

Version. Mk2017.2.2



WAVEPOS 66

User Manual Point of Sale System



Poslab Technology Co., Ltd.

Liancheng Rd., Zhonghe Dist., New Taipei City 23553, Taiwan (R.O.C.)

Tel : + 886-2-7733-7789 Fax : + 886-2-7729-1901

www.poslab.com.tw

Copyright Notice:

No part of this documentation may be reproduced, transcribed, transmitted, or translated in any language, in any form or by any means, except duplication of documentation by the purchaser for backup purpose, without written consent of us.

Products and corporate names appearing in this documentation may or may not be registered trademarks or copyrights of their respective companies, and are used only for identification or explanation and to the owners' benefit, without intent to infringe.

Disclaimer:

Specifications and information contained in this documentation are furnished for informational use only and subject to change without notice, and should not be constructed as a commitment by us. We assume no responsibility for any errors or omissions that may appear in this documentation.

With respect to the contents of this documentation, we do not provide warranty of any kind, either expressed or implied, including but not limited to the implied warranties or conditions of merchantability or fitness for a particular purpose.

In no event shall we, our directors, officers, employees, or agents be liable for any indirect, special, incidental, or consequential damages (including damages for loss of profits, loss of business, loss of data, interruption of business and the like), even if we have been advised of the possibility of such damages arising from any defect or error in the documentation or product.



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

this device may not cause harmful interference, and

this device must accept any interference received, including interference that may cause undesired operation.

CALIFORNIA, USA ONLY

The Lithium battery adopted on this motherboard contains Perchlorate, a toxic substance controlled in Perchlorate Best Management Practices (BMP) regulations passed by the California Legislature. When you discard the Lithium battery in California, USA, please follow the related regulations in advance.

"Perchlorate Material-special handling may apply, see www.dtsc.ca.gov/hazardouswaste/perchlorate"

Table of Contents

Chapter 1 Standard Package	4
1.Wavepos-66	4
2.COM PORT CONNECTORS	4
Chapter 2 Touch Screen Driver Installation	5
2.1 Select the OS you are using.	5
2.2 In our case we select WIN7 or WIN10 and double click the WINXP folder to open it. Then select SETUP.EXE and double click it to start the installation.	5
2.3 Click Next > to welcome window.	5
2.4 Click Next on the destination folder window.	6
2.5 Click next on the Select Program Folder.	6
2.6 Click next on the Setup Type.	7
2.7 Click Yes for 4 point calibration.	7
Chapter 3 System View	8
3.1 I/O ports & Power switch button	8
Chapter 4 Accessories	8
4.1 Card Reader	8
4.2 Customer Display, VFD Type	9
Chapter 5 HDD	10
Chapter 6 Motherboard(MPOS-J1900AS) Specification	11
Chapter 7 Motherboard Layout	12
Chapter 8 MPOS-J1900AS Jumpers and Headers Setting Guide	13
Chapter 9 I/O Panel	16
Chapter 10: Installation	17
10.1 Screw Holes	17
10.2 Pre-installation Precautions	17
10.3 Installation of Memory Modules (SO-DIMM)	18
10.4 Jumpers Setup	19
10.5 Onboard Headers and Connectors	21
Chapter 11: UEFI SETUP UTILITY	25
11.1 Introduction	25
11.1.1 UEFI Menu Bar	25
11.1.2 Navigation Keys	25
11.2 Main Screen	26
11.3 Advanced Screen	26
11.3.1 CPU Configuration	27
11.3.2 Chipset Configuration	28
11.3.3 Storage Configuration	29
11.3.4 Super IO Configuration	30
11.3.5 ACPI Configuration	31
11.3.6 USB Configuration	32
11.4 Hardware Health Event Monitoring Screen	33
11.5 Security Screen	34
11.6 Boot Screen	35
11.7 Exit Screen	37

Chapter 1 Standard Package

1.Wavepos-66

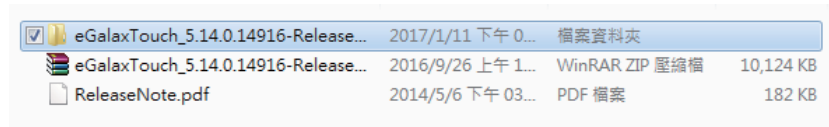


2.COM PORT CONNECTORS



Chapter 2 Touch Screen Driver Installation

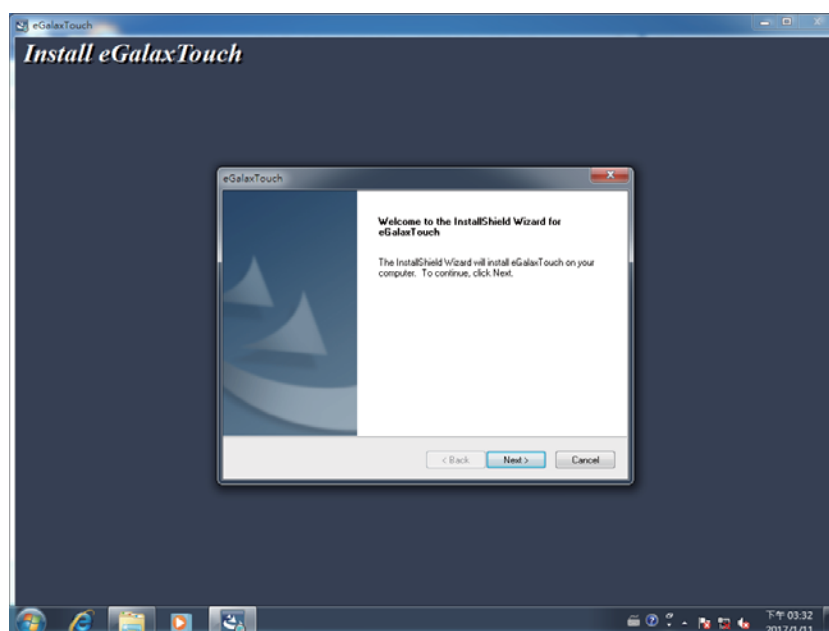
2.1 Select the OS you are using.



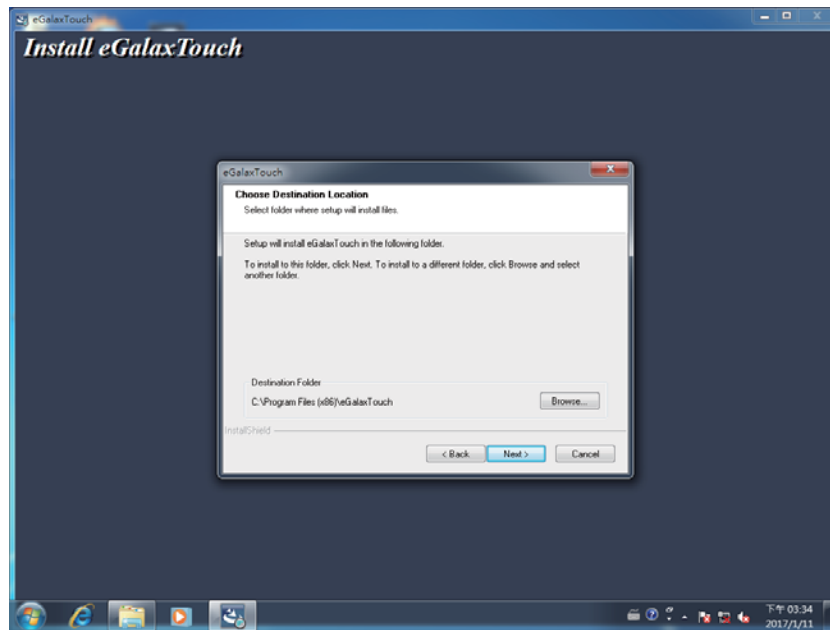
2.2 In our case we select WIN7 or WIN10 and double click the WINXP folder to open it. Then select SETUP.EXE and double click it to start the installation.



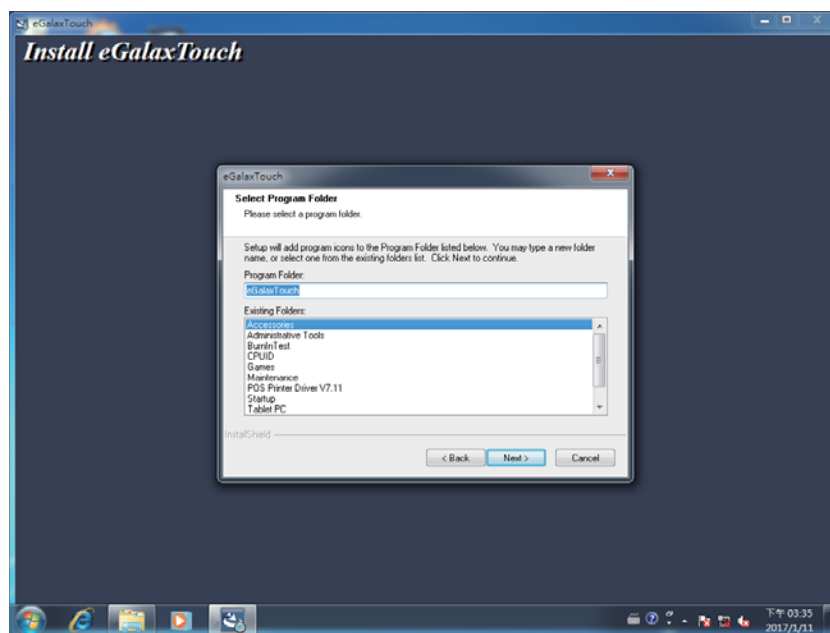
2.3 Click Next > to welcome window.



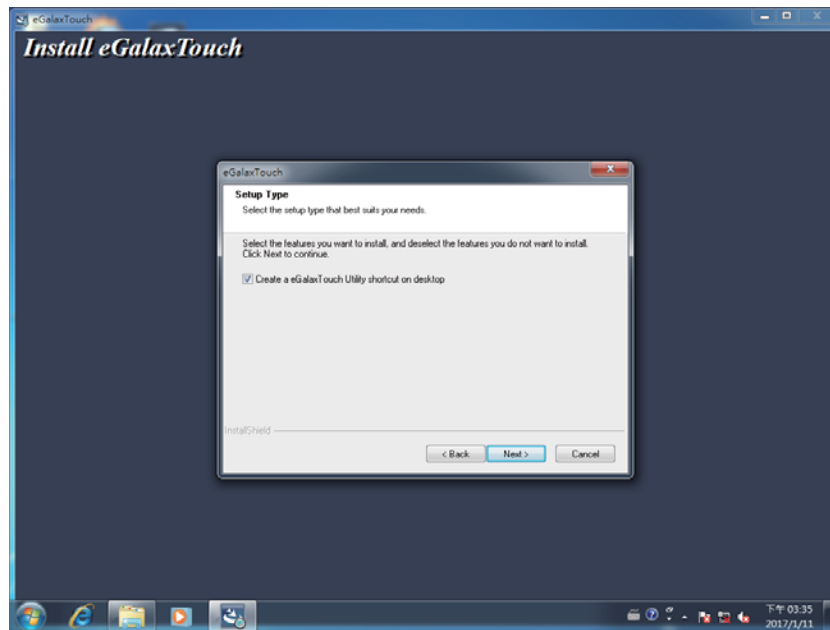
2.4 Click Next on the destination folder window.



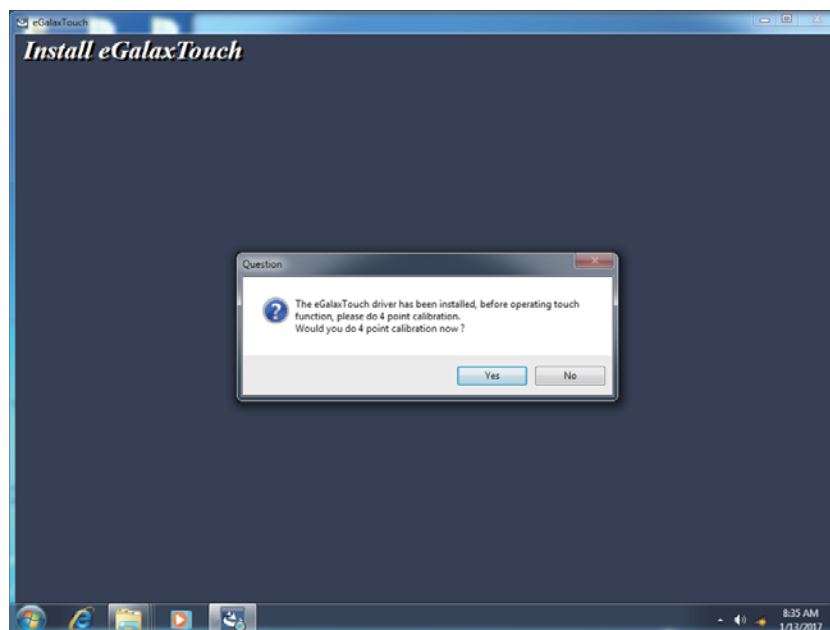
2.5 Click next on the Select Program Folder.



2.6 Click next on the Setup Type.



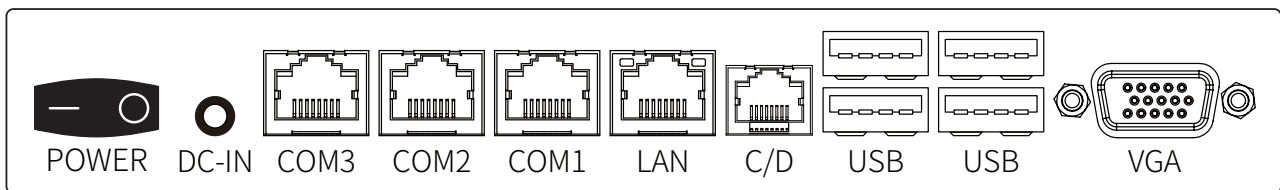
2.7 Click Yes for 4 point calibration.



Chapter 3 System View

3.1 I/O ports & Power switch button

Wave POS 66



Chapter 4 Accessories

4.1 Card Reader

Use two M3*12 screws to assemble



CONNECT USB PORT



4.2 Customer Display, VFD Type

Follow the track and slide the VFD cable from right to left



Chapter 5 HDD

Remove the screw



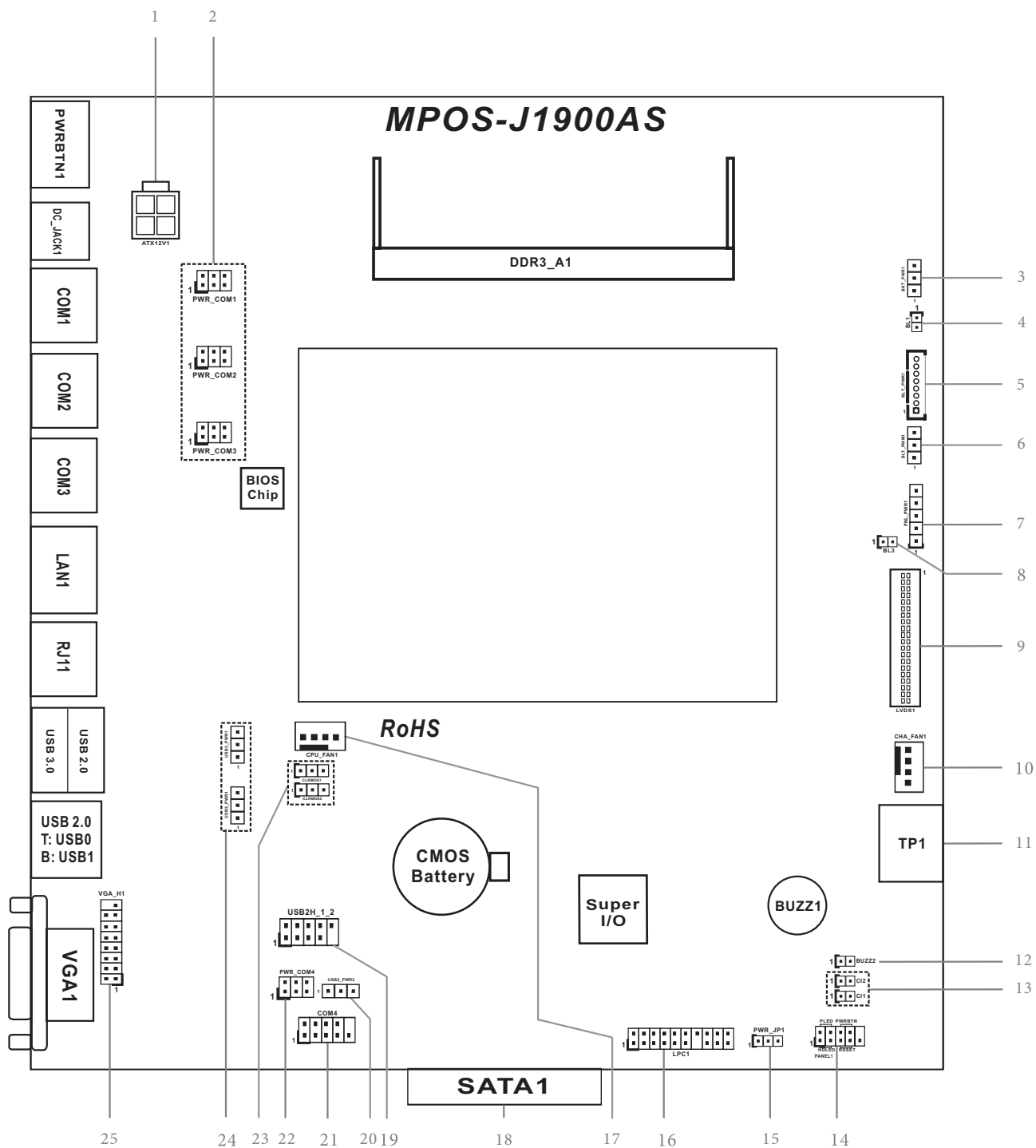
Remove HDD



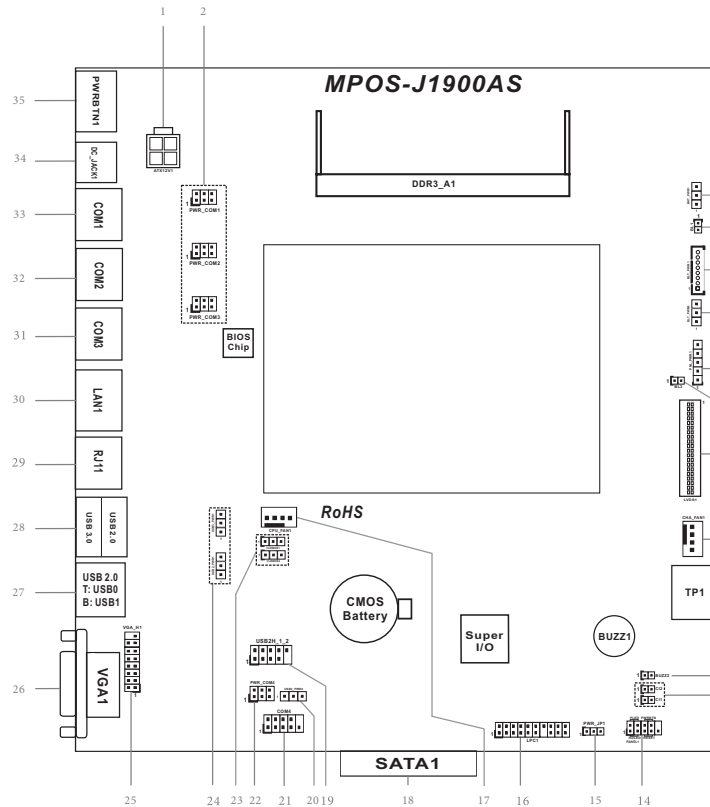
Chapter 6 Motherboard(MPOS-J1900AS) Specification

Processor	Intel® BayTrail J1900 10W 4Core (2.0G Hz), Gen7 Intel® Graphics, GPU freq.688MHz
Memory	1 x 204-pin DDR3L SO-DIMM socket 1333Mhz Up to 4GB (Horizontal Type)
Integrated Graphics	Intel® Integrated Graphic Engine Bay Trail-D/M integrated graphics
VGA	Supports resolution up to 1920 x 1200
Super I/O	NUVOTON NCT6106D (6 COM ports)
COM Ports	3 x COM Port, RJ50 (10P10C)
Watch Dog Timer	0 Sec ~ 255 Sec
USB 2.0 Hub	GL850G
Type	4 Ports USB 2.0 Hub
Ethernet	1 x Realtek RTL8111G-CG
BIOS	AMI® 64Mb SPI BIOS
Internal I/O Connectors	
USB	2 x USB 2.0 (2 x 2.54 pitch header)
LVDS	2 x 20-pin LVDS con
Touch connector	1 x 5-pin (2.5mm)
Serial	1 x (2x5-pin, 2.54mm) COM port Box Header _ Port 4
SATA	1 x SATA2 2.0 Gb/s connectors (7+15-pin, signal+PWR)
Power In	4-pin 12V ATX power connector on board
Audio	1 x On-board Buzzer
Rear I/O	
Display	1 x D-SUB to support VGA output
Tact Switch	One PWR Button switch
DC Jack	1 x DC-IN Jack ψ 2.5mm
Serial Port	3 x COM Port, RJ50 (10P10C)
LAN	1 x RJ45 (W/ LED)
USB 3.0	1 x USB3.0 port
USB 2.0	3 x USB2.0 ports
RJ11	1 x RJ11 connector
Audio	N/A
Power & Connector	12V DC-In
Dimension	186.4 mm x 170 mm
Layer	4 Layer Board
Operation Environment	
Temperature	0 °C to 60 °C
Packaging	Bulk Pack

Chapter 7 Motherboard Layout



Chapter 8 MPOS-J1900AS Jumpers and Headers Setting Guide



1 : 4-pin ATX Power Input/Output Connector



COM Port PWR Setting Jumpers
 2 : PWR_COM1 (For COM Port1)
 PWR_COM2 (For COM Port2)
 PWR_COM3 (For COM Port3)
 22 : PWR_COM4 (For COM Port4)
 1-2 : +12V
 3-4 : RI#
 5-6 : +5V



3 : Backlight Power Select (LCD_BLT_VCC) (BKT_PWR1)
 1-2 : LCD_BLT_VCC : +5V
 2-3 : LCD_BLT_VCC : +12V



4 : BL1



5 : Backlight Power Connector (BLT_PWR1)



PIN	Signal Name
8	LCD_BLT_VCC
7	LCD_BLT_VCC
6	BLDN
5	BLUP
4	CON_LBKLT_EN
3	CON_LBKLT_CTL
2	GND
1	GND

6 : Backlight Control Level (BLT_PWM1)
 1-2 : +3V
 2-3 : +5V



7 : Panel Power Select (LCD_VCC) (PNL_PWR1)
 1-2 : LCD_VCC : +3V
 2-3 : LCD_VCC : +5V
 4-5 : LCD_VCC : +12V

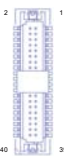


8 : BL3

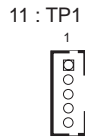
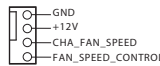


9 : LVDS Panel Connector

Pin	Assignment	Pin	Assignment
1	LVDS_DATA0_N	2	PVDD02_3.3V/5V (selected by JLV3)
2	LVDS_DATA0_P	4	PVDD02_3.3V/5V (selected by JLV3)
3	GND	6	GND
5	GND	8	GND
7	LVDS_DATA1_N	10	LVDS_DATA0_N
8	LVDS_DATA1_P	12	LVDS_DATA0_P
11	GND	14	GND
13	LVDS_DATA2_N	16	LVDS_DATA1_N
15	LVDS_DATA2_P	18	LVDS_DATA1_P
17	GND	20	GND
19	LVDS_CLK_N	22	LVDS_DATA2_N
21	LVDS_CLK_P	24	LVDS_DATA2_P
23	GND	26	GND
25	LVDS_DATA3_N	28	LVDS_CLK_N
27	LVDS_DATA3_P	30	LVDS_CLK_P
29	VCC3_3	32	GND
31	LVDS_EDID_SCL	34	LVDS_DATA3_N
33	VCC3_3	36	LVDS_DATA3_P
35	NC	38	GND
40	PVDD02_3.3V/5V (selected by JLV3)	40	LVDS_EDID_SDA
39	PVDD02_3.3V/5V (selected by JLV3)		



10 : 4-Pin Chassis FAN Connector (+12V)



PIN	Signal Name
1	ULL
2	ULR
3	UPROBE
4	UUR
5	UUL

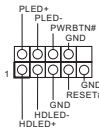
12 : Buzzer



13 : Chassis Intrusion Headers
 C11 :
 Close : Active Case Open
 Open : Normal
 C12 :
 Close : Normal
 Open : Active Case Open



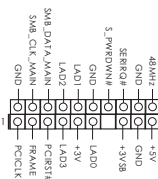
14 : System Panel Header



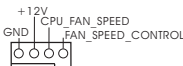
15 : ATX/AT Mode Select (PWR_JP1)
 1-2 : AT Mode
 2-3 : ATX Mode

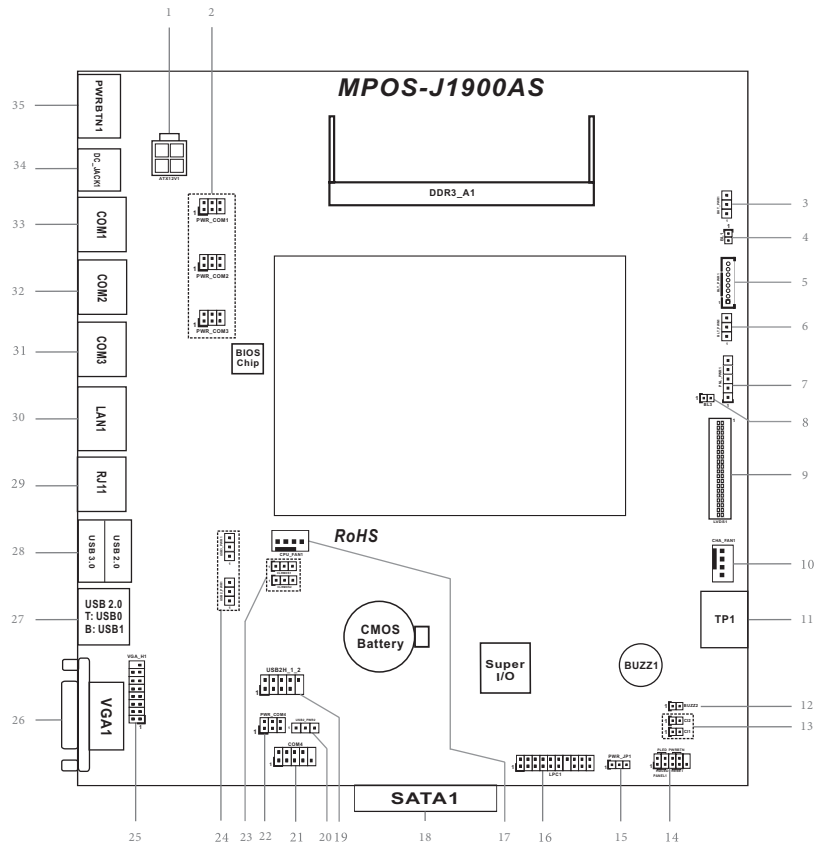


16 : LPC Header



17 : 4-Pin CPU FAN Connector (+12V)





18 : SATA Connector



PIN	Signal Name
S1	GND_1
S2	A+
S3	A-
S4	GND_2
S5	B-
S6	B+
S7	GND_3

PIN	Signal Name
P1	V33_1
P2	V33_2
P3	V33_3
P4	GND_4
P5	GND_5
P6	GND_6
P7	V5_1
P8	V5_2
P9	V5_3
P10	GND_7
P11	DAS/DSS
P12	GND_8
P13	V12_1
P14	V12_2
P15	V12_3

23 : Clear CMOS Headers



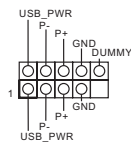
- CLRMO1 :
 1-2 : Normal
 2-3 : Clear CMOS
 CLRMO2 :
 1-2 : +BATT
 2-3 : +3VSB_A

25 : VGA Header



PIN	Signal Name	PIN	Signal Name
16	NA	15	GND
14	CRT_SCL	13	GND
12	5V/VSNC	11	GND
10	5VHSYNC	9	GND
8	CRT_SDA	7	NC
6	NC	5	B
4	GND	3	G
2	IO+5V_HDMI	1	R

19 : USB2.0 Header (USB2H_1_2)



USB Power Setting Jumpers

20 : USB2_PWR2 (For USB2H_1_2)

24 : USB2_PWR1 (For USB2_0_1)

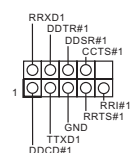
USB3_PWR1 (For USB3_0_2_23)

1-2 : +5V

2-3 : +5VSB



21 : COM Port Header (COM4) (RS232)



26 : D-Sub Port (VGA1)

27 : USB2.0 Ports (USB2_0_1)

28 : Top : USB2.0 Port

Bottom : USB3.0 Port

29 : RJ11 Port



PIN	Signal Name
6	GND
5	CASH2_P
4	JGPIOPWR
3	CASE_OPEN1#
2	CASH1_P
1	CASE_OPEN2#

30 : LAN Port (LAN1)

31 : COM Port (COM3)

32 : COM Port (COM2)

33 : COM Port (COM1)

34 : DC Jack (DC_JACK1)

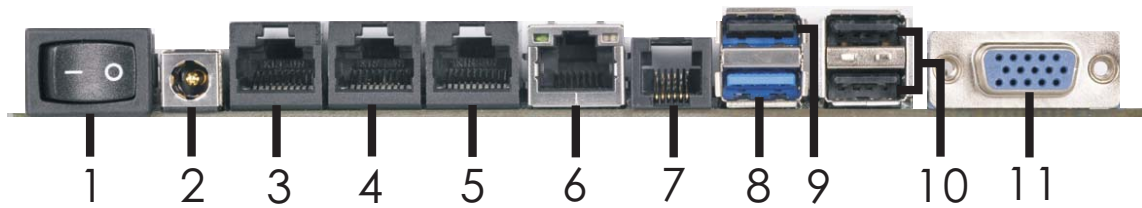
35 : Power Button (PWRBTN1)



PIN	Signal Name
10	DCD#
9	RXD#
8	TXD#
7	DTR#
6	GND
5	DSR#
4	RTS#
3	CTS#
2	Ring#
1	NC

- 1 : 4-pin ATX Power Input/Output Connector
- 2 : COM Port PWR Setting Jumpers
 - PWR_COM1 (For COM Port1)
 - PWR_COM2 (For COM Port2)
 - PWR_COM3 (For COM Port3)
- 3 : Backlight Power Select (LCD_BLT_VCC) (BKT_PWR1)
- 4 : BL1
- 5 : Backlight Power Connector (BLT_PWR1)
- 6 : Backlight Control Level (BLT_PWM1)
- 7 : Panel Power Select (LCD_VCC) (PNL_PWR1)
- 8 : BL3
- 9 : LVDS Panel Connector
- 10 : 4-Pin Chassis FAN Connector (+12V)
- 11 : TP1
- 12 : Buzzer
- 13 : Chassis Intrusion Headers (CI1, CI2)
- 14 : System Panel Header
- 15 : ATX/AT Mode Select (PWR_JP1)
- 16 : LPC Header
- 17 : 4-Pin CPU FAN Connector (+12V)
- 18 : SATA Connector
- 19 : USB2.0 Header (USB2H_1_2)
- 20 : USB Power Setting Jumper
 - USB2_PWR2 (For USB2H_1_2)
- 21 : COM Port Header (COM4) (RS232)
- 22 : COM Port PWR Setting Jumper
 - PWR_COM4 (For COM Port4)
- 23 : Clear CMOS Headers (CLRMOS1, CLRMOS2)
- 24 : USB Power Setting Jumpers
 - USB2_PWR1 (For USB2_0_1)
 - USB3_PWR1 (For USB3_0_2_23)
- 25 : VGA Header

Chapter 9 I/O Panel



1 Power Button (PWRBTN1)

2 DC Jack Port (DC_JACK1)

3 COM Port (COM1)

4 COM Port (COM2)

5 COM Port (COM3)

6 LAN RJ-45 Port (LAN1)*

7 RJ11 Port (RJ11)

8 USB 3.0 Port

9 USB 2.0 Port

10 USB 2.0 Ports (USB2_0_1)

11 D-Sub Port (VGA1)

* There are two LED next to the LAN port. Please refer to the table below for the LAN port LED indications.

LAN Port LED Indications

Activity/Link LED

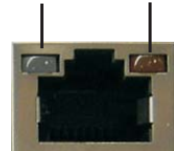
Status	Description
Off	No Link
Blinking	Data Activity
On	Link

SPEED LED

Status	Description
Off	10Mbps connection
Orange	100Mbps connection
Green	1Gbps connection

ACT/LINK SPEED

LED LED



LAN Port

Chapter 10: Installation

This is a 186.4 mm x 170 mm form factor motherboard. Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it.



Make sure to unplug the power cord before installing or removing the motherboard. Failure to do so may cause physical injuries to you and damages to motherboard components.

10.1 Screw Holes

Place screws into the holes to secure the motherboard to the chassis.



Do not over-tighten the screws! Doing so may damage the motherboard.

10.2 Pre-installation Precautions

Take note of the following precautions before you install motherboard components or change any motherboard settings.

1. Unplug the power cord from the wall socket before touching any component.
2. To avoid damaging the motherboard components due to static electricity, NEVER place your motherboard directly on the carpet or the like. Also remember to use a grounded wrist strap or touch a safety grounded object before you handle components.
3. Hold components by the edges and do not touch the ICs.
4. Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that comes with the component.



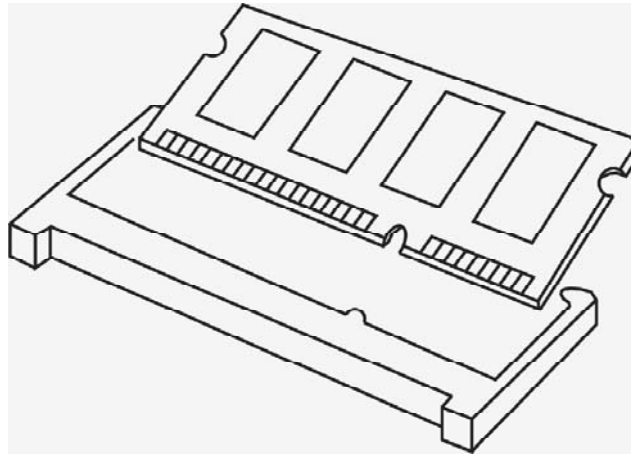
Before you install or remove any component, ensure that the power is switched off or the power cord is detached from the power supply.

Failure to do so may cause severe damage to the motherboard, peripherals, and/or components.

10.3 Installation of Memory Modules (SO-DIMM)

MPOS-J1900AS provides one 204-pin DDR3 (Double Data Rate 3) SO-DIMM slot, which supports single channel DDR3L SDRAM only.

Step 1. Align a SO-DIMM on the slot such that the notch on the SO-DIMM matches the break on the slot.

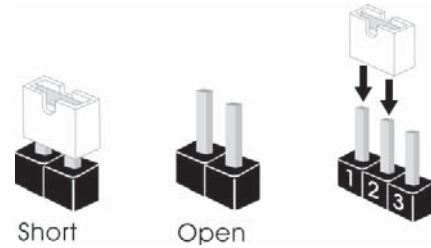


The SO-DIMM only fits in one correct orientation. It will cause permanent damage to the motherboard and the SO-DIMM if you force the SO-DIMM into the slot at incorrect orientation.

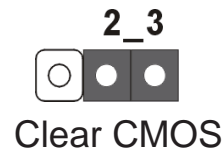
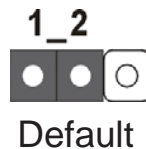
Step 2. Firmly insert the SO-DIMM into the slot until the retaining clips at both ends fully snap back in place and the SO-DIMM is properly seated.

10.4 Jumpers Setup

The illustration shows how jumpers are setup. When the jumper cap is placed on pins, the jumper is “Short”. If no jumper cap is placed on pins, the jumper is “Open”. The illustration shows a 3-pin jumper whose pin1 and pin2 are “Short” when jumper cap is placed on these 2 pins.



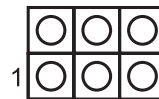
Clear CMOS Jumpers
(CLRCMOS1, CLRCMOS2)
(see p.8, No. 23)



CLRMOS1:
1-2: Normal
2-3: Clear CMOS
CLRMOS2:
1-2: +BATT
2-3: +3VSB_A

Note: CLRCMOS1 allows you to clear the data in CMOS. To clear and reset the system parameters to default setup, please turn off the computer and unplug the power cord from the power supply. After waiting for 15 seconds, use a jumper cap to short pin2 and pin3 on CLRCMOS1 for 5 seconds. However, please do not clear the CMOS right after you update the BIOS. If you need to clear the CMOS when you just finish updating the BIOS, you must boot up the system first, and then shut it down before you do the clear-CMOS action. Please be noted that the password, date, time, user default profile and MAC address will be cleared only if the CMOS battery is removed.

COM Port PWR Setting Jumpers
(6-pin PWR_COM1 (For COM Port1))
(6-pin PWR_COM2 (For COM Port2))
(6-pin PWR_COM3 (For COM Port3))
(see p.8 No. 2)



1-2: +12V
3-4: RI#
5-6: +5V

(6-pin PWR_COM4 (For COM Port4))
(see p.8 No. 22)

Backlight Power Select
(LCD_BLT_VCC)
(3-pin BKT_PWR1)
(see p.8 No. 3)



Use this to set up the backlight power of the LVDS connector.
1-2: LCD_BLT_VCC: +5V
2-3: LCD_BLT_VCC : +12V

Backlight Control Level
(3-pin BLT_PWM1)
(see p.8 No. 6)



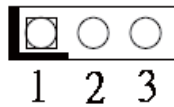
1-2: +3V
2-3: +5V

Panel Power Select (LCD_VCC)
(5-pin PNL_PWR1)
(see p.8 No. 7)



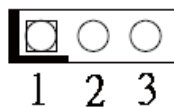
Use this to set up the VDD
power of the LVDS connector.
1-2: LCD_VCC: +3V
2-3: LCD_VCC: +5V
4-5: LCD_VCC: +12V

ATX/AT Mode Select
(3-pin PWR_JP1)
(see p.8 No. 15)



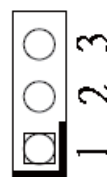
1-2: AT Mode
2-3: ATX Mode

USB Power Setting Jumpers
(3-pin USB2_PWR2 (For USB2H_1_2))
(see p.8 No. 20)



1-2: +5V
2-3: +5VSB

(3-pin USB2_PWR1 (For USB2_0_1))
(3-pin USB3_PWR1 (For USB3_0_2_23))
(see p.8 No. 24)



10.5 Onboard Headers and Connectors



Onboard headers and connectors are NOT jumpers. Do NOT place jumper caps over these headers and connectors. Placing jumper caps over the headers and connectors will cause permanent damage of the motherboard!

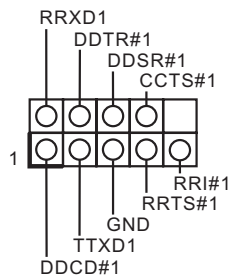
SATA2 Connector
(SATA1: see p.8, No. 18)



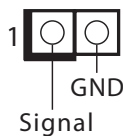
This Serial ATA2 (SATA2) connector supports SATA data cables for internal storage devices.

PIN	Signal Name	PIN	Signal Name
S1	GND_1	P1	V33_1
S2	A+	P2	V33_2
S3	A-	P3	V33_3
S4	GND_2	P4	GND_4
S5	B-	P5	GND_5
S6	B+	P6	GND_6
S7	GND_3	P7	V5_1
		P8	V5_2
		P9	V5_3
		P10	GND_7
		P11	DAS/DSS
		P12	GND_8
		P13	V12_1
		P14	V12_2
		P15	V12_3

COM Port Header (RS232)
(9-pin COM4)
(see p.8 No. 21)

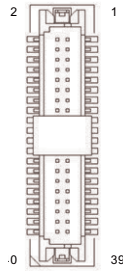


Chassis Intrusion Headers
(2-pin CI1, CI2: see p.8, No. 13)



This motherboard supports CASE OPEN detection feature that detects if the chassis cover has been removed. This feature requires a chassis with chassis intrusion detection design.
Close: Active Case Open
Open: Normal

LVDS Connector
(40-pin LVDS1)
(see p.8 No. 9)



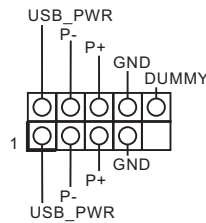
Pin	Assignment	Pin	Assignment
1	LVDSB_DATA0_N	2	PVDD2, 3.3V/5V (selected by JLV1)
3	LVDSB_DATA0_P	4	PVDD2, 3.3V/5V (selected by JLV1)
5	GND	6	GND
7	LVDSB_DATA1_N	8	GND
9	LVDSB_DATA1_P	10	LVDSA_DATA0_N
11	GND	12	LVDSA_DATA0_P
13	LVDSB_DATA2_N	14	GND
15	LVDSB_DATA2_P	16	LVDSA_DATA1_N
17	GND	18	LVDSA_DATA1_P
19	LVDSB_CLK_N	20	GND
21	LVDSB_CLK_P	22	LVDSA_DATA2_N
23	GND	24	LVDSA_DATA2_P
25	LVDSB_DATA3_N	26	GND
27	LVDSB_DATA3_P	28	LVDSA_CLK_N
29	VCC5	30	LVDSA_CLK_P
31	LVDS-EDID_SCL	32	GND
33	VCC3_3	34	LVDSA_DATA3_N
35	NC	36	LVDSA_DATA3_P
37	PVDD2, 3.3V/5V (selected by JLV1)	38	GND
39	PVDD2, 3.3V/5V (selected by JLV1)	40	LVDS_EDID_SDA

Backlight Power Connector
(8-pin BLT_PWR1)
(see p.8 No. 5)



PIN	Signal Name
8	LCD_BLT_VCC
7	LCD_BLT_VCC
6	BLDN
5	BLUP
4	CON_LBKLT_EN
3	CON_LBKLT_CTL
2	GND
1	GND

USB 2.0 Header
(9-pin USB2H_1_2)
(see p.8 No. 19)



There is one header on this motherboard. Each USB 2.0 header can support two ports.

VGA Connector
(15-pin VGA_H1)
(see p.8 No. 25)

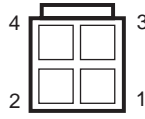


PIN	Signal Name	PIN	Signal Name
16	NA	15	GND
14	CRT_SCL	13	GND
12	5VVSYNC	11	GND
10	5VHSYNC	9	GND
8	CRT_SDA	7	NC
6	NC	5	B
4	GND	3	G
2	IO+5V_HDMI	1	R

Buzzer Header
(2-pin BUZZ2)
(see p.8 No. 12)



ATX Power Input/Output Connector
(4-pin ATX12V1)
(see p.8 No. 1)



Please connect a DC power supply to this connector.

BL Headers
(2-pin BL1)
(see p.8 No. 4)



(2-pin BL3)
(see p.8 No. 8)

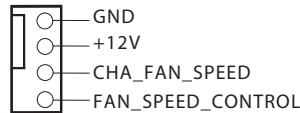


TP Header
(5-pin TP1)
(see p.8 No. 11)



PIN	Signal Name
1	ULL
2	ULR
3	UPROBE
4	UUR
5	UUL

Chassis Fan Connector
(4-pin CHA_FAN1)
(see p.8 No. 10)



Please connect the chassis fan cable to the connector and match the black wire to the ground pin.



Though this motherboard provides 4-Pin chassis fan (Quiet Fan) support, the 3-Pin chassis fan still can work successfully even without the fan speed control function. If you plan to connect the 3-Pin chassis fan to the chassis fan connector on this motherboard, please connect it to Pin 1-3.

CPU Fan Connector
(4-pin CPU_FAN1)
(see p.8 No. 17)

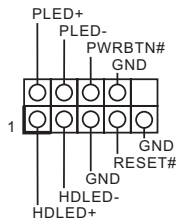


Please connect the CPU fan cable to the connector and match the black wire to the ground pin.



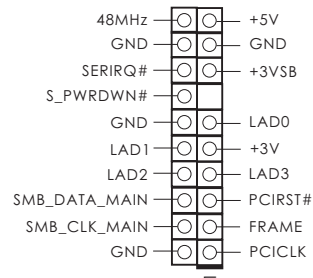
Though this motherboard provides 4-Pin CPU fan (Quiet Fan) support, the 3-Pin CPU fan still can work successfully even without the fan speed control function. If you plan to connect the 3-Pin CPU fan to the CPU fan connector on this motherboard, please connect it to Pin 1-3.

System Panel Header
 (9-pin PANEL1)
 (see p.8, No. 14)



This header accommodates several system front panel functions.

LPC Header
 (19-pin LPC1)
 (see p.8, No. 16)



This connector supports a Trusted Platform Module (TPM) system, which can securely store keys, digital certificates, passwords, and data. A TPM system also helps enhance network security, protects digital identities, and ensures platform integrity.

Chapter 11: UEFI SETUP UTILITY

11.1 Introduction

This section explains how to use the UEFI SETUP UTILITY to configure your system. The UEFI chip on the motherboard stores the UEFI SETUP UTILITY. You may run the UEFI SETUP UTILITY when you start up the computer. Please press <F2> or during the Power-On-Self-Test (POST) to enter the UEFI SETUP UTILITY, otherwise, POST will continue with its test routines.

If you wish to enter the UEFI SETUP UTILITY after POST, restart the system by pressing <Ctl> + <Alt> + <Delete>, or by pressing the reset button on the system chassis. You may also restart by turning the system off and then back on.



Because the UEFI software is constantly being updated, the following UEFI setup screens and descriptions are for reference purpose only, and they may not exactly match what you see on your screen.

11.1.1 UEFI Menu Bar

The top of the screen has a menu bar with the following selections:

Main	To set up the system time/date information
Advanced	To set up the advanced UEFI features
H/W Monitor	To display current hardware status
Security	To set up the security features
Boot	To set up the default system device to locate and load the Operating System

Exit To exit the current screen or the UEFI SETUP UTILITY Use <←> key or <→> key to choose among the selections on the menu bar, and then press <Enter> to get into the sub screen. You can also use the mouse to click your required item.

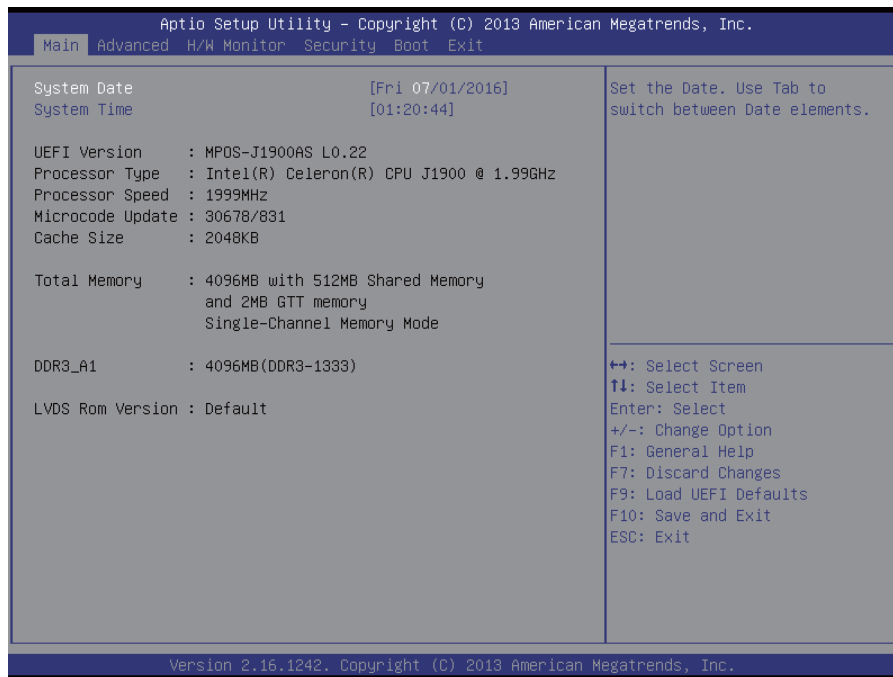
11.1.2 Navigation Keys

Please check the following table for the function description of each navigation key.

Navigation Key(s)	Function Description
← / →	Moves cursor left or right to select Screens
↑ / ↓	Moves cursor up or down to select items
+ / -	To change option for the selected items
<Enter>	To bring up the selected screen
<F1>	To display the General Help Screen
<F7>	Discard changes
<F9>	To load optimal default values for all the settings
<F10>	To save changes and exit the UEFI SETUP UTILITY
<F12>	Print screen
<ESC>	To jump to the Exit Screen or exit the current screen
<Tab>	Switch to next function
<PGUP>	Go to the previous page
<PGDN>	Go to the next page
<HOME>	Go to the top of the screen
<END>	Go to the bottom of the screen

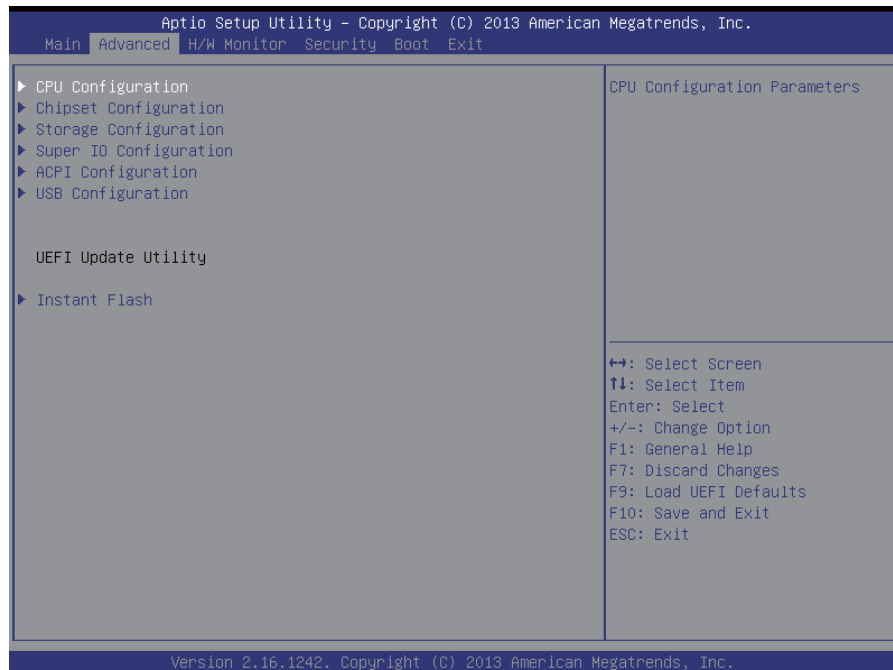
11.2 Main Screen

When you enter the UEFI SETUP UTILITY, the Main screen will appear and display the system overview.



11.3 Advanced Screen

In this section, you may set the configurations for the following items: CPU Configuration, Chipset Configuration, Storage Configuration, Super IO Configuration, ACPI Configuration and USB Configuration.





Setting wrong values in this section may cause the system to malfunction.

Instant Flash

Instant Flash is a UEFI flash utility embedded in Flash ROM. This convenient UEFI update tool allows you to update system UEFI without entering operating systems first like MS-DOS or Windows®. Just launch this tool and save the new UEFI file to your USB flash drive, floppy disk or hard drive, then you can update your UEFI only in a few clicks without preparing an additional floppy diskette or other complicated flash utility. Please be noted that the USB flash drive or hard drive must use FAT32/16/12 file system. If you execute Instant Flash utility, the utility will show the UEFI files and their respective information. Select the proper UEFI file to update your UEFI, and reboot your system after UEFI update process completes.

11.3.1 CPU Configuration

When you enter the UEFI SETUP UTILITY, the Main screen will appear and display the system overview.



Intel SpeedStep Technology

Intel SpeedStep technology is Intel's new power saving technology. Processors can switch between multiple frequencies and voltage points to enable power saving. The default value is [Enabled]. Configuration options: [Enabled] and [Disabled]. If you install Windows® 7 / 8 / 8.1 and want to enable this function, please set this item to [Enabled]. This item will be hidden if the current CPU does not support Intel SpeedStep technology.



Please note that enabling this function may reduce CPU voltage and lead to system stability or compatibility issues with some power supplies. Please set this item to [Disabled] if above issues occur.

CPU C States Support

Enable CPU C States Support for power saving. It is recommended to keep C3 enabled, C6 and C7 disabled.

Enhanced Halt State (C1E)

Enable or disable Enhanced Halt State (C1E) for lower power consumption.

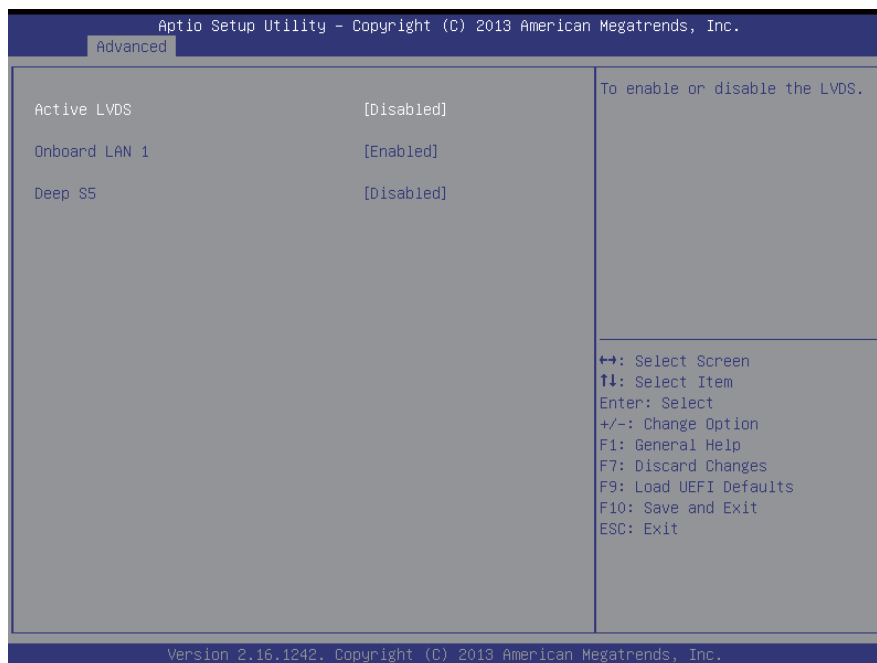
No-Execute Memory Protection

No-Execution (NX) Memory Protection Technology is an enhancement to the IA-32 Intel Architecture. An IA-32 processor with “No Execute (NX) Memory Protection” can prevent data pages from being used by malicious software to execute code.

Intel Virtualization Technology

When this option is set to [Enabled], a VMM (Virtual Machine Architecture) can utilize the additional hardware capabilities provided by Vanderpool Technology. This option will be hidden if the installed CPU does not support Intel Virtualization Technology.

11.3.2 Chipset Configuration



Active LVDS

Use this to enable or disable the LVDS. The default value is [Disabled].

Panel Type Selection

This option appears only when you enable Active LVDS.

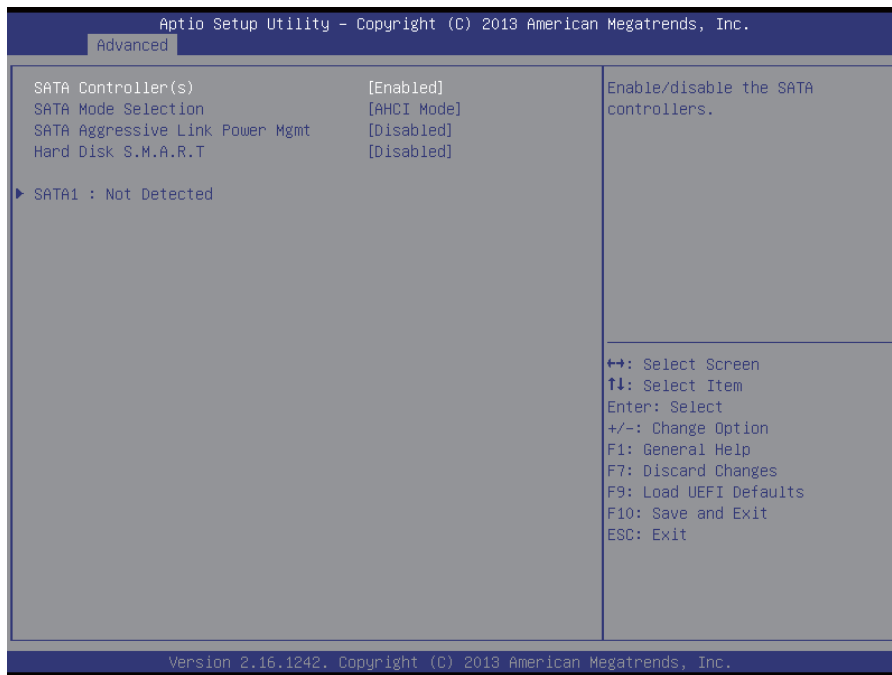
Onboard LAN 1

This allows you to enable or disable the Onboard LAN 1 feature.

Deep S5

This allows you to enable or disable Deep S5.

11.3.3 Storage Configuration



SATA Controller(s)

Use this item to enable or disable the SATA Controller feature.

SATA Mode Selection

Use this to select SATA mode. Configuration options: [IDE Mode] and [AHCI Mode]. The default value is [AHCI Mode].



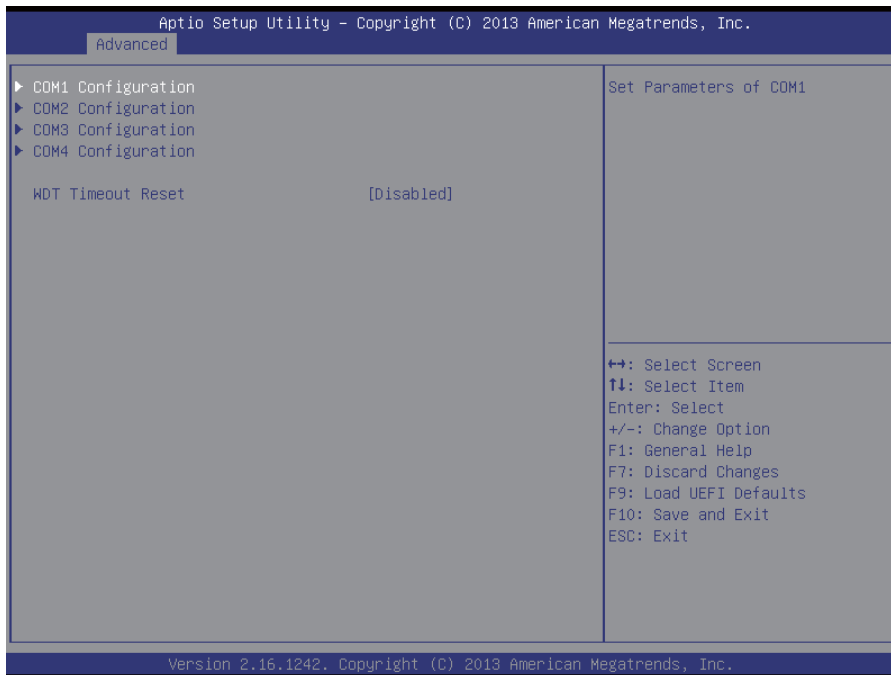
AHCI (Advanced Host Controller Interface) supports NCQ and other new features that will improve SATA disk performance but IDE mode does not have these advantages.

SATA Aggressive Link Power Management Use this item to configure SATA Aggressive Link Power Management.

Hard Disk S.M.A.R.T.

Use this item to enable or disable the S.M.A.R.T. (Self-Monitoring, Analysis, and Reporting Technology) feature. Configuration options: [Disabled] and [Enabled].

11.3.4 Super IO Configuration



COM1 Configuration

Use this to set parameters of COM1.

COM2 Configuration

Use this to set parameters of COM2.

COM3 Configuration

Use this to set parameters of COM3.

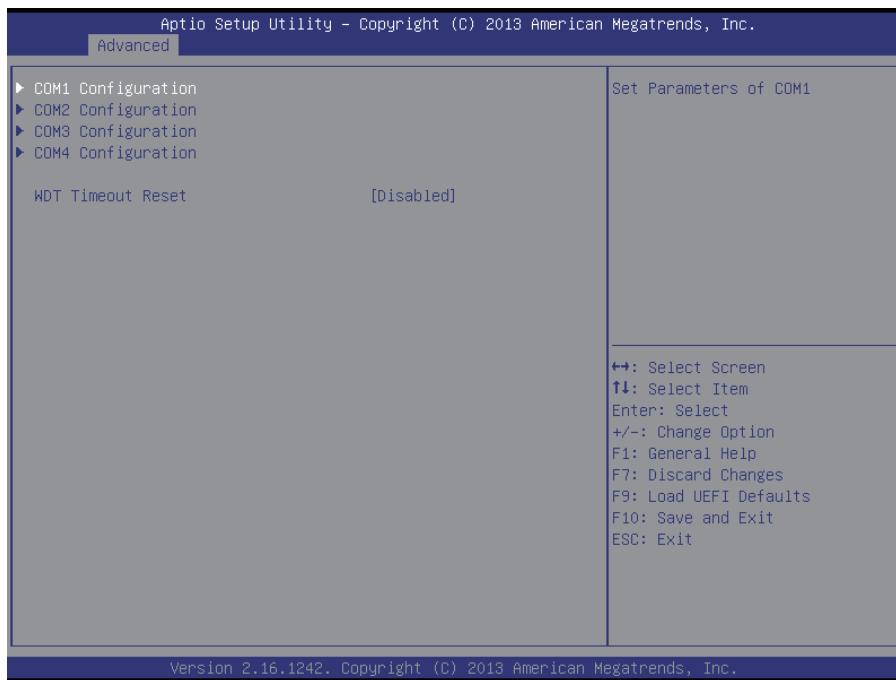
COM4 Configuration

Use this to set parameters of COM4.

WDT Timeout Reset

This allows users to enable/disable the Watch Dog Timer timeout to reset system. The default value is [Disabled].

11.3.5 ACPI Configuration



Suspend to RAM

Use this item to select whether to auto-detect or disable the Suspend-to-RAM feature. Select [Auto] will enable this feature if the OS supports it.

ACPI HPET Table

Use this item to enable or disable ACPI HPET Table. The default value is [Enabled]. Please set this option to [Enabled] if you plan to use this motherboard to submit Windows® certification.

PCIE Devices Power On

Use this item to enable or disable PCIE devices to turn on the system from the power-soft-off mode.

Ring-In Power On

Allow the system to be waked up by onboard COM port modem Ring-In signals.

RTC Alarm Power On

Use this item to enable or disable RTC (Real Time Clock) to power on the system.

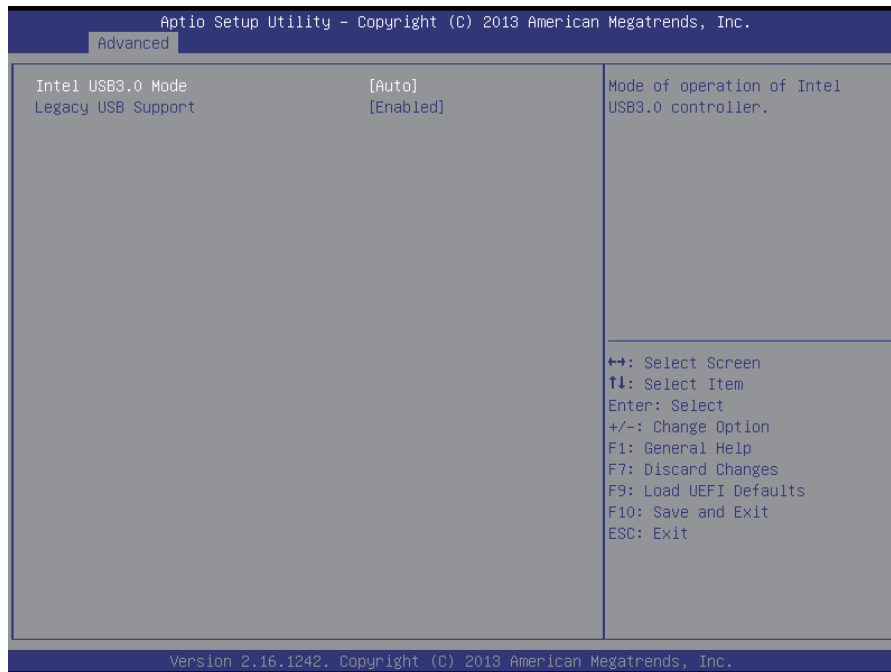
USB Keyboard/Remote Power On

Use this item to enable or disable USB Keyboard/Remote to power on the system.

USB Mouse Power On

Use this item to enable or disable USB Mouse to power on the system.

11.3.6 USB Configuration



Intel USB 3.0 Mode

Select Intel® USB 3.0 controller mode. Set [Smart Auto] to keep the USB 3.0 driver enabled after rebooting (USB 3.0 is enabled in BIOS). Set [Auto] to automatically enable the USB 3.0 driver after entering the OS (USB 3.0 is disabled in BIOS). Set [Enabled] to keep the USB 3.0 driver enabled (Must install driver to use USB devices under Windows® 7). Set [Disabled] to disable the USB 3.0 ports.

Legacy USB Support

Use this option to select legacy support for USB devices. There are four configuration options: [Enabled] and [UEFI Setup Only]. The default value is [Auto]. Please refer to below descriptions for the details of these four

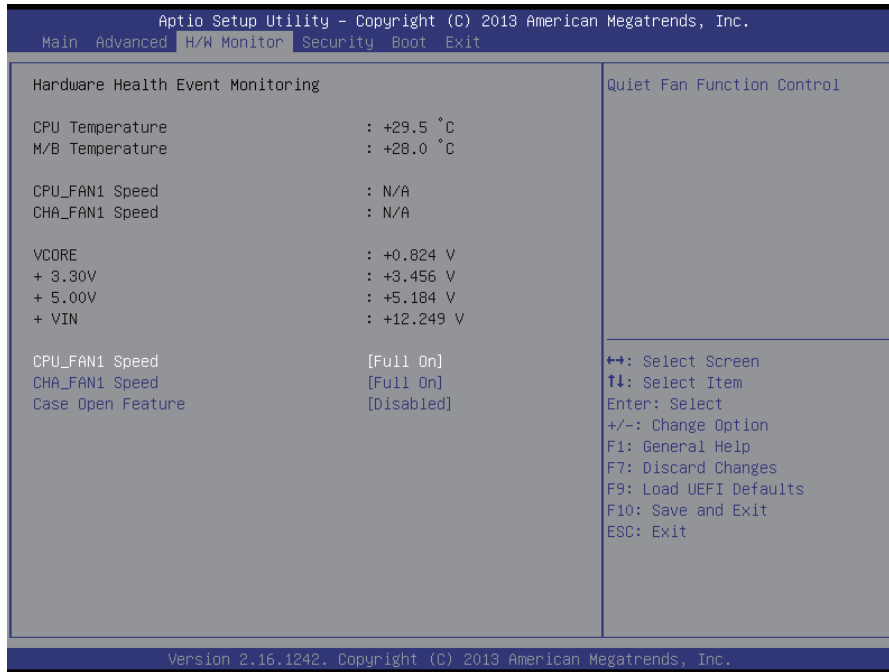
options:

[Enabled] - Enables support for legacy USB.

[UEFI Setup Only] - USB devices are allowed to use only under UEFI setup and Windows / Linux OS.

11.4 Hardware Health Event Monitoring Screen

In this section, it allows you to monitor the status of the hardware on your system, including the parameters of the CPU temperature, motherboard temperature, CPU fan speed, chassis fan speed, and the critical voltage.



CPU_FAN1 Setting

This allows you to set CPU fan 1's speed. Configuration options: [Full On] and [Automatic Mode]. The default value is [Full On].

CHA_FAN1 Setting

This allows you to set chassis fan 1's speed. Configuration options: [Full On] and [Automatic Mode]. The default value is [Full On].

Case Open Feature

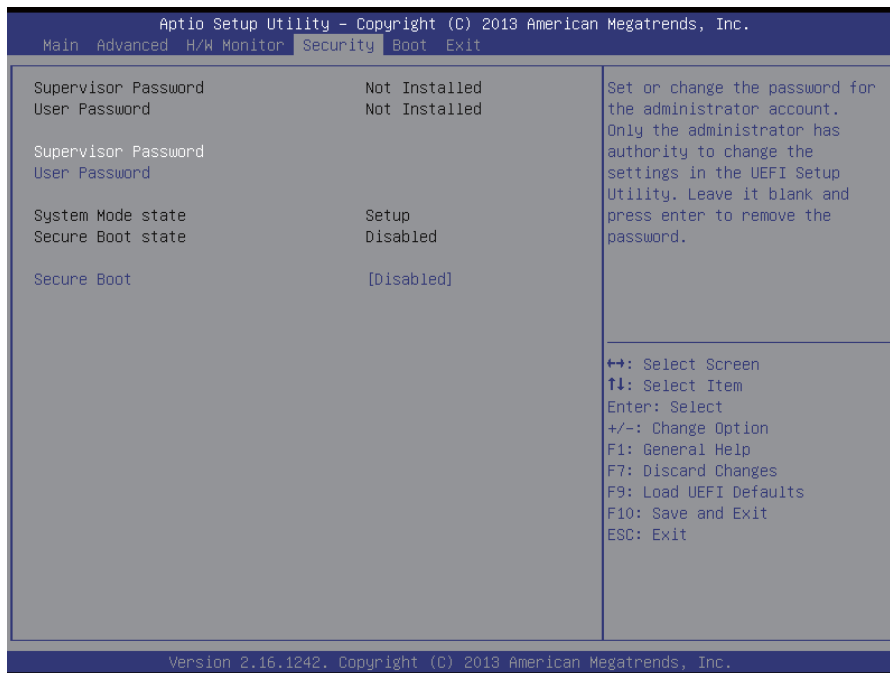
This allows you to enable or disable case open detection feature. The default is value [Disabled].

Clear Status

This option appears only when the case open has been detected. Use this option to keep or clear the record of previous chassis intrusion status.

11.5 Security Screen

In this section, you may set, change or clear the supervisor/user password for the system.



Supervisor Password

Set or change the password for the administrator account. Only the administrator has authority to change the settings in the UEFI Setup Utility.

Leave it blank and press enter to remove the password.

User Password

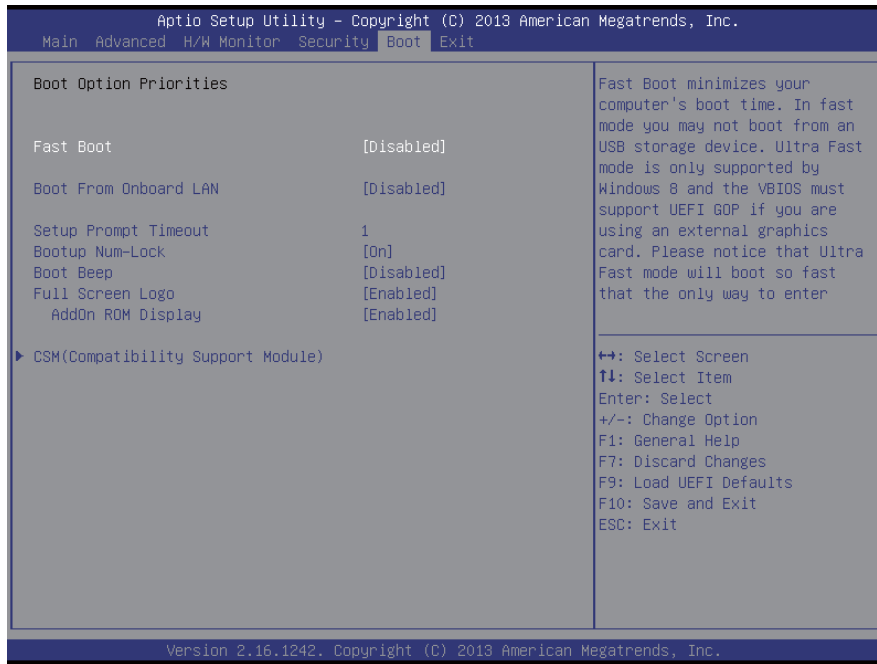
Set or change the password for the user account. Users are unable to change the settings in the UEFI Setup Utility. Leave it blank and press enter to remove the password.

Secure Boot

Enable to support Windows 8 Secure Boot.

11.6 Boot Screen

In this section, it will display the available devices on your system for you to configure the boot settings and the boot priority.



Fast Boot

Fast Boot minimizes your computer's boot time. There are three configuration options: [Disabled], [Fast] and [Ultra Fast]. The default value is [Disabled]. Please refer to below descriptions for the details of these three options:

[Disabled] - Disable Fast Boot.

[Fast] - The only restriction is you may not boot by using an USB flash drive.

[Ultra Fast] - There are a few restrictions.

1. Only supports Windows® 8.1 / 8 64-bit UEFI operating system.
2. You will not be able to enter BIOS Setup (Clear CMOS or run utility in Windows® to enter BIOS Setup).
3. If you are using an external graphics card, the VBIOS must support UEFI GOP in order to boot.

Boot From Onboard LAN

Use this item to enable or disable the Boot From Onboard LAN feature.

Setup Prompt Timeout

This shows the number of seconds to wait for setup activation key.

65535(0XFFFF) means indefinite waiting.

Bootup Num-Lock

If this item is set to [On], it will automatically activate the Numeric Lock function after boot-up.

Boot Beep

Select whether the Boot Beep should be turned on or off when the system boots up. Please note that a buzzer is needed.

Full Screen Logo

Use this item to enable or disable OEM Logo. The default value is [Enabled].

AddOn ROM Display

Enable AddOn ROM Display to see the AddOn ROM messages or configure the AddOn ROM if you've enabled Full Screen Logo. Disable for faster boot speed.

CSM (Compatibility Support Module)



CSM

Enable to launch the Compatibility Support Module. If you are using Windows 8 64-bit UEFI and all of your devices support UEFI, you may also disable CSM for faster boot speed.

Launch PXE OpROM Policy

Select UEFI only to run those that support UEFI option ROM only. Select Legacy only to run those that support legacy option ROM only. Select Do not launch to not execute both legacy and UEFI option ROM.

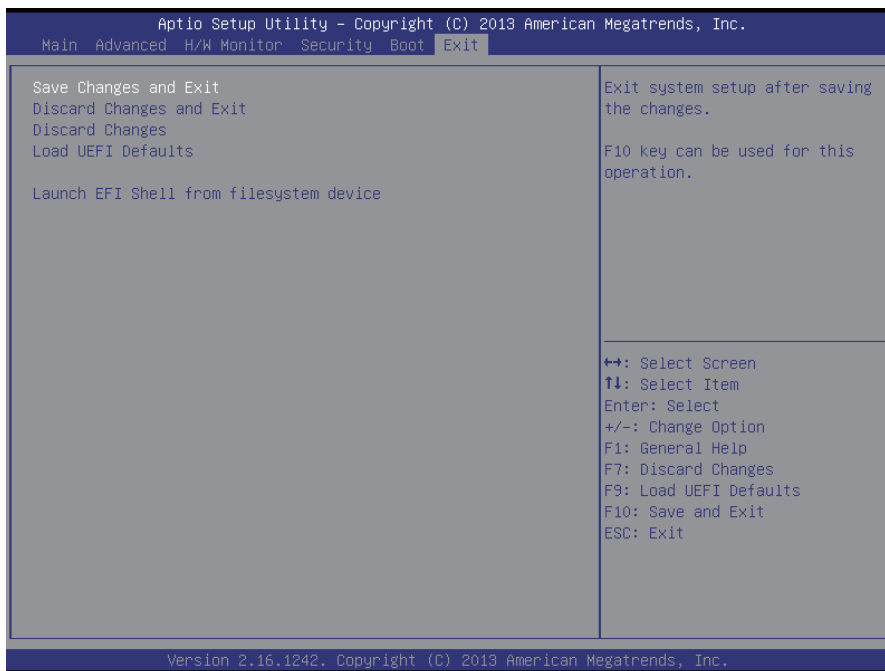
Launch Storage OpROM Policy

Select UEFI only to run those that support UEFI option ROM only. Select Legacy only to run those that support legacy option ROM only. Select Do not launch to not execute both legacy and UEFI option ROM.

Launch Video OpROM Policy

Select UEFI only to run those that support UEFI option ROM only. Select Legacy only to run those that support legacy option ROM only. Select Do not launch to not execute both legacy and UEFI option ROM.

11.7 Exit Screen



Save Changes and Exit

When you select this option, it will pop-out the following message, “Save configuration changes and exit setup?” Select [OK] to save the changes and exit the UEFI SETUP UTILITY.

Discard Changes and Exit

When you select this option, it will pop-out the following message, “Discard changes and exit setup?” Select [OK] to exit the UEFI SETUP UTILITY without saving any changes.

Discard Changes

When you select this option, it will pop-out the following message, “Discard changes?” Select [OK] to discard all changes.

Load UEFI Defaults

Load UEFI default values for all the setup questions. F9 key can be used for this operation.

Launch EFI Shell from filesystem device

Attempts to Launch EFI Shell application (Shell64.efi) from one of the available filesystem devices.