

EM-566 Series

**VIA Eden VE Low-Power CPU For
Network Security Appliance ,
4xLANs Embedded SBC**

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CHAPTER 1.**INTRODUCTION**

The EM-566 Series is a 5.25" single board computer combining an onboard new VIA embedded low power VIA Eden ESP VE Low-Power processor and the highly-integrated VIA Apollo PLE133/VT686B chipset, that provides the most flexible, compatible, and cost-effective platform solution for building a wide range of desktop and set top boxes to thin clients and web terminals powerful computing and multimedia performance for all the most popular productivity and Internet applications.

To enhance network security appliance, the EM-566 Series comes with Realtek RTL8100 10/100 Mbps fast Ethernet controllers and four Ethernet LAN ports to provide an ideal price/performance solution for high-end commercial and industrial applications where stability and reliability are essential.

Designed with the Plug-and-Serve concept in mind, the EM-566 Series offers one 144 pin SODIMM which provide full functionality and performance to be used "exactly" where you need it as well. In addition, one ATA mode CompactFlash type II socket used in installing OS avoiding service disruption caused by hard disk's mechanical/magnetic failures.

EM-566 Series has many expansion functions such as one PCI and one 124-pin Mini- PCI slot , One 40-pin IDE connector that supports up to two IDE devices and Ultra ATA/100/66/33 interface help designers and integrators improve system performance by retrieving and sending data faster. For easy access, EM-566 Series has a 9-pin, RS-232 serial port for local system management, maintenance, and diagnostics. Everything you could need is on-board.

1.1 SPECIFICATIONS

- o Processor : VIA Eden ESP VE series
- o Chipset : PLE133/VT686B, Realtek RTL8100
- o PCI Part Module : A. Four Realtek RTL8100
B. One 124pin mini-PCI Slot
C. One Std PCI Slot
- o System Memory/RAM : One 144 pin SODIMM
- o IDE Drive Interface : A. One CompactFlash type II socket, support UltraDMA mode
B. One 40-pin (2x20) UltraDMA-100 IDE connector
- o BIOS : AMI® licensed BIOS
- o I/O Connector : A. One DB-9 COM connector, One COM pin header
B. Four 10/100Mb RJ-45 connectors
C. Two USB1.1 port connector (Reserved)
D. One Power Jack (2.0mm)
- o Pin-header : A. One 6-pin PS/2 keyboard/mouse header
B. One Multi-mode parallel port header
C. On board mini software reset botton
D. One parallel port pin header (for control LCM use)
E. One 1*4 pin-header (for control Keypad use)
- o RTC : Internal RTC with Li battery
- o Operating Temperature : 0 °C~60 °C
- o Storage Temperature : -20 °C~70 °C
- o Humidity : 5 %~95% RH, non-condensing
- o Power : 2.5mm Power jack or On-board 20 pins ATX power connector (AT Function Only)
- o Board Size (W x D) : 203mm x 146mm
- o Version : EM-566A: VIA Eden 4000, Four RJ-45, One DB-9, Power Jack, w/o LCM and Keypad control pin-header

1.2 PACKING CHECK LIST

Inspect the product package for the following items before installation. If there is anything missing, please contact our authorized reseller.

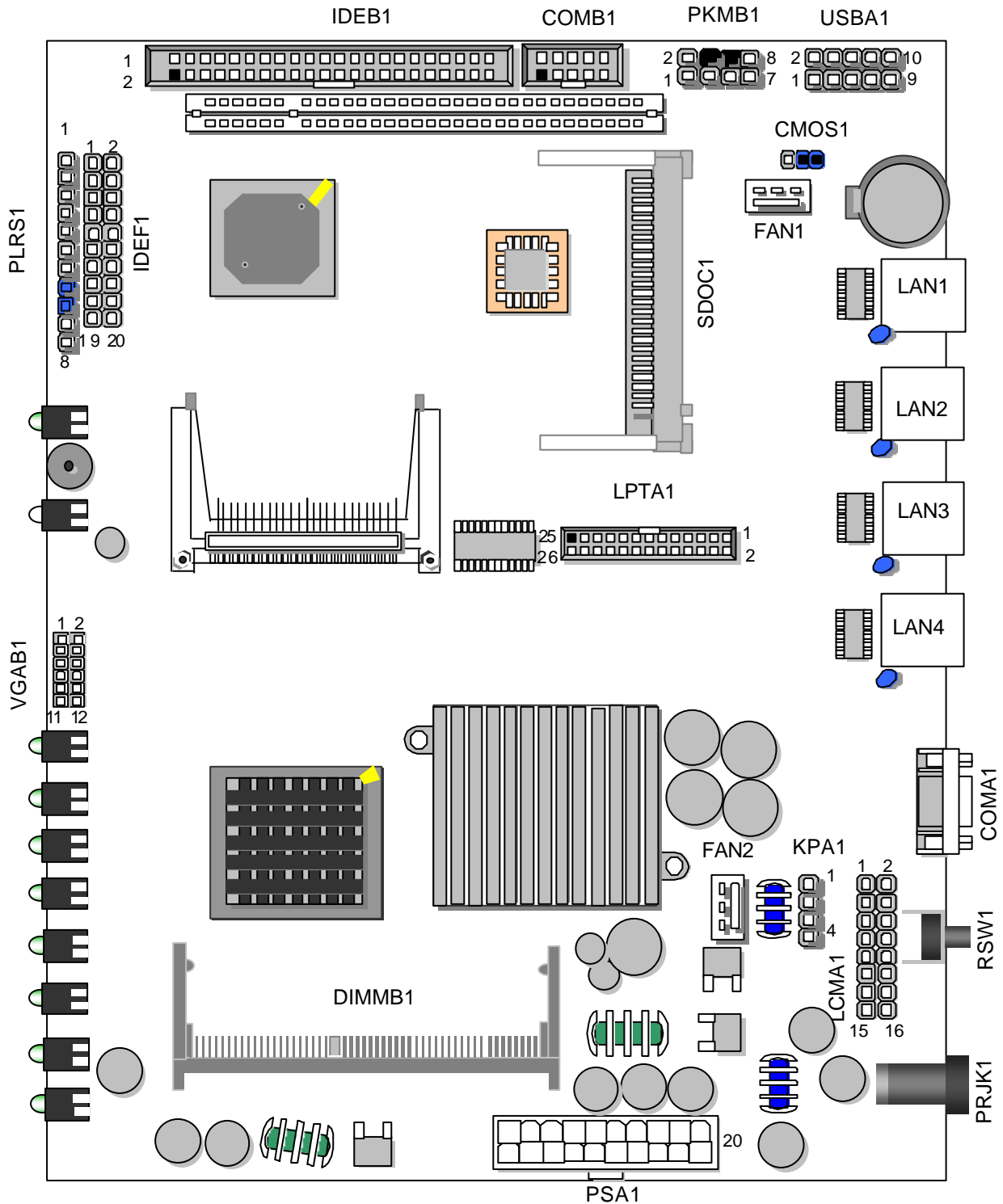
<i>Item</i>	<i>Qty</i>	<i>Remark</i>
EM-566A	1 pc	EM-566A 5.25" Embedded SBC

CHAPTER 2.

JUMPER SETTING AND CONNECTORS

The figure below shows the jumpers and connectors location on the EM-566 Series. The PCB version may differ for slight changes without notice.

2.1 Board Outline of EM-566 Series



2.2 INSTALLING AND UPGRADING THE CPU

To upgrade to a higher power CPU, simply remove the old CPU and install a new one. Make sure to set the jumpers for the new CPU type and speed.

WARNING!

Disconnect the power cord from your system when you intend to work on it or when you plan to open the chassis of your industrial computer. Do not make connections when the power is turned on because the sensitive electronic components could be damaged by the sudden rush of power. Please only allow experienced electronic technicians to do this job.

STATIC ELECTRICITY PRECAUTION!

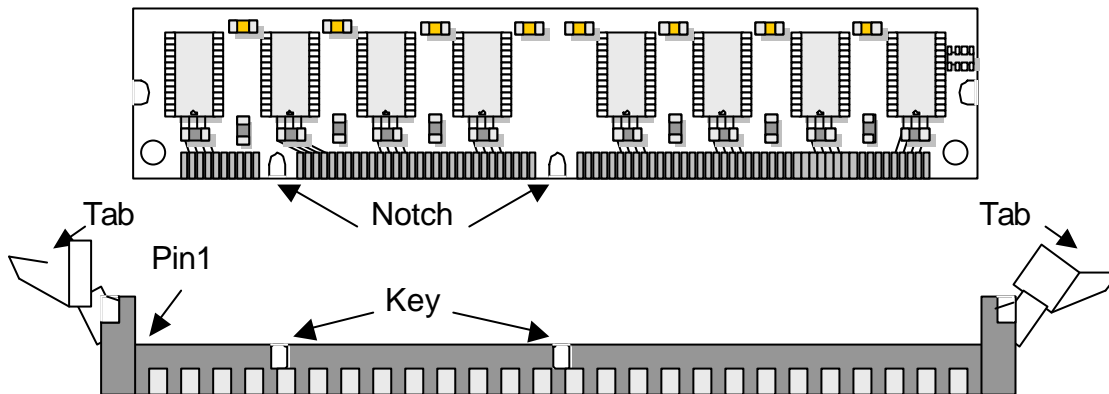
Caution! Computer components are very sensitive to damage from static electric discharge. Always ground yourself to remove static charge build-up before touching the boards in the computer. Use a grounding wrist strap at all times. Place all electronic components on anti-static pad for static-dissipation or in static-shielded bag when they are not in the chassis.

CAUTION!

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the battery manufacturer's instructions or accepted environmental regulatory standards.

© INSTALLING THE DIMM MODULE:

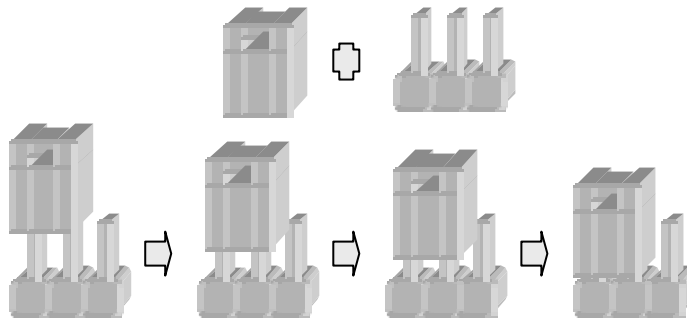
A DIMM module simply snaps into a socket on the system board. Pin1 of the DIMM module must correspond with Pin1 of the socket.



1. Pull the “tabs” which are at the ends of the socket to the side.
2. Position the DIMM above the socket with the “notches” in the module aligned with the “keys” on the socket.
3. Seat the module vertically into the socket. Make sure it is completely seated. The tabs will hold the DIMM in place.

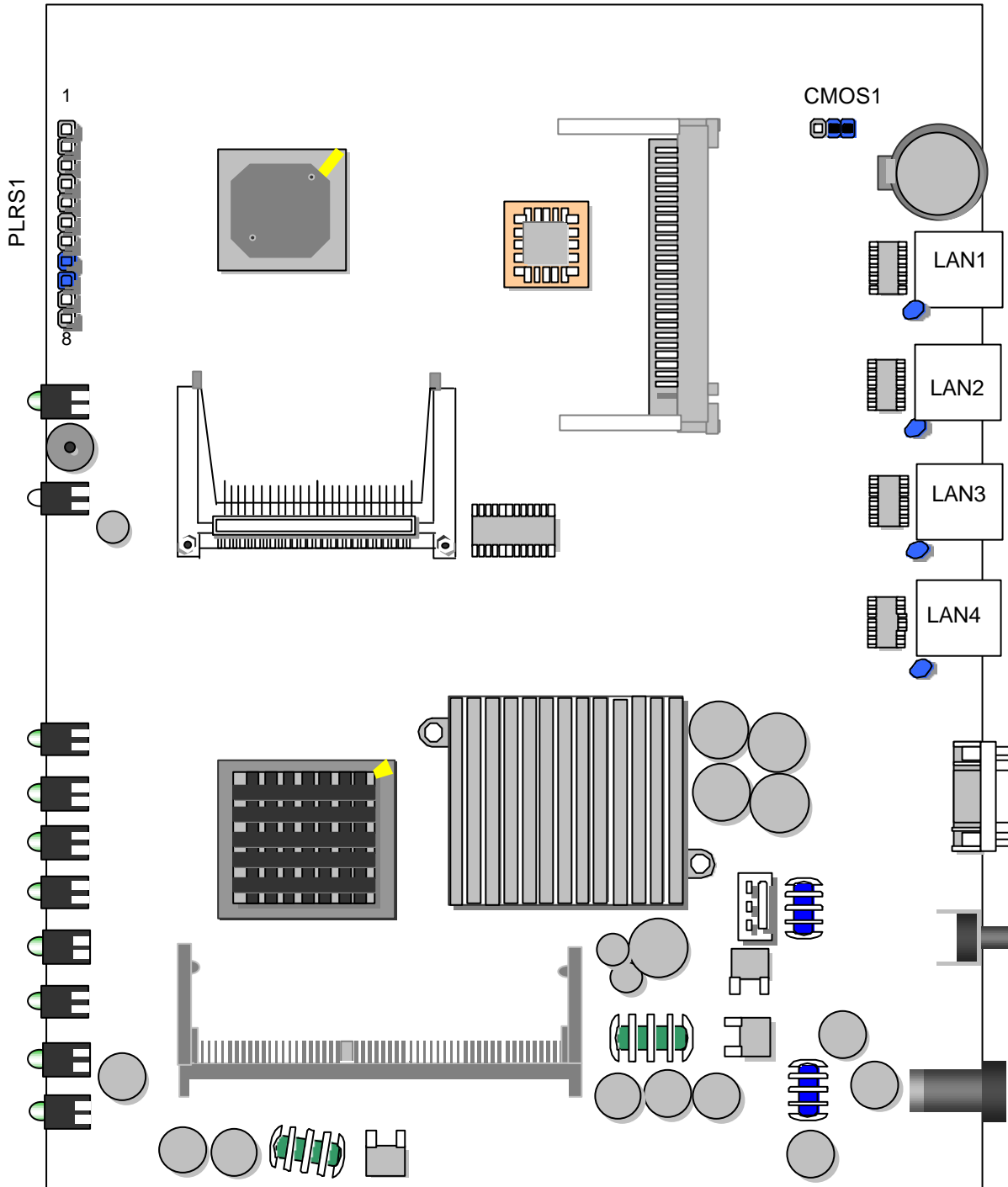
2.3 JUMPER SETTING OVERVIEW

In order to select the operation modes of your system, configure and set the jumpers on your SBC to match the needs of your applications. To set a jumper, a plastic cap containing metal contacts is placed over the jumper pins as designated by the required configuration as listed in this section. A jumper is said to be “ on ” or “ 1-2 ” when the cap has been placed on two of its pins, as show in the figure below:



A pair of needle-nose pliers is recommended when working with jumpers. If you have any doubts about the best hardware configuration for your application, contact our local sales representative before you make any changes. In general, you simply need a standard cable to make most connections

2.4 JUMPER LOCATIONS FOR EM-566



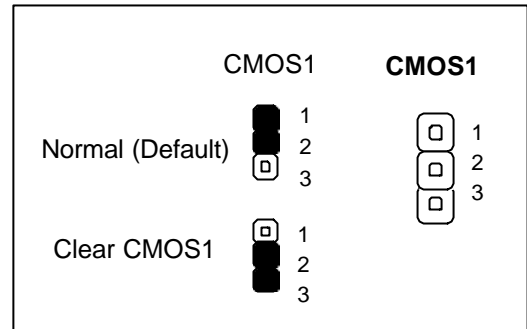
2.5 JUMPER SETTINGS SUMMARY FOR EM-566

JUMPER	FUNCTION
CMOS1	Clear CMOS Data
PLRS1	Power LED,HD LED, Reset, Speaker Connector(11 Pin 2.54mm)

2.6 JUMPER SETTINGS FOR EM-566

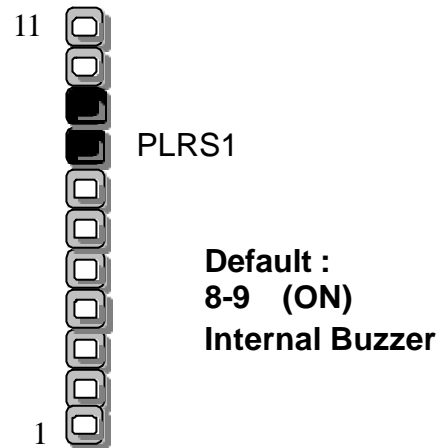
- CMOS1:Clear CMOS Data

CMOS1	Description
1-2	Normal (Default)
2-3	Clear CMOS

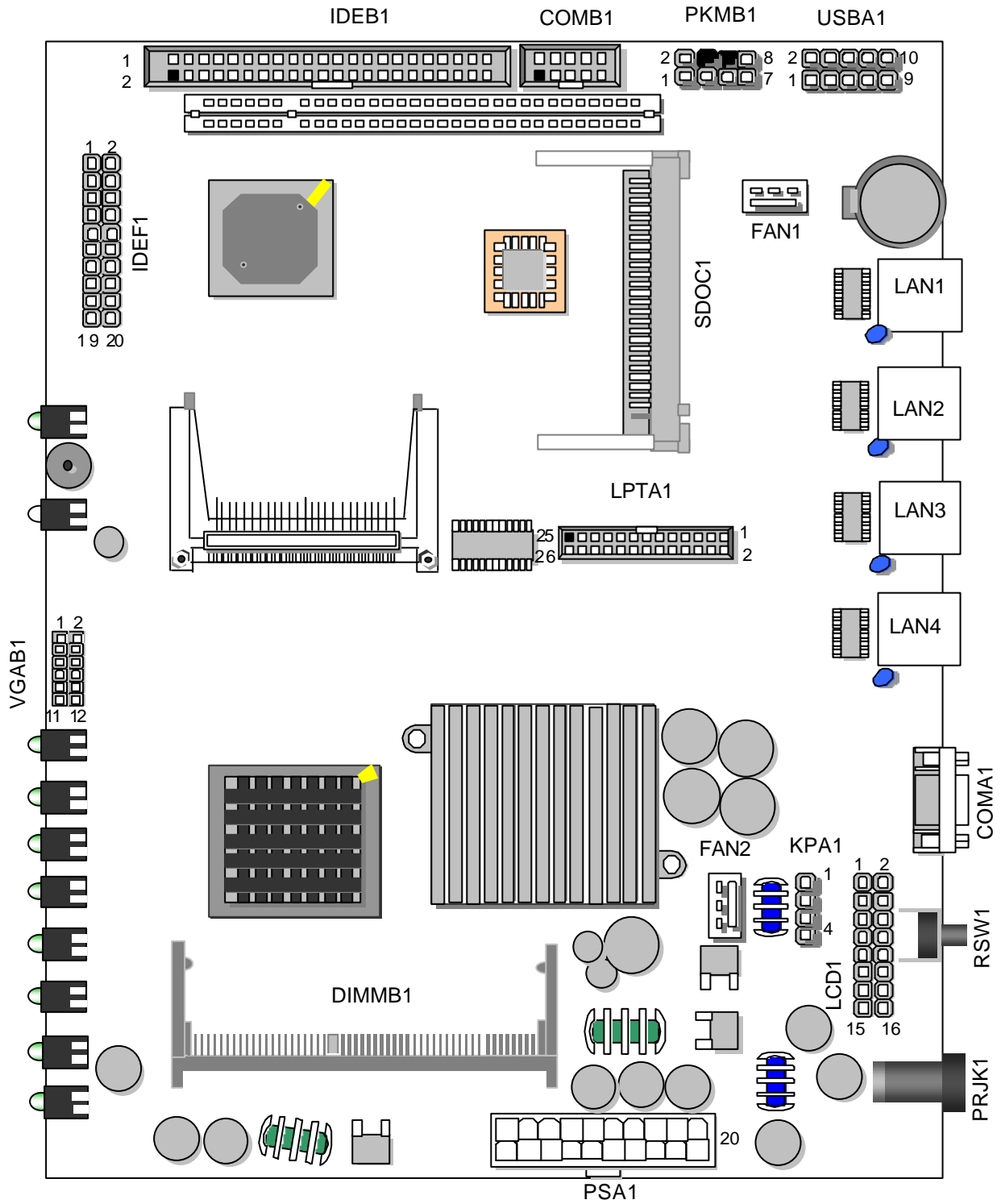


- PLRS1:Power LED,HD LED, Reset, Speaker Connector(11 Pin 2.54mm)

Pin No.	Description
1	Power LED +
2	POWER LED +
3	GND
4	HDD LED +
5	HDD LED -
6	RESET SW +
7	RESET SW – (GND)
8	External Speaker -
9	Internal Buzzer -
10	NC
11	EXTERNAL SPEAKER +



2.7 I/O CONNECTOR LOCATIONS FOR EM-566



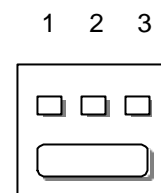
2.8 I/O CONNECTOR SUMMARY FOR EM-566

CONNECTOR	FUNCTION
FAN1, FAN2	3 Pin Fan Connector
LAN1-4	LAN Connector
PRJK1	3 Pin Power Input Jack
KPA1	LCM Keypad
COMA1	RS-232 Serial Port #1 Connector (D-Sub)
COMB1	Serial Port #2 Connector (Header)
PKMB1	PS/2 Keyboard & Mouse Connector
VGAB1	External VGA Connector (Header)
LCMA1	LCM Connector
LPTA1	Parallel Connector
USBA1	Port #1 & #2 Connector 2x5 Pin 2.54mm
Lede1	LED Status Output
PSA1	20 Pin ATX Power Connector
CF1	Compact Flash Connector
IDEB1	IDE Interface Connector
PCIB1	124 Pin Mini PCI Socket

2.9 I/O CONNECTORS DESCRIPTION

- FAN1/2 : 3 Pin FAN Connector**

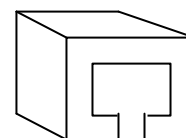
Pin No.	Description
1	Ground
2	+12V
3	FAN Status



FAN1/2

- LANA1~4: Type 1 (RJ-45)**

Pin No.	Description
1	TX+
2	TX-
3	RX+
4	T45
5	T45
6	RX-
7	T78
8	T78



LANA1

- PRJK1 : 3 Pin Power Input Jack**

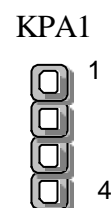
Pin No.	Description
1	GND
2	GND
3	+12V



PRJK1

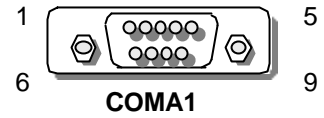
- KPA1 : LCM Keypad**

Pin	Description
1	KPA1
2	KPA2
3	KPA3
4	KPA4



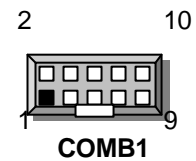
● **COMA1: RS-232 Serial Port #1 Connector (D-Sub)**

Pin No.	Description
1	Data Carrier Detect (DCDA #)
2	Receive Data (RXDA)
3	Transmit Data (TXDA)
4	Data Terminal Ready (DTRA #)
5	Ground (GND)
6	Data Set Ready (DSRA #)
7	Request To Send (RTSA #)
8	Clear To Send (CTSA #)
9	Ring Indicator (RIA #)



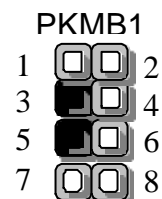
● **COMB1: Serial Port #2 Connector (Header)**

Pin No.	Description
1	Data Carrier Detect (DCDB #)
2	Data Set Ready (DSRB #)
3	Receive Data (RXDB)
4	Request To Send (RTSB #)
5	Transmit Data (TXDB)
6	Clear To Send (CTSB #)
7	Data Terminal Ready (DTRB #)
8	Ring Indicator (RIB #)
9	Ground
10	NC



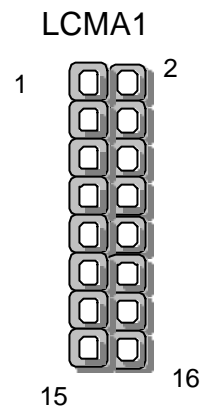
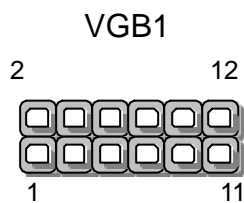
● **PKMB1: PS/2 Keyboard & Mouse Connector (2x4 Header 2.54mm)**

Pin No.	Description	Pin No.	Description
1	KBCLK	2	GND
3	NC	4	KBDATA
5	NC	6	MSDATA
7	MSCLK	8	VCC



● **VGB1 : 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

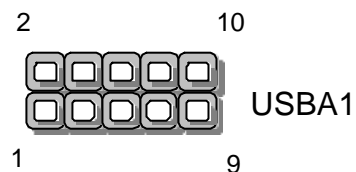
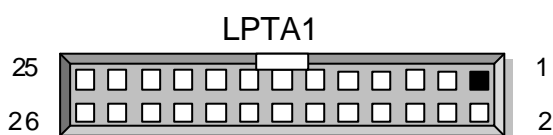


● **LCMA1: LCM CONNECTOR**

PIN	DESCRIPTION	PIN	DESCRIPTION
1	VCC	2	PGND
3	LSTIN-	4	VEE
5	LAFD-	6	LINIT-
7	LPD1	8	LPD0
9	LPD3	10	LPD2
11	LPD5	12	LPD4
13	LPD7	14	LPD6
15	LCD	16	VCC

● **LPTA1: Parallel Connector**

Pin No.	Description	Pin No.	Description
1	Strobe #	2	Auto Form Feed
3	Data0	4	Error #
5	Data1	6	Initialize #
7	Data2	8	Printer Select IN #
9	Data3	10	Ground
11	Data4	12	Ground
13	Data5	14	Ground
15	Data6	16	Ground
17	Data7	18	Ground
19	Acknowledge #	20	Ground
21	Busy	22	Ground
23	Paper Empty	24	Ground
25	Printer Select	26	NC

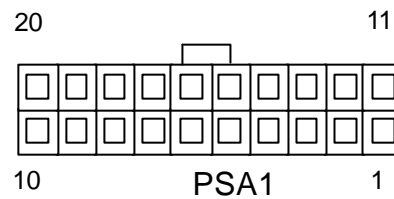
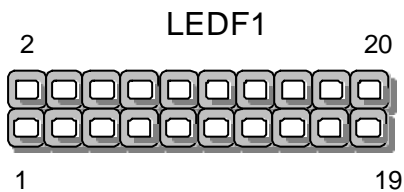


● **USB A1: Port #1 & #2 Connector 2x5 Pin 2.54mm**

Pin No.	Description	Pin No.	Description
1	USB_VCC	2	USB_VCC
3	USBD0-	4	USBD1-
5	USBD0+	6	USBD1+
7	Ground	8	Ground
9	USB Port#1 Ground	10	USB Port#2 Ground

● LEDF1: LED STATUS OUTPUT

Pin No.	Description	Pin No.	Description
1	POWER LED+	2	POWER LED+
3	STATUS LED+	4	STATUS LED-
5	LAN LINK+	6	LANA1 LINK-
7	LANA1 ACT+	8	LANA1 ACT-
9	LANA2 LINK+	10	LANA2 LINK-
11	LANA2 ACT+	12	LANA2 ACT-
13	LANA3 LINK+	14	LANA3 LINK-
15	LANA3 ACT+	16	LANA3 ACT-
17	LANA4 LINK+	18	LANA4 LINK-
19	LANA4 ACT+	20	LANA4 ACT-

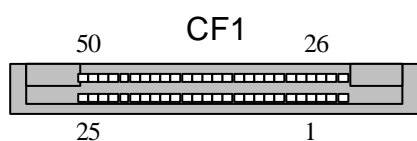


● PSA1: 20 Pin ATX Power Connector

Pin No.	Description	Pin No.	Description
1	NC	11	NC
2	NC	12	-12V
3	GND	13	GND
4	+5V	14	NC
5	GND	15	GND
6	+5V	16	GND
7	GND	17	GND
8	NC	18	NC
9	NC	19	+5V
10	+12V	20	+5V

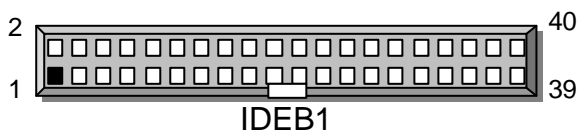
● CF1: Compact Flash Connector

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	A10	33	VS1#
9	OE#	34	IOR#
10	A9	35	IOW#
11	A8	36	WE#
12	A7	37	READY#
13	CFVCC3	38	CFVCC3
14	A6	39	CSEL
15	A5	40	VS2#
16	A4	41	RESET
17	A3	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



● IDEB1 : IDE Interface Connector (40Pin 2.54mm Pitch Header)

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	NC
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



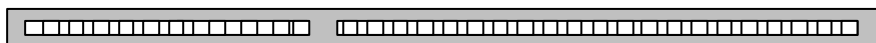
● **PCIB1:124 Pin Mini PCI Socket**

Pin No.	Description	Pin No.	Description
1	TIP	2	RING
3	8PMJ-3	4	8PMJ-1
5	8PMJ-6	6	8PMJ-2
7	8PMJ-7	8	8PMJ-4
9	8PMJ-8	10	8PMJ-5
11	LED1_GRNP	12	LED2_YELP
13	LED1_GRNN	14	LED2_YELP
15	CHSGND	16	RESERVED
17	INT-B	18	+5V
19	+3.3V	20	INT-A
21	RESERVED	22	RESERVED
23	GROUND	24	3.3VAUX
25	CLK	26	RST
27	GROUND	28	+3.3V
29	REO	30	GNT
31	+3.3V	32	GROUND
33	AD31	34	PME
35	AD29	36	RESERVED
37	GROUND	38	AD30
39	AD27	40	+3.3V
41	AD25	42	AD28
43	RESERVED	44	AD26
45	C_BE-3	46	AD24
47	AD23	48	IDSEL
49	GROUND	50	GROUND
51	AD21	52	AD22
53	AD19	54	AD20
55	GROUND	56	PAR
57	AD17	58	AD18
59	C_BE-2	60	AD16
61	IRDY	62	GROUND
63	+3.3V	64	FRAME
65	CLKRUN	66	TRDY

(continued NEXT page)

● PCIB1:124 Pin Mini PCI Socket (continued last page)

Pin No.	Description	Pin No.	Description
67	SERR	68	STOP
69	GROUND	70	+3.3V
71	PERR	72	DEVSEL
73	C_BE-1	74	GROUND
75	AD14	76	AD15
77	GROUND	78	AD13
79	AD12	80	AD11
81	AD10	82	GROUND
83	GROUND	84	AD9
85	AD8	86	C_BE-0
87	AD7	88	+3.3V
89	+3.3V	90	AD6
91	AD5	92	AD4
93	RESERVED	94	AD2
95	AD3	96	AD0
97	+5V	98	RESERVED-WIP
99	AD1	100	RESERVED-WIP
101	GROUND	102	GROUND
103	AC_SYNC	104	M66EN
105	AC_SDATA_IN	106	AC_SDATA_OUT
107	AC_BIT_CLK	108	AC_CODEC_ID0
109	AC_CODEC_ID1	110	AC_RESET
111	MOD_AUDIO_MON	112	RESERVED
113	AUDIO_GND	114	GROUND
115	SYS_AUDIO_OUT	116	SYS_AUDIO_IN
117	SYS_AUDIO_OUT GND	118	SYS_AUDIO_IN GND
119	AUDIO_GND	120	AUDIO_GND
121	RESERVED	122	MPCIACT
123	VCC5VA	124	3.3AUX



PCIB1

CHAPTER 3.

AMI BIOS SETUP

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

3.1 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 appears 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 either of the two different ways – (1) hear a series of short beeps, or (2) see an error message on the screen display. There are two kinds of error: fatal or non-fatal. The system can usually continue to boot up sequence with the 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 bootup 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 typing 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.

Note: BIOS versions are regularly updated form time to time without notices. Therefore, the options available in your setup screen may differ from the options shown in this manual.

3.2 AMI BIOS HIFLEX SETUP UTILITY

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

Main Program Screen

AMIBIOS HIFLEX SETUP UTILITY Version 1.54 ©2001 American Megatrends, Inc. All Rights Reserved
EM-566 Ver.A 2003-01-08
Standard CMOS Setup Advanced CMOS Setup Advanced Chipset Setup Power Management Setup PCI / Plug and Play Setup Peripheral Setup Hardware Monitor Setup Auto-Detect Hard Disks Change User Password Change Supervisor Password Auto Configuration with Optimal Settings Save Settings and Exit Exit Without Saving
Standard CMOS setup for changing time, date, hard disk type, etc. ESC : Exit ↑↓ : Sel F2/F3 : Color F10 : Save & Exit

This screen provides access to the utility's various functions.

Listed below are the 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.

<F2> / <F3> : Changes background and foreground colors.

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

Standard CMOS Setup : Use this menu for basic system configurations, such as time, date, etc.

Advanced CMOS Setup: Use this menu to specify your settings for Advance CMOS.

Advanced Chipset Setup: Use this menu to change the values in the chipset registers and optimize your system' s performance.

Power Management Setup: Use this menu to specify your settings for power management.

PCI / Plug and Play Setup: Use this menu to specify your settings for PCI/Plug and Play.

Peripheral Setup: Use this menu to specify your settings for integrated peripherals.

Hardware Monitor Setup: This entry shows your PC' s current status, and allows you to adjust CPU clock, core voltage, etc.

Auto-Detect Hard Disks: Use this menu to automatically detect the characteristics of most hard drives.

Change User Password: Use this menu to set User Password.

Change Supervisor Password: Use this menu to set Supervisor Password.

Auto Configuration with Optimal Settings: This option allows you to load the default values to your system configuration. These default settings are optimal and enable all high performance features.

Save Settings and Exit: Save changes to CMOS and exit setup.

Exit Without Saving: Abandon all changes and exit setup.

3.3 STANDARD CMOS SETUP

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

Standard CMOS Setup Screen

AMIBIOS SETUP – STANDARD CMOS SETUP											
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Date (mm/dd/yyyy)	: Wed Jan 08, 2003					Base Memory	: 639KB				
Time (hh/mm/ss)	: 00:05:45					Ext' d Memory	: 119MB				
Floppy Drive A :	Not Installed										
Floppy Drive B :	Not Installed										
						LBA	Blk	PIO	32 Bit		
	Type	Size	Cyl'n	Head	WPcom	Sec	Mode	Mode	Mode	Mode	
Pri Master	: Auto										On
Pri Slave	: Not Installed										
Pri Master	: Auto										On
Pri Slave	: Not Installed										
Boot Sector Virus Protection						Disabled					
Month	: Jan - Dec					ESC:Exit	↑↓: Sel				
Day	: 01 - 31					PgUp/PgDn: Modify					
Year	: 1980 - 2099					F1: Help F2/F3:Color					

Standard CMOS Setup options are displayed by choosing the Standard field from the AMIBIOS HIFLEX SETUP menu. All Standard Setup options are described below.

Date: This allows you to set the system to the date that you want (usually the current date). The format is <day><month><date><year>.

- Day** Day of the week, from Sun to Sat, determined by BIOS. Real-only.
- Month** The month from Jan. through Dec.
- Date** The date from 1 to 31 can be keyed by numeric function keys.
- Year** The year can be adjusted by users.

Time: This allows you to set the system time that you want (usually the current time). The time format is <hour><minute><second>.

Pri Master/ Pri Slave: Press PgUp/<+> or PgDn/<-> to select the hard disk drive type. The specification of hard disk drive will show up on the right hand according to your selection.

Type	Type of the device.
Size	Capacity of the device.
Cyln	Number of cylinders.
Head	Number of heads.
Wpcom	Write precompensation cylinder.
Sec	Number of sectors.
Mode	Access mode.

Floppy Drive A, B : Choose the Floppy Drive A or B field to specify the floppy drive type. The settings are 360 KB 5¹/₄" , 1.2 MB 5¹/₄" , 720 KB 3¹/₂" , 1.44 MB 3¹/₂" , or 2.88 MB 3¹/₂" .

Boot Sector Virus Protection: The item is to set the Virus Warning feature for IDE Hard Disk boot sector protection. When *Enabled*, BIOS will issue a virus warning message and beep if a write to the boot sector or the partition table of the HDD is attempted. Setting options: *Disabled* and *Enabled*.

* **Note:** *This feature only protects the boot sector, not the whole hard disk.*

3.4 ADVANCED CMOS SETUP

When you select the “ADVANCED CMOS SETUP” on the main program, the screen display will appear as:

Advanced CMOS Setup Screen

AMIBIOS SETUP – ADVANCED CMOS SETUP		
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Quick Boot	Enabled	<div style="display: flex; align-items: center;"> <div style="border-left: 1px dashed black; width: 10px; height: 100%; margin-right: 5px;"></div> <div style="flex-grow: 1;"> <p>Available Options:</p> <p>Disabled</p> <p>▶ Enabled</p> <p>Available Options:</p> <p>▶ Disabled</p> <p>Enabled</p> <p>Cached</p> <p>ESC : Exit ↑↓ : Sel</p> <p>PgUp/PgDn : Modify</p> <p>F1: Help F2/F3: Color</p> </div> </div>
1st Boot Device	Disabled	
2nd Boot Device	Disabled	
3rd Boot Device	Disabled	
Try Other Boot Devices	Yes	
Initial Display Mode	BIOS	
Display Mode at Add-On ROM Init	Force BIOS	
Hard Disk Access Control	Read-Write	
S.M.A.R.T. for Hard Disks	Enabled	
BootUp Num-Lock	On	
PS/2 Mouse Support	Enabled	
System keyboard	Present	
Password Check	Setup	
Wait For ' F1 ' If error	Enabled	
Hit ' DeL' Message Display	Enabled	
System BIOS Cacheable	Enabled	
C000, 32K Shadow	Cached	
C800, 16K Shadow	Disabled	
CC00, 16K Shadow	Disabled	
D000, 16K Shadow	Disabled	
D400, 16K Shadow	Disabled	
D800, 16K Shadow	Disabled	
DC00, 16K Shadow	Disabled	

***Note :** The above page of the Advanced CMOS Setup only shows part of the related options. To proceed to the next options, please move your cursor downwards.

Advanced Setup options are displayed by choosing the Advanced icon from the WINBIOS Setup main menu. All Advanced Setup options are described in this section.

Quick Boot: Setting the item to “Enabled” allows the system to boot within 5 seconds by skipping some check items. Settings: Enabled and Disabled.

1st/2nd/3rd Boot Device: The items allow you to set the sequence of boot devices where AMIBIOS attempts to load the operation system. Possible settings are:

IDE-0	The system will boot from the first HDD.
IDE-1	The system will boot from the second HDD.
IDE-2	The system will boot from the third HDD.
IDE-3	The system will boot from the fourth HDD.
Floppy	The system will boot from floppy drive.
ARMD-FDD	The system will boot from any ARMD device, such as LS-120 or ZIP drive, that functions as a floppy drive.
ARMD-HDD	The system will boot from ARMD device, such as MO or ZIP drive, that functions as hard disk drive.
CDROM	The system will boot from the CD-ROM.
SCSI	The system will boot from the SCSI.
NETWORK	The system will boot from the Network drive.
BBS-0	The system will boot from the first BBS (BIOS Boot Specification) compliant device.
BBS-1	The system will boot from the second BBS (BIOS Boot Specification) compliant device.
BBS-2	The system will boot from the third BBS (BIOS Boot Specification) compliant device.
BBS-3	The system will boot from the fourth BBS (BIOS Boot Specification) compliant device.
Disabled	Disable this sequence.

*** Note:** Available settings for “1st/2nd/3rd Boot Device “ vary depending on the bootable devices you have installed. For example, if you did not install a floppy drive, the setting “Floppy” does not show up.

Try Other Boot Devices : Setting the option to yes allows the system to try to boot from other devices if the system fails to boot from the 1st/2nd/3rd Boot Device.

Initial Display Mode: Set this option to Silent to enable the AMIBIOS SilentBoot feature. This option specifies the initial display mode when the system boots. The settings are:

Setting	Description
BIOS	The standard BIOS boot messages displayed before booting the system will appear on the system monitor.
Silent	The standard messages will not appear on the system monitor and the system will boot to the operating system immediately. Only BIOS error messages will appear.

Display Mode at Add-On ROM Init: This option specifies the system display mode that is set at the time that AMIBIOS POST initializes an optional adapter ROM. The settings are:

Setting	Description
Force BIOS	The display mode currently being used by AMIBIOS is used.
Keep Current	The current display mode is used.

Hard Disk Access Control: This option specifies the read/write access that is set when booting from a hard disk drive. The settings are Read/Write or Read-Only. The Optimal and Fail-Safe default settings are Read/Write.

S.M.A.R.T. for Hard Disks : This allows you to activate the S.M.A.R.T. (Self-Monitoring Analysis & Reporting Technology) capability for the hard disks. S.M.A.R.T. is a utility that monitors your disk status to predict hard disk failure. This gives you an opportunity to move data to a safe place before the hard disk becomes offline. Settings: Enabled and Disabled.

BootUp Num-Lock : Set this option to *Off* to turn the Num Lock key off when the computer is booted so you can use the arrow keys on both the numeric keypad and the keyboard. The settings are *On* or *Off*. The default setting is *On*.

PS/2 Mouse Support : When this option is set *Enabled*, AMIBIOS supports a PS/2 type mouse. The settings are *Enabled* or *Disabled*. The default setting is *Disabled*. System Boot Up Sequence.

Password Check : This option enables password checking every time the computer is powered on or every time WINBIOS Setup is executed. If *Always* is chosen, a user password prompt appears every time the computer is turned on. If *Setup* is chosen, the password prompt appears if WINBIOS is executed. The Optimal and Power-On defaults are *Setup*.

L1 Cache: The option enabled or disabled the internal cache memory in the processor.

L2 Cache: The option enables secondary cache memory. If enabled is selected, external cache memory is enabled. If disabled is selected, external cache memory is disabled.

System BIOS Cacheable : When this option is set to Enabled, the contents of the F0000h system memory segment can be read from or written to L2 secondary cache memory. The contents of the F0000h memory segment are always copied from the BIOS ROM to system RAM for faster execution.

The settings are *Enabled* or *Disabled*. The Optimal default setting is *Enabled*. The Fail-Safe default setting is *Disabled*.

C000,16K Shadow	D000,16K Shadow
C400,16K Shadow	D400,16K Shadow
C800,16K Shadow	D800,16K Shadow
CC00,16K Shadow	DC00,16K Shadow

These options control the location of the contents of the 16KB of ROM beginning at the specified memory location. If no adaptor ROM is using the named ROM area, this area is made available to the local bus. The settings are:

Setting	Description
Shadow	The contents of C0000h - C3FFFh are written to the same address in System memory (RAM) for faster execution.
Cache	The contents of the named ROM area are written to the same address in system memory (RAM) for faster execution, if an adaptor ROM will be using the named ROM area. Also, the contents of the RAM area can be read from and written to cache memory.
Disabled	The video ROM is not copied to RAM. The contents of the video ROM cannot be read from or written to cache memory.

The default setting is Cache.

In the AMIBIOS for the Intel Triton chipset, the E000h page is used as ROM during POST, but shadowing is disabled and the ROM CS# signal is disabled to make the E000h page available on the local bus.

3.5 ADVANCED CHIPSET SETUP

When you select the “ADVANCED CHIPSET SETUP” on the main program, the screen display will appear as:

Advanced Chipset Setup Screen

AMIBIOS SETUP – ADVANCED CHIPSET SETUP		
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***** DRAM Timing *****		Available Options:
Configure SDRAM Timing by SPD	Enabled	▶ Disabled
DRAM Frequency	100Mhz	Enabled
SDRAM CAS# Latency	3	
DRAM Bank Interleave	Enabled	
Memory Hole	Disabled	
AGP Mode	4x	
AGP Read Synchronization	Enabled	
AGP Fast Write	Disabled	
AGP Aperture Size	64MB	
AGP Master 1 W / S Write	Disabled	
AGP Master 1 W / S Read	Disabled	
Search for MDA Resources	Yes	
PCI Delay Transaction	Enabled	
USB Controller	USB port 0&1	ESC : Exit ↑↓ : Sel
USB Device Legacy Support	Disabled	PgUp/PgDn : Modify
Port 64/60 Emulation	Enabled	F1:Help F2/F3 : Color

In the ‘Advanced Chipset Setup’ page, all options are predefined by the system board designer. Any attempt to change the parameter of the fields are not recommended.

Configure SDRAM Timing by SPD: This option provides DIMM plug-and-play support by Serial Presence Detect (SPD) mechanism via the System Management Bus (SMBus) interface. You can disable this option to manage the following SDRAM timing options by yourself. In addition, SDRAM operating timings may follow serial presence from EEPROM content by setting this option to "Enabled", and all of SDRAM timing options will be not available and hidden.

Memory Hole: This option allows the end user to specify the location of a memory hole for memory space requirement from ISA-bus cards.

AGP Read Synchronization: Enabled is best for performance.

AGP Fast Write: Allows data to be sent directly from the corelogic (i.e. chipset) to the AGP master (graphics chip) instead of keeping a copy in system memory and making the AGP master fetch it. Enabled is best for performance, and probably only works with 4x cards anyway.

AGP Aperture Size: This option specifies the amount of system memory that can be used by the Accelerated Graphics Port (AGP).

AGP Master 1 W / S Write: Implements a single delay when writing from the AGP Bus. Normally, two wait states are used, allowing for greater stability.

AGP Master 1 W / S Read: Implements a single delay when reading from the AGP Bus. Normally, two wait states are used, allowing for greater stability.

PCI Delay Transaction: Choose the "Enabled" option to obtain higher PCI bus performance for slower ISA bus application.

USB Controller: This option will enable on-chip USB controller to support USB (Universal Serial Bus) peripheral devices if user chooses the "Enabled" setting.

USB Device Legacy Support: This field support Universal Serial Bus (USB) devices. If detected, USB controller legacy mode will be enabled. If not detected, USB controller legacy mode will be disabled.

Port 64/60 Emulation: Setting this option to allow a USB Keyboard to act like a legally keyboard.

3.6 POWER MANAGEMENT SETUP

The “Power Management Setup” controls the CPU card’s “Green” features. When you select the “POWER MANAGEMENT SETUP” on the main program, the screen display will appear as:

Power Management Setup Screen

AMIBIOS SETUP – POWER MANAGEMENT SETUP		
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Power Management/APM	Enabled	Available Options: ▶ Disabled Enabled
Video power Down Mode	Suspend	
Hard Disk power Down Mode	Disabled	
Suspend Time out (Minute)	Disabled	
		ESC : Exit ↑↓ : Sel PgUp/PgDn : Modify F1:Help F2/F3 : Color

Power Management Setup options are displayed by choosing the Power Management field from the WINBIOS Setup main menu. All Power Management Setup options are described in this section.

Power Management /APM: Setting to Enabled will activate the Advanced Power Management (APM) feature to enhance power saving modes. Settings: Enabled and Disabled.

Video Power Down Mode: This option specifies the power conserving state that the VESA VGA video subsystem enters after the specified period of display inactivity has expired.

Hard Disk Power Down Mode: This option specifies the power conserving state that the hard disk drive enters after the specified period of hard drive inactivity has expired. The settings are Standby, or Suspend.

Standby Time Out: This option specifies the length of the period of system inactivity while the computer is in Full-On power state before the computer is placed in Standby mode. When this length of the time expires, the computer enters Standby Timeout state. In Standby mode, some power use is curtailed.

3.7 PERIPHERAL SETUP

When you select the “PERIPHERAL SETUP” on the main program, the screen display will appear as:

Peripheral Setup Screen

AMIBIOS SETUP – PERIPHERAL SETUP		
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OnBoard Serial Port 1	3F8/COM1	Available Options: Auto ▶ Disabled 378 278 3BC
OnBoard Serial Port 2	2F8/COM2	
OnBoard Parallel Port	378	
Parallel Port Mode	Normal	
Parallel Port DMA Channel	N/A	
Parallel Port I RQ	7	
OnBoard IDE	Both	
		ESC : Exit ↑↓ : Sel PgUp/PgDn : Modify F1:Help F2/F3 : Color

Peripheral Setup options are displayed by choosing the Peripheral Setup icon from the WINBIOS Setup main menu. All Peripheral Setup options are described in this section.

Onboard Serial Port1: This option enables serial port 1 on the motherboard and specifies the base I/O port address for serial port 1. The settings are 3F8h, 3E8h, or Disabled. The Optimal default setting is 3F8h. The Fail-Safe default setting is Disabled.

Onboard Serial Port2: This option enables serial port 2 on the motherboard and specifies the base I/O port address for serial port 2. The settings are 2F8h, 2E8h, or Disabled. The Optimal default setting is 2F8h. The Fail-Safe default setting is Disabled.

Onboard Parallel Port: This option enables the parallel port on the motherboard and specifies the parallel port base I/O port address. The settings are 378h, 278h, or Disabled. The Optimal default setting is 378h. The Fail-Safe default setting is Disabled.

Parallel Port Mode : This option specifies the parallel port mode. ECP and EPP are both bidirectional data transfer schemes that adhere to the IEEE P1284 specifications. The default setting is *Normal*. The other settings are:

Setting	Description
Normal	Normal The normal parallel port mode is used. This is the default setting.
Cache	Bi-Dir Use this setting to support bidirectional transfers on the parallel port.
EPP	The parallel port can be used with devices that adhere to the Enhanced Parallel Port (EPP) specification. EPP uses the existing parallel port signals to provide asymmetric bidirectional data transfer driven by the host device.
ECP	The parallel port can be used with devices that adhere to the Extended Capabilities Port (ECP) specification. ECP uses the DMA protocol to Achieve transfer rates of approximately 2.5 Mbs. ECP provides symmetric Bidirectional communications.

Parallel Port IRQ: This option specifies the IRQ used by the parallel port. The Optimal and Fail-Safe default setting is 7.

Option	Description
5	This option allows the serial port to use Interrupt 3.
7	This option allows the serial port to use Interrupt 7. This is the default setting. The majority of parallel ports on computer systems use IRQ7 and I/O Port 378H as the standard setting.

Parallel Port DMA Channel: This option is only available if the setting for the **Parallel Port Mode** option is ECP. The settings are Disabled, DMA CH (channel) 0, DMA CH 1, or DMA CH 3. The default setting is N/A.

On-Chip IDE: This allows you to enable or disable on-chip IDE controller. Settings are Disabled, Primary, Secondary and Both.

3.8 PCI PLUG AND PLAY SETUP

Both the ISA and PCI buses on the CPU card use system IRQs & DMAs. You must set up the IRQ and DMA assignments correctly through the PCI / Plug and Play Setup utility, otherwise the SBC will not work properly.

When you select the "PCI / PLUG AND PLAY SETUP" on the main program, the screen display will appear as:

PCI / Plug and Play Setup Screen

AMIBIOS SETUP – PCI / PLUG AND PLAY SETUP		
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Plug and Play Aware O/S	No	Available Options: ▶ No Yes
Reset Configuration Data	No	
PCI Latency Timer (PCI Clocks)	32	Available Options: ▶ Disabled 16k 32k 64k
Primary Graphics Adapter	Add-on Card	
PCI VGA Palette Snoop	Disabled	
PCI Slot1 IRQ Priority	Auto	
PCI Slot2 IRQ Priority	Auto	
PCI Slot3 IRQ Priority	Auto	
PCI Slot4 IRQ Priority	Auto	
DMA Channel 0	PnP	
DMA Channel 1	PnP	
DMA Channel 3	PnP	
DMA Channel 5	PnP	
DMA Channel 6	PnP	
DMA Channel 7	PnP	
IRQ3	ISA / EISA	
IRQ4	ISA / EISA	
IRQ5	PCI / PnP	
IRQ7	ISA / EISA	
IRQ9	PCI / PnP	
IRQ10	PCI / PnP	
IRQ11	PCI / PnP	
IRQ14	PCI / PnP	
IRQ15	PCI / PnP	
Reserved Memory Size	Disabled	ESC : Exit ↑↓ : Sel
Reserved Memory Address	C8000	PgUp/PgDn : Modify F1: Help F2/F3 : Color

PCI/PnP Setup options are displayed by choosing the PCI/PnP Setup icon from the WINBIOS Setup main menu. All PCI/PnP Setup options are described in this section.

Plug and Play Aware O/S: Set this option to “ Yes” if the operation system installed in the computer is Plug and Play-aware. BIOS only detects and enables PnP ISA adapter cards that are required for system boot. The Windows 95 operating system detects and enables all other PnP-aware adapter cards. Windows 95 is PnP-aware. Set this option to “ No” if the operating system (such as DOS, OS/2, Windows 3.x) does not use PnP.

Reset Configuration Data: This option allows the BIOS to rest the Configuration Data in the BIOS. The Optimal and Fail-Safe default setting is No.

Option	Description
No	This setting preserves the PnP data. It does not force the PnP data to be cleared on boot. This is the default setting.
Yes	This option allows the PnP data to be rebuilt by the BIOS at every boot.

PCI Latency Timer (PCI Clocks): This option is used to control PCI latency timer period (follow PCI clocks). Based on PCI specification 2.1 or later and PCI bus frequency in system, user can select different timer to meet their PCI bus environment.

Primary Graphics Adapter: Initialize the PCI video display card on PCI slot before initializing any other display device on the system. Thus the PCI slot display card becomes the primary display. Available options are [PCI] and [AGP].

DMA Channel 0/1/3/5/6/7: These items specify the bus that the system DMA(Direct Memory Access) channel is used. The settings determine if AMIBIOS should remove a DMA from the available DMAs passed to devices that are configurable by the system BIOS. The available DMA pool is determined by reading the ESCD NVRAM. If more DMAs must be removed from the pool, the end user can reserve the DMA by assigning an ISA/EISA setting to it.

IRQ3/4/5/7/9/10/11/14/15: These items specify the bus where the specified IRQ line is used. The settings determine if AMIBIOS should remove an IRQ from the pool of available IRQs passed to devices that are configurable by the system BIOS. The available IRQ pool is determined by reading the ESCD NVRAM. If more IRQs must be removed from the IRQ pool, the end user can use these settings to reserve the IRQ by assigning an ISA/EISA setting to it. Onboard I/O is configured by AMIBIOS. All IRQs used by onboard I/O are configured as PCI/PnP. If all IRQs are set to ISA/EISA, and IRQ14/15 are allocated to the

onboard PCI IDE, IRQ9 will still be available for PCI and PnP devices. Settings: ISA/EISA and PCI/PnP.

Reserved Memory Size : This option specifies the size of the memory area reserved for legacy ISA adapter cards. The settings are Disabled, 16K, 32K, or 64K. The optimal and Fail-Safe default settings are Disabled.

Reserved Memory Address: This option specifies the beginning address (in hex) of the reserved memory area. The specified ROM memory area is reserved for use by legacy ISA adapter cards. This option does not appear if the Reserved Memory Size option is set to Disabled. The settings are C0000,C4000,C8000,CC000,D0000,D4000,D8000,or DC000.

3.9 HARDWARE MONITOR SETUP

When you select the “Hardware Monitor Setup” on the main program, the screen display will appear as:

Hardware monitor Setup Screen

AMIBIOS SETUP – HARDWARE MONITOR SETUP		
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CPU Temperature	49 /120	
System Temperature	31 /87	
FAN1 Speed	0RPM	
FAN2 Speed	0RPM	
Vcore	1.112V	
+2.500V	2.512V	
+3.300V	3.406V	
+5.000V	4.971V	
+12.000V	11.986V	
		ESC : Exit ↑↓ : Sel PgUp/PgDn : Modify F1:Help F2/F3 : Color

CPU Temperature, Fan1 Speed, Fan2 Speed, VCORE, +2.5, +3.3V, +5V, +12V : These items display the current status of all monitored hardware devices/components such as system voltages, temperatures and fan speeds.

3.10 CHANGE SUPERVISOR/USER PASSWORD

When you select this function, a message as below will appear on the screen:

AMIBIOS HIFLEX SETUP UTILITY ©2001 American Megatrends, Inc. All Rights Reserved
EM-566 Ver.A 2002-06-26 Standard CMOS Setup Advanced CMOS Setup Advanced Chipset Setup Power Management Setup
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> Enter new supervisor password: </div>
Auto-Detect Hard Disks Change User Password Change Supervisor Password Auto Configuration with Optimal Settings Save Settings and Exit Exit Without Saving
Standard CMOS setup for changing time, date, hard disk type, etc. ESC : Exit ↑↓ : Sel F2/F3 : Color F10 : Save & Exit

Type the password, up to six characters in length, and press<Enter>. The password typed 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.

Additionally, when a password is enabled, you can also have AMIBIOS to request a password each time the system is booted. This would prevent unauthorized use of your

computer. The setting to determine when the password prompt is required is the PASSWORD CHECK option of the ADVANCED BIOS FEATURES menu. If the PASSWORD CHECK option is set to Always, the password is required both at boot and at entry to Setup. If set to Setup, password prompt only occurs when you try to enter Setup.

Note: About Supervisor Password & User Password

Supervisor Password : Can enter and change the settings of the setup menu.

User Password : Can only enter but do not have the right to change the settings of the setup menu.

High Performance Setup Defaults

The options on the main menu allow users to restore all of the BIOS settings to High Performance defaults. The High Performance Defaults are the default values set by the manufacturer for the best system performance but probably will cause a stability issue.

When you select High Performance Defaults, a message as below appears:

AMIBIOS HIFLEX SETUP UTILITY - VERSION 1.38 ©2001 American Megatrends, Inc. All Rights Reserved
EM-566 Ver.A 2002-09-03 Standard CMOS Setup Advanced CMOS Setup Advanced Chipset Setup Power Management Setup
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> Load high Performance Settings (Y/N)? N </div>
Auto-Detect Hard Disks Change User Password Change Supervisor Password Auto Configuration with Optimal Settings Save Settings and Exit Exit Without Saving
Load configuration settings giving highest performance ESC : Exit ↑↓ : Sel F2/F3 : Color F10 : Save & Exit

Pressing "Y" loads the defaults BIOS values that enable the best system performance but may lead to a stability issue.

3.11 LOAD OPTIMAL DEFAULTS

When you press "Enter" on this item, you get a confirmation dialog box with a message similar to:

AMIBIOS HIFLEX SETUP UTILITY ©2001 American Megatrends, Inc. All Rights Reserved
EM-566 Ver.A 2002-09-03 Standard CMOS Setup Advanced CMOS Setup Advanced Chipset Setup Power Management Setup
Load Optimal Settings (Y/N)? N
Change User Password Change Supervisor Password Auto Configuration with Optimal Settings Save Settings and Exit Exit Without Saving
Load failsafe configuration settings ESC : Exit ↑↓ : Sel F2/F3 : Color F10 : Save & Exit

Pressing "Y" loads the optimal default settings for the WINBIOS by selecting the best-case values that should optimize system performance.

3.12 SAVE & EXIT SETUP

When you want to quit the Setup menu, you can select this option to save the changes and quit. A message as below will appear on the screen.

AMIBIOS HIFLEX SETUP UTILITY ©2001 American Megatrends, Inc. All Rights Reserved
EM-566 Ver.A 2002-09-03 Standard CMOS Setup Advanced CMOS Setup Advanced Chipset Setup Power Management Setup
Save Current settings and exit (Y/N)? Y
Change User Password Change Supervisor Password Auto Configuration with Optimal Settings Save Settings and Exit Exit Without Saving
Write the current settings to CMOS and exit ESC : Exit ↑↓ : Sel F2/F3 : Color F10 : Save & Exit

Typing Y will allow you to quit the Setup Utility and save the user setup changes to RTC CMOS.

Typing N will return to Setup Utility.

3.13 EXIT WITHOUT SAVING

When you want to quit the Setup menu, you can select this option to abandon the changes. A message as below will appear on the screen.

AMIBIOS HIFLEX SETUP UTILITY ©2001 American Megatrends, Inc. All Rights Reserved
EM-566 Ver.A 2002-09-03 Standard CMOS Setup Advanced CMOS Setup Advanced Chipset Setup Power Management Setup
Quit without saving (Y/N)? N
Change User Password Change Supervisor Password Auto Configuration with Optimal Settings Save Settings and Exit Exit Without Saving
Exit without saving the current settings ESC : Exit ↑↓ : Sel F2/F3 : Color F10 : Save & Exit

Typing Y will allow you to quit the Setup Utility without saving any changes to RTC CMOS.

Typing N will return to the Setup Utility.

CHAPTER 4.

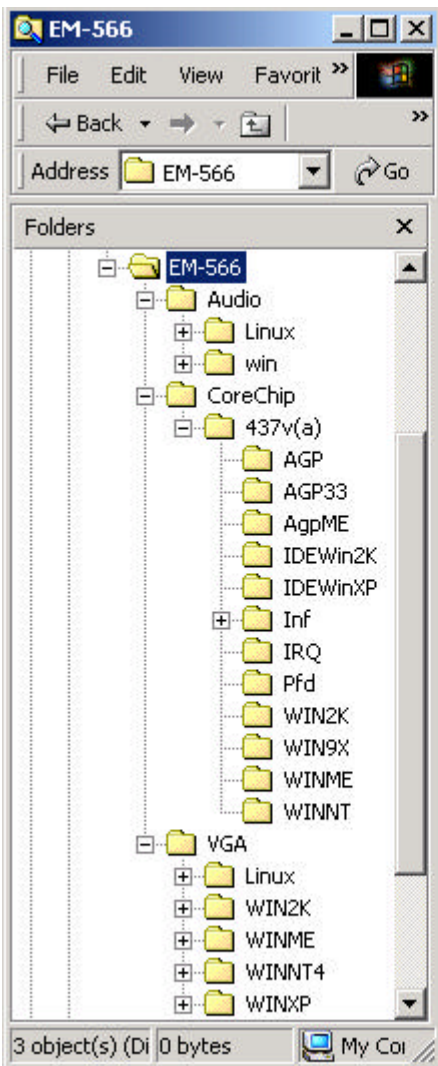
DRIVERS SUPPORT

4.1 USE YOUR DRIVER CD-ROM

This chapter provides information on how to install the drivers that come in the CD-ROM with the package. Please follow the instructions set forth in chapter carefully.

1. Find the directory for your O/S accordingly.
2. Always read the README.TXT. before installation.
3. Run the *.EXE., and follow the installation prompt step by step.

4.2 FILE DIRECTORY



APPENDIX A

TECHNICAL REFERENCE

I/O PORT ADDRESS MAP

Address	Function
000 - 01F	DMA Controller #1
020 - 03F	Interrupt Controller #1
040 - 05F	Timer Chip
043	Disable Watch-Dog Times Operation (Read)
060 - 06F	Keyboard Controller
070 - 07F	Read Time Clock/NMI Mask
080 - 09F	DMA Page Register
0A0 - 0BF	Interrupt Controller #2
0C0 - 0DF	DMA Controller #2
0F0 - 0F1	Clear/Reset Math Coprocessor
1F0 - 1F7	Hard Disk Controller
200 - 210	Game Port
278 - 27F	Parallel Port #2
2E8 - 2EF	Serial Port #4 (COM 4)
2F8 - 2FF	Serial Port #2 (COM 2)
300 - 31F	Prototype Card/Streaming Tape Adapter
360 - 36F	PC Network
378 - 3FF	Parallel Port #1
380 - 38F	SDLC #2
3A0 - 3AF	SDLC #1
3B0 - 3BF	MDA Video Card (Including LPT0)
3C0 - 3CF	EGA Card
3D0 - 3DF	CGA Card
3E8 - 3EF	Serial Port #3 (COM 3)
3F0 - 3F7	Floppy Disk Controller
3F8 - 3FF	Serial Port #1 (COM 1)
443	Enable Watch-dog Timer Operation (read)

MEMORY ADDRESS MAP

Address Range (Hex)	Description
000000H - 09FFFFH	640 KB of Conventional RAM
0A0000H - 0BFFFFH	128 KB of Video RAM
0C0000H - 0EFFFFH	256 KB of I/O Expansion ROM
0F0000H - 0FFFFFFH	64 KB of System BIOS ROM
0100000H - 7FFFFFFFH	1 MB ~ 128MB of User RAM

DMA CHANNELS

CHANNEL	Function
DMA 0	Reserved
DMA 1	Reserved
DMA 2	Floppy Disk Controller
DMA 3	ECP Parallel Port
DMA 4	Cascade for DMA #1
DMA 5	Reserved
DMA 6	Reserved
DMA 7	Reserved

INTERUPT CONTROLLER

IRQ	Function
IRQ 0	System timer output
IRQ 1	Keyboard
IRQ 2	Cascade for INTC #2
IRQ 3	Serial port #2
IRQ 4	Serial port #1
IRQ 5	Parallel port #2
IRQ 6	Floppy disk controller
IRQ 7	Parallel port #1
IRQ 8	Real time clock
IRQ 9	Software redirected to INT 0AH (IRQ 2)
IRQ 10	Reserved
IRQ 11	Reserved
IRQ 12	PS/2 Mouse
IRQ 13	Math Coprocessor (CPU Internal)
IRQ 14	Primary Hard disk
IRQ 15	Secondary Hard Disk
NMI	Parity Check Error

GLOSSARY

8-Bit Bus – Data is transmitted to expansion slots and other components on the bus only along 8 parallel data lines.

10Base-T – It is a 10Mbps IEEE 802.3/Ethernet standard that uses unshielded twisted pair cable specification. 10Base-T supports network configurations using the CSMA/CD access method over a twisted pair transmission system, up to a maximum of 100 meters in length without the use of a repeater.

16-Bit Bus or ISA Bus – Data is transmitted along either 8 or 16 data lines, depending on what kind of adapter card is used in an expansion slot. ISA is the abbreviation of Industry Standard Architecture.

100Base-TX – It is a 100Mbps IEEE 802.3/Ethernet standard that uses UTP cable. Also called Fast Ethernet, it uses RJ-45 connectors and EIA/TIA T568B pinning. Maximum cable length from hub to node is 100 meters without a repeater.

Adapter – It is also called an expansion board, expansion card, or adapter card. It is a small circuit board that is installed in the expansion slots on the motherboard. You can install a particular adapter that connects a new device such as internal modem, sound card, or scanner.

AGP (Accelerated Graphic Port) – is a 32-bit, 66MHz external frequency data bus that transmits data at a maximum of 528MB/s (4 times the speed of PCI transmission); this design improves the speed of large video transactions.

BIOS (Basic Input /Output System) – This is a chip on the motherboard that contains the instructions for starting up, or booting, the computer, and more.

Bus – Data that travels in a computer along the circuits on the motherboard are called buses. Although three main buses (data bus, address bus, and control bus) manage the computer's operation, these are often collectively called the bus. The bus carries instructions back and forth between the CPU and other devices in the system. ISA, EISA, VL-Bus, PCI and SCSI are examples of PC buses.

bps – Bits per second. Also often preceded by k (kilo/thousands), **kbps** – Kilobits per second, and M (mega/million), **Mbps** – Megabits per second.

Bps – Bytes per second. (1 Byte is 8 Bits) **kbps** – kilobytes per second. **Mbps** – megabytes per second.

Bus Mastering – A method of transferring data through a bus in which the device takes over the bus and directly controls the transfer of data to the computer's memory. Bus mastering is a method of Direct Memory Access (**DMA**) transfer.

Cache – Cache RAM is an extra holding area for program instructions that need to be frequently used by the CPU or swapped in and out of RAM. Your CPU can usually access those instructions from the cache more quickly than it could from a hard disk or even RAM, so a cache helps the system work more efficiently. Most systems sold today offer either 256K or 512K cache.

CPU (Central Processing Unit) – executes all commands and controls the flow of data, providing the “ brain ” that enables the PC to calculate and perform the operations like sorting information more quickly than a human could. The CPU makes perhaps the greatest contribution to a PC's speed and power. Note: Any additional information is subject to change without prior revision from the supplier.

Table 1 -- CPU Speeds

Processor type	Speed ratings (MHz)
Eden 4000	400

EIDE (Enhanced IDE) – It is a hard drive controller that enables your system to be able to handle fast hard disk drives at a speed of 10MBPS.

EISA or MCA Bus – Data is transmitted along 32 data lines to adapter cards designed specifically to work with the 32-bit buses. MCA expansion slots cannot accept 8-bit or 16-bit adapter cards. EISA stands for Extended Industry Standard Architecture, while MCA stands for MicroChannel Architecture. MCA is architecture used in IBM Microcomputer.

Expansion slots – Expansion slots are plug-in connectors that allow you to insert additional circuit boards that attach to the rest of the PC through special circuitry called the **bus**. By inserting the right circuit board -- usually called an **adapter** or an **expansion card** – you can increase the resolution and the number of colors used by the display, or you can transform your PC into a machine for recording and playing music.

Fast SCSI – The common nomenclature associated with SCSI-2, the second generation of SCSI offering mandatory parity checking improvements over SCSI-1.

IDE (Integrated Drive Electronics) – It was developed from ST-506 type hard drive interface, utilizes BIOS INT 13h hard drive secondary software and supports two hard drives (Master and Slave). Do not need extra software to drive since it is directly initiated in the BIOS. Data transfer rate is 4.1 Mbps. Take note that this interface cannot support other drives like the CD-ROM drive.

IEEE (Institute of Electrical and Electronic Engineers) – It is an international professional society that issues its own standards, and is a member of ANSI and ISO. Popular known standards is:

- IEEE802.3** – is a physical layer standard for 10Base-T, 100Base-T, Ethernet, and StarLAN.
- IEEE802.5** – is a physical layer standard for Token Ring.
- IEEE802.11** – is a physical layer standard for Wireless LAN/WAN compatibility.
- IEEE802.12** – is a physical layer standard for 100VG AnyLAN.

LAN (Local Area Network) – A data communications network spanning a limited area. It provides communications between three or more computers and peripherals, in most cases using a high-speed media as it' s backbone.

Keyboard – This is a component that comes in direct contact for you with your PC. The mechanism of keyboard converts a key cap' s movement into a signal sent to the computer. The most common key mechanisms are “ **capacitate** ” and “ **hard contact** ”.

Capacitate keyboard has a spring that causes the plastic and the metal plunger to move near two pads that have large plates (plated in tin, nickel, and copper). These pads are connected to the keyboard's printed circuit board. Hard contact keyboard causes the key cap to collapse a foam rubber dome that presses against a sheet of plastic on the bottom of which is metallic area connected to the rest of the keyboard's circuit board.

LDCM (LANDesk Client Manager) – With the help of LDCM, PCs that are either stand-alone or on a network can not escape the control of a system administrator. Alerts will be sent to the user if an abnormal condition is encountered in a PC. It allows the administrator to give each PC a thorough check-up. Additionally, this feature is available to multiple OS's on the market today. LDCM Key Features include the following : ←Health Monitoring , ↑Real-Time Alerting , →Remote Accessibility, ↓Extensive Instrumentation. This is a product from Intel.

Mouse – Xerox Corporation first developed the concept of a pointing device, something a computer user could move with his or her hand, causing a corresponding move on screen. Because of its size and tail like cable, the device was named a mouse. Apple Computer made the mouse a standard feature of its Macintosh computers, and with the popularity of Windows, a mouse is becoming standard equipment on all PCs, as well. The “ **Trackball** ” provides an easier method of navigating than with the keyboard. “ **Digitizing tablets** ” are popular with architects and engineers who must translate precise movements of a pen into lines on the screen. “ Touch screens “ , on which you press either your finger or special light pen to control the software, are too tiring to use for any length of time.

MMX[®] – CPU's with MMX[™] technology are optimized to run multimedia application, and therefore, offer faster multimedia playback than standard CPUs.

Parallel port – Parallel ports (labeled **LPT1**, **LPT2**, and so on) are usually used for plugging in printers. The term **Centronics port** – has been almost synonymous with **printer port**. Although a serial port can also be used to send data from a PC to some models of printers, the parallel port is faster. A serial port sends data one bit at a time over a single one-way wire; a parallel port can send several bits of data across eight parallel wires simultaneously. Take note that a serial connection sends a single bit, a parallel port send an entire byte.

PCI Bus (Peripheral Component Interconnect) – It is a connection slot in a motherboard that supports 32-bit bus transfer rates. The now standard PCI Local Bus carries data along at least 32 lines, that is, at least 32 bits at a time. Local bus computer designs add special buses so the CPU can communicate directly with key components like the monitor, resulting in much better performance. You should look for PCI local bus capabilities in any system you buy, especially PCI local bus video (which helps the monitor display more quickly).

POST (Power-On Self-Test) – is the first thing your PC does when you turn it on, and it's your first warning of trouble with any of the components. When the POST detects an error from the display, memory, keyboard, or other basic components, it produces an error warning in the form of a message on your display and—in case your display is part of the problem—in the form of a series of beeps.

RAM (Random Access Memory) – consists of a bank of chips that act as “ working memory ”, holding program instructions and data only while your computer's on. Unless the instructions and data are saved to a disk, RAM forgets them when you turn your computer off. RAM is measured in megabytes (M). Most computers today come with 64M of RAM, though some sell with only 32M installed. There are a few different types and speeds of RAM, as well. One of the most prominent today is Extended Data Output (EDO) RAM, but an even faster type of RAM that has just hit the market is called **SyncDRAM**.

Serial port – Serial ports are also sometimes called **COM** (short for COMmunications) ports, and are labeled **COM1**, **COM2**, and so on. It is simple in concept: one line to send data, another line to receive data, and a few other lines to regulate how data is sent over the other two lines – uses range from commonplace modems and printers to plotters and burglar alarms. The most common use for serial port is with a **mouse** or **modem**. The reason for this is that a serial port is not a very efficient way to transfer data, so little data that speed is not crucial, and perfect for modems because, with current technology, phone lines cannot transport more than one signal at a time anyway. The **serial port** is often referred to as an **RS-232 port**.

SCSI (Small Computer System Interface) – An intelligent bus for transmitting data commands between a variety of devices. There are many implementations of SCSI, including Fast SCSI, Wide SCSI, Fast Wide SCSI, Fast-20, and Fast-40.

SCSI-2 – The second generation of SCSI; includes many improvements to SCSI-1, including Fast SCSI, Wide SCSI, and mandatory parity checking.

SCSI-3 – The third generation of SCSI; introduces Fast-20 and Fast-40 as improvements to the parallel bus. The standard also includes a number of specifications for high-speed serial bus architectures such as SSA, Fiber Channel, and IEEE 1394. Also known as Ultra SCSI.

Ultra SCSI – Also known as SCSI-3, is a third generation SCSI standard that introduced parallel bus speed improvements (FAST-20 and FAST-40), and the miniaturized 68-pin micro connector.

USB (Universal Serial Bus) – USB consolidates serial, parallel, keyboard, mouse, and game ports into one asynchronous and isochronous communications port with bandwidth for data transfer speeds up to 12 Mbps without termination. By daisy-chaining USB hubs, up to 127 I/O devices can be connected to one USB port on the PC. USB is completely plug-and play meaning peripherals can be correctly detected and configured automatically as soon as they are connected.

UTP (Unshielded Twisted Pair) – Twisted pair cable with neither individual nor overall shielding. **Twisted Pair** are two wires twisted together to reduce susceptibility to RF crosswalk.

VGA (Video Graphics Array) – A video adapter that supports 640x480 pixels color resolution. The Windows OS provides medium text & graphics standard.

VL-Bus – It is also known as Local Bus; this is an I/O interface that is directly connected to and dependant on the system CPU. The VL-Bus is an abbreviation of VESA Local Bus.

Terms and Conditions

Date:1997.10.20

Warranty Policy

1. All products are warranted against defects in materials and workmanship for a period of two years from the date of purchase by the customer.
2. The buyer will bear the return freight charges for goods that are returned for repair within the warranty period whereas manufacturer will bear the return to user freight charges after repair.
3. The buyer will pay for repair (for the replaced materials 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 the customer expense.
5. The following conditions are excluded from this warranty :
 - A. Improper or inadequate maintenance by the customer.
 - B. Unauthorized modification or misuse.
 - C. Operation outside of the environmental specifications for the product.

RMA Service

1. **Request a RMA#:**

Complete and fax to Supplier the "RMA Request Form" to obtain a RMA number.

2. **Shipping:**

- A. The customer is requested to fill up the problem code as listed . If none of the code is selected, please write the symptom description on the remark.
- B. Ship the defective units with freight prepaid.
- C. Mark the RMA # clearly on the box.
- D. Shipping damage as a result of inadequate packing is the customer's responsibility.
- E. Use the original packing materials whenever possible .

3. **All RMA# are valid for 30 days only:**

When RMA goods are received after valid RMA# period , the goods will be rejected.

RMA Service Request Form

When requesting RMA service, please fill out this "RMA Service Request Form".

Without this form your RMA will be REJECTED!!!

RMA No:	Reasons to Return:	Repair(Please include failure details)	Testing Purpose
Company:	Contact Person:		
Phone No.	Purchased Date:		
Fax No.:	Applied Date:		
Return Shipping Address: _____			
Shipping by: Air Freight Sea Express : _____ 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 Signatures / Date

Authorized Signatures / Date