tualatin / PIII / Celeron CPUs.

ENDAT-3205M is highly integrated industrial grade system board to support 133/100/66 MHz CPU FSB ("Front Side Bus") frequency and based on 64-bit to support VIA C3 / Eden series embedded processors.

ENDAT-3205M / ENDAT-3205S are designed with VT8606 "Twister-T" North Bridge and the VT82c686B Super South Bridge. Support One DIMM Socket of DRAM up to 512MBbyte of system memory with 256Mbit DRAM technology. The DRAM controller supports standard PC133 and PC100 Synchronous DRAM (SDRAM). The DRAM bank can be composed of an arbitrary mixture of 1M / 2M / 4M / 8M / 16M / 32MxN DRAMs. The DRAM controller can run at either the host CPU FSB at 133/100 MHz.

ENDAT-3205M/S are integrate S3 Graphics' 128-bit ProSavage4 graphics accelerator which support mainstream graphics perform with leading-edge 2D, 3D and DVD video acceleration. Based on its integrated AGP 4X solution, and support the Microsoft DirectX Texture Compression (DXTC) to deliver unprecedented 3D performance and image quality. With utilizes a single cycle architecture that provides high performance along with superior image quality. Several new features to enhance 3D architecture, including single-pass multi-texturing, anisotropy filtering, and an 8-bit stencil buffer to enable stunning image quality without losing on performance.

ENDAT-3205M/S strongly supports a wide variety of DSTN or TFT panels through a 36-bit TTL/CMOS interface from 4:3 and 16:9 mode displays. Which include VGA, SVGA, XGA, and SXGA+ TFT color panels with 9-bit, 12-bit, 18-bit (both 1

pixel/clock and 2 pixels/clock), and 24-bit TTL/CMOS interfaces. Its enhanced STN hardware with 256 gray scale support and advanced frame rate control can provide up to 16.7 million colors. In addition, the integrated 2-channel LVDS interface can support 18-bit (36-bit) color panels. All resolutions are supported up to SXGA+ (1400x1050).

ENDAT-3205M/S provides standard PCI slot with Intel embedded ATX defined can support more than 2 PCI expansions via the edge connector along with the standard onboard PCI slot. This board is not only fully compatible with industry standards, but also thousand of software application; such as WIN 95, 98, WIN ME, WIN XP, WIN NT 3.x / 4.x, WIN 2000, WIN CE (.NET), Linux, UNIX, Novell…etc. The control logic provides high-speed performance for the most advance multi-user, multitasking application. Tomorrow's PC technology is here today.

The ideal solution of ENDAT-3205M/ ENDAT-3205S

- POS system
- KIOSK
- Interactive system
- Airport Terminal Controller
- Industrial controller
- Digital entertainment
- Embedded system equipment

1-1. Features

Basic Feature:

- **ENDAT-3205M**: supports VIA EBGA type of C3 / Eden series processors with 133/100/66 MHz Front Side Bus (FSB)
- **ENDAT-3205S**: supports Socket370 Intel Tualatin / Pentium III / Celeron / FCPGA / FCPGA2 series processors with 133/100/66 MHz Front Side Bus (FSB)
- DRAM interface runs synchronous (133/133 or 100/100) mode.
- Supports standard PC133 and PC100 SDRAM up to 512MB
- Full internal AGP 4x performance with 8/16/32 MB frame buffer share with system memory
- Integrated ProSavage4 2D/3D/Video Accelerator, with next generation, 128-bit 2D graphics engine resolutions up to 1920x1440
- Direct Flat panel interface support 36-bit DSTN/TFT flat panel interface support 4:3 and 16:9 display, with 256 gray shade support up to SXGA+(1920x1400x16)
- Integrated 2-channel 110 MHz LVDS interface
- Simultaneous display of CRT with LCD Panel
- 6 bit digital input / 2 bit output
- Built-in Cash drawer controller.
- AC97' Audio support with 1.5W amplifier built-in

Full Software Support

- Drivers for major operating systems and APIs: Windows 9x / ME, Windows NT 4.0, Windows 2000, Windows XP, Direct3D, DirectDraw and DirectShow, OpenGL ICD for Windows 9x, NT, and 2000, and DXVA for Windows 2000 and Windows XP

Ordering information:

ENDAT-3205M

1. ENDAT-3205M-1R-10: Supports 1 Realtek LAN, C3 1GHz, LVDS 18 and 36 bits
2. ENDAT-3205M-1RL-10: Supports 1 Realtek LAN, C3 1GHz, and LVDS 24 bits
3. ENDAT-3205M-1R-E8: Supports 1 Realtek LAN, Eden ESP8000, LVDS 18 and 36 bits
4. ENDAT-3205M-1RL-E8: Supports 1 Realtek LAN, Eden ESP8000, and LVDS 24 bits

ENDAT-3205S

1. ENDAT-3205S-1R: Support 1 Realtek LAN, LVDS 18 and 36 bits
2. ENDAT-3205S-1RL: Support 1 Realtek LAN and LVDS 24 bits
3. ENDAT-3205S-2R: Support 2 Realtek LAN, LVDS 18 and 36 bits
4. ENDAT-3205S-2RL: Support 2 Realtek LAN and LVDS 24 bits

Note:

1. *The standard version of ENDAT-3205M is embedded with VIA C3 1 GHz and one Realtek LAN chip. Other option will be provided upon request.*
2. *All VIA C3 series and Socket 370 type CPUs are Heat sink and FAN required.*

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-3205M/S System Board
- HDD/FDD/Serial port Cables
- LCD cable **(Optional)**
- IDE Driver includes: Drivers for Windows NT 3.x/4.x, Windows 95, 98, ME, 2000, XP, Novell Netware and AMI / AWARD FLASH ROM utilities.
- Driver utilities for on-board VGA drivers, LAN adapter

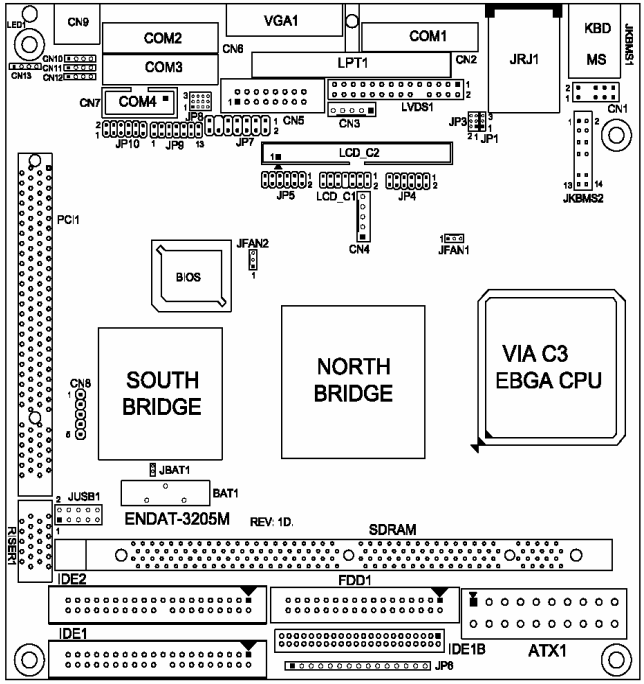
If any of these items are missing or damage, please contact the dealer from whom you purchase the motherboard. Save the shipping material and carton in the event that you want to ship or store the board in the future.

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

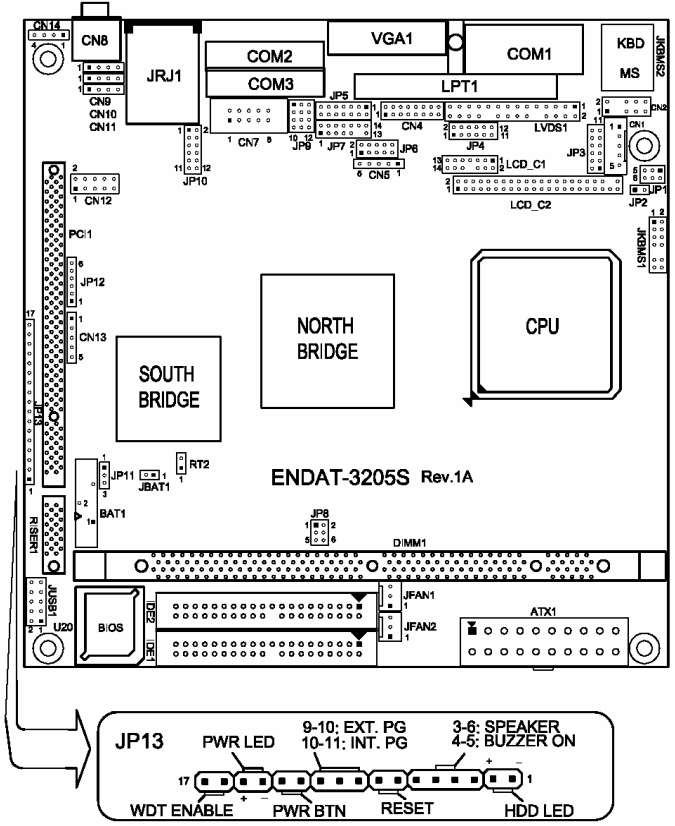
1-3. Electrostatic Discharge Precautions

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. ENDAT-3205M



1-5. ENDAT-3205S



Chapter 2. Setting up the Motherboard

2-1. Jumpers and Connectors (ENDAT-3205M)

Jumpers/Connectors Overview:

Function	Jumpers/Connectors
Cooling Fan Connector	JFAN1, JFAN2
LAN Adapter Disable/Enable	JP1
COM Ports Power Selector (COM1, 2, 3, 4)	JP5, JP10
RS232/RS422/RS485 Selector (COM2)	JP8, JP9
LCD: TFT LCD Panel Connector	LCD_C1, LCD_C2
LVDS LCD Output Port	LVDS1
24 bit LVDS trigger edge	JP3: Pin 1, 3, 5
LVDS backlight power/control	CN3
TFT LCD Voltage Selector	JP2, JP3: Pin 2, 4, 6
LCD clock timing adjustment	JP4
Internal VGA port	CN5
COM4 Box header	CN7
MIC IN, LINE IN, CD IN	CN10, CN11, CN12
Speaker out / internal speaker out	CN9, CN13
Digital I/O header	JP7
Cash drawer connector	CN4
Clear CMOS	JBAT1
Factory default	SW1, JP6: Pin 9~11
PS/2 Mouse/KB Pin Header	CN1, JKBMS2
OEM MS/KB Header	JKBM2
IR	CN8
USB Port (0-3)	JRJ1A, JUSB1
LAN port	JRJ1B
FDD Connector	FDD1
IDE 1, IDE2	IDE1, IDE2
Slim IDE	IDEB1

Function	Jumpers/Connectors
Header for Case Panel	**JP6**
IDE LED	**JP6:** Pin 1 (–), Pin 2 (+)
External Speaker	**JP6:** Pin 3, Pin 6
Buzzer On/Off	**JP6:** Pin 4, Pin 5
Hardware Reset Switch	**JP6:** Pin 7, Pin 8
Power Good Select: External PG	**JP6:** Pin 9-10
Internal PG	**JP6:** Pin 10-11
ATX Power Supply On/Off Switch	**JP6:** Pin 12, Pin 13
Power LED	**JP6:** Pin 14 (–), Pin 15 (+)

Please double-check the insertion and orientation of the LCD cable before applying power. Improper installation will result in permanent damage LCD panel.

Part 1: Onboard Jumpers

JP1: On-board LAN Disable/Enable (2.0mm)

Enable *	Close Pin 1-2
Disable	Close Pin 2-3

JBAT1: CMOS Data Clear (2.0mm)

Pin 1-2	Close for clear CMOS, the default setting is OPEN.

JP8, JP9: RS232 / 422 / 485 Selector for COM2 (2.0mm)

TYPE	JP8 (3x4/2mm)	JP9 (2x7/2mm)
RS-232 *	1-2, 4-5, 7-8, 10-11	1-2
RS-422/485 (2 wire)	2-3, 5-6, 8-9, 11-12	5-6, 9-11, 10-12
RS-422/485 (4 wire)	2-3, 5-6, 8-9, 11-12	3-4, 7-8

**** Make sure the port mode has been set up correctly before installing any peripherals.***

JP5 (COM1, 2) / JP10 (COM3, 4) Voltage Selector (2.0mm)

Voltage	COM1 (JP5)	COM2 (JP5)	COM3 (JP10)	COM4 (JP10)
+12V(DC)	1-2	7-8	1-2	7-8
R.I. *	3-4	9-10	3-4	9-10
+5V(DC)	5-6	11-12	5-6	11-12

JP6: Case Panel Connection (2.54mm)

Pin No.	Description
1-2	HDD_LED (1:LED–, 2:LED+)
3-6	PC speaker
4-5 *	Onboard Buzzer
7-8	Hardware RESET
9-10-11	9-10: External PG, 10-11: Internal PG
12-13	Power On/Off
14-15	Power LED (14:LED-, 15:LED+)

JP3 (Pin 2, 4, 6), JP2: Voltage Selector for LCD panel

LCD power	JP2 (2.54mm)	JP3 (2.0mm)
VDDLCD is 5V	Open	Close 2-4
VDDLCD is 3.3V *	Open	Close 4-6
VDDLCD is 12V	Close	Pin 2, 4, 6 must Open

Caution: Improper setting will damage LCD panel.

JP3 (Pin 1, 3, 5): 24 bit on-board LVDS trigger edge selector (2.0mm)

Pin No.	Function
1,3 *	Rising edge
3,5	Falling edge

JP4: LCD Panel clock timing adjustment (2.0mm).

Pin No.	Function
1,2 *	No delay
3,4	Delay 5n Sec
5,6	Delay 10n Sec
7,8	Delay 15n Sec
9,10	Delay 20n Sec
11,12	Delay 25n Sec

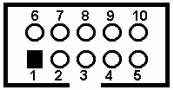
Part 2: Onboard connectors

JFAN1, JFAN2: CPU / 2nd Cooling Fan Connector

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

Box Header Type Connector for COM port (RS-232)

Pin No.	Function	Pin No.	Function
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	RI
5	GND	10	N.C



D-SUB Type Connector for COM2 port (RS-422→ 4 Wire)

Pin No.	Function	Pin No.	Function
1	–TXD	6	NA
2	+RXD	7	NA
3	+TXD	8	NA
4	NA	9	–RXD
5	NA		

D-SUB Type Connector for COM2 port (RS-485→ 2 Wire)

Pin No.	Function	Pin No.	Function
1	Data –	6	NA
2	NA	7	NA
3	Data +	8	NA
4	NA	9	NA
5	NA		

J1: IR Connector (2.54mm)

Pin 1	VCC	Pin 4	GND
Pin 2	N.C	Pin 5	IRTX
Pin 3	IRRX		

CN7: PS/2 Keyboard / Mouse Pin Header Connector (2.54mm)

Pin No.	Signal (KB)	Pin No.	Signal (MS)
1	KB Data	2	MS Data
3	KEY	4	KEY
5	GND	6	GND
7	+5V(DC)	8	+5V(DC)
9	KB_CLK	10	MS_CLK

JKBMS2: Pin Header for external device (2.0mm)

Pin No.	Signal (KB)	Pin No.	Signal (MS)
1	KB Data Out	2	MS Data Out
3	KB Data In	4	MS Data In
5	KB CK Out	6	MS Data Out
7	KB CK In	8	MS CK In
9	KEY	10	KEY
11	+5V(DC)	12	+5V(DC)
13	GND	14	GND

Default setting is: 1-3, 5-7, 2-4 and 6-8 close.

JUSB1: USB port 2, 3 (2.54mm)

Pin No.	Function	Pin No.	Function
1	USB2_VCC	2	USB3_VCC
3	USBD2–	4	USBD3–
5	USBD2+	6	USBD3+
7	USB_GND2	8	USB_GND3
9	USB_GND2	10	USB_GND3

CN12: CD IN (2.54mm)

Pin No.	Function	Pin No.	Function
1	LEFT	2	GND
3	GND	4	RIGHT

CN11: LINE IN (2.54mm)

Pin No.	Function	Pin No.	Function
1	RIGHT	2	GND
3	GND	4	LEFT

CN10: Microphone IN (2.54mm)

Pin No.	Function	Pin No.	Function
1	MIC POWER	2	GND
3	GND	4	MIC IN

CN13: Internal speaker out (2.54mm)

Pin No.	Function	Pin No.	Function
1	RIGHT	2	GND
3	GND	4	LEFT

JP7: Digital I/O connector (2.54mm)

Pin No.	Function	Pin No.	Function
1	OUT0	2	INPUT0
3	OUT1	4	INPUT1
5	INPUT4	6	INPUT2
7	INPUT5	8	INPUT3
9	+12V	10	+12V
11	KEY	12	+5V
13	GND	14	GND

CN4: Cash drawer connector (JST connector)

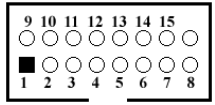
Pin No.	Function
1	DRAWER1
2	SENSOR
3	+12V
4	DRAWER2
5	GND

CN3: LCD - LVDS backlight power and ON/OFF control (JST connector)

Pin No.	Function
1	VBL (+12V)
2	VBL (+12V)
3	ON (+5V)/OFF (GND)
4	GND
5	GND

CN5: Internal VGA Connector (2.54mm)

Pin No.	Description	Pin No.	Description
1	RED	9	N.C / +5V
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		



Note: Please refer to the appendix B for data mapping of LCD connector

2-2. Jumpers and Connectors (ENDAT-3205S)

Jumpers/Connectors Overview:

Function	Jumpers/Connectors
Cooling Fan Connector	JFAN1, JFAN2
LAN Adapter Disable/Enable	JP12
COM Ports Power Selector (COM1, 2, 3, 4)	JP4, JP10
RS232/RS422/RS485 Selector (COM2)	JP5, JP9
LCD: TFT LCD Panel Connector	LCD_C1, LCD_C2
LVDS LCD Output Port	LVDS1
24 bit LVDS trigger edge	JP1: Pin 1, 3, 5
LVDS backlight power/control	CN1
TFT LCD Voltage Selector	JP1: Pin 2,4, 6, JP2
LCD clock timing adjustment	JP3
Internal VGA port	CN4
COM4 Box header	CN7
MIC IN, LINE IN, CD IN	CN11, CN10, CN9
Speaker out / internal speaker out	CN8, CN14
2nd LAN header	CN12
Digital I/O header	JP7
Cash drawer connector	CN5
Clear CMOS	JBAT1
Factory default	JP6, JP8
PS/2 Mouse/ KB Pin Header	CN2, JKBMS1
IR	CN13
USB Port (0-3)	JRJ1A, JUSB1
LAN port	JRJ1B
IDE 1, IDE2	IDE1, IDE2
CF Master/Slave select	JP11
Header for Case Panel	**JP13**
IDE LED	**JP13:** Pin 1 (–), Pin 2 (+)
External Speaker	**JP13:** Pin 3, Pin 6
Buzzer On/Off	**JP13:** Pin 4, Pin 5

Function	Jumpers/Connectors
Hardware Reset Switch	**JP13:** Pin 7, Pin 8
Power Good Select: External PG	**JP13:** Pin 9-10
Internal PG	**JP13:** Pin 10-11
ATX Power Supply On/Off Switch	**JP13:** Pin 12, Pin 13
Power LED	**JP13:** Pin 14 (–), Pin 15 (+)
Watch Dog Timer enable Switch	**JP13:** Pin 16, Pin 17

Please double-check the insertion and orientation of the LCD cable before applying power. Improper installation will result in permanent damage LCD panel.

Part 1: Onboard Jumpers

JP12: LAN Enable / Disable:

Pin No.	Function
1-2 *	LAN1 Enable
2-3	LAN1 Disable
4-5 *	LAN2 Enable
5-6	LAN2 Disable

JBAT1: CMOS Data Clear:

Pin 1-2	Close for clear CMOS, the default setting is OPEN.

JP5, JP9: RS232 / 422 / 485 Selector for COM2:

TYPE	JP9 (3x4/2mm)	JP5 (2x7/2mm)
RS-232 *	1-2, 4-5, 7-8, 10-11	1-2
RS-422/485 (2 wire)	2-3, 5-6, 8-9, 11-12	5-6, 9-11, 10-12
RS-422/485 (4 wire)	2-3, 5-6, 8-9, 11-12	3-4, 7-8

**** Make sure the port mode has been set up correctly before installing any peripherals.***

JP4 (COM1, 2) / JP10 (COM3, 4) Voltage Selector:

Voltage	COM1 (JP4)	COM2 (JP4)	COM3 (JP10)	COM4 (JP10)
+12V(DC)	1-2	7-8	1-2	7-8
R.I. *	3-4	9-10	3-4	9-10
+5V(DC)	5-6	11-12	5-6	11-12

JP13: Case Panel Connection:

Pin No.	Description
1-2	HDD_LED (1:LED–, 2:LED+)
3-6	PC speaker
4-5 *	Onboard Buzzer
7-8	Hardware RESET
9-10-11	9-10: External PG, 10-11: Internal PG
12-13	Power On/Off
14-15	Power LED (14:LED-, 15:LED+)
16-17	Watch Dog Timer Enable

JP1: LCD power selector / Onboard 24bit LVDS trigger edge:

LCD Power (+Volts)	JP1	JP2
3.3 *	4-6	Open
5	1-3	Open
12	Open	Close

Pin No (JP2)	Function
1-3 *	Rising edge
3-5	Falling edge

Caution: Improper setting will damage LCD panel.

JP3: LCD Panel clock timing adjustment (2.0mm):

Pin No.	Function
1-2 *	No delay
3-4	Delay 5n Sec
5-6	Delay 10n Sec
7-8	Delay 15n Sec
9-10	Delay 20n Sec
11-12	Delay 25n Sec

JP11: CF Master/Slave select:

Pin No	Function
1-2 *	Slave
2-3	Master

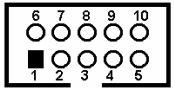
Part 2: Onboard connectors

JFAN1, JFAN2: CPU / 2nd Cooling Fan Connector:

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

Box Header Type Connector for COM port (RS-232)

Pin No.	Function	Pin No.	Function
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	RI
5	GND	10	N.C



D-SUB Type Connector for COM2 port (RS-422→ 4 Wire)

Pin No.	Function	Pin No.	Function
1	–TXD	6	NA
2	+RXD	7	NA
3	+TXD	8	NA
4	NA	9	–RXD
5	NA		

D-SUB Type Connector for COM2 port (RS-485→ 2 Wire)

Pin No.	Function	Pin No.	Function
1	Data –	6	NA
2	NA	7	NA
3	Data +	8	NA
4	NA	9	NA
5	NA		

CN13: IR Connector (2.54mm)

Pin 1	VCC	Pin 4	GND
Pin 2	N.C	Pin 5	IRTX
Pin 3	IRRX		

CN2: PS/2 Keyboard / Mouse Pin Header Connector (2.54mm)

Pin No.	Signal (KB)	Pin No.	Signal (MS)
1	KB Data	2	MS Data
3	KEY	4	KEY
5	GND	6	GND
7	+5V(DC)	8	+5V(DC)
9	KB_CLK	10	MS_CLK

JKBMS2: Pin Header for external device (2.0mm)

Pin No.	Signal (KB)	Pin No.	Signal (MS)
1	KB Data Out	**2**	MS Data Out
3	KB Data In	**4**	MS Data In
5	KB CK Out	**6**	MS Data Out
7	KB CK In	**8**	MS CK In
9	KEY	**10**	KEY
11	+5V(DC)	**12**	+5V(DC)
13	GND	**14**	GND

Default setting is: 1-3, 5-7, 2-4 and 6-8 close.

JUSB1: USB port 2, 3 (2.54mm)

Pin No.	Function	Pin No.	Function
1	USB2_VCC	**2**	USB3_VCC
3	USBD2–	**4**	USBD3–
5	USBD2+	**6**	USBD3+
7	USB_GND2	**8**	USB_GND3
9	USB_GND2	**10**	USB_GND3

CN9: CD IN (2.54mm)

Pin No.	Function	Pin No.	Function
1	LEFT	**2**	GND
3	GND	**4**	RIGHT

CN10: LINE IN (2.54mm)

Pin No.	Function	Pin No.	Function
1	RIGHT	**2**	GND
3	GND	**4**	LEFT

CN11: Microphone IN (2.54mm)

Pin No.	Function	Pin No.	Function
1	MIC POWER	**2**	GND
3	GND	**4**	MIC IN

CN14: Internal speaker out (2.54mm)

Pin No.	Function	Pin No.	Function
1	RIGHT	**2**	GND
3	GND	**4**	LEFT

JP7: Digital I/O connector (2.0mm)

Pin No.	Function	Pin No.	Function
1	OUT0	**2**	INPUT0
3	OUT1	**4**	INPUT1
5	INPUT4	**6**	INPUT2
7	INPUT5	**8**	INPUT3
9	+12V	**10**	+12V
11	KEY	**12**	+5V
13	GND	**14**	GND

CN5: Cash drawer connector (2.54mm)

Pin No.	Function
1	DRAWER1
2	SENSOR
3	+12V
4	DRAWER2
5	GND

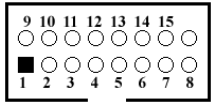
CN1: LCD - LVDS backlight power and ON/OFF control (JST connector)

Pin No.	Function
1	VBL (+12V)
2	VBL (+12V)
3	ON (+5V)/OFF (GND)
4	GND
5	GND

ENDAT-3205S

CN4: Internal VGA Connector (2.0mm)

Pin No.	Description	Pin No.	Description
1	RED	**9**	N.C / +5V
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		



Note: Please refer to the appendix B for data mapping of LCD connector

2-3. Installing Memory

The ENDAT-3205M/S CPU board offers one 168pin DIMM socket supporting up to 512MB of memory. The DIMM memory can be 100MHz (PC-100) or 133 MHz (PC-133).

2-4. Shared VGA Memory

The ENDAT-3205M/S is using built-in AGP VGA controller with Share Memory Architecture (SMA) - **AGP mode with up to 32MB** 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. 2 PCI Slots on Riser Card)

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

The default INT/AD-select for ENDAT-3205M/S All-In-One motherboard is listed in the above table.

2-6. Assigning IRQs for Expansion Cards

The IRQ number is automatically assigned to PCI expansion cards after those used by onboard device. To install a PCI riser card, you need to set the correct "ADSEL" and "INT" (interrupt) assignment. Please refer to "Chapter 2-5" Installing 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
6	Used	Floppy Disk
7	Used	LPT1
8	Used	RTC
9	Used	LPT2 or Audio
10	Used	COM4
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. Watch Dog Timer (optional function)

Watch Dog Timer (WDT) is a special design for system to monitor and secure that system can work normally. WDT is used an independent ISA device for support this function. When time is up, WDT would send hardware RESET signal to reset system.

Operators need to write a value into WDT port. The detailed operate instruction is shown below:

WDT port address	FUNCTION DESCRIPTION
305h (1 byte data)	Set the time up value (1-255), unit: SEC
306h (address trigger)	Enable WDT
307h (address trigger)	Disable WDT
308h (address trigger)	Refresh/ clear WDT counter

WDT Setup Procedure:

1) Disable WDT:

Please make sure WDT is not working before process. Send one byte (any value) into system address (307H) to disable WDT working status.
The sample code is shown below (using TurboC/C++ 3.0):

```
#define WDT_DISABLE 0x307
outportb(WDT_DISABLE,0x0);
```

2) Set a time-up value by 305H:

Set the time-up value to WDT. The unit is second and range from 1 to 255 seconds.
The sample code is shown below (using TurboC/C++ 3.0):

```
#define WDT_TIME_VALUE 0x307
#define WDT_TIME_UP_VALUE 10
outportb(WDT_TIME,WDT_TIME_UP_VALUE);
```

3) Enable WDT:

Enable WDT counter "on" and start increasing counter. Send one byte (any value) into system address (306H) to enable WDT.
The sample code is show below (using TurboC/C++ 3.0):

```
#define WDT_ENABLE 0x306
outportb(WDT_ENABLE,0x0);
```

4) REFRESH/CLEAR WDT:

Repeatedly write WDT REFRESH port (308H) with any data and the interval cannot be longer than the preset time. Otherwise, WDT will send hardware RESET signal to reset system.

The sample code is shown below (using TurboC/C++ 3.0):

```
#define WDT_REFRESH 0x308
outportb(WDT_REFRESH,0x0);
```

2-8. Digital I/O & Cash Drawer control (Optional feature for input, function combined with WDT H/W)

1) Pin out of digital I/O header (JP7):

Pin No.	Function	Pin No.	Function
1	OUT0	**2**	INPUT0
3	OUT1	**4**	INPUT1
5	INPUT4	**6**	INPUT2
7	INPUT5	**8**	INPUT3
9	+12V	**10**	+12V
11	KEY	**12**	+5V
13	GND	**14**	GND

2) Digital input control port:

The **digital input** function and **WDT** function are **both supported by** H/W **WDT chip**. Either one cannot work without H/W WDT chip!

The digital input port can be read directly from port address "**30Ah**" and the default value is "FFh (data mapping to bit0 to bit5)". ENDAT-3205x is with onboard pull-up resistors (4.7K ohm to +5V) and decoupling capacitor (180pF to system GROUND) for each input pin to prevent any unexpected noise. The input level is **2.5V**, **3.3V** and **5V** (+/-5% range).

The sample code is shown below (using TurboC/C++ 3.0):

```
#define INPUT_PORT 0x30a
unsigned char read_data;
read_data=inportb(INPUT_PORT);  //Read status from INPUT port
```

Attention: The WDT chip might be damaged by over specifying voltage.

3) Digital output control port:

This function is built in the system South-Bridge. ENDAT-3205x can offer 2 different logic level (**3.3V** and **12V**) outputs at the same time.

The digital output port can be written directly by porting address "404Eh" and the default value is "00h (data mapping to **bit6 for OUT1** and **bit7 for OUT0**)".

The **JP7** only provides **0V/3.3V** and **CN4** only provides **0V/12V** output.

The sample code is shown below (using TurboC/C++ 3.0):

```
#define OUT_PORT 0x404e
outportb(OUT_PORT,0x80);  //Set OUT0 as logic "1" and OUT1 as "0"
outportb(OUT_PORT,0x40);  //Set OUT1 as logic "1" and OUT0 as "0"
outportb(OUT_PORT,0xc0);  //Set OUT0 and OUT1 as logic "1"
```

4) Cash drawer port:

a). Pin out of cash drawer connector (internal JST connector):

Pin No.	Function
1	**DRAWER1**
2	**SENSOR**
3	**+12V**
4	**DRAWER2**
5	**GND**

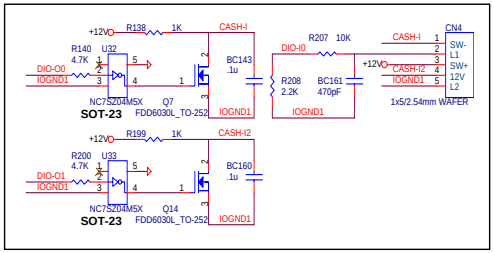
b). Digital output control port:

This function offers **2** controls (0V/+12V) to open the cash drawer. It can be used for DIGITAL I/O control with 0V/+12V level also. The input level of **SENSOR** pin (pin2) must be **12V**, and the SENSOR pin can be read from bit0 of DIGITAL INPUT port.

The sample code is shown below (using TurboC/C++ 3.0):

```
#define OUT_PORT 0x404e
#define INPUT_PORT 0x30a
unsigned char read_data;
outportb(OUT_PORT,0xc0);  //Set all cash drawer not open (+12V)
outportb(OUT_PORT,0x40);  //Set DRAWER1 open (0V)
outportb(OUT_PORT,0x80);  //Set DRAWER2 open (0V)
outportb(OUT_PORT,0x00);  //Set all cash drawer open (0V)
read_data=inportb(INPUT_PORT);  //Read status from INPUT port
read_data=read_data&0x01;  //Get the status of sensor
```

The diagram shown below is the detailed schematic of this interface:



Chapter 3. AWARD BIOS SETUP

Phoenix – Award BIOS CMOS Setup Utility

> Standard CMOS Features	**> Frequency/Voltage Control**
> Advanced BIOS Features	**Load Optimized Defaults**
> Advanced Chipset Features	**Set Supervisor Password**
> Integrated Peripherals	**Set User Password**
> Power Management Setup	**Save & Exit Setup**
> PnP/PCI Configurations	**Exit Without Saving**
> PC Health Status	

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.

"Advanced BIOS Features", "Advanced Chipset Features" and "PnP/PCI Configurations" require board knowledge on PC/AT system architecture and VIA chipset specification. They intend to be used by well-trained technicians and experienced users. Incorrect setup could cause system malfunctions.

3-1. Standard COMS Features

Item	Available Options:
Floppy Drive A	1.44M, 3.5 in
Floppy Drive B:	Not Installed
Pri Master:	Auto
Pri Slave :	Auto
Sec Master:	Auto
Sec Slave :	Auto
Video	EGA/VGA
Halt On	All , But Keyboard

Note: FDD item is not available on ENDAT-3205S

3-2. Advanced BIOS Features

Item	Available Options:
Quick Power On Self Test	Enabled
Virus Warning	Disabled
CPU Internal Cache	Enabled
External Cache	Enabled
CPU L2 Cache ECC Checking	Enabled
Processor Number Feature	Enabled
USB Flash Disk Type	Auto
Hard Disk Boot Priority	Pri.Master:
First Boot Device	Floppy
Second Boot Device	Hard Disk
Third Boot Device	CDROM
Boot Other Device	Enabled
Swap Floppy Drive	Disabled
Boot Up Floppy Seek	Disabled
Boot Up NumLock Status	On
Gate A20 Option	Fast
Typematic Rate Setting	Disabled
Typematic Rate (Chars/Sec)	6
Typematic Delay (Msec)	250
Security Option	Setup
OS Select For DRAM > 64MB	Non-OS2
System BIOS Cacheable	Enabled
Video RAM Cacheable	Enabled
Video BIOS Shadow	Enabled
C8000-CBFFF Shadow	Disabled
CC000-CFFFF Shadow	Disabled
D0000-D3FFF Shadow	Disabled
D4000-D7FFF Shadow	Disabled
D8000-DBFFF Shadow	Disabled
DC000-DFFFF Shadow	Disabled
Small Logo(EPA) Show	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.

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.

3-3. Advanced Chipset Features

Item	Available Options:
DRAM Timing By SPD	Enabled
DRAM Clock	Host CLK
SDRAM Cycle Length	3
Bank Interleave	Disabled
Memory Hole	Disabled
P2C/C2P Concurrency	Enabled
Frame Buffer Size	32
AGP Aperture Size	128
AGP-4X Mode	Enabled
AGP Driving Control	Auto
AGP Driving Value	DA
Select Display Device	CRT
Panel Type	07
Init Display First	PCI Slot
CPU to PCI Write Buffer	Enabled
PCI Dynamic Bursting	Enabled
PCI Master 0 WS Write	Enabled
PCI Delay Transaction	Disabled
PCI#2 Access #1 Retry	Disabled
AGP Master 1 WS Write	Disabled
OnChip USB	Enabled
OnChip Sound	Enabled
Onboard LAN Boot ROM	Disabled

DRAM Timing By SPD

SPD (Serial Presences Detect) is a device in memory module for storing the module information such as DRAM timing and chip parameters. If this option is enabled, BIOS will access SPD automatically to configure module timing. If disabled, DRAM timing can be configured manually.

- **DRAM Clock**
  Allows you set the SDRAM frequency with user set by SPD Disable.
  <Choices: **HCLK+33M** / **Host CLK** / **HCLK-33M>**
  Caution: Improper setting will cause unpredicted result

- **SDRAM CAS# Latency**
  With SDRAM Timing by SPD disabled, you can select The SDRAM CAS# (Column Address Strobe) latency setup manually.
  <Choices: 2 Clocks; 3 Clocks>

SDRAM Bank Interleave

This function is to enable / disable SDRAM Bank Interleave function.
<Choices: Disabled / Enabled>

Memory Hole

To enabled / disabled (default) the support of Memory Hole which is reserved for ISA card.

Frame Buffer Size

Allocate the share memory size from system memory for Video

AGP Aperture Size

Select 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.

Select Display Device

Select the display device for system. The available options are **CRT, LCD and CRT+LCD**.
***** Please note that the text form in the CRT+LCD mode will be shown as the format of LCD mode, not CRT mode; therefore, it will be reading differently on the CRT display.***

Panel Type

Select the display resolution for LCD panel. The available options are 00 ~ 0F

No.	Function	No.	Function
00	640x480 TFT	08	640x480 TFT/ LVDS
01	800x600 TFT/LVDS	09	800x600 TFT
02	1024x768 TFT 2pixel/clk at 32Mhz	0A	1024x768 TFT
03	1280x1024 TFT	0B	1280x1024 TFT
04	640x480 DSTN	0C	1400x1050 TFT 2pixel/clk at 54Mhz
05	800x600 DSTN	0D	800x600 TFT
06	1600x1200 TFT/ LVDS	0E	1024x768 DSTN
07	1024x768 TFT 1pixel/clk at 65Mhz	0F	1280x1024 DSTN

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 2.2.

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.)**

Onboard LAN Boot ROM

The default setting is enabled or disabled LAN boot up function.

3-4 Integrated Peripherals

Item	Available Options:
OnChip IDE Channel0	Enabled
OnChip IDE Channel1	Enabled
IDE Prefetch Mode	Enabled
Primary Master PIO	Auto
Primary Slave PIO	Auto
Secondary Master PIO	Auto
Secondary Slave PIO	Auto
Primary Master UDMA	Auto
Primary Slave UDMA	Auto
Secondary Master UDMA	Auto
Secondary Slave UDMA	Auto
IDE HDD Block Mode	Enabled
Onboard FDD Controller	Enabled
Onboard Serial Port 1	Enabled
Onboard Serial Port 2	Enabled
UART 2 Mode	Standard
IR Function Duplex	Full
TX,RX inverting enable	No, No
Onboard Parallel Port	378/IRQ7
Onboard Parallel Mode	ECP
ECP Mode Use DMA	1
Parallel Port EPP Type	EPP1.9
Onboard Serial Port 3	3E8H
Serial Port 3 Use IRQ	10
Onboard Serial Port 4	2E8H
Serial Port 4 Use IRQ	11

OnChip 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 PIO (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 devices support it and the operating environment includes a DMA drive (Windows 95 OSR2 or a third-party IDE bus master driver). If the device and system software both support Ultra DMA/33, select "Auto" to enable BIOS support.

Onboard FDD Controller

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

Note: FDD item is not available on ENDAT-3205S.

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. Configuration options: Normal, EPP (Extended Parallel Port), ECP (Extended Capabilities Port) and ECP+EPP. Select Normal, unless it is sure that the hardware and software both support EPP or ECP mode. Assign DMA for ECP or EPP mode when you not select Normal mode.

3-5. Power Management Setup

Item	Available Options:
ACPI function	Enabled
Power Management	Press Enter
Power Management	User Define
HDD Power Down	1~15Min or Disable
Doze Mode	1 Min
Suspend Mode	1 Min
PM Control by APM	Yes
Video Off Option	Always On
Video Off Method	Blank Screen
Soft-Off by PWRBTN	Instant-Off
State After Power Failure	Off
Wake Up Events	Press Enter
VGA	OFF
LPT & COM	LPT/COM
HDD & FDD	ON
PCI Master	OFF
Wake Up On LAN/Ring	Disable
RTC Alarm Resume	Disable
Date (of Month)	0
Resume Time (hh:mm:ss)	0 : 00 : 00
Primary INTR	ON
IRQs Activity Monitoring	Press Enter
IRQ3 (COM 2)	Disable
IRQ4 (COM 1)	Disable
IRQ5 (LPT 2)	Disable
IRQ6 (Floppy Disk)	Disable
IRQ7 (LPT 1)	Disable
IRQ8 (RTC Alarm)	Disable
IRQ9 (IRQ2 Redir)	Disable
IRQ10 (Reserved)	Disable
IRQ11 (Reserved)	Disable
IRQ12 (PS/2 Mouse)	Disable
IRQ13 (Coprocessor)	Disable
IRQ14 (Hard Disk)	Disable
IRQ15 (Reserved)	Disable

Power Management

This category allows you to select the type (or degree) of power saving and which 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. Disabled all 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	Allow 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

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. PnP/PCI Configurations

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.

Item	Available Options:
PNP OS Installed	NO
Reset Configuration Data	Disabled
Resources Controlled By	Auto(ESCD)
IRQ Resources	Press Enter
IRQ-3 assigned to	Reserved
IRQ-4 assigned to	Reserved
IRQ-5 assigned to	PCI Device
IRQ-7 assigned to	Reserved
IRQ-9 assigned to	PCI Device
IRQ-10 assigned to	PCI Device
IRQ-11 assigned to	PCI Device
IRQ-12 assigned to	PCI Device
IRQ-14 assigned to	PCI Device
IRQ-15 assigned to	PCI Device
PCI/VGA Palette Snoop	Disabled
Assign IRQ For VGA	Enabled
Assign IRQ For USB	Enabled
USB Keyboard Support	Enabled
USB Mouse Support	Enabled

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.

3-7. PC Health Status

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

Chapter 4. VGA, LCD Feature

4-1. AGP-BUS VGA Feature

The ENDAT-3205M/S built-in Graphics Controller is a fully integrated 128-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.

The on-board Graphics 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. The controller of ENDAT-3205M/S also supports two simultaneous displays: CRT and LCD panel.

The on-board Graphics Controller's main system features include:

- 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
- Versatile Motion Video Capture/Overlay/Playback Support
- Flexible Frame Buffer Memory Interface
- Advanced Mobile Power Management and CRT Power Management (VESA™ DPMS)
- PC99 Hardware Support

4-2. LCD Flat Panel Feature

Flat Panel Interface

The on-board graphic controller also support industry standard TFT LCD panel, the interface supports both of TTL/CMOS and LVDS:

TTL/CMOS with STN panel: 8, 16 and 24bit for DSTN/CSTN.
TTL/CMOS with TFT panel: 9, 12, 18, 24 and 36bit for TFT.
LVDS: 18 and 36bit by standard feature and **24bit by optional** feature.

LVDS interface provides a low voltage, high speed and low EMI serial DC-balanced differential data via optional onboard LVDS.

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

Please note that the default setting is with "CRT only". If the LCD display feature is required, the setting will need to be revised in the system BIOS setting: "Select Display Device" under "Advanced Chipset Features"; unless it is specified at the time of order.

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
- Loop back 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 Windows-95, Windows-98 and Windows-NT

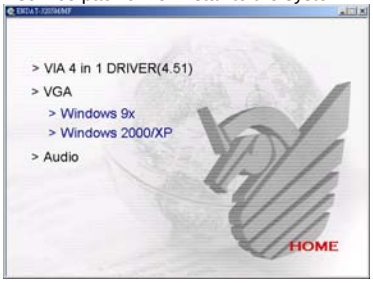
4-4. Driver Utility Installation Guide

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

2. Insert the support CD that supplied with motherboard into CD-ROM driver which enable the access with auto-run mode; or double –click the CD driver icon in "My Computer" to bring up the screen.

3. Select correct motherboard to install driver / utility for the system

4. Select VIA 4in1 service pack driver install to the system



5. The Screen will appear VIA 4in1 driver setup screen, please press "NEXT" to continue. Please follow the steps instructed by each screen for the installation of the VIA 4in1 driver. Restart the system after completed the installation.

6. After installing the VIA 4in1 driver, please select VGA driver for install. The system will request for "restart" after the completion of the driver installation.

7. The Screen can be adjusted at Display properties after the installation of VGA driver.

We strongly recommend using the 4in1 driver to install the system since the 4in1 driver will automatically detect / update the necessary drivers.

This driver will automatically detect and install the latest utilities as following:

IDE Bus master, VIA AGP Driver, IRQ Routing Driver, VIA INF Driver

LAN Driver: Install the LAN driver for on-board LAN adapter. Please refer to Chapter 5, Software Installation.

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 integrated of Single Chip Fast Ethernet Controller with options of one or dual LAN solution, and also the LAN chip option of Realtek 8139D and Intel 82551QM (except ENDAT-3205S) solution. It 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 802.3x 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 Remote Boot ROM by system BIOS
- Provides a comprehensive setup program for displaying the adapter configuration and includes diagnostic on board or network tests
- Complete drivers for Novell, Windows NT and Windows 95/98 Packet driver etc

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

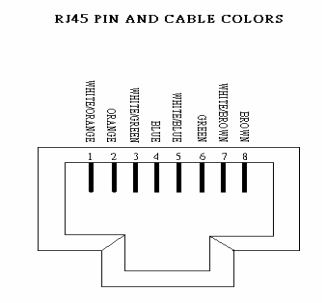
Straight through twisted pair cable is typically used to connect a hub to a server or workstation. In a straight through connection, Pin 1 at the server, Pin 2 at the hub connects to Pin 2 at the server, and so on. Figure A-1 shows the locations of pins on a standard RJ-45 plug on a twisted-pair cable.

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 is 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 fireproofing 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 function

This function is available with the BIOS programming for indicated operation system. The remote boot function 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.

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 will 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 setting by the BIOS. Other default settings can be changed for situations as shown below.

Program (RESET8139.exe) provides the following function:

- Displays the current configuration of the adapter
- Performs network diagnostic tests to verify the operation of the adapter's basic functions, and the adapter's 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, loop back 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 Set Up New Configuration option from the main menu

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

Option	Default Setting	Other Available Settings
Medium Type	Auto Selection	100 Full – 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 4in1 Driver" 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

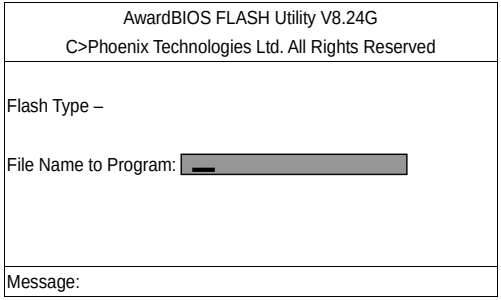
Before installing the driver programs, please refer to each directory that contains a README file, which provides detailed installation instructions, or to execute the HELP8139.EXE help file viewer in DOS. The utility will then present with a screen showing the information about how to install the network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

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>



3. Enter the name of the system BIOS disk file into the "File Name to Program" field. The following message appears in the "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 (press "**F1**" key)
7. For upgrade BIOS procedure, please refer to our web site: http://www.unicorn-computer.com.tw

**** Please turn off system and clear CMOS data by JBAT1.***

**** Please restart your system and load setup default /***

Appendix B: Connector Pin Assignment

PS/2 Keyboard / Mouse Pin Header Connector (2.54mm)

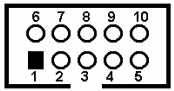
Pin No.	Signal (KB)	Pin No.	Signal (MS)
1	KB Data	2	MS Data
3	KEY	4	KEY
5	GND	6	GND
7	+5V(DC)	8	+5V(DC)
9	KB_CLK	10	MS_CLK

D-SUB Type Connector for COM port (RS-232)

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

Box Header Type Connector for COM port (RS-232)

Pin No.	Description	Pin No.	Description
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	RI
5	GND	10	N.C



D-SUB Type Connector for COM2 port (RS-422→ 4 Wire)

Pin No.	Description	Pin No.	Description
1	–TXD	6	NA
2	+RXD	7	NA
3	+TXD	8	NA
4	NA	9	–RXD
5	NA		

D-SUB Type Connector for COM2 port (RS-485→ 2 Wire)

Pin No.	Description	Pin No.	Description
1	Data –	6	NA
2	NA	7	NA
3	Data +	8	NA
4	NA	9	NA
5	NA		

JRJ1A: USB port 0, 1 (For ENDAT-3205M/S)

Pin No.	Function	Pin No.	Function
1	USB0_VCC	5	USB1_VCC
2	USBD0–	6	USBD1–
3	USBD0+	7	USBD1+
4	USB_GND1	8	USB_GND1

JUSB1: USB port 2, 3 (For ENDAT-3205M/S)

Pin No.	Function	Pin No.	Function
1	USB2_VCC	2	USB3_VCC
3	USBD2–	4	USBD3–
5	USBD2+	6	USBD3+
7	USB_GND2	8	USB_GND2
9	USB_GND2	10	USB_GND2

Pin Header for external device

Pin No.	Signal (KB)	Pin No.	Signal (MS)
1	KB Data Out	2	MS Data Out
3	KB Data In	4	MS Data In
5	KB CK Out	6	MS Data Out
7	KB CK In	8	MS CK In
9	KEY	10	KEY
11	+5V(DC)	12	+5V(DC)
13	GND	14	GND

Default setting is: 1-3, 5-7, 2-4 and 6-8 close.

Printer (LPT1) 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**	N.C / +5V
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		

Digital I/O Header

Pin No.	Function	Pin No.	Function
1	DIO_O0	**2**	DIO_I0
3	DIO_O1	**4**	DIO_I1
5	DIO_I4	**6**	DIO_I2
7	DIO_I5	**8**	DIO_I3
9	+12V	**10**	+12V
11	KEY	**12**	+5V
13	GND	**14**	GND

Internal Cash Drawer Connector

Pin 1	Drawer1	**Pin 4**	Drawer2
Pin 2	Sensor	**Pin 5**	GND
Pin 3	+12V		

IR Connector

Pin 1	VCC	**Pin 4**	GND
Pin 2	N.C	**Pin 5**	IRTX
Pin 3	IRRX		

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#

Power connector

	ATX		
3.3V	**11**	**1**	3.3V
–12V	**12**	**2**	3.3V
GND	**13**	**3**	GND
PS ON	**14**	**4**	+5V
GND	**15**	**5**	GND
GND	**16**	**6**	+5V
GND	**17**	**7**	GND
–5V	**18**	**8**	POWER OK
+5V	**19**	**9**	5V SB
+5V	**20**	**10**	+12V

Slim IDE1 Connector (44Pins with 2.0mm)

Pin No.	Description	Pin No.	Description
2,19,22,24	GND	**13**	IDE data2
26,30,40,43	GND	**14**	IDE data13
41,42	VCC (+5V)	**15**	IDE data1
20,21,28	N.C	**16**	IDE data14
29,32,34,44	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#

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#

Note: The above 2 connectors (Slim IDE1 Connector and FDD Connector) are not available on ENDAT-3205S

LVDS1: LCD - LVDS Output (2.54mm)

Pin No.	Signal	Pin No.	Signal
1	VDDLCD	**2**	VDDLCD
3	GND	**4**	GND
5	Y0-	**6**	Y0+
7	GND	**8**	Y1-
9	Y1+	**10**	KEY
11	Y2-	**12**	Y2+
13	GND	**14**	YCK-
15	YCK+	**16**	GND
17	Y3-	**18**	Y3+
19	GND	**20**	KEY
21	Z0-	**22**	Z0+
23	Z1-	**24**	Z1+
25	Z2-	**26**	Z2+
27	ZCK-	**28**	ZCK+

Note: The 18 bits LCD was used Y0~Y2 and YCK LVDS pair.
The 24 bits LCD was used Y0~Y3 and YCK LVDS pair (optional).
The 36 bits LCD was used all LVDS pair on this connector.

36bit TFT LCD data mapping:

LCD_C2 (2.0mm)

Pin No.	Signal	Pin No.	Signal
1	VBL	**2**	VBL
3	GND	**4**	GND
5	VDDLCD	**6**	VDDLCD
7	ON/OFF	**8**	GND
9	B0 (ODD)	**10**	B3 (ODD)
11	B0 (EVEN)	**12**	B1 (EVEN)
13	B2 (EVEN)	**14**	B3 (EVEN)
15	B4 (EVEN)	**16**	B5 (EVEN)
17	G0 (ODD)	**18**	G3 (ODD)
19	G0 (EVEN)	**20**	G1 (EVEN)
21	G2 (EVEN)	**22**	G3 (EVEN)
23	G4 (EVEN)	**24**	G5 (EVEN)
25	R0 (ODD)	**26**	R3 (ODD)
27	R0 (EVEN)	**28**	R1 (EVEN)
29	R2 (EVEN)	**30**	R3 (EVEN)
31	R4 (EVEN)	**32**	R5 (EVEN)
33	GND	**34**	GND
35	Pixel Clock	**36**	V-SYNC
37	Data Enable	**38**	H-SYNC
39	GND	**40**	VDDLCD
41	VDDLCD	**42**	**KEY**
43	VDDLCD	**44**	VDDLCD

LCD_C1 (2.0mm)

Pin No.	Signal	Pin No.	Signal
1	R1 (ODD)	**2**	R2 (ODD)
3	R4 (ODD)	**4**	R5 (ODD)
5	G1 (ODD)	**6**	G2 (ODD)
7	GND	**8**	**KEY**
9	G4 (ODD)	**10**	G5 (ODD)
11	B1 (ODD)	**12**	B2 (ODD)
13	B4 (ODD)	**14**	B5 (ODD)

24bit TFT LCD data mapping:

LCD_C2 (2.0mm)

Pin No.	Signal	Pin No.	Signal
1	VBL	**2**	VBL
3	GND	**4**	GND
5	VDDLCD	**6**	VDDLCD
7	ON/OFF	**8**	GND
9	B0	**10**	B1
11	B2	**12**	B3
13	B4	**14**	B5
15	B6	**16**	B7
17	G0	**18**	G1
19	G2	**20**	G3
21	G4	**22**	G5
23	G6	**24**	G7
25	R0	**26**	R1
27	R2	**28**	R3
29	R4	**30**	R5
31	R6	**32**	R7
33	GND	**34**	GND
35	Pixel Clock	**36**	V-SYNC
37	Data Enable	**38**	H-SYNC
39	GND	**40**	VDDLCD
41	VDDLCD	**42**	**KEY**
43	VDDLCD	**44**	VDDLCD

18bit TFT LCD data mapping:

LCD_C2 (2.0mm)

Pin No.	Signal	Pin No.	Signal
1	VBL	**2**	VBL
3	GND	**4**	GND
5	VDDLCD	**6**	VDDLCD
7	ON/OFF	**8**	GND
9	NC	**10**	NC
11	B0	**12**	B1
13	B2	**14**	B3
15	B4	**16**	B5
17	NC	**18**	NC
19	G0	**20**	G1
21	G2	**22**	G3
23	G4	**24**	G5
25	NC	**26**	NC
27	R0	**28**	R1
29	R2	**30**	R3
31	R4	**32**	R5
33	GND	**34**	GND
35	Pixel Clock	**36**	V-SYNC
37	Data Enable	**38**	H-SYNC
39	GND	**40**	VDDLCD
41	VDDLCD	**42**	**KEY**
43	VDDLCD	**44**	VDDLCD

16bit DSTN LCD data mapping:

LCD_C2 (2.0mm)

Pin No.	Signal	Pin No.	Signal
1	VBL	**2**	VBL
3	GND	**4**	GND
5	VDDLCD	**6**	VDDLCD
7	ON/OFF	**8**	GND
9	N.C.	**10**	N.C.
11	UD4	**12**	UD3
13	UD2	**14**	UD1
15	UD0	**16**	N.C.
17	N.C.	**18**	N.C.
19	LD1	**20**	LD0
21	N.C.	**22**	UD7
23	UD6	**24**	UD5
25	N.C.	**26**	N.C.
27	LD7	**28**	LD6
29	LD5	**30**	LD4
31	LD3	**32**	LD2
33	GND	**34**	GND
35	Pixel Clock	**36**	FLM
37	Data Enable	**38**	LP
39	GND	**40**	VDDLCD
41	VDDLCD	**42**	**KEY**
43	VDDLCD	**44**	VDDLCD

8bit CSTN LCD data mapping:

LCD_C1 (2.0mm)

Pin No.	Signal	Pin No.	Signal
1	D4	**2**	D2
3	N.C.	**4**	N.C.
5	N.C.	**6**	N.C.
7	GND	**8**	KEY
9	N.C.	**10**	N.C.
11	N.C.	**12**	N.C.
13	N.C.	**14**	N.C.

LCD_C2 (2.0mm)

Pin No.	Signal	Pin No.	Signal
1	VBL	**2**	VBL
3	GND	**4**	GND
5	VDDLCD	**6**	VDDLCD
7	ON/OFF	**8**	GND
9	N.C.	**10**	N.C.
11	N.C.	**12**	N.C.
13	N.C.	**14**	N.C.
15	N.C.	**16**	N.C.
17	N.C.	**18**	N.C.
19	N.C.	**20**	N.C.
21	N.C.	**22**	N.C.
23	N.C.	**24**	N.C.
25	D6	**26**	D0
27	D7	**28**	D5
29	D3	**30**	D1
31	N.C.	**32**	N.C.
33	GND	**34**	GND
35	Pixel Clock	**36**	FLM
37	Data Enable	**38**	LP
39	GND	**40**	VDDLCD
41	VDDLCD	**42**	**KEY**
43	VDDLCD	**44**	VDDLCD

BIOS LCD panel type list (Advance Chipset Setup/Panel Type)

No.	Function	No.	Function
00	640x480 TFT	08	640x480 TFT/ LVDS
01	800x600 TFT/LVDS	09	800x600 TFT
02	1024x768 TFT 2pixel/clk at 32Mhz	0A	1024x768 TFT
03	1280x1024 TFT	0B	1280x1024 TFT
04	640x480 DSTN	0C	1400x1050 TFT 2pixel/clk at 54Mhz
05	800x600 DSTN	0D	800x600 TFT
06	1600x1200 TFT/ LVDS	0E	1024x768 DSTN
07	1024x768 TFT 1pixel/clk at 65Mhz	0F	1280x1024 DSTN

Appendix C: 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