



RS12-38800 Manual

RS12-38800

Manual

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Safety Guidelines

Follow these guidelines to ensure general safety:

- Keep the chassis area clear and dust-free during and after installation.
- Do not wear loose clothing or jewelry that could get caught in the chassis. Fasten your tie or scarf and roll up your sleeves.
- Wear safety glasses if you are working under any conditions that might be hazardous to your eyes.
- Do not perform any action that creates a potential hazard to people or makes the equipment unsafe.
- Disconnect all power by turning off the power and unplugging the power cord before installing or removing a chassis or working near power supplies
- Do not work alone if potentially hazardous conditions exist.

Never assume that power is disconnected from a circuit; always check the circuit.

- LITHIUM BATTERY CAUTION :

Risk of Explosion if Battery is replaced by an incorrect type. Dispose of used batteries according to the instruction

Operating Safety

- Electrical equipment generates heat. Ambient air temperature may not be adequate to cool equipment to acceptable operating temperatures without adequate circulation. Be sure that the room in which you choose to operate your system has adequate air circulation.
- Ensure that the chassis cover is secure. The chassis design allows cooling air to circulate effectively. An open chassis permits air leaks, which may interrupt and redirect the flow of cooling air from internal components.

Electrostatic discharge (ESD) can damage equipment and impair electrical circuitry. ESD damage occurs when electronic components are improperly handled and can result in complete or intermittent failures. Be sure to follow ESD-prevention procedures when removing and replacing components to avoid these problems.

- Wear an ESD-preventive wrist strap, ensuring that it makes good skin contact. If no wrist strap is available, ground yourself by touching the metal part of the chassis.
 - Periodically check the resistance value of the antistatic strap, which should be between 1 and 10 mega ohms (Mohms).

EMC Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case users will be required to correct the interference at their own expense.

Class A Notice for FCC

Modifying the equipment without the authorization of Lanner Electronics, Inc. may result in the equipment no longer complying with FCC requirements for Class A digital devices. In that event, your right to use the equipment may be limited by FCC regulations, and you may be required to correct any interference to radio or television communications at your own expense.

This equipment is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

Contents

Safety Guidelines	3
EMC Notice	4
Contents.....	5
1. Product overview--.....	6
1.1 Product Introduction	6
1.2 Features and Benefits	6
1.3 Specifications: RS12-38800-.....	7
1.4 Specifications: MB-8675B	8
1.5 Package Content.....	9
1.6 Technical Assistance.....	9
2. System components	10
2.1 MB-8675 System Board.....	11
2.2 Mechanical Overview	33
3. Hardware Installation Guide	35
3.1 CPU Installation.....	35
3.2 System Memory	35
3.3 Installation Compact Flash Card	35
3.4 Rack Mounting Installation	36
4. Bios Setup	39
A. Appendix A: Power Supply	53
B. Appendix B: Watchdog Timer	54
C. Appendix C: Console Redirection.....	55
D. Appendix D: LCM Module and Keypad for FW-8650	56
E. Appendix E: LAN Bypass Function	57
F. Appendix F: Hot-Swap Hard Disk.....	58
Terms and Conditions.....	59
Warranty Policy	59
RMA Service	60

1. Product Overview

1.1 Product Introduction



Figure 1 – RS12-38800 Outlook

The RS12-38800, 3U Rack mount storage platform designed for networking storage demands of high-end markets, the RS12-38800 is equipped with Intel Xeon 5100 series CPU support, eight PCI Express interfaces, redundant power supply and an optional Ethernet module. It is designed with an Intel Blackford 5000P as its Northbridge and [Intel ESB2 \(6321\)](#) as its Southbridge.

1.2 Features and Benefits

- Listed below are the key features of RS12-38800:
- [Supports 12 hot-swappable 3.5" hard drives](#)
- [Supports Intel Dual-Core Xeon 5100 Processor](#)
- [Supports 8 x Fully Buffer DIMM, up to 32GB](#)
- [Supports up twelve Gigabit Ethernet ports \[Marvell 88E8062\]\(#\) chipset](#)
- [Equipped with Compact Flash port, \[Console port \\(RJ-45\\)\]\(#\), \[USB Ports\]\(#\) x 2, LCM module x 1](#)
- N+1 Redundant Switch Power Supply ensure a higher level of system reliability and stability
- Optional Cavium CN1010 delivers high-speed encryption and packet throughput
- Customization of the front panel and chassis colors tailored solutions for OEM and ODM customers

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1.3 Specifications: RS12-38800 (19" 3U Rack-Mount Network Storage Platform + EM-8675B)

Feature		Description			
Form Factor		3U 19" Rack mount			
Color		Black U			
Temperature		0 - 40 Degree Celsius			
Humidity		5% -95%RH, Non-Condensing			
Dimensions	Height	130mm, 5.12 in			
	Width	442mm, 17.4 in			
	Depth	610mm, 24 in			
	Weight	30kg			
Material		SGCC			
Compartment Orientation		NIC module on bottom of HDD bay			
HDD Bay	Number	12			
	HDD Form-factor	3.5"			
	HDD Orientation	Based on Lanner standard design			
	LED Indicators	2 x LED per Tray, Reference: NSB-38800 "Disk LED Activity"			
	Dimensions	198.2mm x 107.2 mm x27mm			
System Fan	Number	3 x 4700rpm (80x80x25mm)			
	Fan Speed Sensing	Yes			
	Fan Speed Control	Yes			
	Others	Easy to replace			
Cooling		2U CPU active heat-sink Smart Fan x 2 (Swappable)			
Exposure I/O		1 x RJ45 Console Port (Front)			
		2 x USB Port (Front)			
		1 x RJ-45 for IPMI Network Control (Front)			
Expansion Slot		1 x PCI-E Slot or 2 x PCI-X Slot			
Network Interface		NCM-IG407A : 4 Port sRJ-45 Gbe (2 Pair By-Pass supported)			
		NCM-IG407B : 4 Ports RJ-45 Gbe			
		NCM-IG411A : 4 Ports SFP Gbe			
		NCM-IG411B : 2 Ports SFP Gbe			
		NCM-IG208A : 2 Ports SFP 1000Base-SX (with By-Pass supported)			
		NCM-IG208B : 2 Ports SFP 1000Base-LX (with By-Pass supported)			
Temperature		Operating 0°C ~ 40°C Ambient Storage 0°C ~ 70°C			
Humidity		5 - 95%, non condensing			
Miscellaneous	LCD Module	2 x 20 Character			
	Watchdog	Yes			
Certification	Internal RTC with Li Battery	Yes			
	Safety	CE, FCC Class A,			
	EMC	FCC Part 15 Class A,			
Power supply	ROHS	EU, China			
	Model	1 x Zippy M3W-6950P 950W N+1 Redundant Switch Power Supply Detail spec. see M3W-6950P.pdf			
	Output Characteristics	Connector	Length	Unit	Mapping
		24 Pin	150mm	1	MB
		8 Pin	250mm	1	MB
		20 Pin	150mm	1	BP
		4 Pin	150mm	1	BP
2 Pin (TTL Signal)		150mm	1	MB	

1.4 Specifications: EM-8675B (LGA 771 for Intel Dual-Core (Woodcrest) and Quad-Core (Clovertown) XEON)

Features		Description
Processor (2 x LGA771)		Dual Intel LGA 771 for Dual-Core and Quad-Core XEON · Up to 3.0G
BIOS		8M EEPROM · AMI Plug & Play BIOS (with Console Re-Direction)
Chipset	Northbridge	Intel Blackford 5000P
	Southbridge	Intel ESB2 (6321)
	I/O Controller	ITE8712F-S/KX-L
Memory		8 x Fully Buffer DIMM , up to 32GB
VGA		ATI ES1000
SSD		1 x Compact Flash Type II (DMA support)
Security processor		Cavium CN1010 (Optional)
On Board I/O Connector		2 x USB Port (Front)
		1 x RJ-45 Console Port (Front)
		1 x RJ-45 for IPMI Network Control (Front ; Optional)
		1 x Serial Console Port Pin Header on Board
		1 x KeyBoard/Mouse Pin Header (2x4 Pin)
		1 x LCM & KeyPad Pin Header (2x7 Pin)
		1 x Reset Button Pin Header (2 Pin)
Expansion Slot		PCI-E Slot (Rear)
		PCI-X Slot (Rear)
IPMI		1 x OPMA Connector
Network interface		Depends on LAN Modules
Manageability		Temperature and Fan Speed Sensing
System fan		3 x Fan connector by IAC-FAN02A
Watch Dog Timer		Super IO, 1-255
RTC		Internal RTC w/ Li Battery
Temperature		Operating 0°C ~ 40°C
		Ambient Storage 0°C ~ 70°C
Humidity		5 ~ 95%, non condensing
Certification	Safety	CE, FCC Class A
	EMC	FCC Part 15 Class A
	ROHS	EU, China
Dimension		12" x 14" (304.8mm x 355.6mm)

1.5 Package Contents

Carefully unpack your package and make sure that you have the following items.

- RS12-38800_Network Storage Platform x 1
- Console cable (RJ-45) x 1
- 1.8 meters cross-over Ethernet cable x 1
- 1.8 meters straight-through Ethernet cable x 2
- Power cable x 3
- Screw Set
- Slide & Bracket Set

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Note: If you should find any components missing or damaged, please contact your dealer immediately for assistance.

1.6 Technical Assistance

Should you have any questions or problems with your product, please contact the Lanner sales team.

Phone: 886-2-8692-6060

Fax: 886-2-8692-6101

E-mail: sales@lannerinc.com

Prior to contacting us, we ask that you first check the electronic product documentation for assistance. Should you still have questions, we recommend you have the following information on hand in order to expedite the process:

1. RS12-38800 model name
2. Part number
3. Abnormal behavior and/or error messages reported by your network storage system
4. Your questions or a description of the problem you are experiencing

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2. System Components

2.1 EM-8675 system Board

EM-8675 is the system board bundled with the RS12-38800 Network security platform. The succeeding sections list all EM-8572 related jumper settings and connector pin assignments.

2.1.1 Board Layout

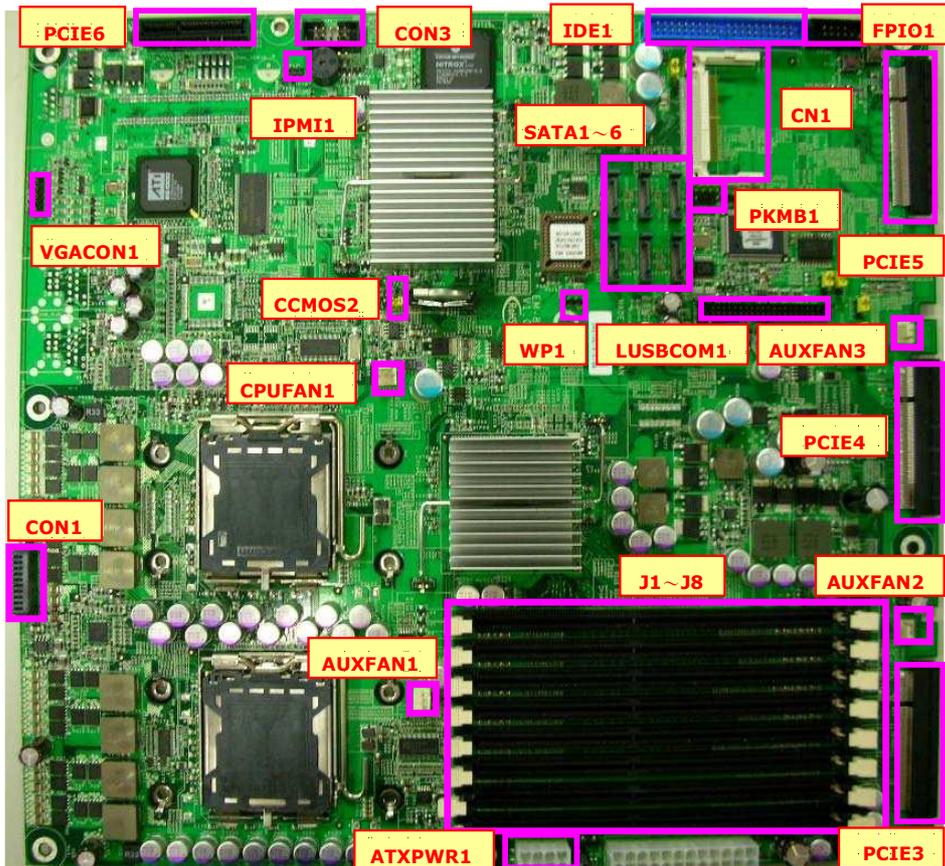


Figure 2 – EM-8675 Key Features

2.1.2 Dimensions (mm)

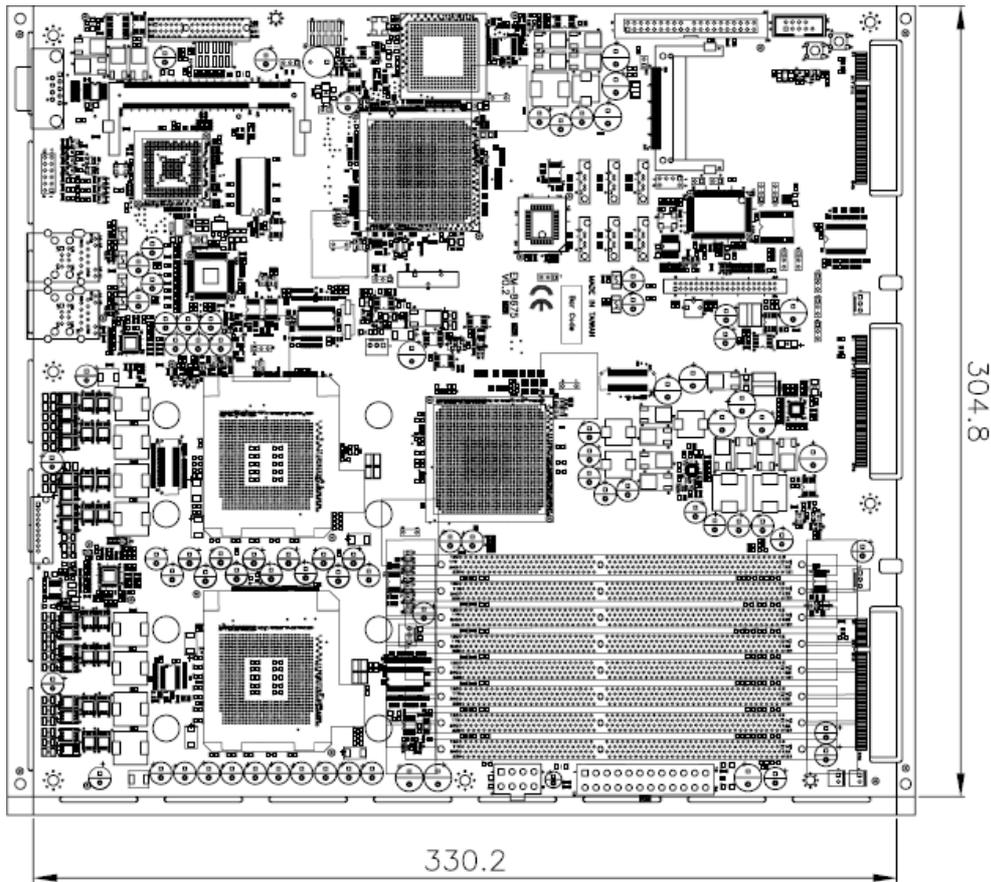


Figure 3 - Dimensions

2.1.3 Jumper Settings and I/O Connectors

The jumper settings and I/O connectors of the EM-8675 board are specific to the FW-8890. Changing these settings may result in malfunctions or damage to your system.

Jumper Settings and I/O Connector Summary for EM-8675 :

JUMPER	FUNCTION
PKMB1	2x4 Header PS/2 Keyboard & Mouse Connector (2.54mm)
CCMOS2	Clear CMOS Data
IDE1	40 Pin IDE Interface Connector (2.54mm)
CN1	Compact Flash Connector
FPIO1	9 Pin Front Panel Connector (2.54mm)
CPUFAN1/AUXFAN1	3 Pin Smart FAN Header
AUXFAN2 ~ AUXFAN3	3 Pin FAN Header
ATXPWR1	8 Pin Power Connector
LUSBCOM1	2X20 Pin BOX Connector (2.00mm)
VGACON1	12 Pin External VGA Header (2.54mm)
JP1	1x2 Pin Compact Flash Mode (2.54mm)
JP2	4 Pin TACT Power Button
JP3	4 Pin TACT Reset Button
JP8 ~ JP11	1x3 Pin Select KEYPAD or USB_RJ1 Lan LED (2.54mm)
JP12	2 Pin For TTL1 detect
JP13	2 Pin For TTL2 detect
JP14	1x2 Pin For SIO GPIO Pin (2.54mm)
JP15	1x2 Pin For SIO GPIO Pin (2.54mm)
JP16~JP18	1x3 Pin Select Bypass Function (2.54mm)
JP19	1x2 Pin For I2C BUS Pin (2.54mm)
CON1	10 Pin Smart FAN Connector
CON3	10 Pin SMD OPMA_LAN Connector (2.54mm)
WP1	1x3 Pin U41 Flash Rom Write Protect (2.54mm)
IPMI1	1x3 Pin Header (2.54mm)
SATA1~SATA6	180° SATA Connector
PCIEC6	PCI Express x4 Standard Connector
PCIEC3 ~ PCIEC5	Splint PCI Express x8 Standard Connector

J1~J8	240Pin FB-DIMM Connector
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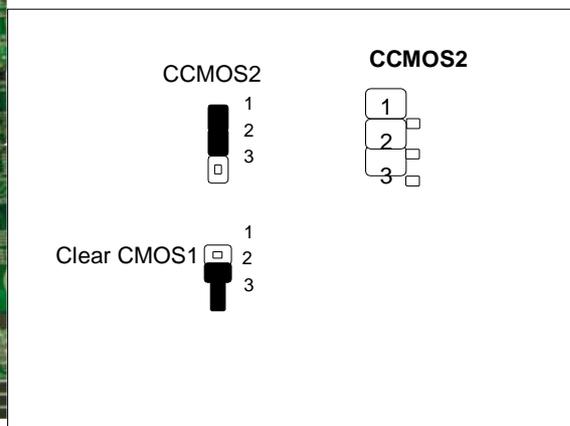
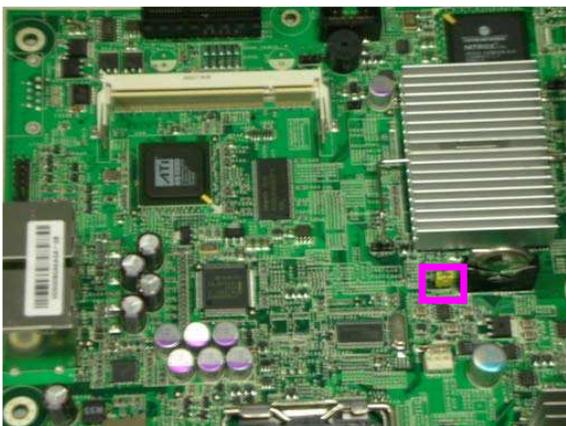
2.1.4 Connectors Pin Assignment

PKMB1 : 2x4 Header PS/2 Keyboard & Mouse Connector



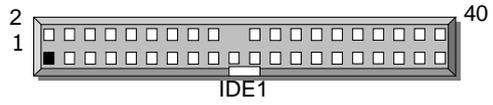
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC	2	MSCLK
3	MSDATA	4	KEY
5	KBDATA	6	KEY
7	GND	8	KBCLK

CCMOS2: Clear CMOS Data



DESCRIPTION	CMOS
Normal (Default)	1-2
Clear CMOS	2-3

IDE1 : 40Pin IDE Interface Connector (2.54mm)



PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	Reset #	2	Ground
3	Data 7	4	Data 8
5	Data 6	6	Data 9
7	Data 5	8	Data 10
9	Data 4	10	Data 11
11	Data 3	12	Data 12
13	Data 2	14	Data 13
15	Data 1	16	Data 14
17	Data 0	18	Data 15
19	Ground	20	KEY
21	DMA REQ#	22	Ground
23	IOW #	24	Ground
25	IOR #	26	Ground
27	IOCHRDY	28	Ground
29	DMA ACK #	30	Ground
31	Interrupt	32	NC
33	SA1	34	PD80P / SD80P
35	SA0	36	SA2
37	HDC CS0 #	38	HDC CS1 #
39	HDD Active LED #	40	Ground

CN1 : Compact Flash Connector

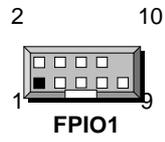


CN1



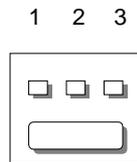
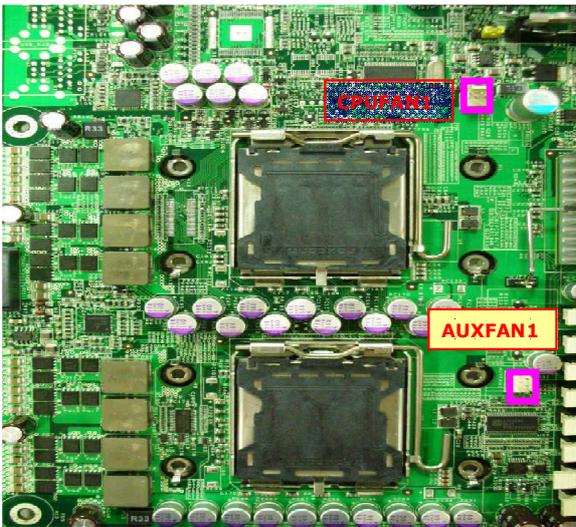
PIN NO	DESCRIPTION	PIN NO	DESCRIPTION
1	GND	26	CD1-
2	DATA3	27	DATA11
3	DATA4	28	DATA12
4	DATA5	29	DATA13
5	DATA6	30	DATA14
6	DATA7	31	DATA15
7	CE1#	32	CE2#
8	NC	33	NC
9	GND	34	IOR#
10	NC	35	IOW#
11	NC	36	WE#
12	NC	37	READY#
13	CFVCC3	38	CFVCC3
14	NC	39	CSEL
15	NC	40	NC
16	NC	41	RESET
17	NC	42	WAIT#
18	A2	43	INPACK#
19	A1	44	REG#
20	A0	45	DASP#
21	DATA0	46	DIAG#
22	DATA1	47	DATA8
23	DATA2	48	DATA9
24	WP	49	DATA10
25	CD2-	50	GND

FPIO1 : 9Pin Front Panel Connector (2.54mm)



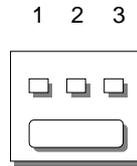
PIN NO	DESCRIPTION	PIN NO	DESCRIPTION
1	HDD_LEDH	2	SP_LEDH
3	HDD_LEDL	4	SP_LEDL
5	Ground	6	Ground
7	FP_RST#_N	8	PS_ON#
9	NMI_N	10	KEY

CPUFAN1 / AUXFAN1 : 3Pin Smart FAN Header



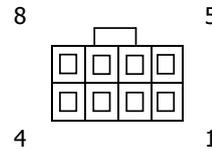
PIN NO	DESCRIPTION
1	Ground
2	VFAN1~2
3	FAN Speed

AUXFAN2 ~ AUXFAN3 : 3 Pin FAN Header



PIN NO	DESCRIPTION
1	Ground
2	VFAN1~2
3	FAN Speed

ATXPWR1 : 8Pin Power Connector



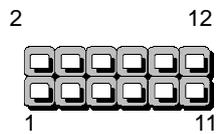
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	Ground	5	P12V_A
2	Ground	6	P12V_A
3	Ground	7	P12V_B
4	Ground	8	P12V_B

LUSBCOM1 : 2 x 20 Pin BOX Connector (2.00mm)



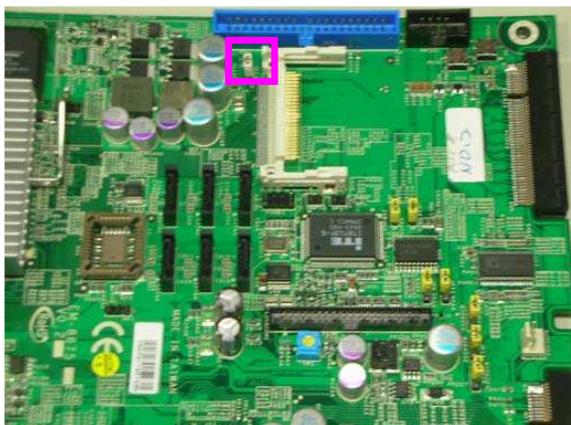
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NDCDB#	2	NDSRB#
3	NSINB	4	NRTSB#
5	NSOUTB	6	NCTSB#
7	NDTRB#	8	NRIB#
9	Ground	10	Ground
11	+5V	12	+5V
13	CTR_GRN	14	HDD_LED#
15	P5V_USB4	16	CTR_RED
17	USB_4N_C	18	P5V_USB5
19	USB_4P_C	20	USB_5P_C
21	LPT17	22	USB_5N_C
23	LPT14	24	Ground
25	LPT3	26	VEE(LCD)
27	LPT5	28	LPT16
29	LPT7	30	LPT2
31	LPT9	32	LPT4
33	LCD-	34	LPT6
35	KPA1_JP	36	LPT8
37	KPA3_JP	38	KPA2_JP
39	FP_RST#_N	40	KPA4_JP

VGA1: External VGA Connector (12 Pin Header)



PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	R	2	Ground
3	G	4	Ground
5	B	6	Ground
7	H-SYNC	8	Ground
9	V-SYNC	10	Ground
11	Detect-display Data	12	Detect-display CLOCK

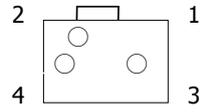
JP1 : 1x2 Pin Compact Flash Mode (2.54mm)



Default JP1 (1-2)

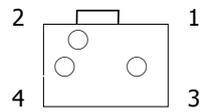
PIN NO.	DESCRIPTION
OPEN	Slave
SHORT	Master

JP2 : 4 Pin TACT Power Button



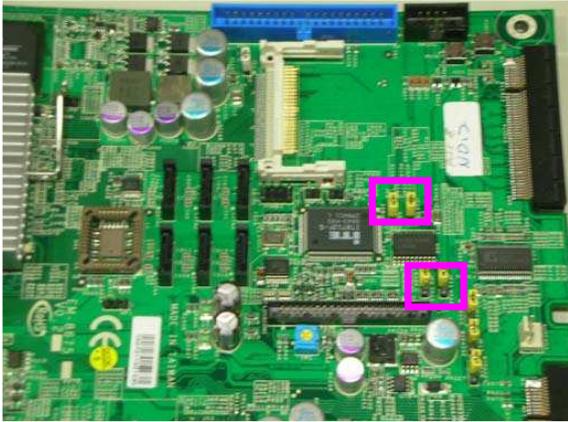
PIN NO.	DESCRIPTION
1	Ground
2	Ground
3	PS_ON#
4	PS_ON#

JP3 : 4 Pin TACT Reset Button



PIN NO.	DESCRIPTION
1	Ground
2	Ground
3	PS_ON#
4	PS_ON#

JP8~JP11 : 1x3 Pin Select KEYPAD or USB_RJ1 Lan LED



JP8/JP10

JP9/JP11



PIN NO.	DESCRIPTION
1	KPAx
2	KPAx_JP
3	Lan_LEDx

Default (1-2),(2-3) for ODM

JP12 : 2Pin For TTL1 detect



JP12



PIN NO.	DESCRIPTION
1	Ground
2	TTL1(IT8712F GP30)

JP13 : 2Pin For TTL2 detect



PIN NO.	DESCRIPTION
1	Ground
2	TTL1(IT8712F GP31)

JP14 : 1x2 Pin For SIO GPIO Pin (2.54mm)



PIN NO.	DESCRIPTION
1	Ground
2	IT8712F GP16

JP15 : 1x2 Pin For SIO GPIO Pin (2.54mm)



PIN NO.	DESCRIPTION
1	Ground
2	IT8712F GP17

JP16~JP18 : 1x3 Pin Select Bypass Function (2.54mm)



JP16
JP17
JP18

PIN NO.	DESCRIPTION
1	IT8712F(GP32~34)
2	PCIEC3~5 Pin B12
3	Ground

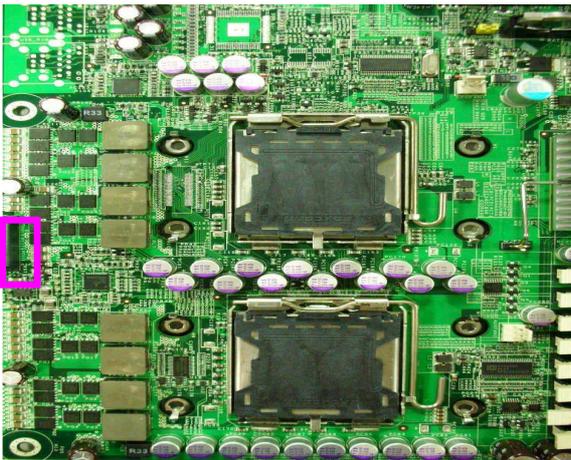
Default (1-2 , Bypass Enable)

JP19 : 1x2 Pin For I2C BUS Pin (2.54mm)



PIN NO.	DESCRIPTION
1	I2C_CHIPSET_SCL
2	I2C_CHIPSET_SCA

CON1 : 10 Pin Smart FAN Connector



PIN NO.	DESCRIPTION
1	Ground
2	FAN3 speed
3	VFAN3
4	Ground
5	FAN4 speed
6	VFAN4
7	Ground
8	FAN5 speed
9	VFAN5

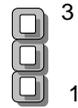
10	Ground
----	--------

CON3 : 10 Pin SMD OPMA_LAN Connector (2.54mm)



PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	MCARD_TX_H	2	MCARD_RX_H
3	MCARD_TX_L	4	MCARD_RX_L
5	POE_GND	6	POE_GND
7	POE_PWR	8	POE_PWR
9	LAN_BUSY_LED_L	10	LAN_LINK_LED_L

WP1 : 1x3 Pin U41 Flash Rom Write Protect (2.54mm)



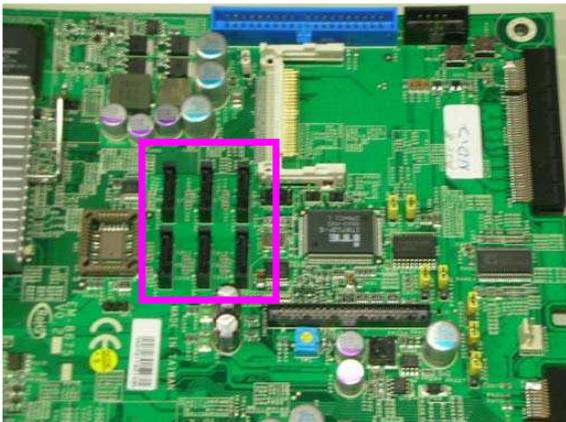
PIN NO.	DESCRIPTION
1	FWP#
2	Ground
3	NC

IPMI1 : 1x3 Pin Header (2.54mm)



PIN NO.	DESCRIPTION
1	IPMB_SDA
2	GND
3	IPMB_SCL

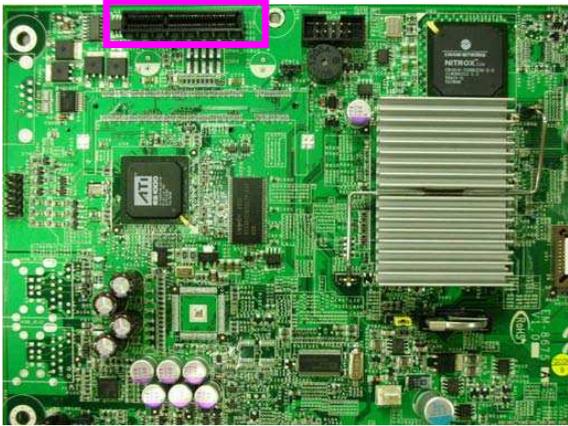
SATA1~SATA6 : 180° SATA CONNECTOR



SATA1 / SATA2 / SATA3
SATA4 / SATA5 / SATA6

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	SATA_TXP
3	SATA_TXN	4	GND
5	SATA_RXN	6	SATA_RXP
7	GND	8	GND
9	GND		

PCIEC6 : PCI Express x4 Standard Connector



PCIEC3~PCIEC5 : Splint PCI Express x8 Standard Connector



PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
B1	+12V	B1	PRSNT1#
B2	+12V	B2	+12V
B3	+12V	B3	+12V
B4	GND	B4	GND
B5	SMCLK	B5	JTAG2
B6	SMDAT	B6	JTAG3
B7	GND	B7	JTAG4
B8	+3.3V	B8	JTAG5
B9	JTAG1	B9	+3.3V
B10	3.3VAUX	B10	+3.3V
B11	WAKE#	B11	PERST#
B12	BYPASS Mode	B12	GND
B13	GND	B13	REFCLKA+
B14	PETP0	B14	REFCLKA-
B15	PETN0	B15	GND
B16	GND	B16	PERP0
B17	PRSNT#2	B17	PERN0
B18	GND	B18	GND
B19	PETP1	B19	RSVD
B20	PETN1	B20	GND
B21	GND	B21	PERP1
B22	GND	B22	PERN1
B23	PETP2	B23	GND
B24	PETN2	B24	GND
B25	GND	B25	PERP2
B26	GND	B26	PERN2
B27	PETP3	B27	GND
B28	PETN3	B28	GND
B29	GND	B29	PERP3
B30	REFCLKB+	B30	PERN3
B31	REFCLKB-	B31	GND
B32	GND	B32	RSVD
B33	PETP4	B33	RSVD
B34	PETH4	B34	GND
B35	GND	B35	PERP4
B36	GND	B36	PERN4
B37	PETP5	B37	GND
B38	PETN5	B38	GND
B39	GND	B39	PERP5

B40	GND	B40	PERN5
B41	PETP6	B41	GND

B42	PETN6	B42	GND
B43	GND	B43	PERP6
B44	GND	B44	PERN6
B45	PETP7	B45	GND
B46	PETN7	B46	GND
B47	GND	B47	PERP7
B48	PRSNT2#	B48	PERN7
B49	GND	B49	GND

J1~J8 : 240Pin FB-DIMM Connector



- J1
- J2
- J3
- J4
- J5
- J6
- J7
- J8

2.2 Mechanical Overview

This section of the manual describes the mechanical and device nomenclature of the RS12-38800.

2.2.1 Face Panel LED Status and Behavior

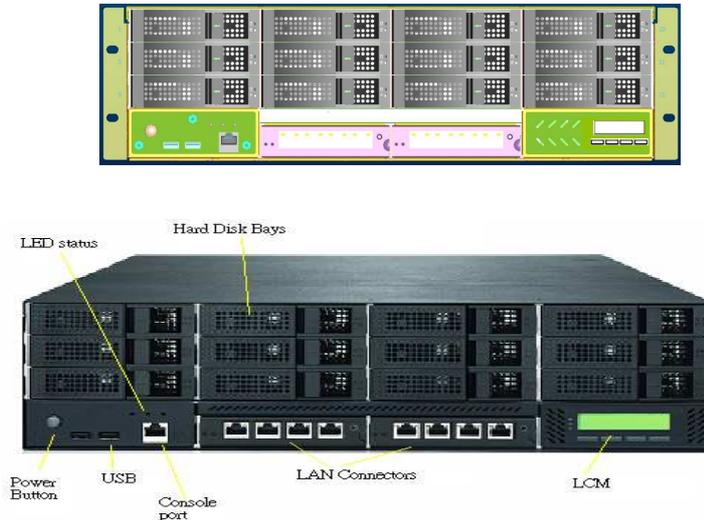


Figure 5 – RS12-38800_Front Panel

The following table provides a description of each LED on the RS12-38800 front panel:

- **Console Port:** The console port cable connects RS12-38800 to the host PC via. The Default baud rate is 115200
- **LAN Connector:** Require an Ethernet RJ-45 cable
- **LCM & Keypad:** Please reference the Appendix B

LED	Color	Status	Description
PWR	Green	On	Indicates when RS12-38800 power is switched ON
	N/A	Off	No power connected
HDD	Yellow	On	Hard disk is being accessed
	N/A	Off	No Data is being accessed
Ethernet Ports Link/ACT	Green	On	LAN is connected
	Orange	Flash	Data is being accessed
Status			Lanner Provide the Sample Codes (Please reference the Driver/ Manual CD, under "LED Status" for more information)

RS12-38800

2.2.2 Rear View

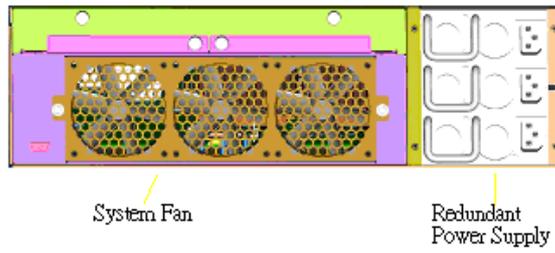


Figure 6 – RS12-38800 Rear View

删除: <sp>

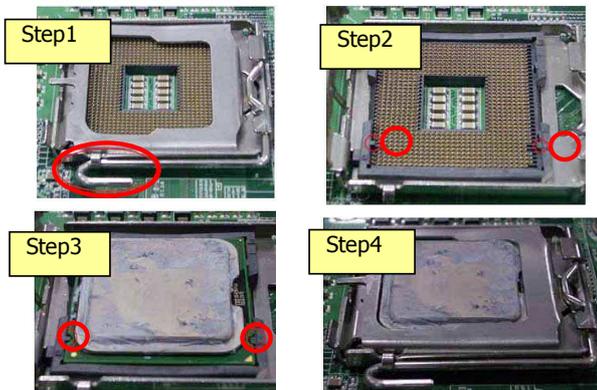
Warning: Faulty or improper use of the power adaptor may cause permanent damage to the power supply and the RS12-38800. Plug the adaptor to an electrical wall outlet that matches its specifications.

3. Hardware Installation Guide

3.1 CPU Installation

- Step 1:** Open Socket by pushing lever down and away from socket.
- Step 2:** Open load plate.(Don't Touch Socket Contacts)
- Step 3:** Align notches with socket
- Step 4:** Close load plate.

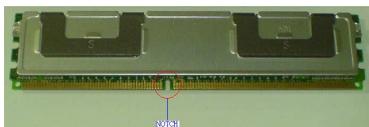
刪除: Removing the Top Cover
Step 1 : Unscrew screws from the system.
Step 2 : Pull up the top cover
<sp><sp>



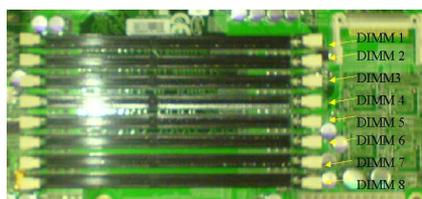
3.2 System Memory

Position the Fully Buffer DIMM memory module to the DIMM socket properly, so the notch on the memory module fits the socket. Push the memory card into the socket.

Note: The Fully Buffer DIMM memory module requires the proper orientation in order to fit into the socket properly.



Warning: Please note that the DIMM socket must be used in sequence.



← 格式化: 項目符號及編號

3.3 Installing Compact Flash Card



删除: Installing Hard Disk Drive
Step 1: screws the bracket.
Step 2: Moving the hard disk bracket.
Step 3:
Step 4:
 <sp><sp><sp><sp>
 <sp>

Carefully insert the Compact Flash card into the slot as shown in the illustration above.

3.4 Install the Rail slider

Rail Kits Package Content

- Inner member x 2
- Outer member x 2
- Screw set for rack mount x8
- Screws for 2U chassis x 8
- Screws for 3U chassis x 6



Inner member



Outer member



Screws for rack mount x 8



Screws for 3U, #6-32*6



Screws for 2U, M3*6

Installation

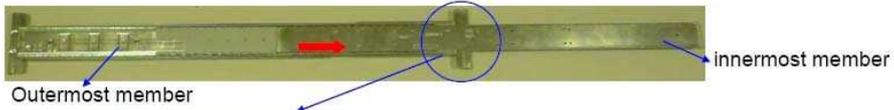
Rail Kits



Detach the outermost member together with innermost member

Step1: Move innermost member to lock the slide/rail in position

Step2: Move inner member back a little bit (1cm -2com) to release lock-out status



Push latch. the latch must be actuated to move the slide

Innermost member: Mechanism from back view

Installation I

Stab-in/Screw-on inner member on the chassis

For 2U chassis: please use M3*6

For 3U chassis: please use #6-32*6



Note: The innermost/rail can be installed on the both 2U & 3U platforms. Select the screw holes (with up-right wording) according to the platform you would like to use the innermost/rail

Installation II

Screw-on outermost member with cabinet



Front side of cabinet

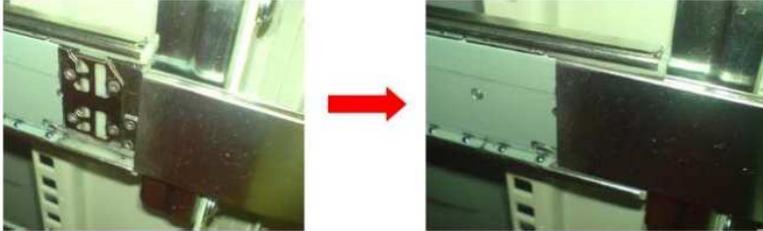


Rear side of cabinet

Installation III

Connect:

Attach the chassis together with the innermost member from the cabinet member of the slide



Lock-in & Lock-out

Lock-in & Lock-out :

Lock the slide /rail in position. The latch must be actuated to move the slide.

A lock-out feature assists servicing components without removing the unit from the enclosure.

A lock-in feature prevents chassis from opening until latch is actuated.



Disconnect

Disconnect:

Detaching the chassis together with the innermost member from the cabinet member of the slide



- Step1: Lock the slide /rail in position
- Step2: Move the chassis back into cabinet a little bit (1cm)
- Step3: Push latch along red arrow, then detach the chassis

"Rack Mount Instructions - The following or similar rack-mount instructions are included with the installation instructions:

- i. Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (T_{ma}) specified by the manufacturer.
- ii. Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- iii. Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- iv. Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- v. Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips)."



CAUTION :

Slide/rail mounted equipment is not to be used as a shelf or a work space.

4. BIOS Setup

BIOS Setup

AMI's ROM BIOS provides a built-in Setup program that allows users to modify the basic system configuration and settings. The modified data will be stored in a battery-backed CMOS RAM so that this data will be retained even when the power is turned off. In general, the information saved in the CMOS RAM remains unchanged unless there is a configuration change in the system, such as hard drive replacement or new equipment installment.

Running AMI BIOS

The Setup Utility is stored in the BIOS ROM. When the power of the computer system is turned on, a screen message will appear to give you an opportunity to call up the Setup Utility while the BIOS will enter the Power On Self Test (POST) routines. The POST routines perform various diagnostic checks while initializing the board hardware. If the routines encounter an error during the tests, the error will be reported in one of two ways, a series of short beeps or an error message on the screen. There are two kinds of errors, fatal and non-fatal. The system can usually continue the boot up sequence with non-fatal errors. Non-fatal error messages usually appear on the screen along with the following instructions:

" Press <F1> to RESUME "

Write down the message and press the F1 key to continue the boot up sequence. After the POST routines are completed, the following message appears:

" Press DEL to enter SETUP "

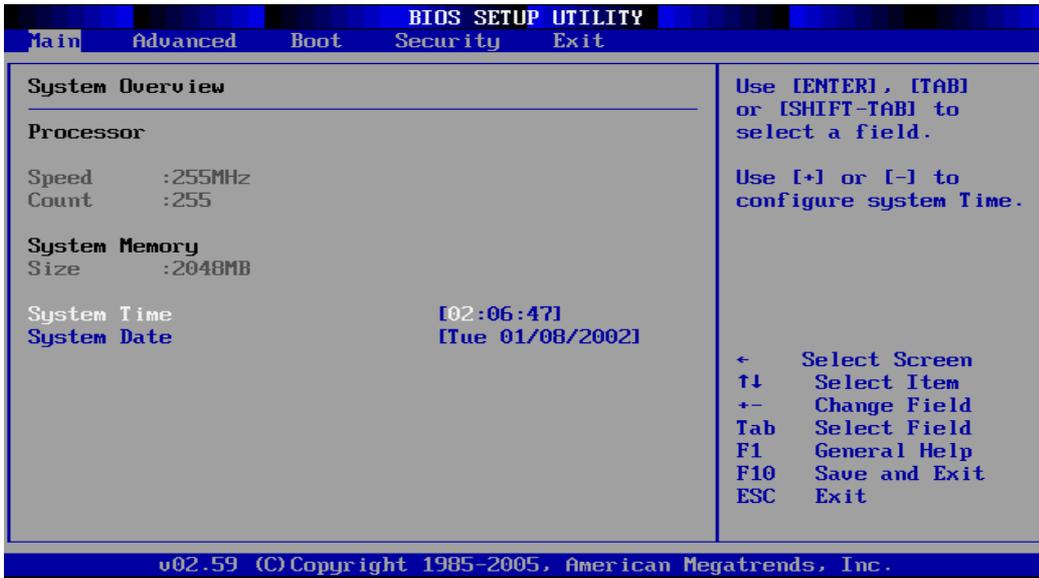
Entering Setup

Turn on the power of the computer system and press immediately. If you don't have the chance to respond, reset the system by simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys, or by pushing the ' Reset ' button on the system cabinet. You can also restart by turning the system OFF then ON.

CMOS Setup Utility

To access the AMI BIOS SETUP program, press the key. The screen display will appear as shown below:

4.1 Main Program Screen



This screen provides access to the utility's various functions. Listed below is explanation of the keys displayed at the bottom of the screen:

<ESC>: Exit the utility.

<↑↓→←>: Use arrow keys ↑ ↓ → ← to move cursor to your desired selection.

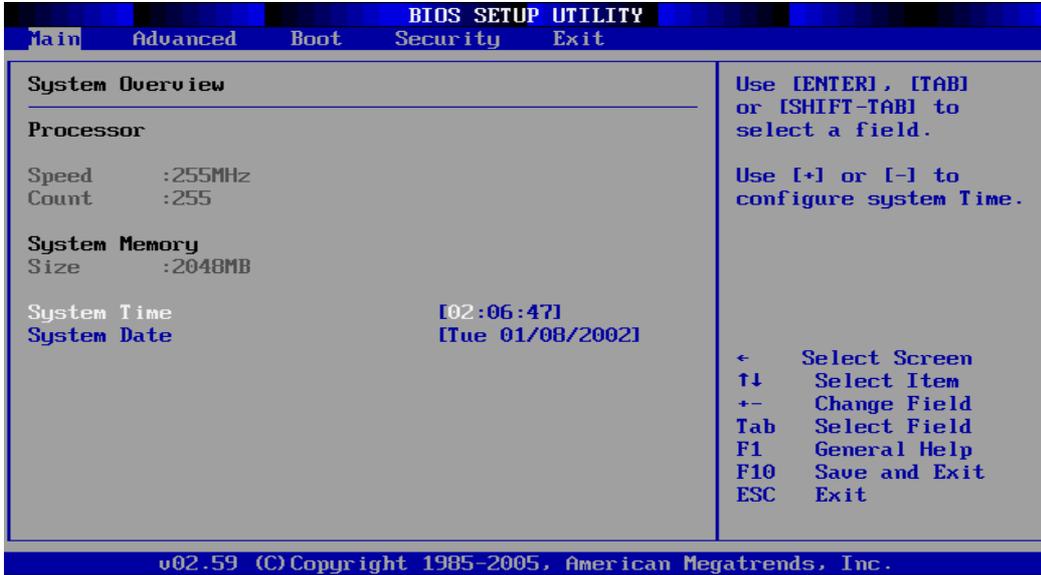
<F1>: General Help

<F10>: Saves all changes made to Setup and exits program.

Main	For changing the basic system configuration
Advanced	For changing the advanced system settings
Boot	For changing the system boot configuration
Security	For changing the Security setting
Exit	For selecting the exit options and loading default Settings

4.2 Main CMOS Setup

When you select the "Main CMOS SETUP" on the main program, the screen display will appear as:



The Main CMOS Setup utility is used to configure the following components such as date, time, display and memory.

Processor Displays the auto-detected CPU specification

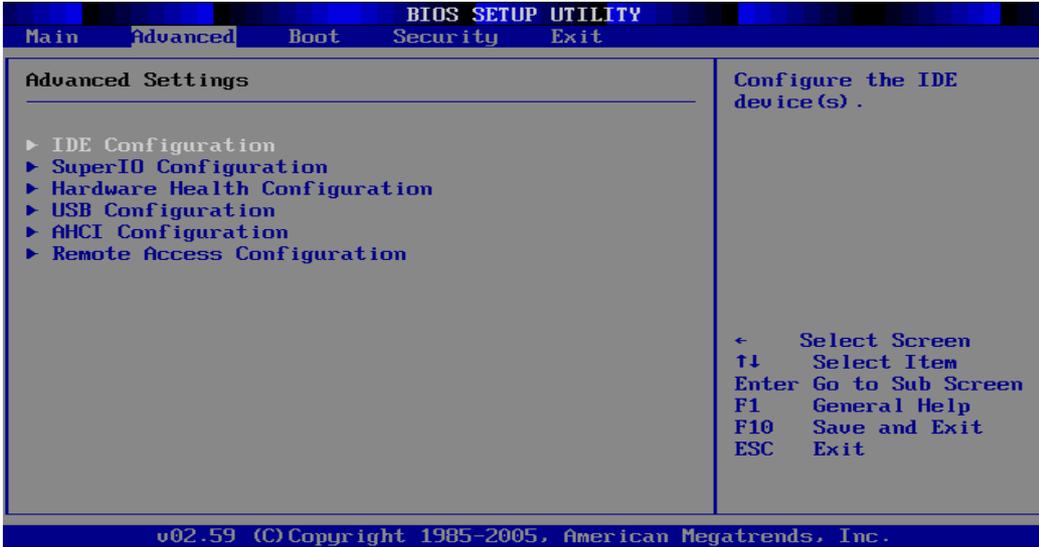
System Memory Displays the auto-detected system memory

System Time [xx:xx:xxxx] Allows you to set the system time.

System Date [Day xx/xx/xxxx] Allows you to set the system date.

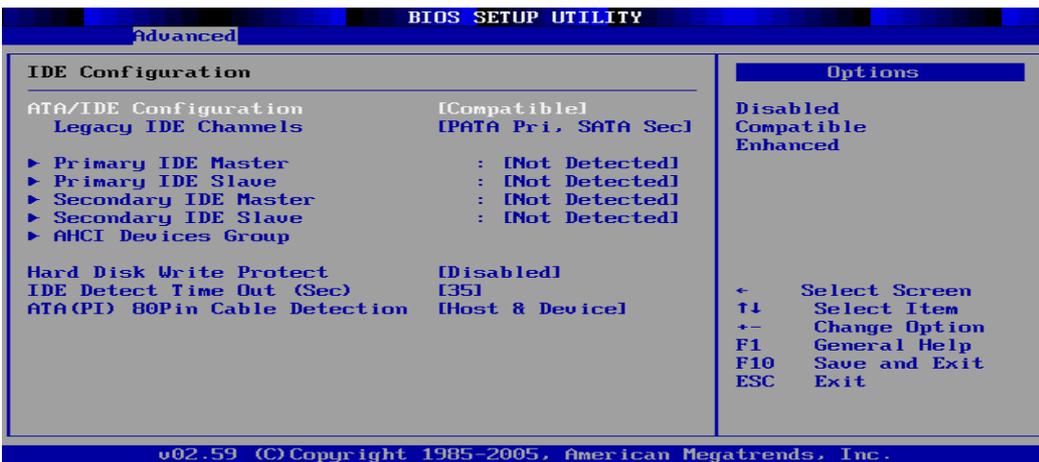
4.3 Advanced Menu

When you select the "Advanced Menu" on the main program, the screen display will appear as:



The following explains the options for each of the features as listed in the above menu:

IDE Configuration: The items in this menu allow you to set or change the configurations. Four IDE devices were installed in the system. Select an item then press <Enter> if you wish to configure the item.



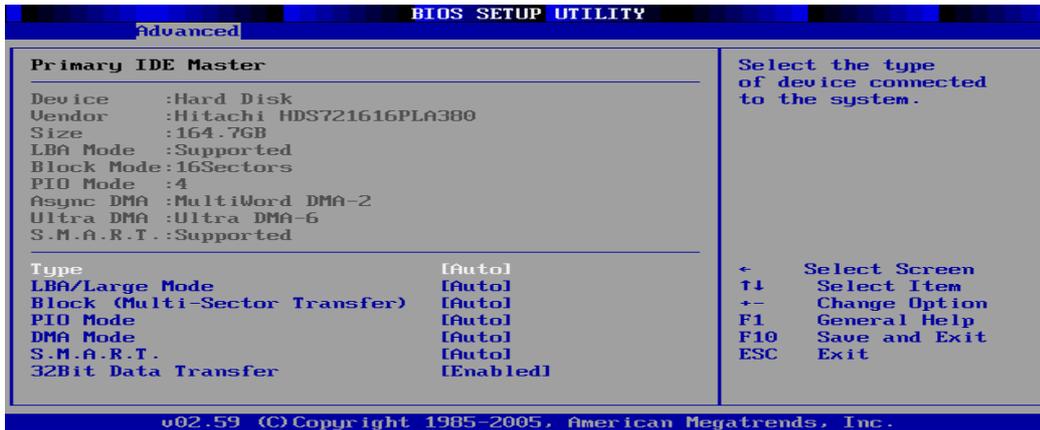
ATA/IDE Configuration: These 2 items allow you to select the ATA/IDE and SATA

configuration. Select [Disabled] in ATA/IDE Configuration if you want to disable both ATA/IDE configuration. Select [Compatible] or [Enhanced] to use the IDE, S-ATA and PATA devices. Refer to the following tables for details.

	ATA/IDE Configuration (Compatible)
SATA Only	[SATA 1/3/2/4]
PATA Pri, SATA Sec	[IDE1, SATA2/4]
SATA Pri, PATA Sec	[SATA1/3, IDE1]
PATA Only	[IDE1]

Primary, Third and Fourth IDE Master/Slave

While entering Setup, the BIOS automatically detects the presence of IDE devices. There is a separate sub-menu for each IDE device. Select a device item then press <Enter> to display the IDE device information.



The BIOS automatically detects the values opposite the dimmed items (Device, Vendor, Size, LBA Mode, Block Mode, PIO Mode, Async DMA, Ultra DMA, and SMART monitoring). These values are not user-configurable. These items show N/A if no IDE device is installed in the system. Hard disk boot priority: Select boot sequence for onboard (or add-on cards) SCSI, RAID, etc.

Type: Selects the type of IDE drive. Setting to Auto allows automatic selection of the appropriate IDE device type. Select CDROM if you are specifically configuring a CD-ROM drive. Select ARMD (ATAPI Removable Media Device) if your device is either a ZIP, LS-120, or MO drives. Configuration options: [Not Installed] [Auto] [CDROM] [ARMD]

LBA/Large Mode: Enables or disables the LBA mode. Setting to Auto enables the LBA mode if the device supports this mode, and if the device was not previously formatted with LBA mode disabled.

RS12-38800

Configuration options: [Disabled] [Auto].

Block (Multi-sector Transfer): Enables or disables data multi-sector transfers. When set to Auto, the data transfer from and to the device occurs multiple sectors at a time if the device supports multi-sector transfer. When set to [Disabled], the data transfer from and to the device occurs one sector at a time.

Configuration options: [Disabled] [Auto].

PIO Mode: Selects the PIO mode,

Configuration options: [Auto] [0] [1] [2] [3] [4].

DMA Mode: Selects the DMA mode.

Configuration options: [Auto] [DMA0][SWDMA1] [SWDMA2] [MWDMA0] [MWDMA1] [MWDMA2] [UDMA0] [UDMA1] [UDMA2] [UDMA3] [UDMA4] [UDMA5].

SMART Monitoring: Sets the Smart Monitoring, Analysis, and Reporting Technology. Configuration options: [Auto] [Disabled] [Enabled].

32Bit Data Transfer: Enables or disables 32-bit data transfer.

Configuration options: [Disabled] [Enabled].

Hard Disk Write Protect: Write protection effective only if device is accessed through BIOS.

Configuration options: [Disabled] [Enabled].

IDE Detect Time Out (Sec): Select the time out value for detecting ATA/ATAPI device(s).

Configuration options: [0] [5] [10] [15] [20] [25] [30] [35]

ATA (PI) 80Pin Cable Detection: Select the mechanism for detecting 80Pin ATA (PI) cable.

Configuration options: [Host & Device] [Host] [Device]

Super IO Configuration: Press <Enter> to enter the sub-menu and the following screen appears:

BIOS SETUP UTILITY	
Advanced	
Configure ITE8712 Super IO Chipset	
Serial Port1 Address	[3F8/IRQ4]
Serial Port1 Mode	[Normal]
Serial Port2 Address	[2F8/IRQ3]
Serial Port2 Mode	[Normal]
Parallel Port Address	[378]
Parallel Port Mode	[Normal]
Parallel Port IRQ	[IRQ7]
Restore on AC Power Loss by IO	[Last State]
Allows BIOS to Select Serial Port1 Base Addresses.	

Serial Port1/2 Address:

These items specify the base I/O port addresses of the onboard Serial Port 1

RS12-38800

Selecting [Auto] allows BIOS to automatically determine the correct base I/O port address. Settings: [3F8/IRQ4], [2F8/IRQ3], [3E8/IRQ4], [2E8/IRQ3] and [Disabled].

Serial Port2 Mode:

This item allows you to select mode for Serial Port2. Setting options: [Normal], [IrDA], [ASK IR].

Parallel Port Address: Allows you to select the Parallel Port base addresses. Configuration options: [Disabled] [378] [278] [3BC].

Parallel Port Mode: Allows you to select the Parallel Port mode. Configuration options: [Normal] [Bi-directional] [EPP] [ECP].

Parallel Port IRQ:

Configuration options: [IRQ5] [IRQ7].

Restore on AC Power Loss by IO

This setting specifies whether your system will reboot after a power failure or interrupt occurs. Available settings are:

- [Power Off]** Leaves the computer in the power off state.
- [Power On]** Leaves the computer in the power on state.
- [Last State]** Restores the system to the previous status before power failure or interrupt occurred.

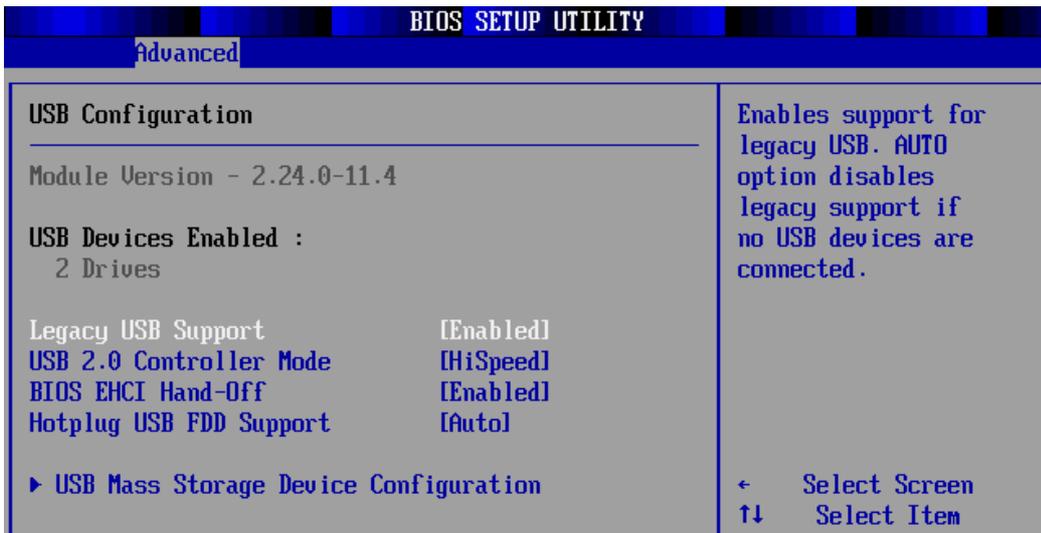
Hardware Health Configuration: Press <Enter> to enter the sub-menu and the following screen appears:

BIOS SETUP UTILITY	
Advanced	
Hardware Health Configuration	
H/W Health Function	[Enabled]
CPU2 Fan2 Speed :3770 RPM	
CPU1 Fan1 Speed :N/A	
Fan3 Speed :N/A	
Fan4 Speed :N/A	
Fan5 Speed :N/A	
CPU Core :0.832 U	
FBD_UCC :1.792 U	
+3.30U :3.312 U	
+5.00U :4.919 U	
+12.0U :11.968 U	
FBD_UTT : 0.880 U	
-12.0U :-9.097 U	
5USB :4.945 U	
UBAT :3.168 U	
← Select Screen	
↑↓ Select Item	
+- Change Option	
F1 General Help	
F10 Save and Exit	
ESC Exit	
v02.59 (C) Copyright 1985-2005, American Megatrends, Inc.	

H/W Health Function: Enable/Disable Hardware Health Monitoring Device.

SYS/CPU/Power FAN Speed, CPU Vcore, FBD_VCC, +3V, +5V, +12V, FBD_VTT, -12V, 5VSB,VBAT: These items display the current status of all of the monitored hardware devices components such as CPU voltages, and all fans' speeds.

USB Configuration: Press <Enter> to enter the sub-menu and the following screen appears:



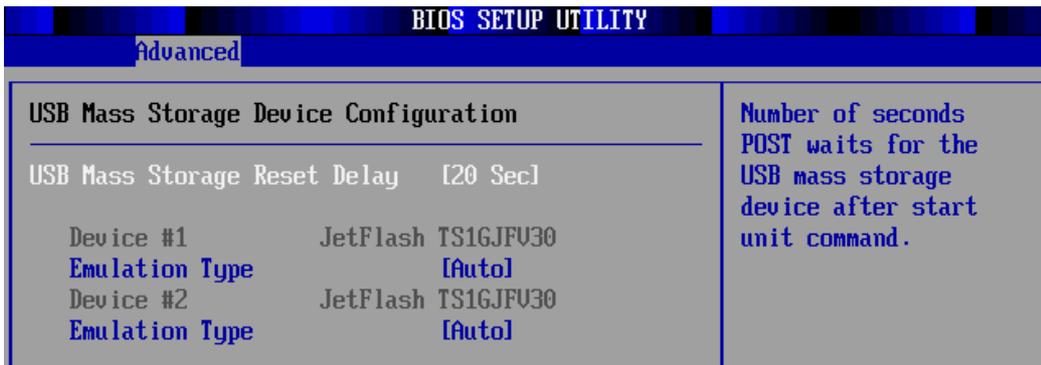
Legacy USB Support: Enables support for legacy USB. AUTO disable legacy support if no USB devices are connected.
Configuration options: [Disable] [Enable] [Auto].

USB 2.0 Controller Mode: Configures the USB 2.0 controller in HiSpeed or FullSpeed).
Configuration options: [FullSpeed] [HiSpeed].

BIOS EHCI Hand-Off: this is a workaround for Oses without EHCI hand-off support. The EHCI ownership change should claim by EHCI driver.
Configuration options:[Disable] [Enable].

Hotplug USB FDD Support: A dummy FDD device is created that will be associated with the hot plugged FDD later. AUTO creates this dummy device only if there is no USB FDD present.
Configuration options: [Disable] [Enable] [Auto].

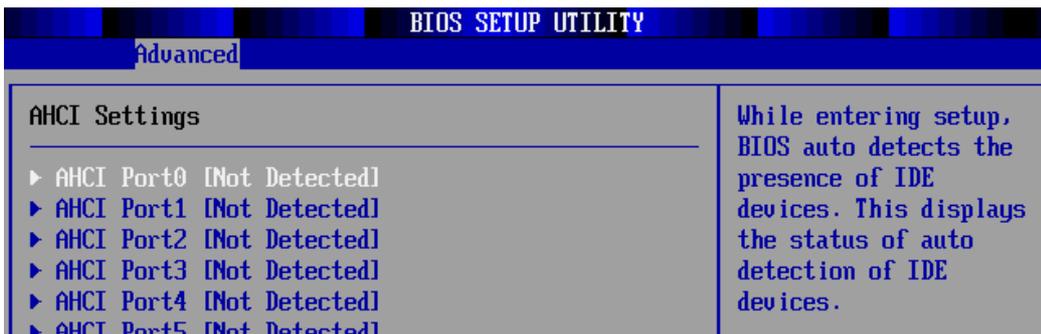
USB Mass Storage Device Configuration: Press <Enter> to enter the sub-menu and the following screen appears:



USB MASS Storage Reset Delay: Number of seconds POST waits for the USB mass Storage device after start unit command.

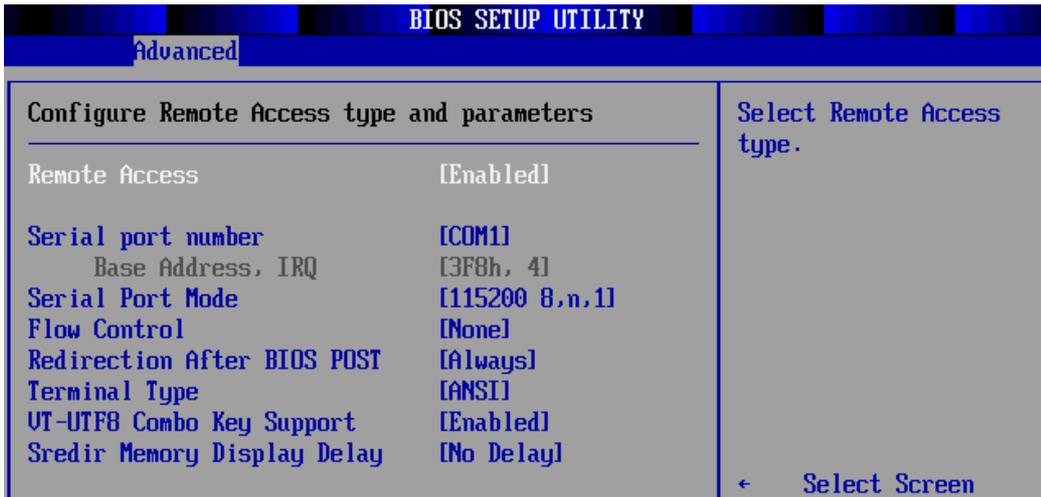
Emulation Type: If AUTO, USB devices less than 530MB will be emulated as floppy and remaining as hard drive. Forced FDD option can be used to force a HDD formatted drive to boot as FDD (Ex. ZIP drive).

AHCI Configuration: Press <Enter> to enter the sub-menu and the following screen appears:



AHCI Port0/1/2/3/4/5[Not Detected]: While entering setup, BIOS auto detects the presence of IDE devices. This displays the status of auto detection of IDE device.

Remote Access Configuration: Press <Enter> to enter the sub-menu and enable Remote Access, the following screen appears:



Serial port number: Select Serial Port for console redirection.

Serial Port Mode: Select Serial Port setting.

Flow Control: Select Flow Control for console redirection.

Redirection After BIOS POST: DISABLE, Turns off the redirection after POST. Boot Loader, Redirection is active during POST and during Boot Loader. Always, Redirection is always active.

Terminal Type: Select the target terminal type.

VT-UTF8 Combo Key Support: Enable VT-UTF8 Combination Key Support for ANSI/VT100 terminals.

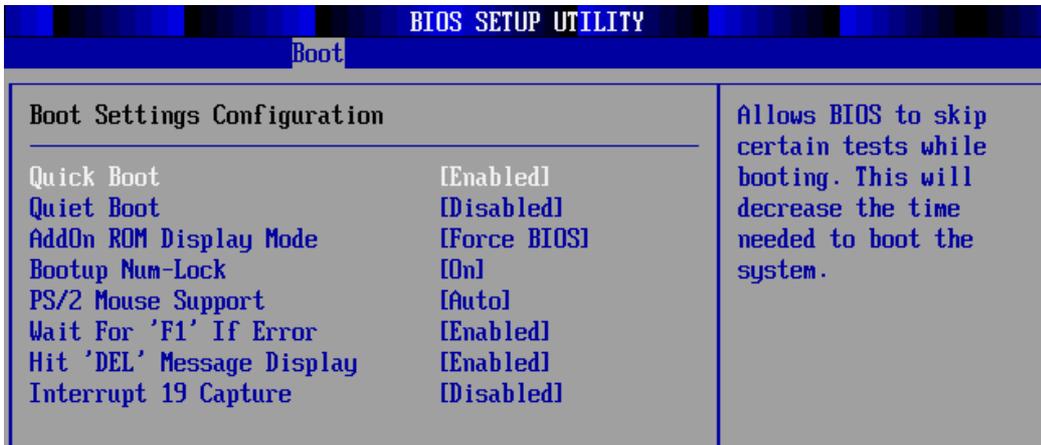
Sredir Memory Display Delay: Gives the delay in seconds to display memory information.

4.4 Boot Menu

The Boot menu items allow you to change the system boot options. Select an item then press <Enter> to display the sub-menu.



Boot Setting Configuration: Press <Enter> to enter the sub-menu and the following screen appears:



Quick Boot : Enabling this item allows the BIOS to skip some power on self tests (POST) while booting to decrease the time needed to boot the system. When set to [Disabled], BIOS performs all the POST items. Configuration options: [Disabled] [Enabled]

Full Screen Logo: This allows you to enable or disable the full screen logo display feature. Configuration options: [Disabled] [Enabled]

Add On ROM Display Mode: Sets the display mode for option ROM.

RS12-38800

Configuration options: [Force BIOS] [Keep Current].

Bootup Num-Lock: Allows you to select the power-on state for the NumLock.
Configuration options: [Off] [On]

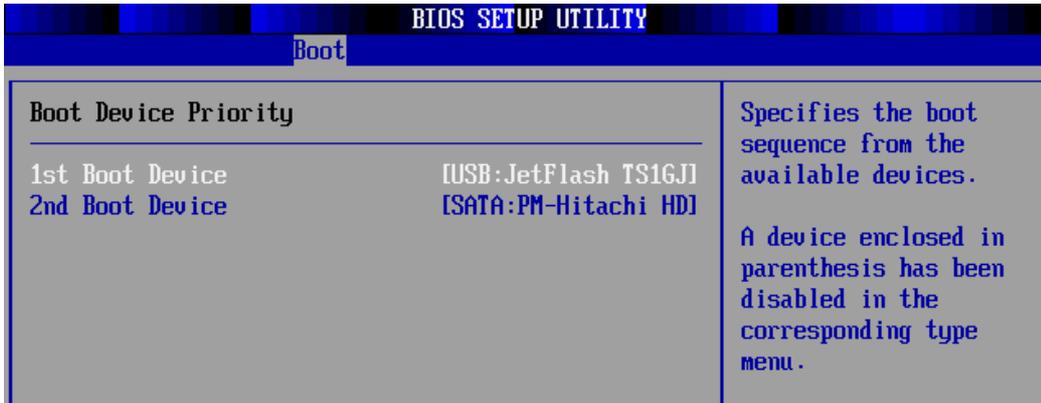
PS/2 Mouse Support: Allows you to enable or disable support for PS/2 mouse.
Configuration options: [Disabled] [Enabled] [Auto].

Wait for 'F1' If Error: When set to Enabled, the system waits for the F1 key to be pressed when error occurs. Configuration options: [Disabled] [Enabled].

Hit 'DEL' Message Display: When set to Enabled, the system displays the message. "Press DEL to run Setup" during POST. Configuration options: [Disabled] [Enabled].

Interrupt 19 Capture: When set to [Enabled], this function allows the option ROMs to trap Interrupt 19. Configuration options: [Disabled] [Enabled].

Boot Device Priority: Press <Enter> to enter the sub-menu and the following screen appears:



The screenshot shows the BIOS Setup Utility interface. At the top, it says "BIOS SETUP UTILITY" and "Boot". Below that, there is a table with the following content:

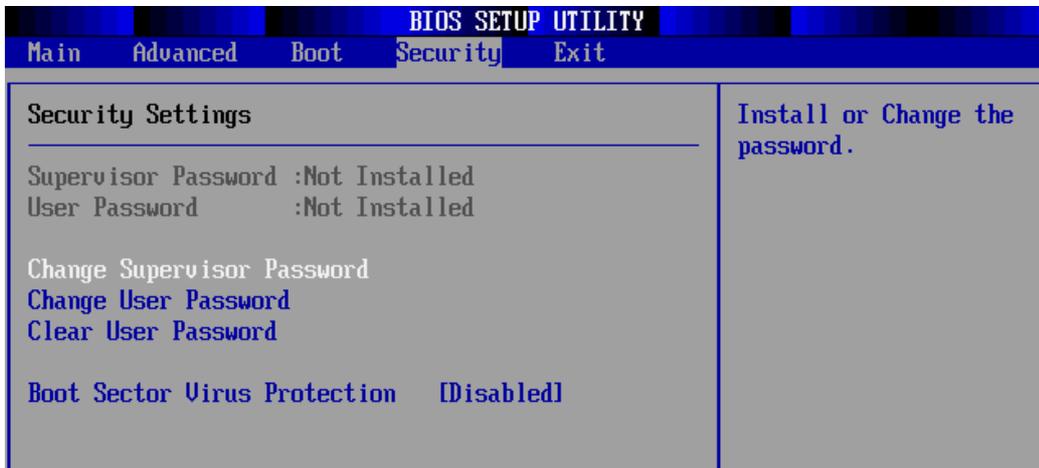
Boot Device Priority	
1st Boot Device	[USB:JetFlash TS16J]
2nd Boot Device	[SATA:PM-Hitachi HD]

To the right of the table, there is a description: "Specifies the boot sequence from the available devices. A device enclosed in parenthesis has been disabled in the corresponding type menu."

1st ~ xxth Boot Device: These items specify the boot device priority sequence from the available devices. The number of device items that appears on the screen depends on the number of devices installed in the system. Configuration options: [xxxxx Drive] [Disabled].

4.5 Security Menu

Press <Enter> to enter the sub-menu and the following screen appears:



Type the password, up to 6 characters in length, and press <Enter>. The typed password now will replace any previously set password from CMOS memory. You will be prompted to confirm the password. Retype the password and press <Enter>. You may also press <Esc> to abort the selection and not enter a password. To clear a set password, just press <Enter> when you are prompted to enter the password. A message will show up confirming the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup without entering any password.

When a password has been set, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

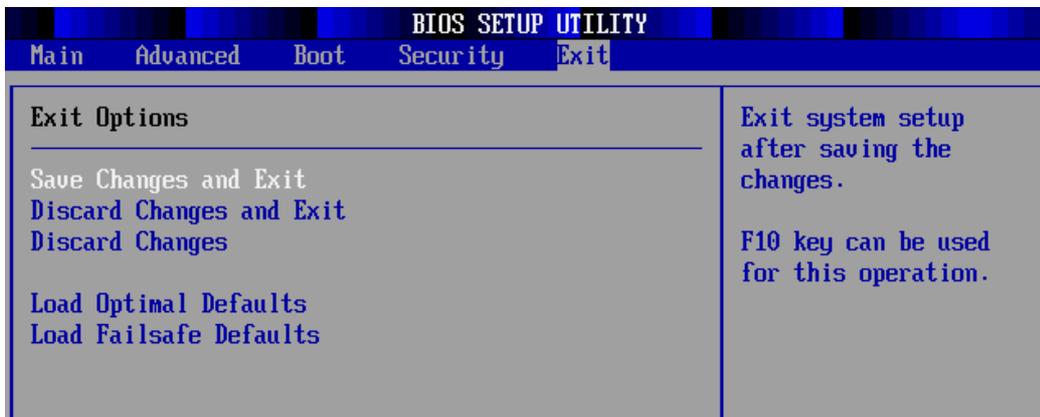
Change Supervisor Password: Install or Change the password.

Change User Password: Install or Change the password.

Boot Sector Virus Protection: Enable/Disable Boot Sector Virus protecting.

4.6 Exit Menu

Press <Enter> to enter the sub-menu and the following screen appears:



Save Changes and Exit: Once you are finished making your selections, choose this option from the Exit menu to ensure the values you selected are saved to the CMOS RAM. An onboard backup battery sustains the CMOS RAM so it stays on even when the PC is turned off. When you select this option, a confirmation window appears. Select Yes to save changes and exit.

Discard Changes and Exit: Select this option only if you do not want to save the changes that you made to the Setup program. If you made changes to fields other than System Date, System Time, and Password, the BIOS asks for a confirmation before exiting.

Discard Changes: This option allows you to discard the selections you made and restore the previously saved values. After selecting this option, a confirmation appears. Select Yes to discard any changes and load the previously saved values.

Load Optimal/Failsafe Defaults: This option allows you to load the default values for each of the parameters on the Setup menus. When you select this option or if you press <F9/F8>, a confirmation window appears. Select Yes to load default values. Select Exit & Save Changes or make other changes before saving the values to the non-volatile RAM.

A. Appendix A: Power Supply

A.1 Power Supply Specifications

AC Input Specifications: Voltage 90 ~ 264 VAC FULL RANGE

Output Specifications

Output Voltage	Output Current Min.	Output Current Max.	Output Current Peak	Regulation Load	Regulation Line	Output Ripple & Noise Max.[P-P]
+5V	6	56.00		±5%	±1%	70mV
-5V	0.2	1.2		±5%/-10%	±1%	120mV
+12V	6	60.00		+6%	±1%	120mV
-12V	0.2	1.20		+5%/-10%	±1%	120mV
+3.3V	3.5	44		±5%	±1%	70mV
+5VSB	0.4	3.5		+5%/-6%	±1%	70mV

A.2 Features:

Active PFC (full range), meets IEC-1000-3-2 Class D requirements

12V, Maximum Current: 60A

Temperature Range: Operating ranges from 0°C ~ 40°C, Storage ranges from -20°C ~ 70°C

EMI: FCC CLASS B, CISPR 22 CLASS B

Safety: UL 1950, CSA 22.2 No./ 950, TUV IEC 950

Hot-Swappable / Hot-Pluggable Redundancy Function

Uses 48-pin industrial connectors

Cooling: 38 x 38 x 28mm DC Fans (Module)

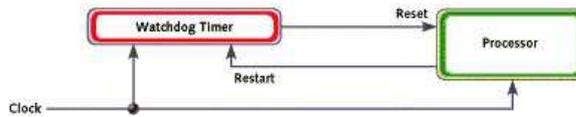
AC Inlet in each module

B. Appendix B: Watchdog Timer

B.1 Introduction

Most systems need to be self-reliant. If an error should occur it is typically not possible to wait for the system to be rebooted manually. In some cases, the system is simply not accessible to human operators. If such systems should ever hang, they would be permanently disabled. In other cases, the speed at which a human operator would reset the system would be too slow to meet the uptime requirements of the product.

A watchdog timer is a piece of hardware that can be used to automatically detect system anomalies and reset the processor in the case any problems are found. Generally speaking, a watchdog timer is based on a counter that counts down from an initial value to zero. The software selects the counter's initial value and periodically restarts it. Should the counter reach zero before the software restarts it, the software is presumed to be malfunctioning, and the processor's reset signal is asserted. Thus, the processor will be restarted as if a human operator had cycled the power.



Note: [The watchdog function is the Intel 82571EB.](#) Lanner provides sample codes in the Manual/ Driver CD under the path:// WATCHDOG

删除: Detail Register Descriptions

A watchdog action consists of a series of watchdog instructions. A watchdog instruction is the operation on a register region. This section describes the detail register in LPC I/O(W83627HF).

Watch Dog Timer Control Register

Watch Dog Timer is controlled by CRF5, CRF6, CRF7 of Logical Device.

CRF5 (PLED mode register. Default 0x00)

Bit 7-6 : select PLED mode
 = 00 Power LED pin is tri-stated.

= 01 Power LED pin is driven low.

= 10 Power LED pin is a 1Hz toggle pulse with 50 duty cycle

= 11 Power LED pin is a 1/4Hz toggle pulse with 50 duty cycle.

Bit 5-4 : Reserved

Bit 3 : select WDTO count mode.

= 0 second

= 1 minute

Bit 2 : Enable the rising edge of keyboard Reset(P20) to force Time-out event.

= 0 Disable

= 1 Enable

Bit 1-0 : Reserved

CRF6 (Default 0x00)

Watch Dog Timer Time-out value. Writing a non-zero value to this register causes the counter to load the value to Watch Dog Counter and start counting down. If the Bit 7 and Bit 6 are set, anyMouse Interrupt or Keyboard Interrupt event will also cause the reload of previously-loaded non-zero value to Watch Dog Counter and start counting down. Reading this register returns current value in Watch Dog Counter instead of Watch Dog Timer Time-out value.

Bit 7 - 0 = 0x00 Time-out Disable

= 0x01 Time-out occur... []

C. Appendix C: Console Redirection

Console redirection lets you maintain a system from a remote location by re-directing keyboard input and text output through the serial port. This section will tell you how to use this feature.

1. Attach the console cable to the RS12-38800 and Remote Client System.
2. Choose the following settings in the BIOS Setup menu for RS12-38800.

BIOS > Advanced > Remote Access Configuration > Serial Port Mode > [115200, 8, n, 1](Default)

3. Configure Console Redirection on the client system. The following example is applicable for a Windows platform:
 - A. Click the start button, point to Programs > Accessories > Communications and select Hyper Terminal.
 - B. Enter any name for the new connection and select any icon.
 - C. Click OK.
 - D. From the "Connect to". Pull-down menu, select a Com2 port available on the client system and click OK.
 - E. Select Baud Rate > 115200 > Flow Control > None.
 - F. Select Data bit > 8.
 - G. Select Parity Check > None.
 - H. Select Stop bit > 1.
 - I. Power on the RS12-38800, and it should display the BIOS information on the client system..

D. Appendix D: LCM Module and Keypad for RS12-38800

D.1 Purpose of this chapter

The purpose of this document is to provide installation information for the LCM module and key pad installed in the RS12-38800

D.2 LCM module specification overview

The LCM module is designed to provide real-time operating status and configuration information for the system. The detail specifications can be referenced in the Manual/ Driver CD under the path:// LCM/ LCD_Datasheet.pdf

The driver and library can be found on the Manual/ Driver CD under the path://LCM

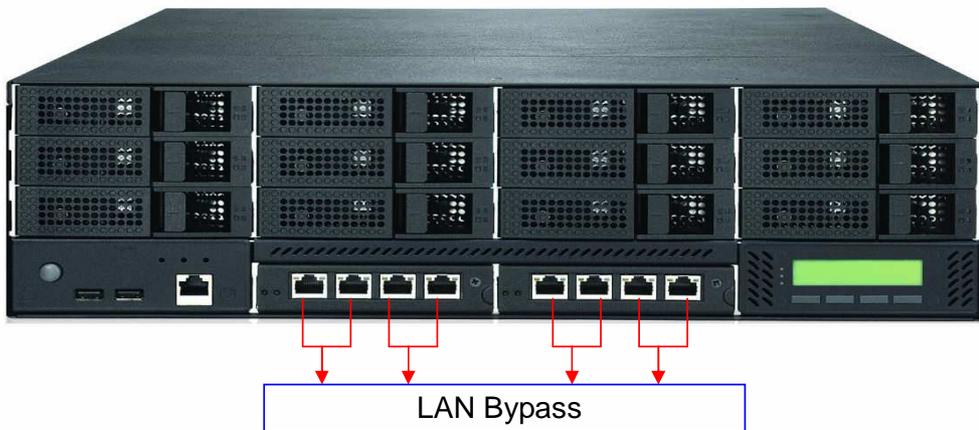
E. Appendix E: LAN Bypass Function

E.1 Introduction

The bypass function is used to link (or short) two independent Ethernet ports when the system crash or powers off. This means if your system is equipped with a LAN Bypass function, a condition in your system will not interrupt your network traffic. There are typically two communication states for the bypass function, one is "Normal" state and another is "Bypass" state. Lanner provides three methods for enabling the LAN Bypass function.

1. When the system powers off, it will be forced to enable the LAN Bypass function directly..
2. User can enable or disable the LAN Bypass function by programming which Control by GPIO.
3. A watchdog timer (WDT) can be used to control the LAN Bypass function via programming.

Please refer to the Intel 82571EB datasheet on the Manual/ Driver CD under the path// LAN_Bypass. Lanner also provides sample code for reference.



F. Appendix F: Hot-swap

F.1 Introduction

Hot swap is a feature supported by the Interface(AHCI). Hot swap allows devices to be the system is running.

In order for hot swap to be enabled, the follow

1. bios select Advanced → IDE configuration → Cc
2. Operating system must to be support the AHCI d fully supported out of the box for Micros operating system from kernel 2.6.19 or lat



Terms and Conditions

Date: 2008.03.19

Warranty Policy

1. All products are under warranty against defects in materials and workmanship for a period of one year from the date of purchase.
2. The buyer will bear the return freight charges for goods returned for repair within the warranty period; whereas the manufacturer will bear the after service freight charges for goods returned to the user.
3. The buyer will pay for repair (for replaced components plus service time) and transportation charges (both ways) for items after the expiration of the warranty period.
4. If the RMA Service Request Form does not meet the stated requirement as listed on "RMA Service," RMA goods will be returned at customer's expense.
5. The following conditions are excluded from this warranty:
 - Improper or inadequate maintenance by the customer
 - Unauthorized modification, misuse, or reversed engineering of the product
 - Operation outside of the environmental specifications for the product.

← --- 格式化: 項目符號及編號

RMA Service

Requesting a RMA

1. To obtain a RMA number, simply fill out and fax the "RMA Request Form" to your supplier.
 2. The customer is required to fill out the problem code as listed. If your problem is not among the codes listed, please write the symptom description in the remarks box.
 3. Ship the defective unit(s) on freight prepaid terms. Use the original packing materials when possible.
 4. Mark the RMA# clearly on the box.
- Note: Customer is responsible for shipping damage(s) resulting from inadequate/loose packing of the defective unit(s). All RMA are valid for 30 days only; RMA goods received after the effective RMA# period will be rejected.

RS12-38800

RMA Service Request Form

When requesting RMA service, please fill out the following form. Without this form enclosed, your RMA cannot be processed.

RMA No:	Reasons Return: <input type="checkbox"/> Repair(Please include failure details) <input type="checkbox"/> Testing Purpose
Company:	Contact Person:
Phone No.	Purchased Date:
Fax No.:	Date:
Return Shipping Address: _____	
Shipping by: <input type="checkbox"/> Air Freight <input type="checkbox"/> Sea <input type="checkbox"/> Express _____	
<input type="checkbox"/> Others: _____	

Item	Model Name	Serial Number	Configuration

Item	Problem Code	Failure Status

- *Problem Code:
- | | | | |
|------------------------|------------------------------|--------------------|--------------------------|
| 01: D.O.A. | 07: BIOS Problem | 13: SCSI | 19: DIO |
| 02: Second Time R.M.A. | 08: Keyboard Controller Fail | 14: LPT Port | 20: Buzzer |
| 03: CMOS Data Lost | 09: Cache RMA Problem | 15: PS2 | 21: Shut Down |
| 04: FDC Fail | 10: Memory Socket Bad | 16: LAN | 22: Panel Fail |
| 05: HDC Fail | 11: Hang Up Software | 17: COM Port | 23: CRT Fail |
| 06: Bad Slot | 12: Out Look Damage | 18: Watchdog Timer | 24: Others (Pls specify) |

Request Party

Confirmed By Supplier

Authorized Signature / Date

Authorized Signature / Date

Detail Register Descriptions

A watchdog action consists of a series of watchdog instructions. A watchdog instruction is the operation on a register region. This section describes the detail register in LPC I/O(W83627HF).

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CRF5 (PLED mode register. Default 0x00)

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- = 11 Power LED pin is a 1/4Hz toggle pulse with 50 duty cycle.

Bit 5-4 : Reserved

Bit 3 : select WDTO count mode.

- = 0 second
- = 1 minute

Bit 2 : Enable the rising edge of keyboard Reset(P20) to force Time-out event.

- = 0 Disable
- = 1 Enable

Bit 1-0 : Reserved

CRF6 (Default 0x00)

Watch Dog Timer Time-out value. Writing a non-zero value to this register causes the counter to load the value to Watch Dog Counter and start counting down. If the Bit 7 and Bit 6 are set, any Mouse Interrupt or Keyboard Interrupt event will also cause the reload of previously-loaded non-zero value to Watch Dog Counter and start counting down. Reading this register returns current value in Watch Dog Counter instead of Watch Dog Timer Time-out value.

Bit 7 - 0 = 0x00 Time-out Disable

- = 0x01 Time-out occurs after 1 second/minute
- = 0x02 Time-out occurs after 2 second/minutes
- = 0x03 Time-out occurs after 3 second/minutes
- = 0xFF Time-out occurs after 255 second/minutes

CRF7 (Default 0x00)

Bit 7 : Mouse interrupt reset Enable or Disable

= 1 Watch Dog Timer is reset upon a Mouse interrupt

= 0 Watch Dog Timer is not affected by Mouse interrupt

Bit 6 : Keyboard interrupt reset Enable or Disable

= 1 Watch Dog Timer is reset upon a Keyboard interrupt

= 0 Watch Dog Timer is not affected by Keyboard interrupt

Bit 5 : Force Watch Dog Timer Time-out, Write only

= 1 Force Watch Dog Timer time-out event; this bit is self-clearing.

Bit 4 : Watch Dog Timer Status, R/W

= 1 Watch Dog Timer time-out occurred

= 0 Watch Dog Timer counting

Bit 3 -0 : These bits select IRQ resource for Watch Dog. Setting of 2 selects SMI.