BIRCH®

CARiSMA

Small foot print & Elegant

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TRADEMARK

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Specifications

Main Board

CPU

IT7000V0-15	Intel® Pentium® Processor 2117U (2M Cache, 1.80 GHz)
Chipset	Intel® HM70 Express
System Memory	Socket-type RAM device, 204PIN SO-DIMM DDR3 1333 / 1600 RAM, up to 8GB
Graphic Memory	Shared system memory up to 256MB

LCD Panel

IT7000V0-15

Panel Size	15”
Maximum Resolution	1024 x 768
Brightness	250 cd/m1
Contrast Ratio	600 : 1
Response Time	8 ms
View Angles (H/V)	160 / 160
Touch Panel	Five Wires Resistive

Storage

HDD	2.5” SATAIII interface

Expansion

Socket	One Mini-PCIE or One Msata II

Power

Power Adaptor	Input AC 100-240V 2.5A 50/60Hz, Output DC 12V 6.66A

I / O

USB	Six
Serial	Four COM ports with RJ-45 Connector
	Pin 9 with 5V / 12V power selectable
Parallel	One LPT with adaptor cable
LAN	One
2nd VGA Output	One with optional adaptor cable
PS/2	One

Audio	One Earphone & One Microphone
Cash Drawer	One with optional adapter

Control/Indicator

Power Button	One
LED Indicators	Power (Green), HDD (Red), LAN(Orange)

Optional Peripherals

Magnetic Card Reader	ISO Track 1/2/3, USB interface
VFD customer display	20 x 2 characters, RS-232 interface

Dimensions

IT-7000V0-15	358(W) X 367(L) X 173(H) mm

Environment

Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)
Storage Temperature	- 20°C ~ 60°C (- 4°F ~ 140°F)
Operating Humidity	10% - 80% RH non condensing
Storage Humidity	10% - 80% RH non condensing

Model Number

IT7000VX – SS Intel® Pentium® Processor 2117U

X : M --- Shinny Black housing

Q --- Dull Black housing

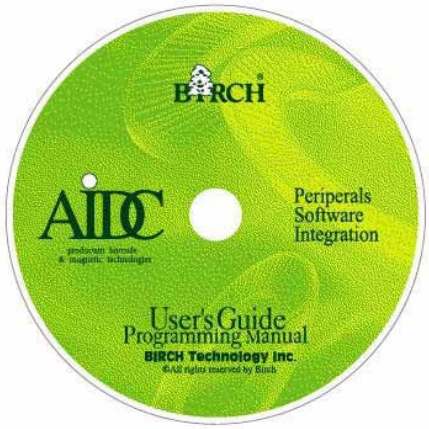
W – Shinny White housing

SS: 15 --- 15” TFT LCD

Items Checklist

If any item is missing, please contact your sale agent immediately.

Take the system unit out from the carton. Remove the unit by carefully holding the foam inserts and remove slowly to protect the system. The following items should be found in the carton:



1. CD that including all driver and manual

2. The System

. Power Adaptor

4. AC Power Cord

5. Printer Port conversion cable

6. Two RS-232 port conversion cables

About Your System

Please unplug the AC power of the adapter before opening any part of the system. Since the standby power is always on after the adapter is plugged in. It may cause permanent damage to your svstem when you open any part of it.

Front View

Rear View

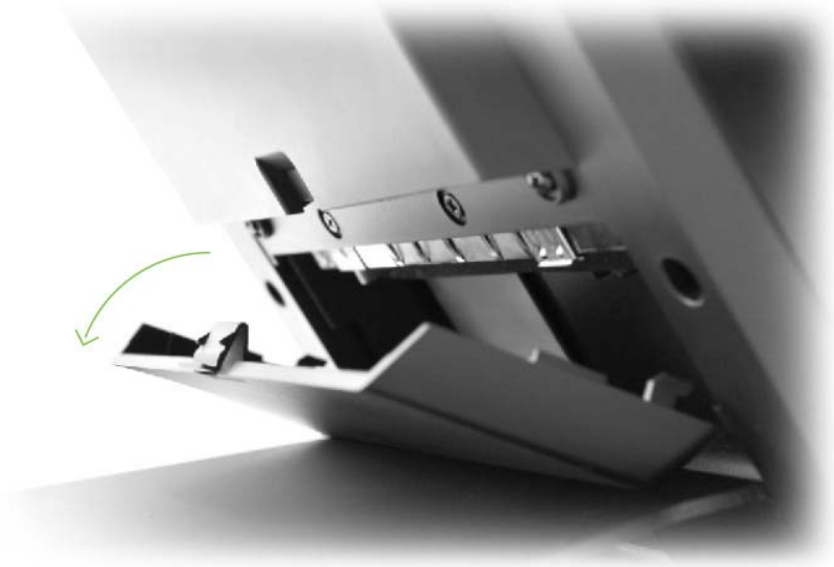
How to open the connector bezel

Please unplug the AC power of the adapter before opening any part of the system.

Since the standby power is always on after the adapter is plugged in.

It may cause permanent damage to your system when you open any part of it.

As illustrated in the following,



The connector panel

Please notice that all Four COM ports using RJ-45 connector and two RJ-45 to DB-9 conversion cables are provided in the package.

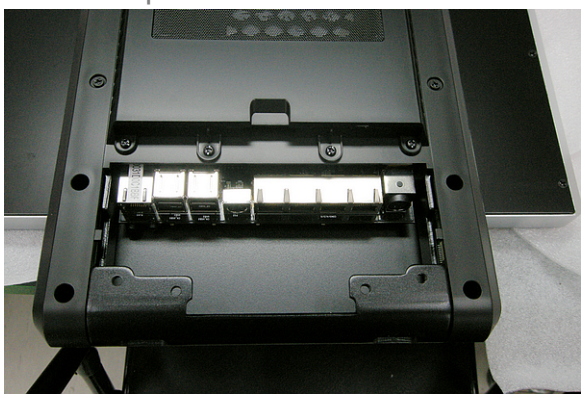
Please notice that the Printer and VGA connectors in the second level, using JST PHD pitch 1.25 type connectors. The package includes a Printer Port adapter cable to connect to this connector and a centronic connector. The VGA, Audio adapter is optional accessory.

Setting Up Your System

Please unplug the AC power of the adapter before opening any part of the system. Since the standby power is always on after the adapter is plugged in. It may cause permanent damage to your system when you open any part of the system.

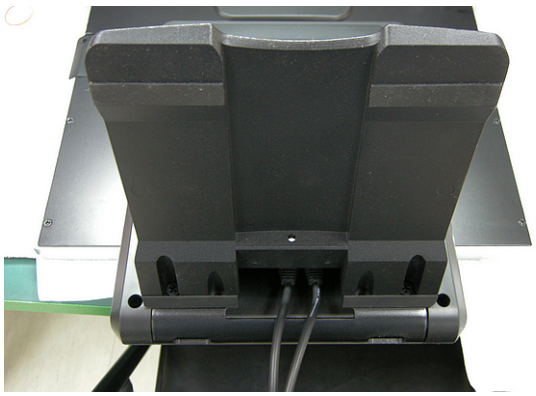
Installing Peripherals

To install the peripheral's cables, please follow the method described below.
It will make the process much easier.



1. Turn the system upside down and Open the cable cover as mentioned in the former chapter.

2. Plug in the cables



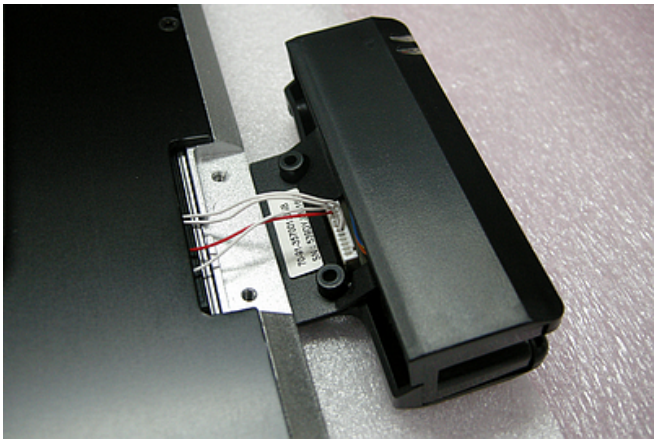
3. Lock the metal foot

4. Turn the system back to normal direction and let the cables coming out from the opening of the bottom stand.
5. Then close the cable cover.

Installing Magnetic Card Reader (MSR)

1. Turn the system upside down

2. Open the cover of MSR cable



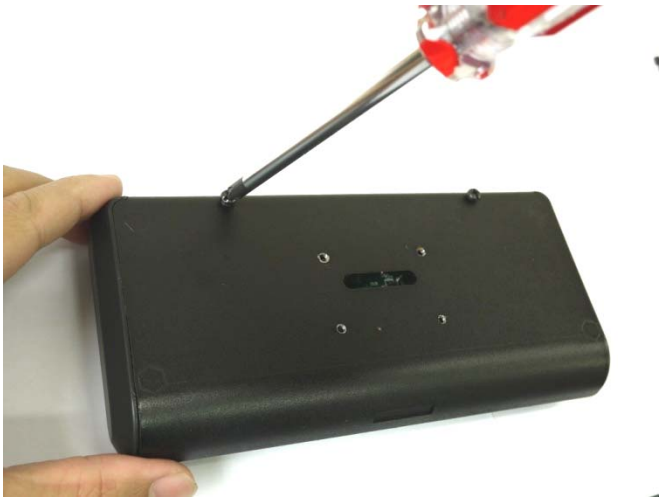
3. Connect the cable to MSR

4. Lock the screw to mount MSR

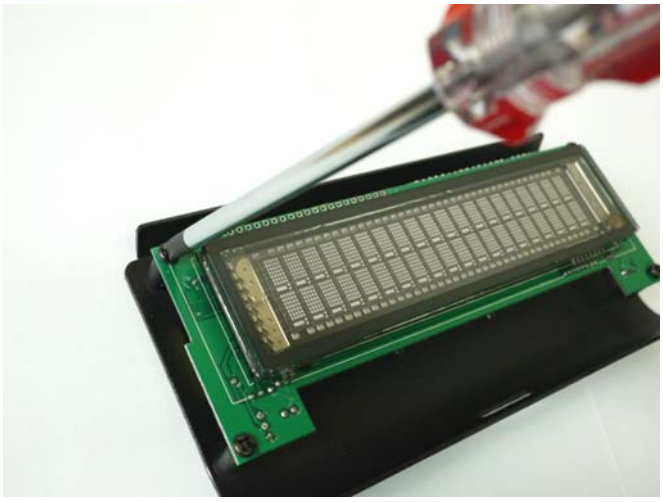
Installing Customer Display

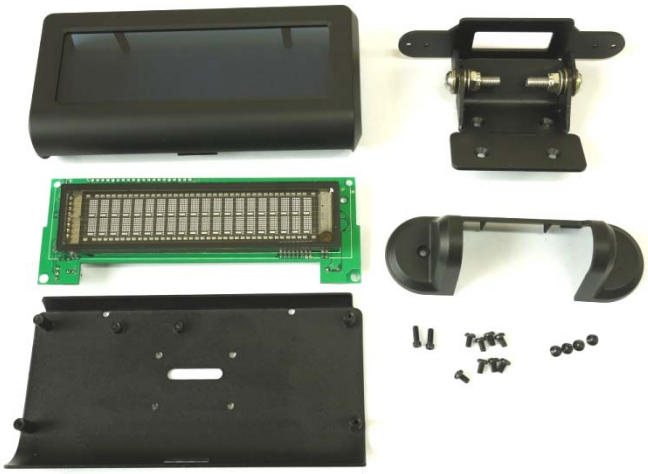
1. Release Four screw on the back of VFD module

2. Release Two screw



3. Release the screws on the VFD module





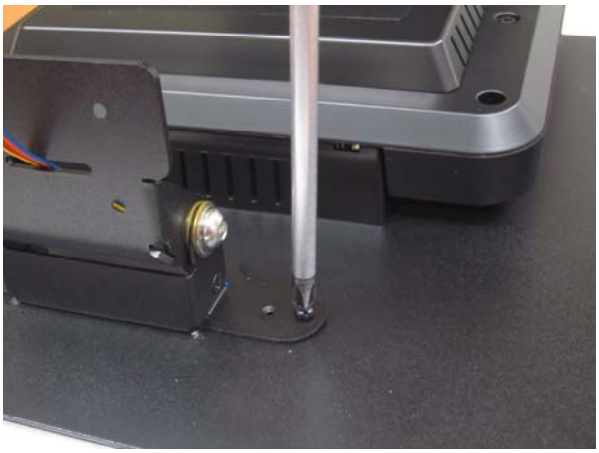
4. Release the VFD board

5. Turn the system upside down

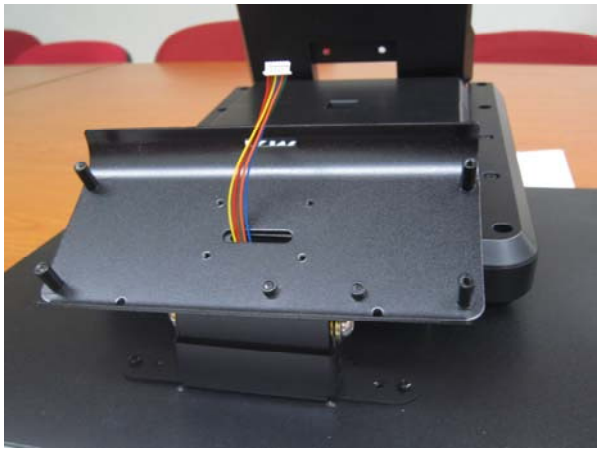
6. Open the VFD cover by fingernail

7. Pass the signal line through the middle of the lower hinge mount hole

8. Pass the signal line through the middle of the upper of hinge mount hole



9. Lock the hinge mount by screw



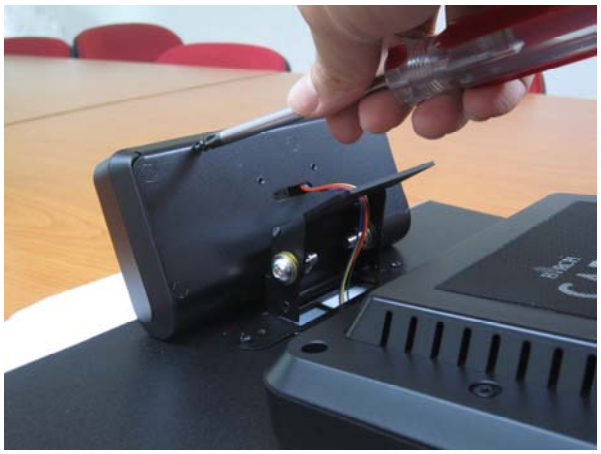
10. Pass the signal line through the middle of the VFD base

11. Connect the signal line with VFD board

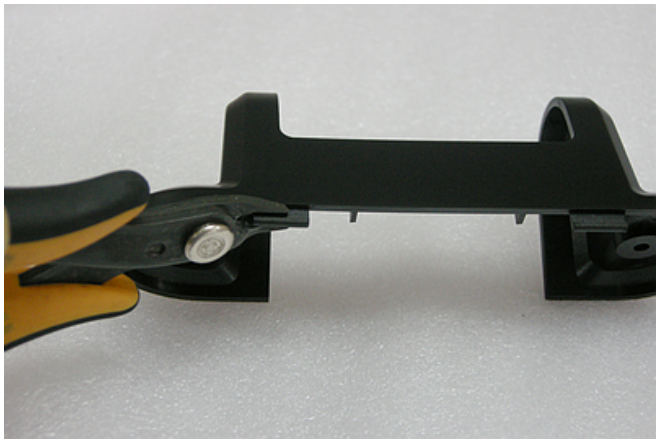
12. Lock the VFD board by screws

13. Close the VFD cover

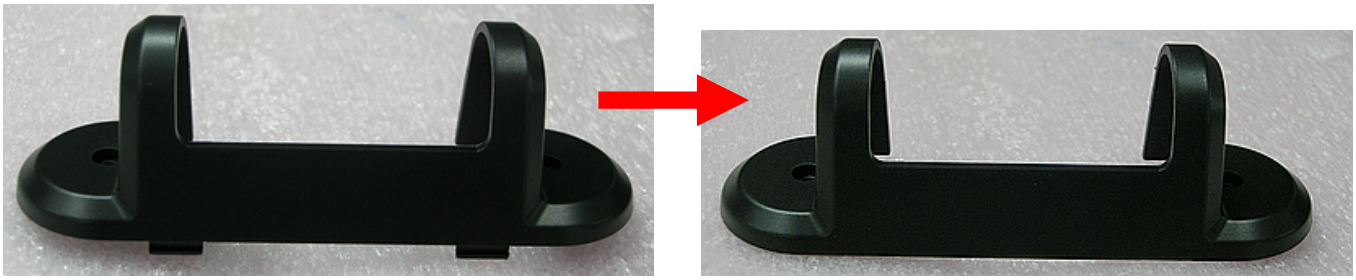
Attention: Make sure latches are securely



14. Lock the VFD cover with VFD base



15. Cut two plastic sheets



16. Install hinge cover

17. Lock the hinge cover by screw

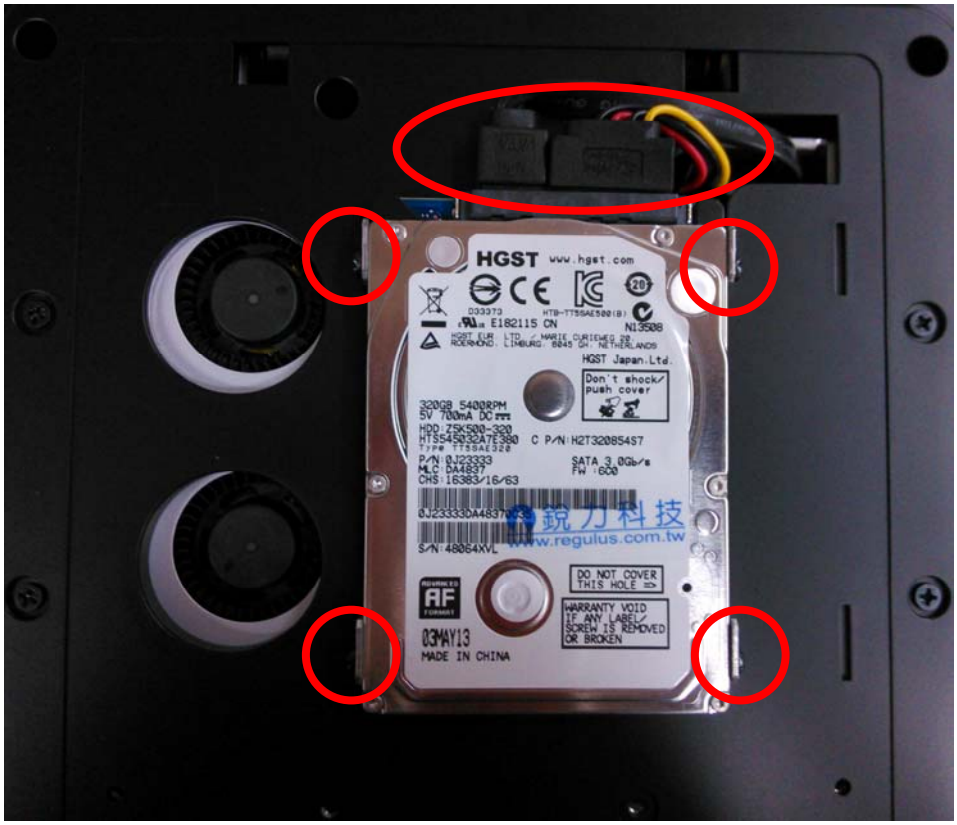
18. Lock the VFD module with hinge mount

19. Taped

Installing Hard Disk

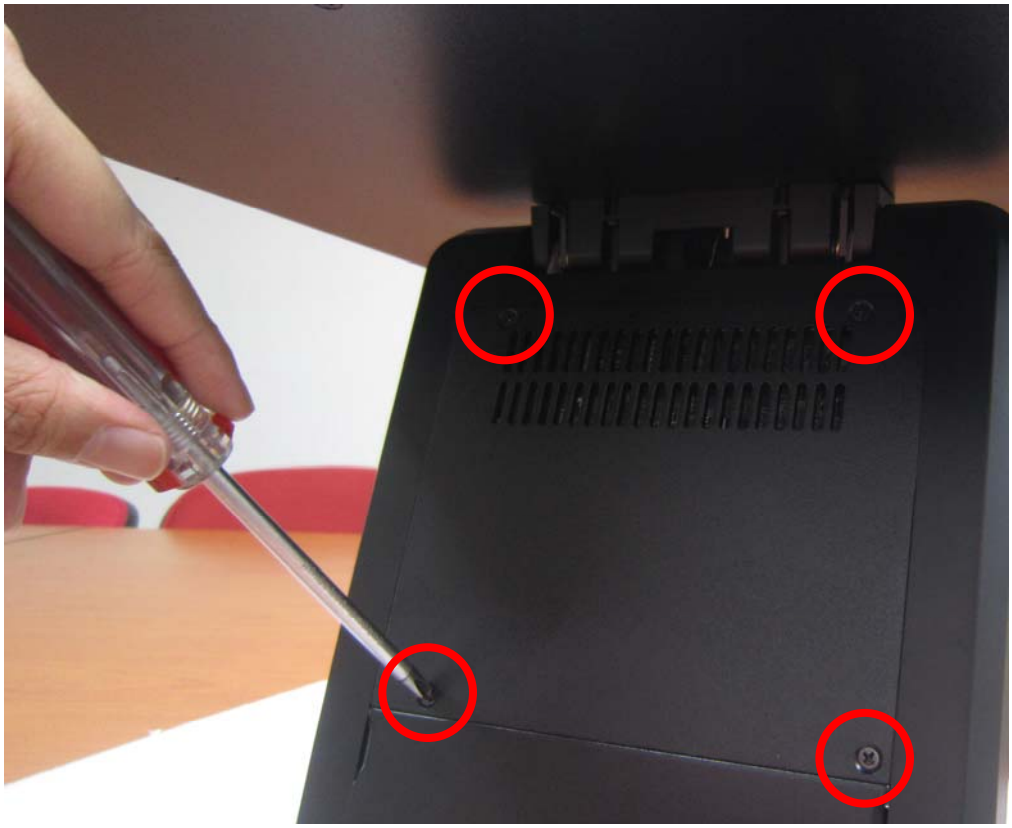
Please unplug the AC power of the adapter before opening the hard disk cover. Since the standby power is always on after the adapter is plugged in. It may cause permanent damage to your system when you open any part of the system.

1. Release these two screws of the hard disk cover.



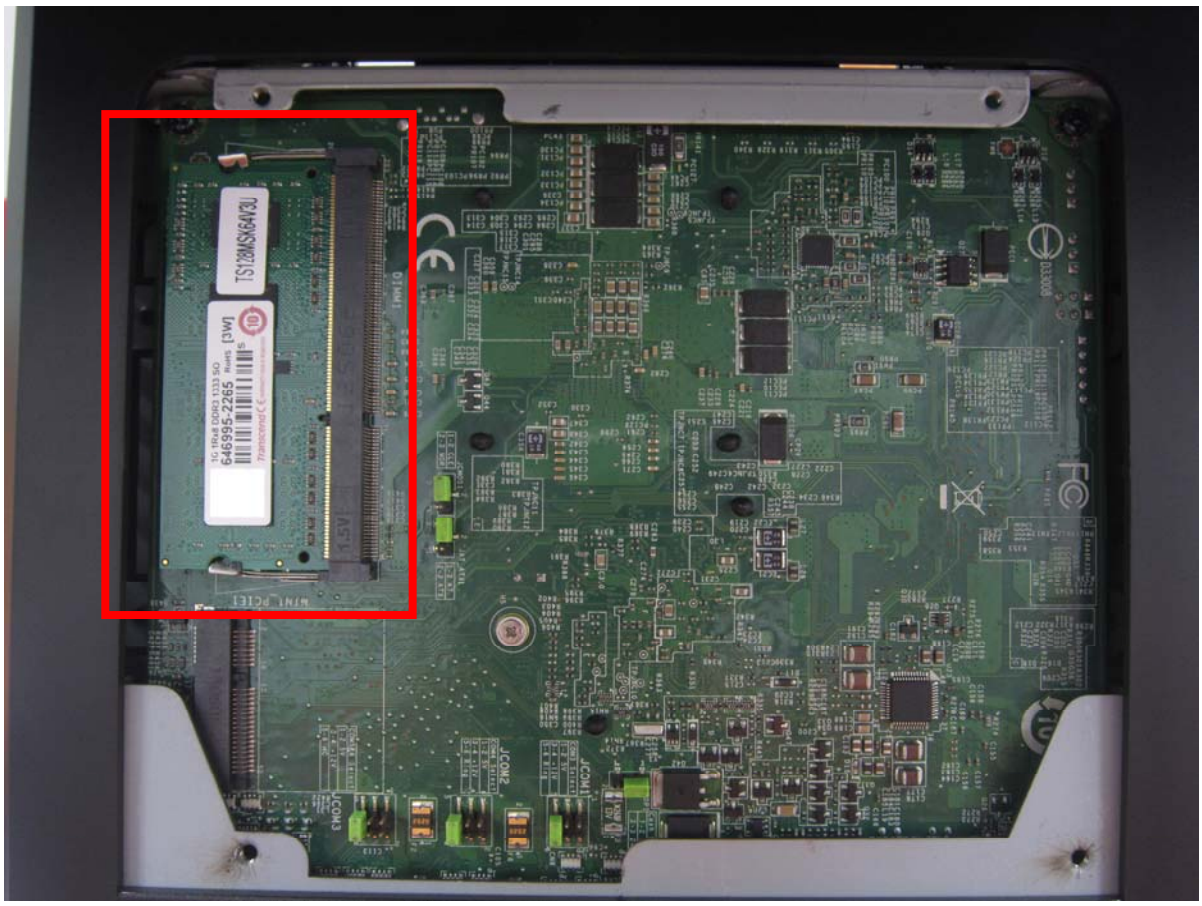
2. After remove the hard disk cover, you will find the 2.5” hard disk

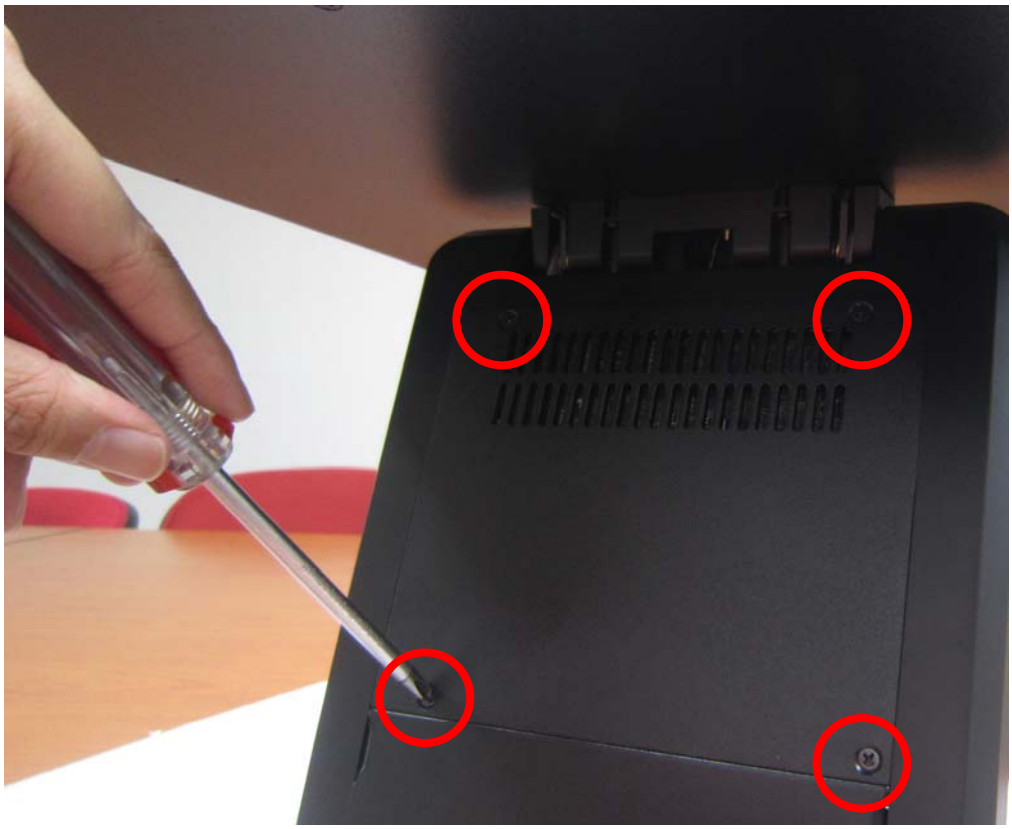
Installing RAM



1. Release the four screws in the front housing.

2. Sometime, if the CPU front panel is too tight, it is easier to use a tweezers as a hook to pull the panel out.





3. After changing RAM module, please lock the four screws for front housing

Introducing BIOS

Notice! The BIOS options in this manual are for reference only. Different configurations may lead to difference in BIOS screen and BIOS screens in manuals are usually the first BIOS version when the board is released and may be different from your purchased motherboard. Users are welcome to download the latest BIOS version form our official website.

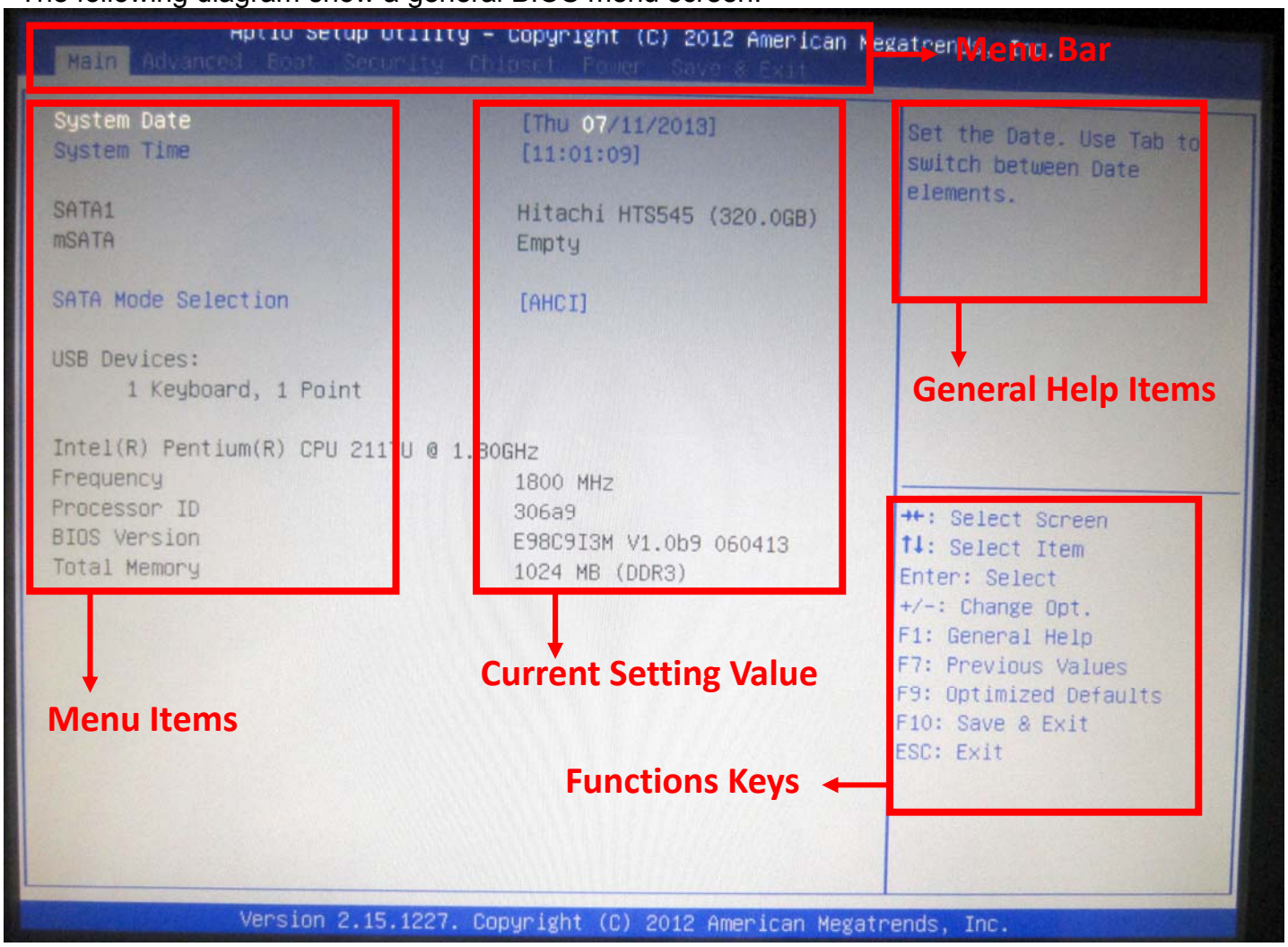
The BIOS is a program located on a Flash Memory on the motherboard. This program is a bridge between motherboard and operating system. When you start the computer, the BIOS program will gain control. The BIOS first operates an auto-diagnostic test called POST (power on self test) for all the necessary hardware, it detects the entire hardware device and configures the parameters of the hardware synchronization. Only when these tasks are completed done it gives up control of the computer to operating system (OS). Since the BIOS is the only channel for hardware and software to communicate, it is the key factor for system stability, and in ensuring that your system performance as its best.

Entering Setup

Power on the computer and by pressing <Del> immediately allows you to enter Setup. If the message disappears before your respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the “RESET” button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt> and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to Press **<Del>** to enter Setup

BIOS Menu Screen

The following diagram show a general BIOS menu screen:



Function Key

In the above BIOS Setup main menu of, you can see several options. We will explain these options step by step in the following pages of this chapter, but let us first see a short description of the function keys you may use here:

- Press←→ (left, right) to select screen
- Press ↑↓ (up, down) to choose, in the main menu, the option you want to confirm or to modify.
- Press <Enter> to select.
- Press <+>/<–> keys when you want to modify the BIOS parameters for the active option.
- [F1]: General help.
- [F2]: Previous value.
- [F3]: Optimized defaults.

- [F4]: Save & Reset.
- Press <Esc> to quit the BIOS Setup.

Getting Help

Main Menu

The on-line description of the highlighted setup function is displayed at the top right corner the screen.

Status Page Setup Menu/Option Page Setup Menu

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window, press <**Esc**>.

Menu Bar

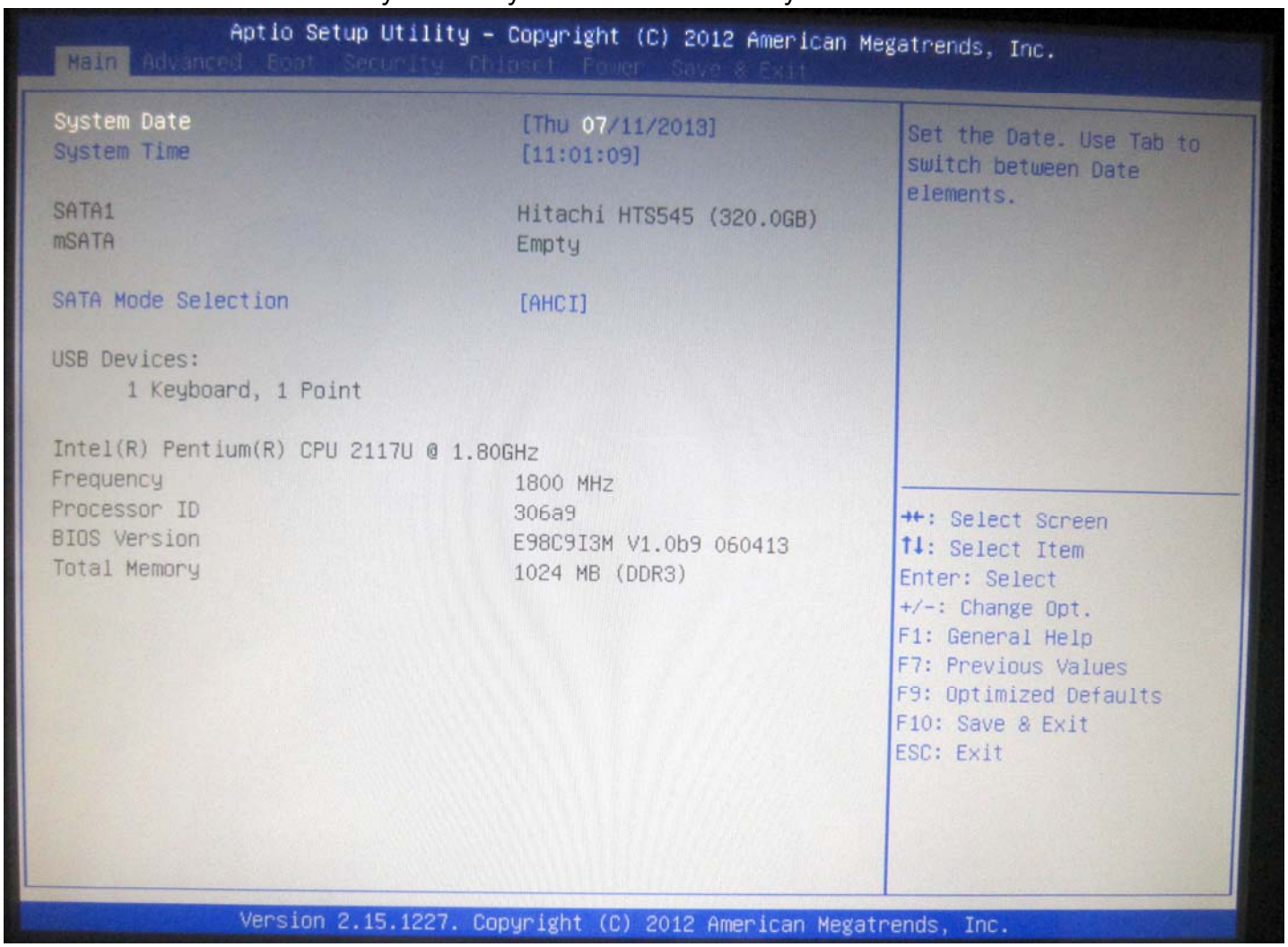
There are six menu bars on top of BIOS screen:

Main	To change system basic configuration
Advanced	To change system advanced configuration
Chipset	To change chipset configuration
Boot	To change boot settings
Security	Password settings
Save & Exit	Save setting, loading and exit options.

User can press the right or left arrow key on the keyboard to switch from menu bar. The selected one is highlighted.

Main Menu

Main menu screen includes some basic system information. Highlight the item and then use the <+> or <-> and numerical keyboard keys to select the value you want in each item.



System Date

Set the date. Please use [TAB] to switch between data elements.

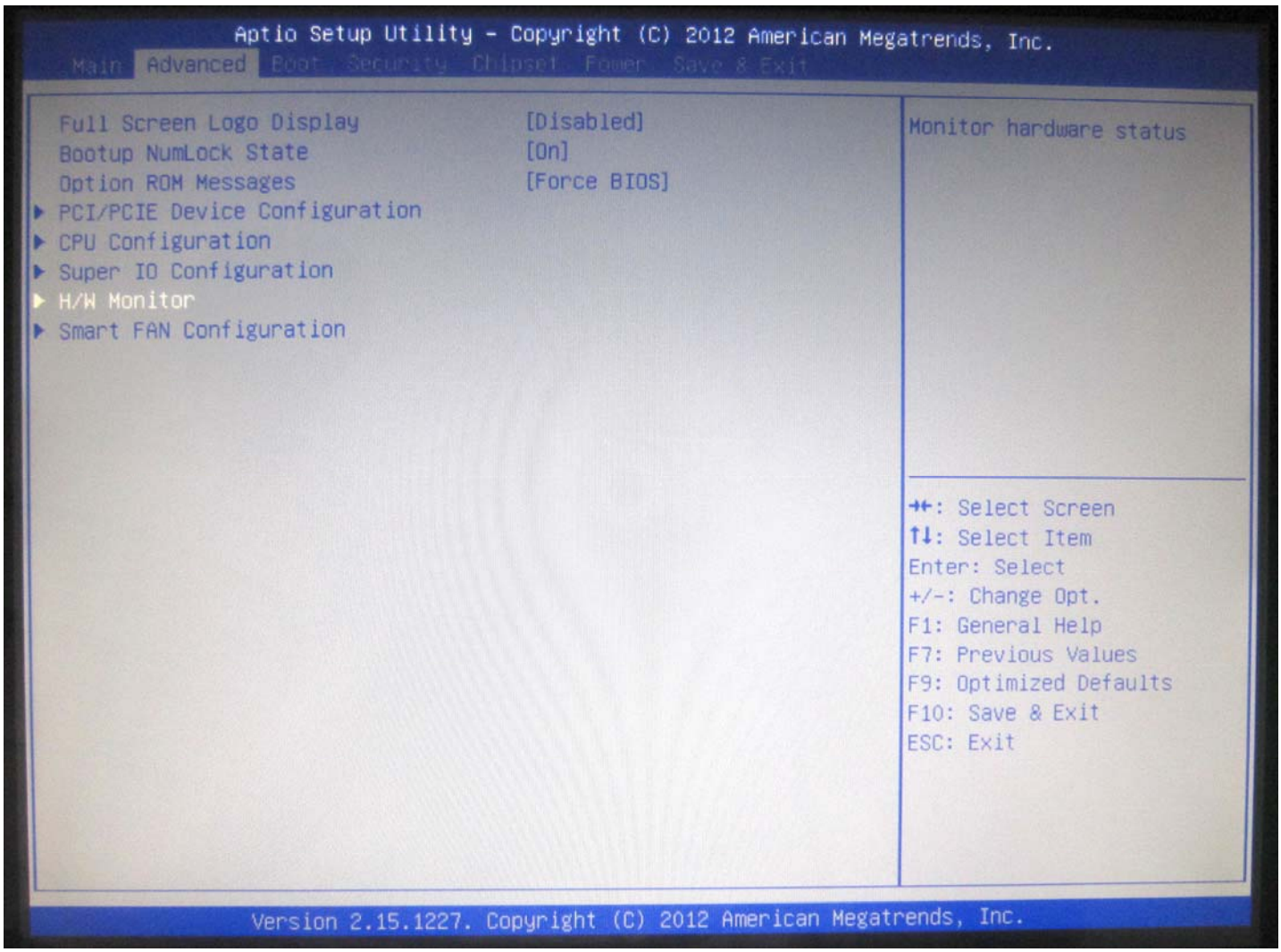
System Time

Set the time. Please use [TAB] to switch between time elements.

SATA Mode Selection

Set SATA Mode. Please use [TAB] to switch between time elements.

Advanced Menu



Full Screen logo Display

Enables or disables Quiet Boot option.

Bootup Numlock State

Select the keyboard Number Lock State.

Option ROM Messages

Set display mode for Option ROM

PCI/PCIE Device Configuration

PCI, PCI-X and PCI Express Settings

PCI Latency Timer

Value to be programmed into PCI Latency Timer Register

EHCI1

Control the USB EHCI (USB 2.0) functions. One EHCI controller must always be enabled.

EHCI2

Control the USB EHCI (USB 2.0) functions. One EHCI controller must always be enabled.

Legacy USB Support

Enables Legacy USB support.

Audio Controller

Control Detection of the Audio Controller.

Launch Onboard Lan OpROM

Enables or Disable Boot Option for Legacy Network Devices.

Mini-PCIe Slot

Select Mini-PCIe or mSATA mode for Mini-PCIe Slot.

CPU Configuration

CPU Configuration Parameters.

Active Processor Cores

Number of cores to enable in each processor package.

Execute Disable Bit

XD can prevent certain classes of malicious buffer overflow attacks when combined with a supporting OS.

Intel Virtualization Technology

When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.

EIST

Enable/Disable Intel SpeedStep.

Super IO Configuration

System Super IO Chip Parameters

Serial Port 1

Use this item to enable or disable serial port.

Change Settings

Use this item to select an optimal setting for super IO device.

Serial Port 2

Use this item to enable or disable serial port.

Change Settings

Use this item to select an optimal setting for super IO device.

Serial Port 3

Use this item to enable or disable serial port.

Change Settings

Use this item to select an optimal setting for super IO device.

Serial Port 4

Use this item to enable or disable serial port.

Change Settings

Use this item to select an optimal setting for super IO device.

Serial Port 5

Use this item to enable or disable serial port.

Change Settings

Use this item to select an optimal setting for super IO device.

Serial Port 6

Use this item to enable or disable serial port.

Change Settings

Use this item to select an optimal setting for super IO device.

Parallel Port

Use this item to enable or disable parallel port (LPT/LPE).

Change Settings

Select an optimal setting for Super IO device.

Device Mode

Change the Printer Port mode.

FIFO Mode

Set FIFO Mode.

Shared IRQ Mode

Level/Edge.

Watch Dog Timer

Watch Dog Timer.

H/W Monitor

Monitor hardware status

Thermal Shutdown

Use this item to enable or disable thermal shutdown.

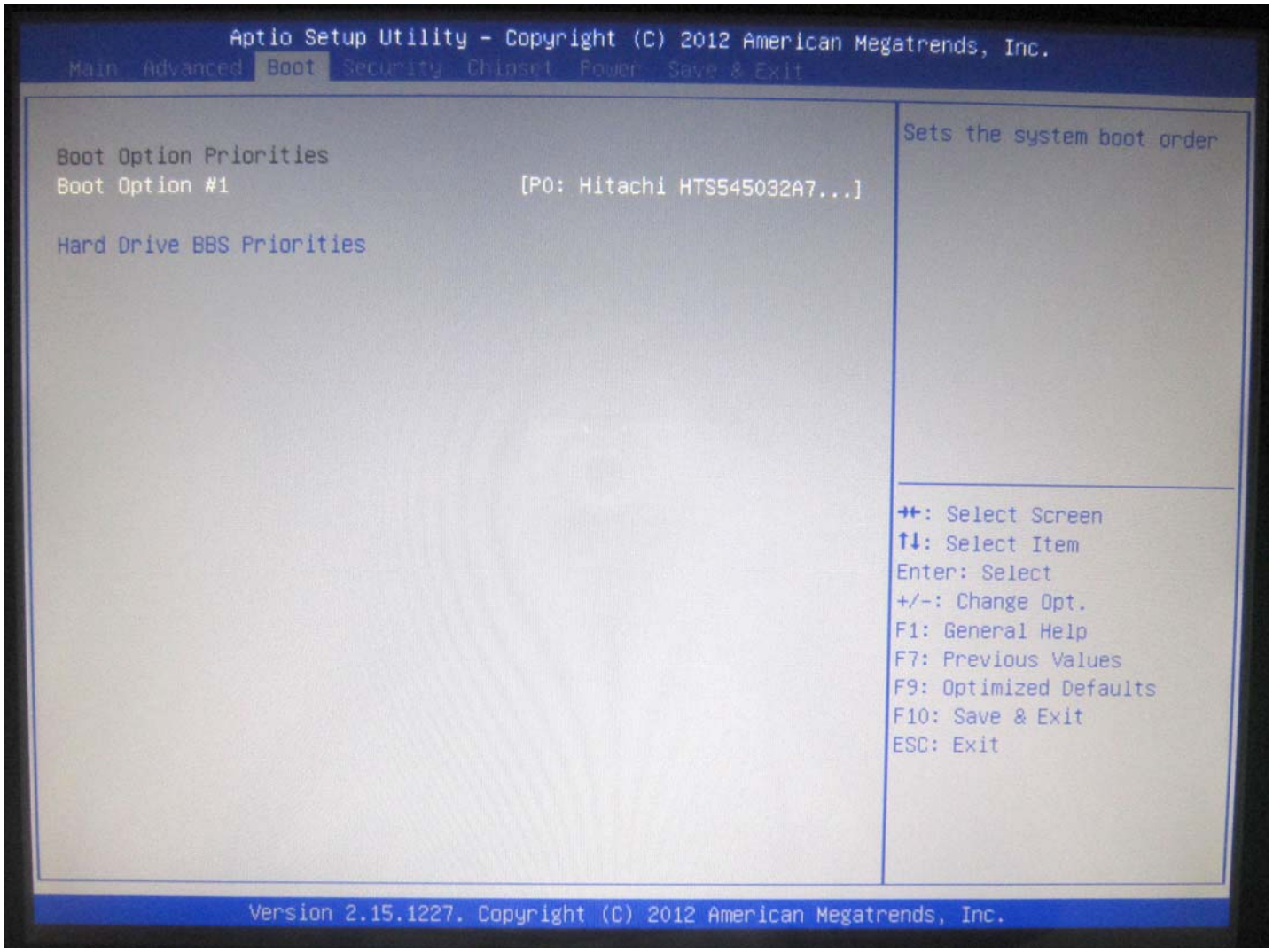
Smart FAN Configuration

Smart FAN Configuration

Smart CPUFAN1 and CPUFAN2

Use this item to enable or disable FAN function.

Boot Menu



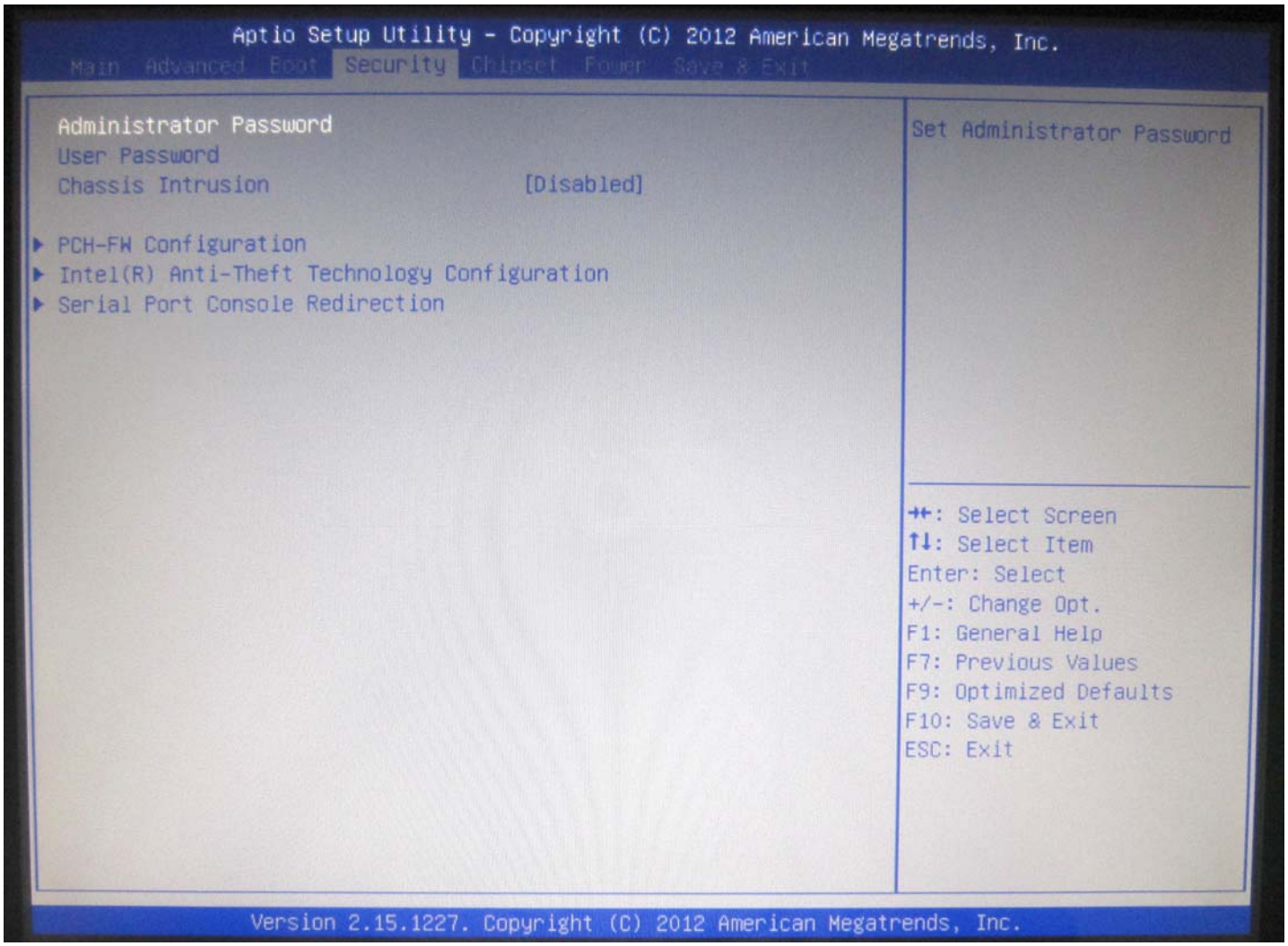
Boot Option #1

The optional settings are: [Windows Boot Manager]; [Disabled].

Hard Drive BBS Priorities

Set the order of the legacy devices in this group.

Security Menu



Security menu allow users to change administrator password and user password settings.

PCH-FW Configuration

Configure Management Engine Technology Parameters.

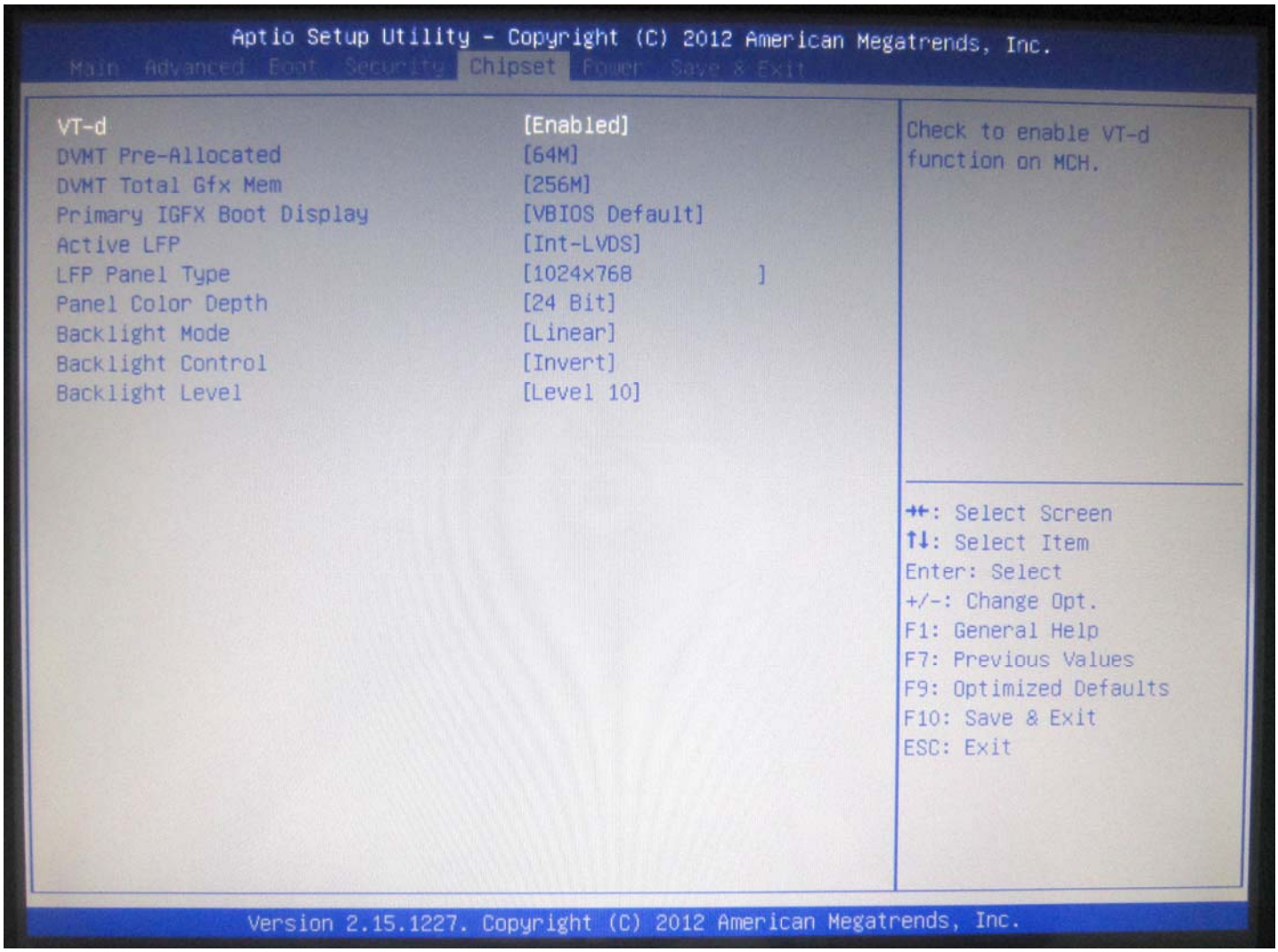
Intel(R) Anti-Theft Technology Configuration

Disabling Intel(R) AT Allow user to login to platform. This is strictly for testing only. This does not disable Intel(R) AT Services in ME.

Serial Port Console Redirection

Serial Port Console Redirection.

Chipset Menu



VT-d

Enables or disables VT-d function on MCH.

DVMT Pre-Allocated

Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device.

DVMT Total Gfx Mem

Select DVMT 5.0 Total Graphic Memory size used by the internal Graphics Device.

Primary IGFX Boot Display

Select the Video Device which will be activated during POST

Active LFP

Select the Active LFP Configuration.

LFP Panel Type

Select internal panel type.

Panel Color Depth

Select internal panel color depth.

Backlight Mode

Backlight Mode Selection

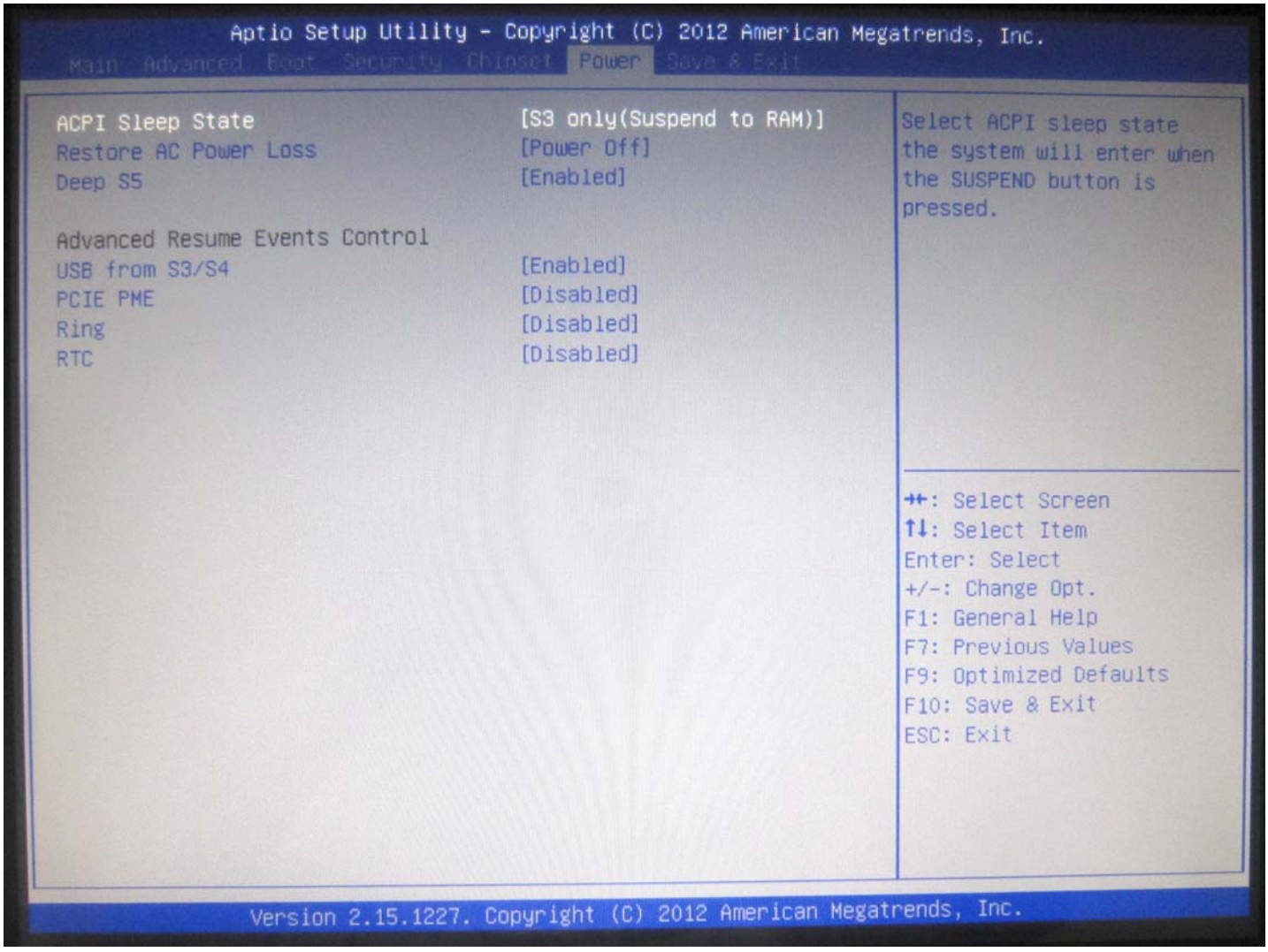
Backlight Control

Backlight Control Selection

Backlight Level

Backlight Level Selection

Power Menu



ACPI Sleep State

Select ACPI sleep state the system will enter when the SUSPEND button is pressed.

Restore AC Power Loss

Select AC power state when power is re-applied after a power failure.

Deep S5

Configure the DeepSx Mode Configuration.

Advanced Resume Events Control

USB from S3/S4

Main switch Resume on USB from S3/S4

PCIE PWE

Resume on PCIE PME.

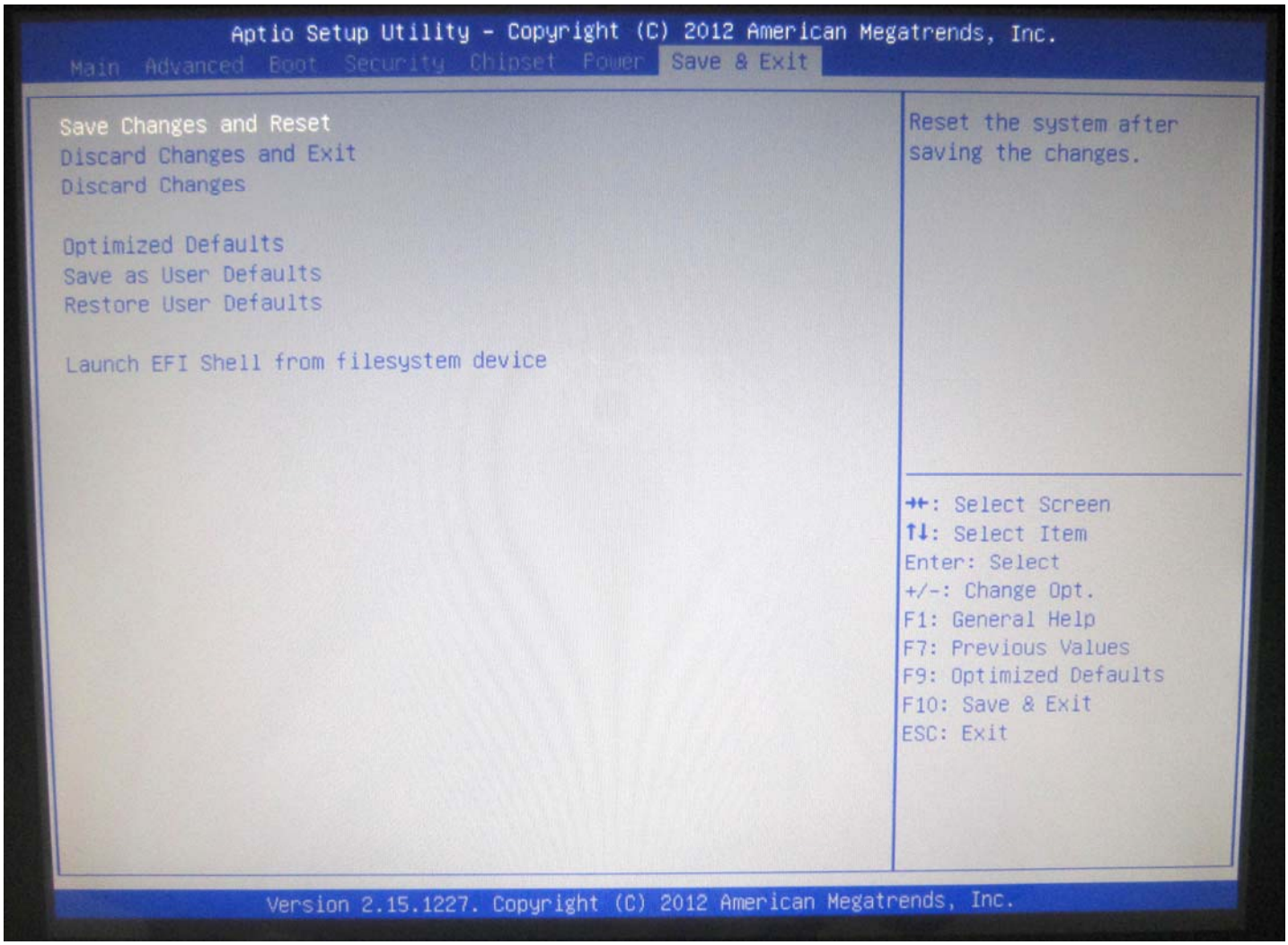
Ring

Enabled or Disabled Wake On Ring.

RTC

Enable or Disable System wake on from S3/S4/S5 alarm event.

Save & Exit Menu



Save Changes and Reset

This item allows user to reset the system after saving the changes.

Discard changes and Reset

This item allows user to reset the system without saving any changes.

Discard changes

Discard changes done so far to any of the setup options.

Optimized Defaults

Use this item to restore /Load default values for all the setup options.

Save as User Defaults

Use this item to save the changes done so far as user defaults.

Restore User Defaults

Use this item to restore defaults to all the setup options.

Launch EFI Shell from filesystem device

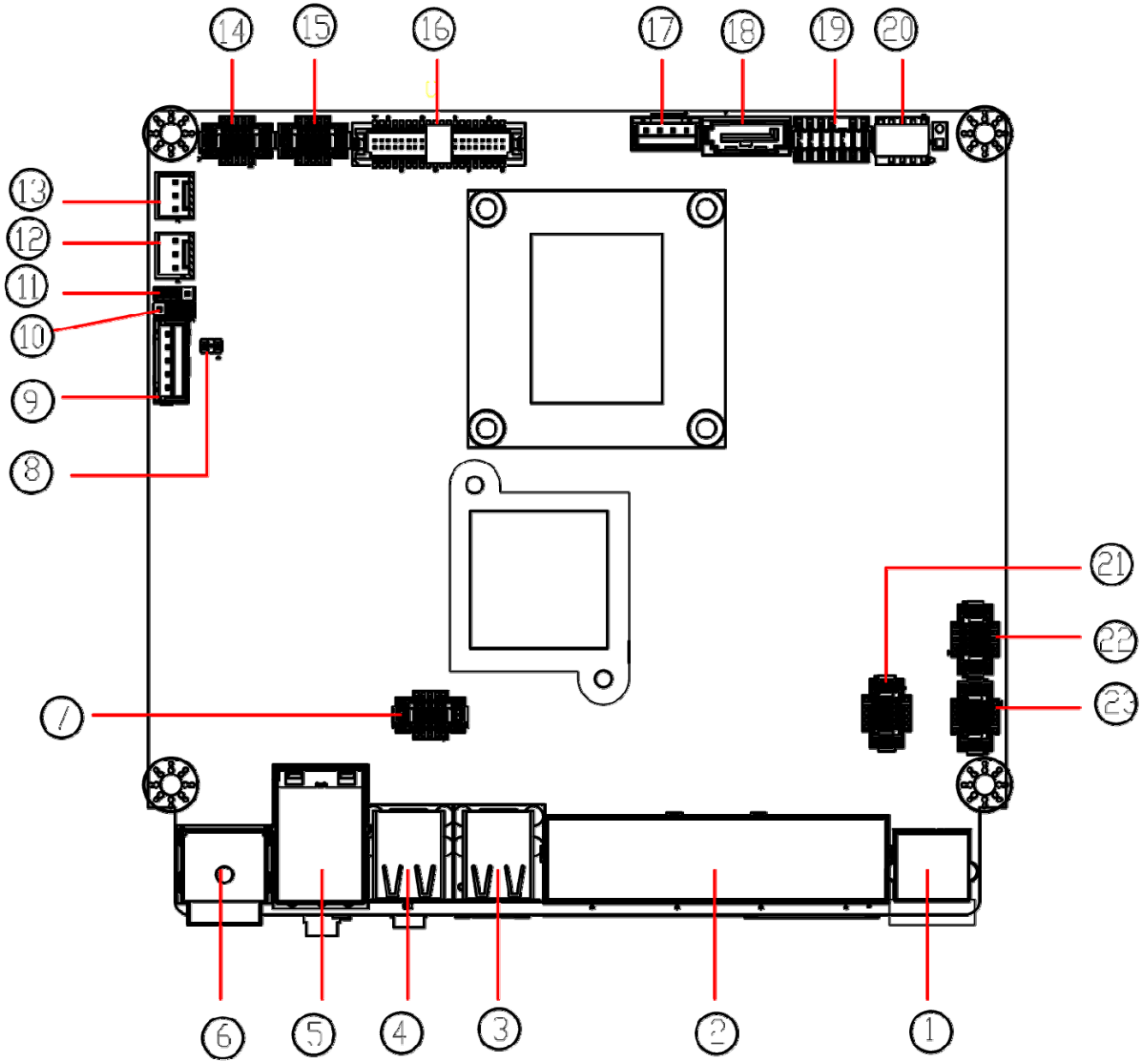
This item is used for attempts to launch EFI shell application from one of the available file system devices.

Main Board Setting

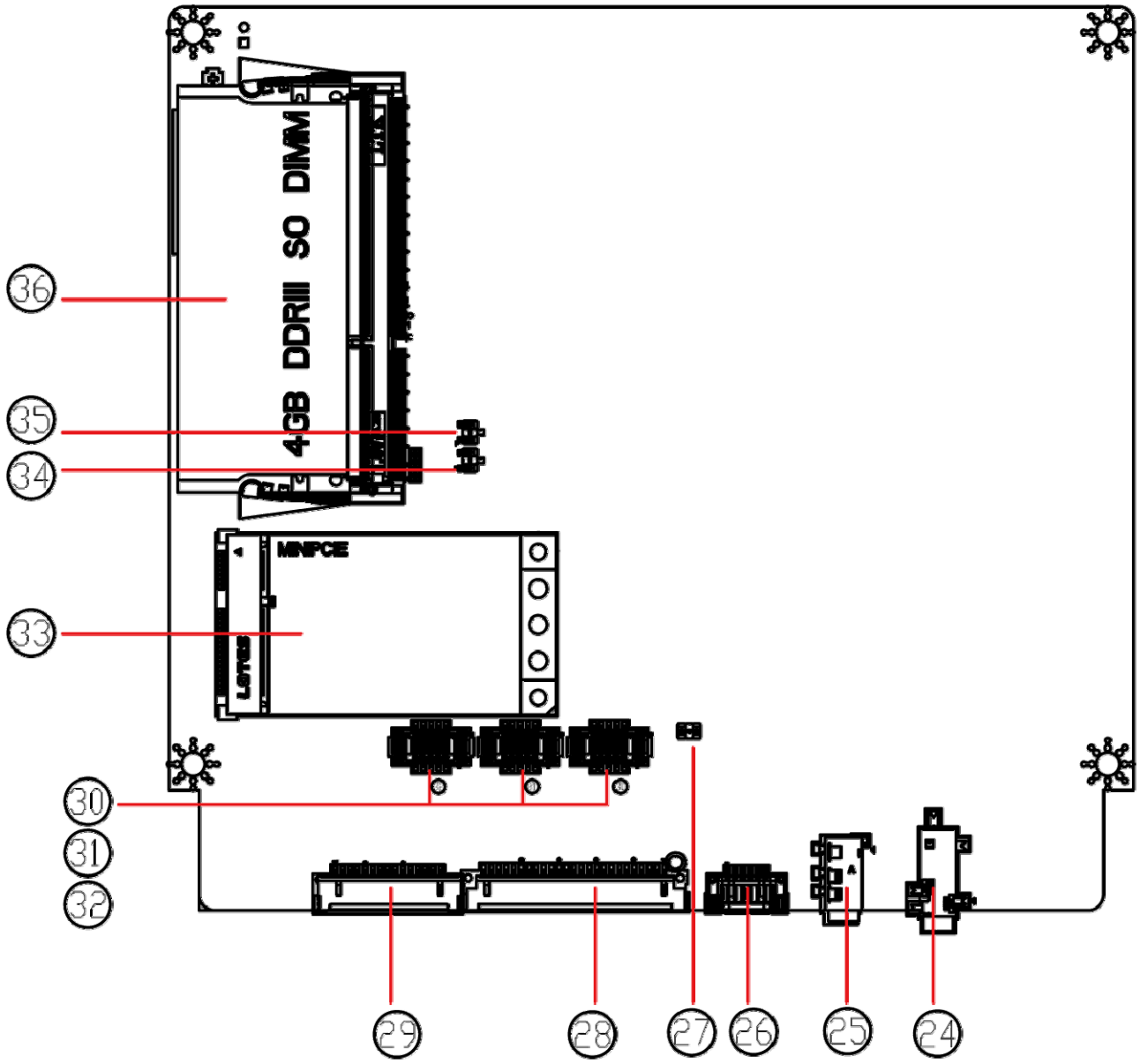
Please unplug the AC power of the adapter before opening any part of the system. Since the standby power is always on after the adapter is plugged in. It may cause permanent damage to your system when you open any part of the system.

Installing Peripherals Connectors & Jumpers settings

Motherboard Layout Component Side



Main Board Top side


4GB DDRIII SO DIMM
MINPCIE
36
35
34
33
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31
32
29
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27
26
25
24

NO.	EE NO.	Directions
1	KB1	PS2 Keyboard
2	COM3	COM3
3	USB2	USB connector
4	USB1	USB connector
5	LAN1	LAN connector
6	PWRJACK1	Power connector
7	JAF1	Front Audio connector
8	JBLK1	Backlight Level selector
9	JINV1	LVDS inverter
10	JINVS1	LVDS inverter Voltage
11	JLCD1	LVDS Voltage selector
12	CPUFAN2	CPUFAN header
13	CPUFAN1	CPUFAN header
14	JUSB1	USB Header
15	JUSB2	USB Header
16	JLVDS1	LVDS header
17	JHDDPWR1	SATA POWER header
18	SATA1	SATA connector

NO.	EE NO.	Directions
19	JDP1	Debug port
20	JSPI1	SPI Debug Port
21	COM2	COM2 5V only
22	JFP1	Front panel
23	COM1	COM1 12 only
24	JLINE1	Audio LINE out
25	JMIC1	Audio MIC in
26	JCDW1	Cash Drawer
27	JCDP1	Cash Drawer Voltage
28	JPLT1	Parallel port
29	JVGA1	D-sub
30	JCOM1	COM3 Voltage selector
31	JCOM2	COM4 Voltage selector
32	JCOM3	COM5 Voltage selector
33	MINI_PCIE1	Mini PCIE & mSata
34	JAT_ATX11	AT & ATX selector
35	JCMOS1	CMOS Jump
36	DIMM1	Sodimm Slot

Connector: JUSB1/2

Type: DF13 10-pin pitch=1.25mm

Pin	Description	Pin	Description
1	5VSB	2	5VSB
3	USB4N/6N	4	USB5N/7N
5	USB4P/6P	6	USB5P/7P
7	GND	8	GND
9	GND	10	N/C

Connector: COM1

Type: DF13 10-pin pitch=1.25mm

Pin	Description	Pin	Description
1	MDCD1	2	MSIN1
3	MS01	4	MDTR1
5	GND	6	MDSR1
7	MRTS1	8	MCTS1
9	+12V	10	N/C

Connector: COM2

Type: DF13 10-pin pitch=1.25mm

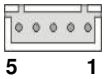
Pin	Description	Pin	Description
1	MDCD1/2	2	MSIN1/2
3	MS01/2	4	MDTR1/2
5	GND	6	MDSR1/2
7	MRTS1/2	8	MCTS1/2
9	+5V	10	N/C

Connector: JAF1

Type: DF13 10-pin pitch=1.25mm

Pin	Description	Pin	Description
1	GND	2	MIC2-L
3	RSVD	4	MIC2-R
5	RSVD	6	LINE2-R
7	RSVD	8	RSVD
9	RSVD	10	LINE2-L

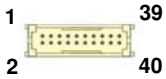
Connector: JINV1



Type: 5-pin LVDS Power Header

Pin	Description
1	+12V
2	CTLBKL
3	GND
4	GND
5	ENABKL

Connector: JLVDS1



Type: onboard 40-pin connector for LVDS connector
Connector model: HIROSE DF13-40DP-1.25V

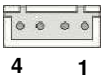
Pin	Description	Pin	Description
2	LCDVCC	1	LCDVCC
4	GND	3	GND
6	ATX0-	5	BTX0-
8	ATX0+	7	BTX0+
10	GND	9	GND
12	ATX1-	11	BTX1-
14	ATX1+	13	BTX1+
16	GND	15	GND
18	ATX2-	17	BTX2-
20	ATX2+	19	BTX2+
22	GND	21	GND
24	ACLK-	23	BTX3-
26	ACLK+	25	BTX3+
28	GND	27	GND
30	ATX3-	29	BCLK-
32	ATX3+	31	BCLK+
34	GND	33	GND
36	DDCPCLK	35	N/C
38	DDCPDATA	37	N/C
40	N/C	39	N/C

Connector: JFP1

Type: DF13 10-pin pitch=1.25mm

Pin	Description	Pin	Description
1	PWRBT-	2	PWRBT-
3	LANLED-	4	LANLED+
5	HDLED	6	HDLED+
7	PWRLED	8	PWRLED+
9	Reset+	10	Reset-

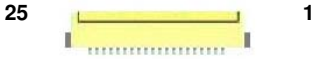
Connector: JHDDPWR1



Type: 4-pin connector for +5V/+12V output

Pin	Description	Pin	Description
1	+12V	2	Ground
3	Ground	4	+5V

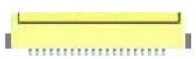
Connector: JPLT



Type: DF14 25-pin pitch=1.25mm

Pin	Description	Pin	Description
1	-PSTB	2	AFD
3	PRD0	4	ERR
5	PRD1	6	INIT
7	PRD2	8	SLIN
9	PRD3	10	GND
11	PRD4	12	GND
13	PRD5	14	GND
15	PRD6	16	GND
17	PRD7	18	GND
19	ACK	20	GND
21	BUSY	22	GND
23	PE	24	GND
25	SLCT		

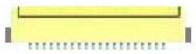
Connector: JVGA1



Type: DF14 25-pin pitch=1.25mm

Pin	Description	Pin	Description
1	BR	2	5VSB
3	BG	4	GND
5	BB	6	N/C
7	N/C	8	CDA
9	GND	10	HSYNC
11	GND	12	VSYNC
13	GND	14	CLK
15	GND		

Connector: JCDW1



Type: DF14 25-pin pitch=1.25mm

Pin	Description	Pin	Description
1	GND	2	Drawer kick-out drive signal
3	Drawer Open/closed signal	4	24VDC
5	Drawer kick-out drive signal	6	Drawer kick-out Open/closed signal ground≤1A/24V

Connector: JCOM1(COM3)/JCOM2(COM4) /JCOM3(COM5 & COM6)

Type: onboard 3 x 2-pin header

JP1/JP2	Mode
5-6	Standard COM Port
3-4	Pin9 with 12V signal
1-2	Pin9 with 5V signal

Default setting

Connector: JCOMS1

Type: Onboard 3-pin jumper

Normal Operation	Mode
1-2	Clear CMOS
2-3	Normal Operation

Default setting

Connector: JAT_ATX11

Type: Onboard 3-pin jumper

Normal Operation	Mode
1-2	AT Mode
2-3	ATX Mode

Default setting

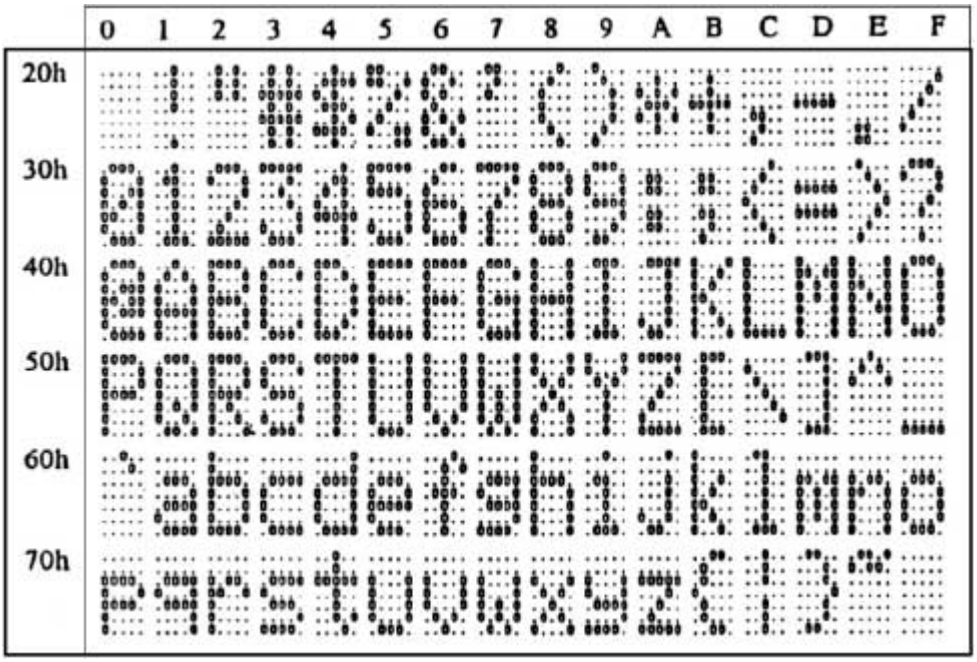
Customer Display Setting

Character Font Table

A. Control code set

HEX	CODE	HEX	CODE
00H	NULL	10H	DLE
01H	MD1	11H	DC1
02H	MD2	12H	DC2
03H	MD3	13H	DC3
04H	MD4	14H	DC4
05H	MD5	15H	
06H	MD6	16H	
07H	MD7	17H	
08H	BS, Md8	18H	CAN
09H	HT	19H	
0AH	LF	1AH	
0BH	HOM	1BH	ESC
0CH	CLR	1CH	
0DH	CR	1DH	
0EH	SLE1	1EH	SF1
0FH	RS,SLE2	1FH	US, SF2

B. U.S.A. font set



C. International character selection

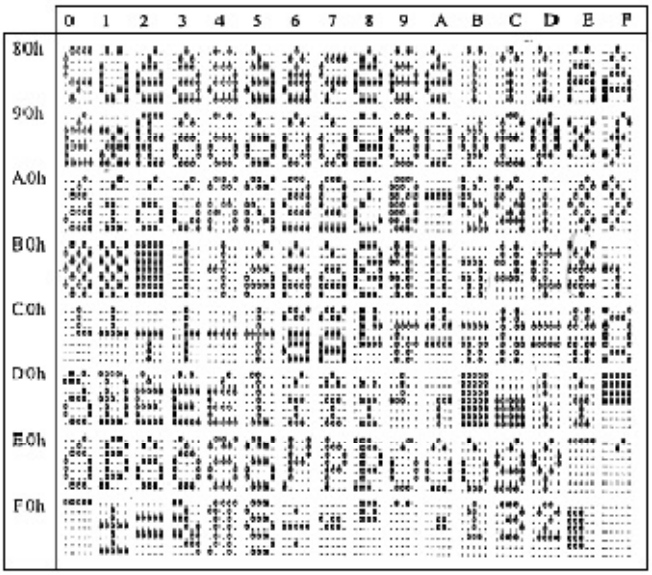
ASCII CODE

Hex. Value	International	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
30H	USA	#	$	@	[	\	]	^	`	{	|	}	~
31H	FRANCE	#	$	à	°	ç	§	^	`	é	ù	è	¨
32H	GERMANY	#	$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
33H	U.K.	£	$	@	[	\	]	^	`	{	|	}	~
34H	DENMARK I	#	$	É	Æ	Ø	Å	^	`	é	ø	å	~
35H	SWEDEN	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
36H	ITALY	#	$	@	°	ç	é	^	ù	à	ò	è	ì
37H	SPAIN	Pt	$	@	¡	Ñ	¿	^	`	¨	ñ	}	~
38H	JAPAN	#	$	@	[	¥	]	^	`	{	|	}	~
39H	NORWAY	#	$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
3AH	DENMARK II	#	$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
3BH	SLAVONIC	#	$	@	[	\	]	^	`	{	|	}	~
3CH	RUSSIA	#	$	@	[	\	]	^	`	{	|	}	~

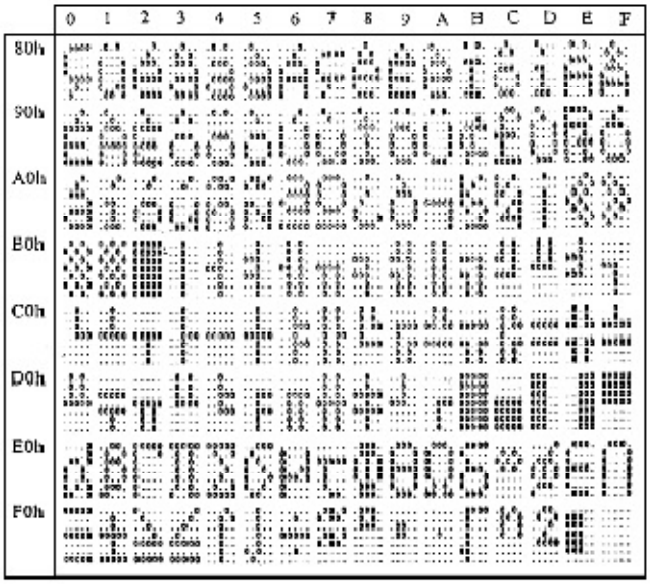
3DH: Standard Europe international font set

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
80h	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ì	Ä	Å
90h	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	ø	£	Ø	×	ƒ
A0h	á	í	ó	ú	ñ	Ñ	ª	º	¿	®	¬	½	¼	¡	«	»
B0h	▒	▓	▒	▒	▒	Á	Â	À	©	▒	▒	▒	▒	¢	¥	▒
C0h	▒	▒	▒	▒	▒	▒	ã	Ã	▒	▒	▒	▒	▒	▒	▒	¤
D0h	ð	Ð	Ê	Ë	È	ı	Í	Î	Ï	▒	▒	▒	▒	¦	Ì	▒
E0h	Ó	ß	Ô	Ò	õ	Õ	µ	þ	Þ	Ú	Û	Ù	ý	Ý	¯	´
F0h	≡	±	‗	¾	¶	§	÷	¸	°	¨	·	¹	³	²	▒	▒

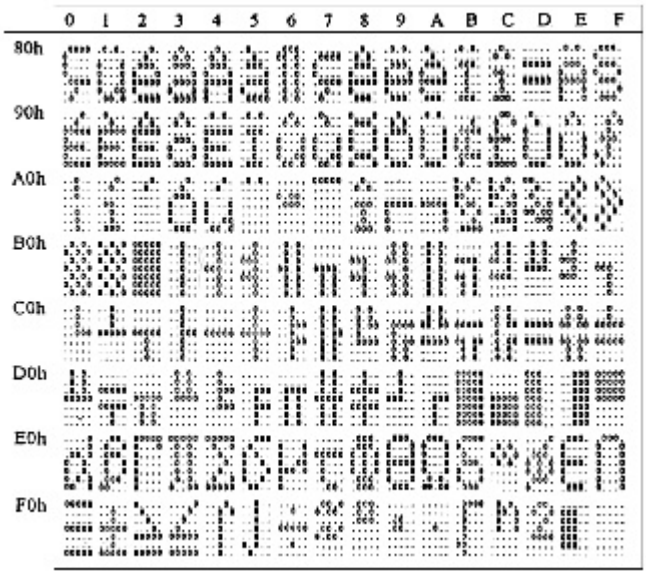
3EH: Multingual international font set



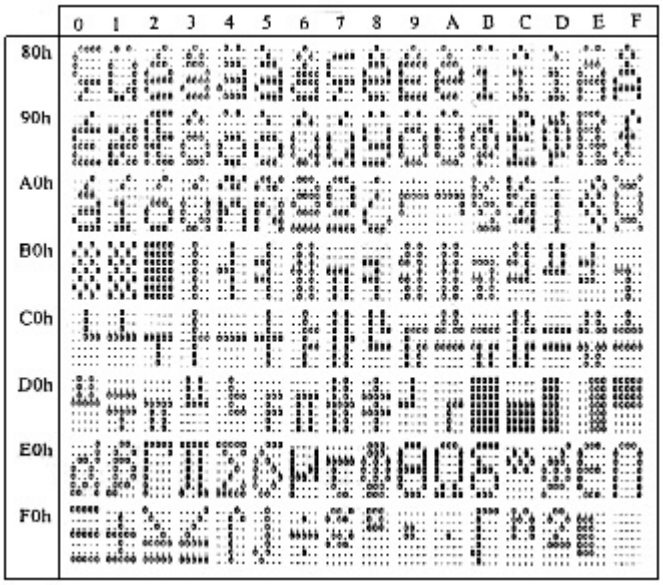
3FH: Portuguese international font set



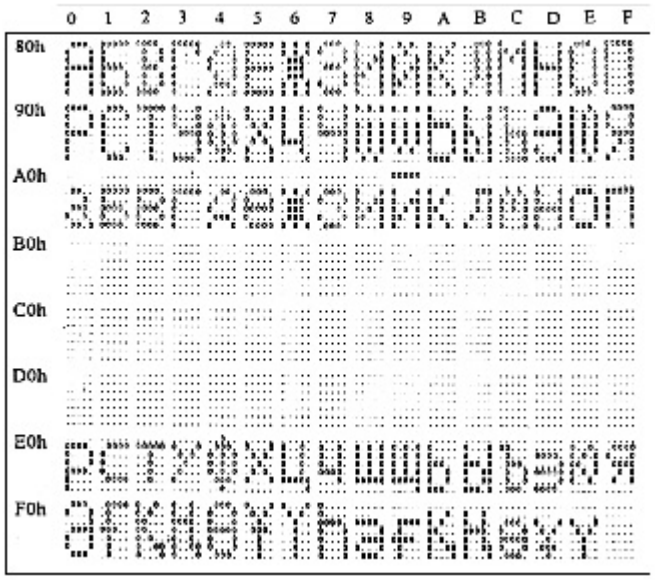
40H: Canadian French international font set



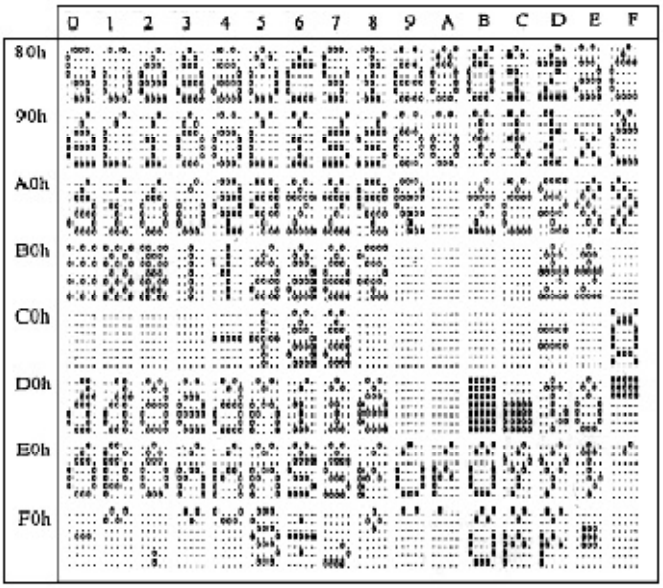
41H: NORDIC internatinal font set



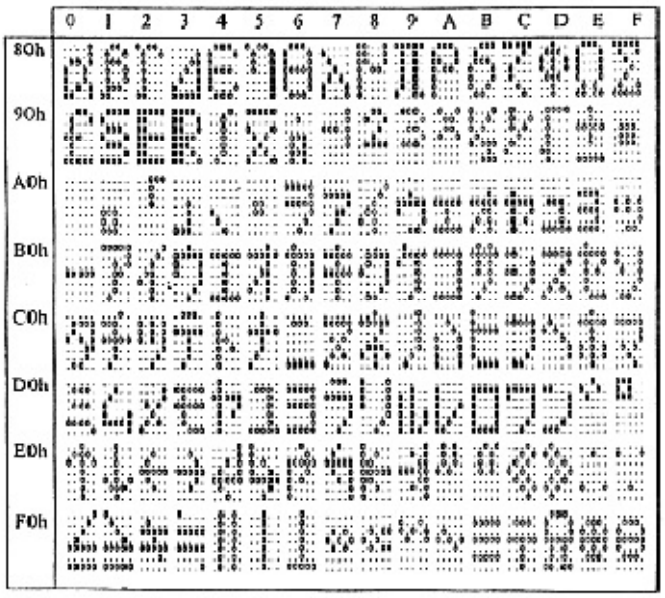
42H: RUSSIA font set



43H: SLAVONIC Font set

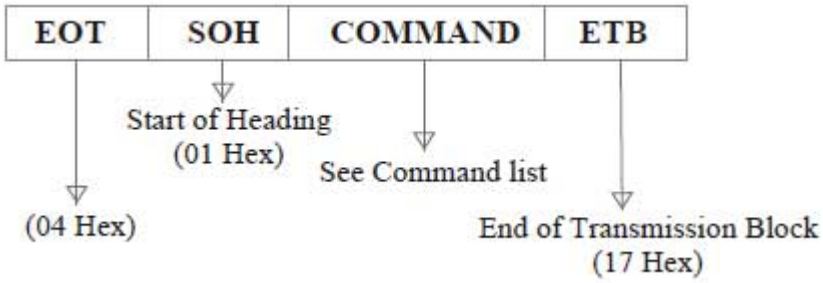


44H: Katakana font set



System Commands

Command Format



Command List

A. Set Baud Rate

COMMAND: B

COMPUTER:EOT SOH 'B' 'BAUD RATE' 'N' ETB

ASCII (04H) (01H)(42H) (31H~37H)(4EH)(17H)

Byte 1 1 1 1 1 1

DISPLAY: ACK (or NACK if failed)

ASCII (06H) (15H)

Byte 1 1

Note: Baud rates

31H: 9600

32H: 4800

33H: 2400

34H: 1200

35H: 600

36H: 300

37H:19200

B. Select international code table

COMMAND: I

COMPUTER:EOT SOH 'I' 'CHAR' ETB

ASCII(04H)(01H)(49H)(30H~44H)(17H)

Byte 1 1 1 1 1

DISPLAY: ACK (or NACK if failed)

ASCII (06H) (15H)

Byte 1 1

Note : International Character Code

30H : U. S. A.	3BH : Slavonic
31H : France	3CH : Russia
32H : Germany	3DH : Standard Europe International font set
33H : U. K.	3EH : Multingual International font set
34H : Denmark I	3FH : Portuguese International font set
35H : Sweden	40H : Canadian French International font set
36H : Italian	41H : Nordic International font set
37H : Spain	42H : Russia font set
38H : Japan	43H : Slavonic font set
39H : Norway	44H : Katakana font set
3AH : Denmark II	

C. Save the current view message

(Save Demo view data)

COMMAND: S

COMPUTER:EOT SOH 'S' 'Layer' ETB

ASCII(04H)(01H)(53H)(31H~33H)(17H)

Byte 1 1 1 1 1

DISPLAY: ACK (or NACK if failed)

ASCII (06H) (15H)

Byte 1 1

Note : 31H: Layer 1 / 32H: Layer 2 / 33H: Layer 3

D. Set cursor position

COMMAND: P

COMPUTER: EOT SOH 'P' 'Position' ETB

ASCII	(04H)	(01H)	(50H)	(31H~58H)	(17H)
Byte	1	1	1	1	1

DISPLAY: ACK (or NACK if failed)

ASCII	(06H)	(15H)
Byte	1	1

Note: The cursor can be set to the position from 1 to 40

Position 1 means the upper left corner position.

Position 20 means the upper right corner position.

Position 21 means the lower left corner position.

Position 40 means the lower right corner position.

E. Clear display range

COMMAND: C

COMPUTER: EOT SOH 'C' 'START' 'END' ETB

ASCII	(04H)	(01H)	(43H)	(31H~58H)	(31H~58H)	(17H)
Byte	1	1	1	1	1	

DISPLAY: ACK (or NACK if failed)

ASCII	(06H)	(15H)
Byte	1	1

Note: Some part of the current view messages can be cleared by this COMMAND. It can start clearing between position 1 and position 40.

F. Display the saved DEMO message

COMMAND: D

COMPUTER: EOT SOH 'D' 'Layer' 'Mode' ETB

ASCII	(04H)	(01H)	(44H)	(31H~37H)	(31H~33H)	(17H)
Byte	1	1	1	1	1	

DISPLAY: ACK (or NACK if failed)

ASCII	(06H)	(15H)
Byte	1	1

Note:

a) There are three layers of saved view messages as described on COMMAND "S"

b) There are two modes of display:

Mode 1 is running the saved messages from right to left, which is a horizontal scroll mode.

Mode 2 is running the saved messages from the lower line to the upper line, which is a vertical scroll mode.

c) For display layers:

select 31H means display the message saved on layer 1.

select 32H means display the message saved on layer 2.

select 33H means display the message saved on layer 1+ layer2.

select 34H means display the message saved on layer 3.

select 35H means display the two messages saved on layer 1 + layer 3.

select 36H means display the two messages saved on layer 2 +layer 3.

select 37H means display all the messages saved on layer 1 +layer 2 + layer 3.

d) For display modes,

select 31H means display the message with Mode 1.

select 32H means display the message with Mode 2.

select 33H means display the message with Mode 1+Mode 2.

For this Demo display function, you must have saved the message by COMMAND "S" previously, For example, select 37H for displaying layers and select 33H for displaying modes, DSP would display all the three messages saved on layer 1+ layer 2 + layer 3 with both Mode 1 + Mode 2 displaying modes.

e) Any new message from the computer would stop this Demo

display function and DSP would display that new message from the computer.

G. Select the Command Mode

COMMAND: M

COMPUTER: EOT SOH 'M' 'Mode' ETB

ASCII	(04H)	(01H)	(4DH)	(30H~38H)	(17H)
Byte	1	1	1	1	1

DISPLAY: ACK (or NACK if failed)

ASCII	(06H)	(15H)
Byte	1	1

Note: Command Modes Selection

30H : VFD-450	35H : ICD 2002
31H : EPSON ESC/POS	36H : CD 5220
32H : UTC/S	37H : DSP-800
33H : UTC/E	38H : ADM 787/788
34H : AEDEX	

H. Set all default

COMMAND: X

COMPUTER: EOT SOH 'X' ETB

ASCII	(04H)	(01H)	(58H)	(17H)
Byte	1	1	1	1

Transmission method

Each ASCII character is transmitted with

1 start bit

8 data bits

1 stop bit

No parity

Note: You may generate your own application software to run the display according to the standard RS-232C communication protocols and the SOFTWARE CONTROL information listed on this chapter.

Command Modes

The command modes can be selected with the Demo Software.

Mode 0: Default

Mode 1: EPSON Esc/POS

Mode 2: UTC Standard

Mode 3: UTC Enhanced

Mode 4: AEDEX

Mode 5: ICD 2002

Mode 6: CD 5220

Mode 7: DSP-800

Mode 8: ADM 787/788

Mode 0: Default

Command	Hexadecimal Codes	Function
B	42H	Set baud rate and parity
I	49H	Select international character set
S	53H	Save the current view message
P	50H	Set cursor position
C	43H	Clear display message
D	44H	Display the saved DEMO message
ESC G ESC S	IBH 47H IBH 53H	Print ON command Print OFF command
M	4DH	Select command mode
X	58H	Set all default

Mode 1: EPSON Esc/POS mode

Command	Code Description (hex)	Function
HT	09	Move cursor right
BS	08	Move cursor left
US LF	1F 0A	Move cursor up
LF	0A	Move cursor down
US CR	1F 0D	Move cursor to right-most position
CR	0D	Move cursor to left-most position
HOM	0B	Move cursor to home position
US B	1F 42	Move cursor to bottom position
US $ x y	1F 24 x y X=1-20 y=01,02	Move cursor to specified position
CLR	0C	Clear display screen
CAN	18	Clear cursor line
US E n	1F 45 n n=00-ff	Blink display screen
ESC @	1B 40	Initialize display
ESC R n	1B 52 n n=0~15	Select international character set
US MD1	1F 01	Specify overwrite mode
US MD2	1F 02	Specify vertical scroll mode
US MD3	1F 03	Specify horizontal scroll mode
ESC W n s x1 y1 x2 y2	1B 57 n s x1 y1 x2 y2 n=1,2,3,4 s=0, 1	Specify/cancel the window range 1<=x1<=x2<=20 1<=y1<=y2<=2
US:	1F 3A	Set starting/ending position of macro definition
US ^ n m	1F 5E n m 00<=(n,m)<=ff	Execute and quit macro
US @	1F 40	Execute self-test
US T h m	1F 54 h m 0<=h<=17,	Display time 0<=m<=3b
US U	1F 55	Display time continuously
US.n	1F 2E n	n= a displayable character code Display the code with a dot
US,n	1F 2C n	n= a displayable character code Display the code with a comma
US;n	1F 3B n	n= a displayable character code Display the code with a semicolon
US#nm	1F 23 n m n = 0 ro 1 0 <=m<=20	Turn the anuciator (▼) ON/OFF

Mode 2: UTC Standard mode

Command	Code Description (hex)	Function
BS	08	Back space
HT	09	Horizontal tab
LF	0A	Line feed
CR	0D	Carriage return
DLE	0F	Display position
DC1	11	Over write display mode
DC2	12	Vertical scroll mode
DC3	13	Cursor on
DC4	14	Cursor off
ESC d	1B 64	Change to UTC enhanced mode
US	1F	Clear display

Mode 3: UTC enhanced mode

Command	Code Description (hex)	Function
ESC u ACR	1B 75 41 [data x 20] 0D	Upper line display
ESC u BCR	1B 75 42 [data x 20] 0D	Bottom line display
ESC u DCR	1B 75 44 [data x 20] 0D	Upper line message scroll continuously
ESC u ECR	1B 75 45 hh ':' mm 0D H,m='0'-'9'	Display time
ESC u FCR	1B 75 46 [data x 20] 0D	Upper line message scroll once pass
ESC u HCR	1B 75 48 n m 0D 20h<=n,m	Change attention code
ESC u ICR	1B 75 49 [data x 40] 0D	Two line display
ESC RS CR	1B 0F 0D	Change to UTC standard mode

Mode 4: AEDEX mode

Command	Code Description (hex)	Function
! # 1CR	21 23 31 [data x 20] 0D	Upper line display
! # 2CR	21 23 32 [data x 20] 0D	Bottom line display
! # 4CR	21 23 34 [data x 20] 0D	Upper line message scroll continuously
! # 5CR	21 23 35 hh ':' mm 0D H,m='0'-'9'	Display time
! # 6CR	21 23 36 [data x 20] 0D	Upper line message scroll once pass
! # 8CR	21 23 38 n m 0D 20h<=n,m	Change attention code
! # 9CR	21 23 39 [data x 40] 0D	Two line display
! # ACR	21 23 41 [data x 20] 0D	Upper line scroll message
! # BCR	21 23 42 [data x 20] 0D	Bottom line display message

Mode 5: ICD 2002 mode

Command	Code Description (hex)	Function
HT	09	Move cursor right (only valid in overwrite mode)
BS	08	Move cursor left (only valid in overwrite mode)
CR	0D	Move cursor to left-most position (only valid in overwrite mode)
ESC @	1B 40	Initialize customer display to initial state, clears display buffer, set display mode to shift and sets current display row to upper row
ESC U	1B 55	Select upper row as current row (initial default)
ESC D	1B 44	Select lower row as current row
ESC A ϕ	1B 41 ϕ	Sets customer display disable or enable ϕ 'D'=disable, 'E'=enable
ESC C r c	1B 43 r c	Move cursor to specified position (only valid in overwrite mode) -r Row ('U'=upper,'D'=lower) -c Column number (range from 1~20)
ESC E r ϕ	1B 45 r ϕ	Set special effect or display mode of specified row
ESC R n	1B 52 n n=30~44	Set international font sets -n international fonts code

REMARK)* Using command "ESC E r Φ", the value of parameter:

r 58= all rows

55= upper row

44= lower row

Φ special function, the value is one of

30= shift mode (default)

31= rotation mode

32= blink mode

33= clear this row and switch to shift mode

34= overwrite mode

35= vertical mode

Mode 6: CD 5220 standard mode

Command	Code Description (hex)	Function
ESC DC1	1B 11	Overwrite mode
ESC DC2	1B 12	Vertical scroll mode
ESC DC3	1B 13	Horizontal scroll mode
ESC Q A...CR	1B 51 41 [n]x20 0D	Set the string display mode, write string to upper line
ESC Q B...CR	1B 51 42 [n]x20 0D	Set the string display mode, write string to lower line
ESC Q D...CR	1B 51 44 [n]x20 0D	Upper line message scroll continuously
ESC [D	1B 5B 44	Move cursor left
BS	08	Move cursor left
ESC [C	1B 5B 43	Move cursor right
HT	09	Move cursor right
ESC [A	1B 5B 41	Move cursor up
ESC [B	1B 5B 42	Move cursor down
LF	0A	Move cursor down
ESD [H	1B 5B 48	Move cursor to home position
HOM	0B	Move cursor to home position
ESC [L	1B 5B 4C	Move cursor to left-most position
CR	0D	Move cursor to left-most position
ESC [R	1B 5B 52	Move cursor to right-most position
ESC [K	1B 5B 4B	Move cursor to bottom position
ESC 1 x y	1B 6C x y 1<=x<=20, y=1,2	Move cursor to specified position
ESC @	1B 40	Initialize display
ESC W s x1 x2 y	1B 57 1 x1 x2 y 1<=x1<=x2<=20 Y=1,2	Set or cancel the window range at horizontal scroll mode
CLR	0C	Clear display screen, and Clear string mode
CAN	18	Clear cursor line, and clear string mode
ESC _ n	1B 5F n n=0,1	Set cursor ON/OFF
ESC f n	1B 66 n n=30~44	Select international fonts set

30H : U. S. A.	3BH : Slavonic
31H : France	3CH : Russia
32H : Germany	3DH : Standard Europe International font set
33H : U. K.	3EH : Multingual International font set
34H : Denmark I	3FH : Portuguese International font set
35H : Sweden	40H : Canadian French International font set
36H : Italian	41H : Nordic International font set
37H : Spain	42H : Russia font set
38H : Japan	43H : Slavonic font set
	44H : Katakana font set

Mode 7: DSP-800 mode

Command	Code Description (hex)	Function
EOT SOH I n ETB	04 01 49 n 17	Select international fonts set
EOT SOH P n ETB	04 01 50 n 17 n=31H-58H	Move cursor to specified position
EOT SOH C n m ETB	04 01 43 n m 17 31H≤n≤m≤58H	Clear display range from n position to m position and move cursor to n position
EOT SOH S n ETB	04 01 53 n 17 n=31H-35H	Save the current displaying data to n layer for demo display
EOT SOH D n m ETB	04 01 44 n m 17 n=31H-4FH m=31H-33H	Display the saved data
EOT SOH T ETB	04 01 54 17	Transmit the current view message to computer
EOT SOH B n N ETB	04 01 42 n 4E 17 n=31H: 9600 n=32H: 4800 n=33H: 2400 n=34H: 1200 n=35H: 600 n=36H: 300	Set baud rate

Mode 8: ADM 787/788 mode

Command	Code Description (hex)	Function
CLR	0C	Clear display
CR	0D	Carriage return
SLE1	0E	Clear upper line and move cursor to upper left-end position
SLE2	0F	Clear bottom line and move cursor to bottom left-end position
DC0	10 n	Set period to upper line, last n position 31h<n<37h
DC1	11 n	Set line blinking, upper line n ='1' bottom line n='2'
DC2	12 n	Clear line blinking, upper linen ='1', bottom line n='2'
SF1	1E	Clear field 1 and move cursor to field 1, first position
SF2	1E	Clear field 2 and move cursor to field 2, first position

Safety Regulatory Notices

CE MARK

This device compiles with the requirements of the EEC directive 89/336/EEC with regard to "Electromagnetic compatibility" and 73/23/EEC "Low Voltage Directive"

FCC

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

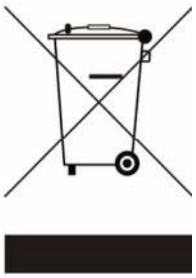
(1)This device may not cause harmful interference.

(2)This device must accept any interference received, including interference that may cause undesired operation.

CAUTION ON LITHIUM BATTERIES

There is adapter of explosion if the battery is replaced incorrectly. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

LEGISLATION AND WEEE SYMBOL



2002/96/EC Waste Electrical and Electronic Equipment Directive on the treatment, collection, recycling and disposal of electric and electronic devices and their components.

The crossed dustbin symbol on the device means that it should not be disposed of with other household wastes at the end of its working life. Instead, the device should be taken to the waste collection centers for activation of the treatment, collection, recycling and disposal procedure.

To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract.

This product should not be mixed with other commercial wastes for disposal.