

element™

CA250W

User Manual

Rev 1.2



www.elementpos.co

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Ai sensi dell'art. 2 comma 3 del D.M.
275 del 30/10/2002

Si dichiara che questo prodotto è
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dalle direttive

2004/108/CE, 2006/95/CE e
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quando ad esso applicabili

Short Declaration of conformity

We declare this product is complying
with the laws in force and meeting all
the essential requirements as specified
by the directives

2004/108/CE, 2006/95/CE and
1999/05/CE

whenever these laws may be applied

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1. Introduction

1.1 Before You Start

Thank you for choosing our product. Before you start installing the POS system, please prepare a dry and stable working environment with sufficient lighting.

- Before you take the POS system out from anti-static bag, ground yourself properly by touching any safely grounded appliance, or use a grounded wrist strap to remove the static charge.
- Avoid opening the chassis of POS system without technical knowledge in order to avoid any technical problem.
- Do not leave any unfastened small parts inside the case after installation.
- ESD will cause short circuits which may damage the equipment.
- Keep the POS system computer from dangerous area, such as heat source, humid air and water.
- The operating temperatures of the computer should be 0 to 40 degrees Celsius.
- To avoid injury, be careful of:
 - Sharp pins on headers and connectors.
 - Rough edges and sharp corners on the chassis.
 - Damage to wires that could cause a short circuit.

Package List

- Element CA250W x1 (Power Adaptor and Power Cord are Included)
- RJ to COM Cable x 2



2. SPECIFICATION

2.1 CPU Support

- Product Collection: Intel® Celeron Processor J Series
- Code Name: BayTrail
- Processor: J1900
- Processor Base Frequency: 2.00 GHz
- Burst Frequency: 2.42 GHz
- Cache: 2 MB

2.2 Memory

- 1 X 204-pin DDR3L SO-DIMM socket 1333/1600Mhz up to 8GB

2.3 Main Screen

- 15.6" LED Display, Image Resolution 1366x768
- LED Backlight
- 220 cd/m2 (Typical)

2.4 Touch Panel

- 15.6" Projected-Capacitive Touch

2.5 Storage

- 2.5" SATA SSD

2.6 I/O Ports

- 4x COM (RJ45 to RS232); 3x External (RJ45 to RS232); 1x Internal (Pin Header)
- 1x Standard COM on M/B (Pin Header)
- 6x USB 2.0; 4x External (USB 3.0 x 1; USB 2.0 x 3); 2x Internal (Pin Header)
- 1x LAN
- 1x VGA
- 1x RJ11 for Cash Drawer
- 1x DC-PLUG

2.7 Model Features (Optional)

- Magnetic Strip Reader Track 1,2,3.
- Vacuum Fluorescent Display (VFD) with Display 20 Columns and 2 lines.
- 10.1" 2nd Display

2.8 OS Support

- POSReady 7
- Windows 10 IOT

2.9 Voltage Input

- 12 VDC/5A
- Adaptor: DC-IN Connector

2.10 Operating Temperature

- Celsius 0°C to 40°C, Humidity 15% to 80%

2.11 Ingress Protection Rating

- Front Screen Water Splashes IP65 (Self Declaration)

2.12 Color

- Black

2.13 Installation Method

- Desktop
- Wall Mount (Optional)

2.14 Power Adaptor

- 60W 12V DC Adaptor, Voltage 100V ~ 240V

2.15 MTBF

- 50,000 (Fifty Thousand) Hours under Room Temperature.

2.16 Software/Peripherals

- OPOS
- MSR
- Cash Drawer
- Customer Display (VFD)
- Thermal Printer (Optional)

3. TERMINAL OVERVIEW / Components

3.1 Appearance

The Element CA250W complete configuration is pictured below. The Element CA250W includes a projected capacitive touch screen with true flat touch. The design provides an accurate surface touch.

- LED light will be on when booting.
- MSR is optional.



- VFD/2nd display will be installed on the rear side, if fitted without a VFD/Display, a mylar-cover is installed instead.

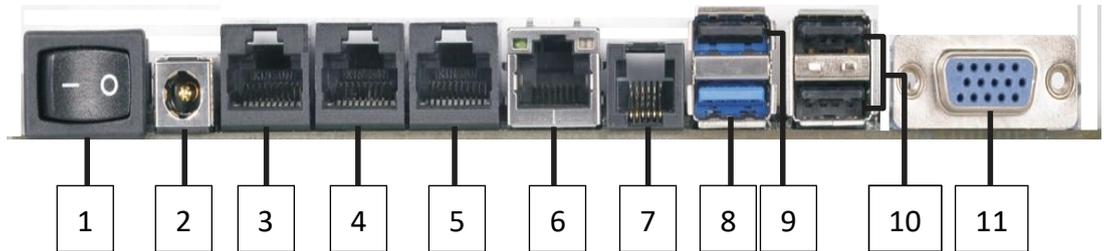


3.1.1 Power Switch

- Power switch is located on the left I/O port side of 15.6” main screen

3.1.2 User Accessible Interface

- I/O Ports as Below



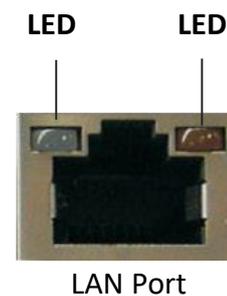
- | | |
|----------------------------|------------------------------|
| 1. Power Switch (PWRBTN1) | 7. RJ11 Port (RJ11) |
| 2. DC Jack Port (DC_JACK1) | 8. USB 3.0 Port |
| 3. COM Port (COM1) | 9. USB 2.0 Port |
| 4. COM Port (COM2) | 10. USB 2.0 Ports (USB2_0_1) |
| 5. COM Port (COM3) | 11. D-Sub Port (VGA1) |
| 6. LAN RJ-45 Port (LAN1)* | |

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

LAN Port LED Indications

Activity/Link LED		SPEED LED	
Status	Description	Status	Description
Off	No Link	Off	10Mbps connection
Blinking	Data Activity	Orange	100Mbps connection
On	Link	Green	1Gbps connection

ACT/LINK SPEED



3.1.3 Cooling System

- Fan-less Design, Low Power Consumption

3.1.4 Accessibility

Once the plastic peripheral cover is removed, optional peripherals can be installed and uninstalled making maintenance easy.

- Magnetic Strip Reader (MSR)
- Customer Display (VFD / 2nd Display)
- Solid-state Disk (SSD)

3.1.5 Installation Option

- Pedestal stand
- Wall mount

3.1.6 Operating Environment

- Celsius 0°C ~ 40°C, Humidity 15% RH ~ 80% RH

3.2 VFD, 2x20 Columns (Optional)

3.2.1 Specification

- Vacuum LED
- Display Characteristics
- Color: Green
- Viewing Angle: Maximum 180°
- Backlight: Green LED
- Resolution: 300-700 cd/m²
- Interface: RS-232
- Support Below:
 1. ECPSON ESC/POS
 2. EMAX (AEDEX)
 3. UTC
 4. ADM 787/788
 5. CD5220
 6. DSP-800

3.2.2 Input

- Operating Voltage: 5V Normal
- Operating Current: 1.8 mA Normal

3.2.3 Operating Environment

- Operating Temperature: -20 to +70°C
- Storage Environment: -30 to +80°C

3.3 MSR (Optional)

- MSR: Standard 3 Track (ISO 7811)

3.4 Power Supply

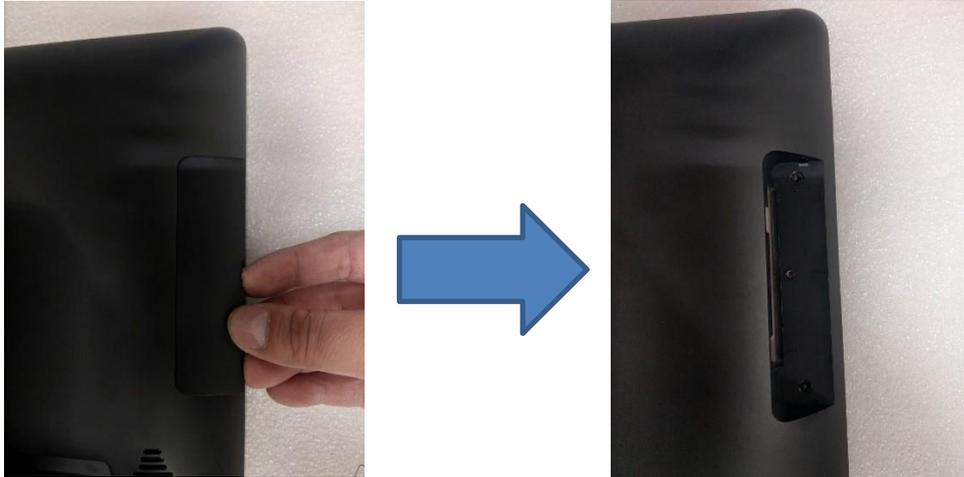
3.4.1 Power Adaptor Specification

- Input Voltage: 100V ~ 240 VAC, 50 ~ 60Hz, Auto-Ranging
- Nominal Output Voltage: 12V
- Rated Output Current: 5A
- Rated Power: 60W
- MTBF: 50,000 hours

4. INSTALLATION

4.1 SSD Installation

Step 1. Remove the right-side cover.



Step 2. Draw the SSD/HDD out to replace it. After swapping the SSD/HDD and reinsert the cover.



4.2 MSR Installation

Step 1. Remove the left side cover.



Step 2. Attach the cable's connectors together.



Step 3. Tighten two screws on the MSR.



4.3 Customer Display: VFD Type

Step 1: Remove the top cover.



Step 2: Connect the interface cable.



Step 3: Install the holder bracket and tighten two screws on each side of the bracket.

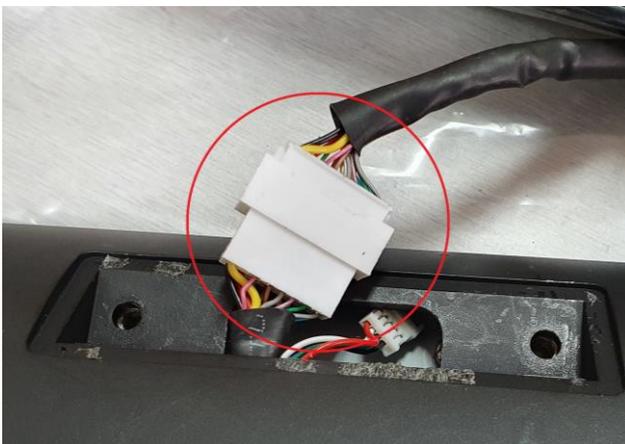


4.4 Customer Display: 10.1"

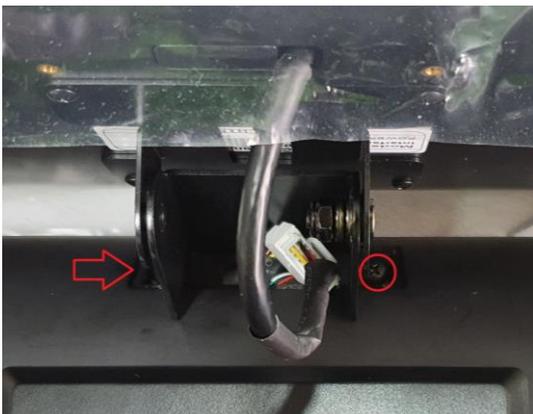
Step 1: Remove the top cover.



Step 2: Connect the interface cable.



Step 3: Install the holder bracket and tighten two screws on each side of the bracket.



Step 4: Correct the touch screen calibration

1. Power the system on, connect a mouse and launch the iUniTouch tool.
2. Navigate to Mode Switch and select ON under Multi-monitor mapping, then select start mapping.
3. Follow the prompts on both screens to select the touch screen, then click Set.

5. BIOS Setup

5.1 Main BIOS Information

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.



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.

5.1.1 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 boot device and load the Operating System
Exit	To exit the current screen or the UEFI SETUP UTILITY

Use < ← > key or < → > key to highlight selections on the menu bar, and then press <Enter> to enter the sub menu. You can also use the mouse to select your required item.

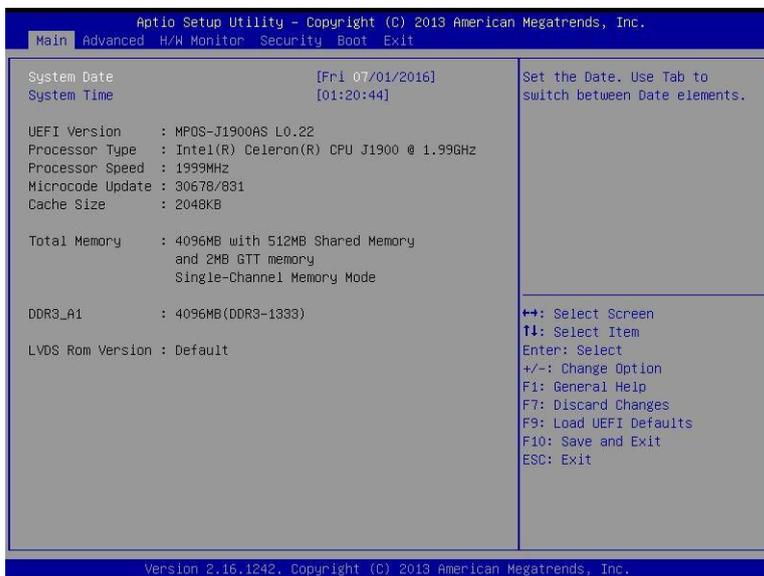
5.1.2 Navigation Keys

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

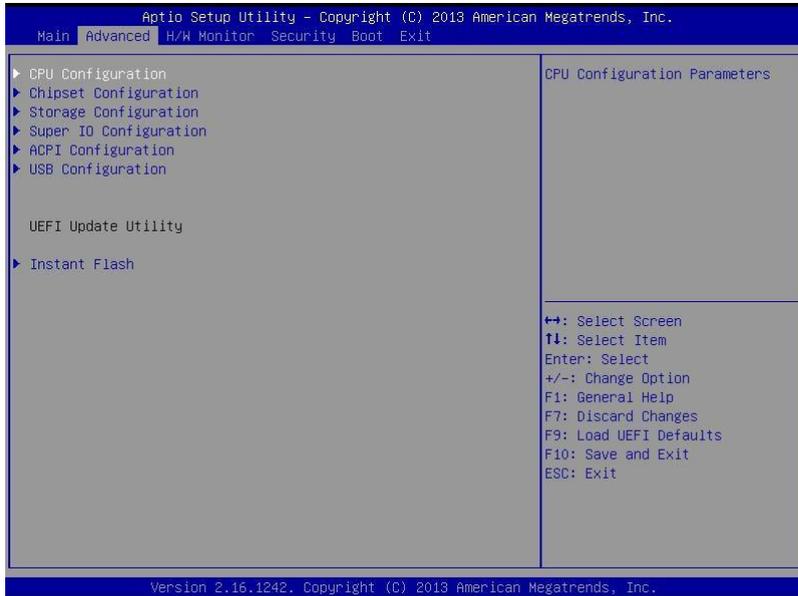
5.2 Main Screen

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



5.3 Advanced Screen

In this section, you may configure the following items: CPU, Chipset, Storage, Super IO, ACPI and USB.



Setting incorrect values in this section may cause system instability. Please proceed with caution.

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.

5.3.1 CPU Configuration



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].

If you install Windows® 7 / 8 / 8.1 and want to enable this function, please set this item to [Enabled].



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.

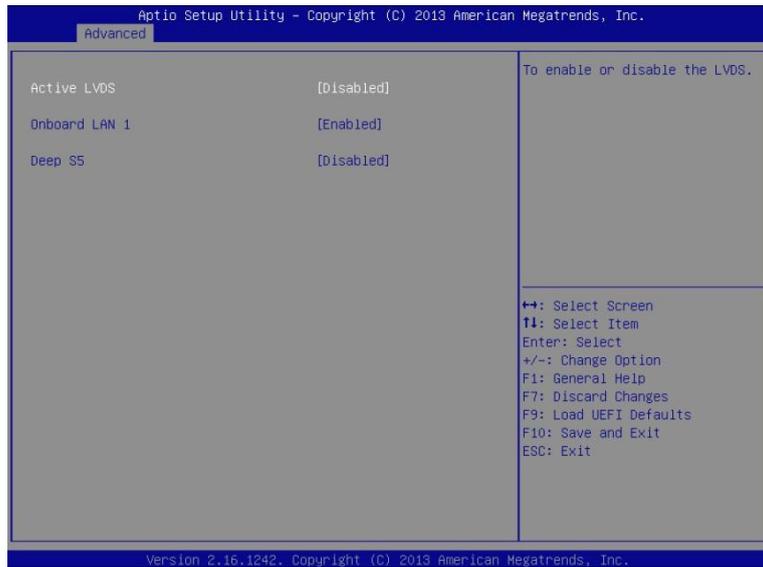
Enhanced Halt State (C1E)

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. This can prevent data pages from being used by malicious software to execute code.

5.3.2 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.

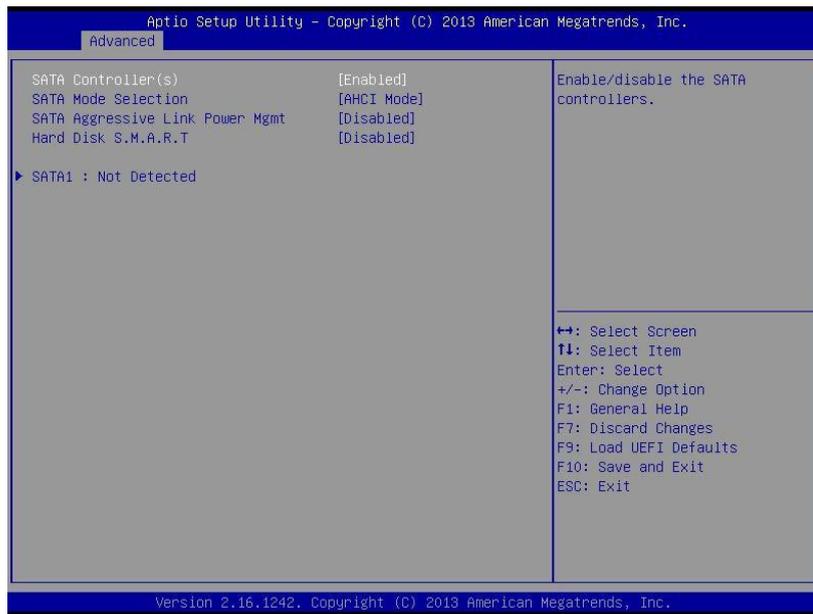
Onboard LAN 1

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

Deep S5

This allows you to enable or disable Deep S5.

5.3.3 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, IDE mode does not have these advantages.

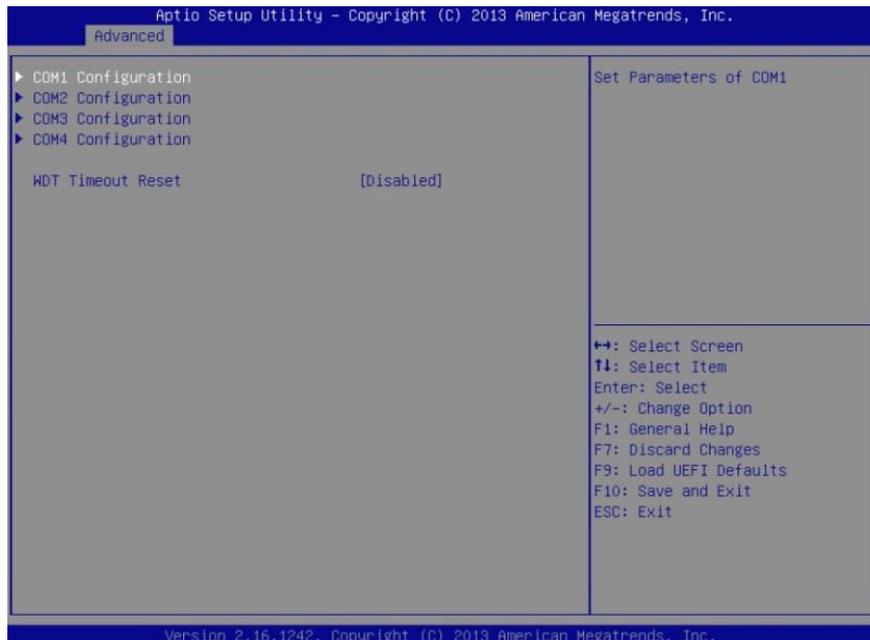
SATA Aggressive Link Power Management

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].

5.3.4 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.

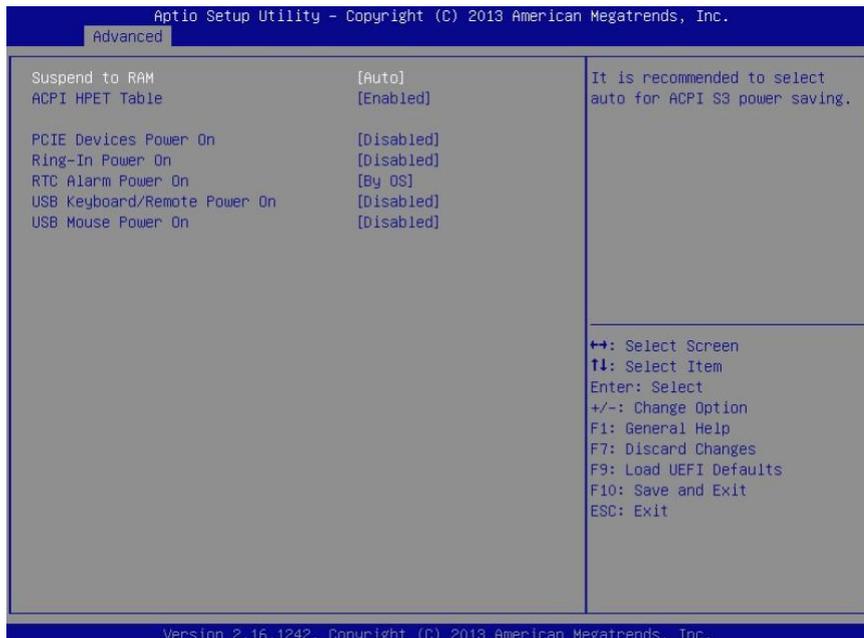
COM4 Configuration

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].

5.3.5 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.

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.

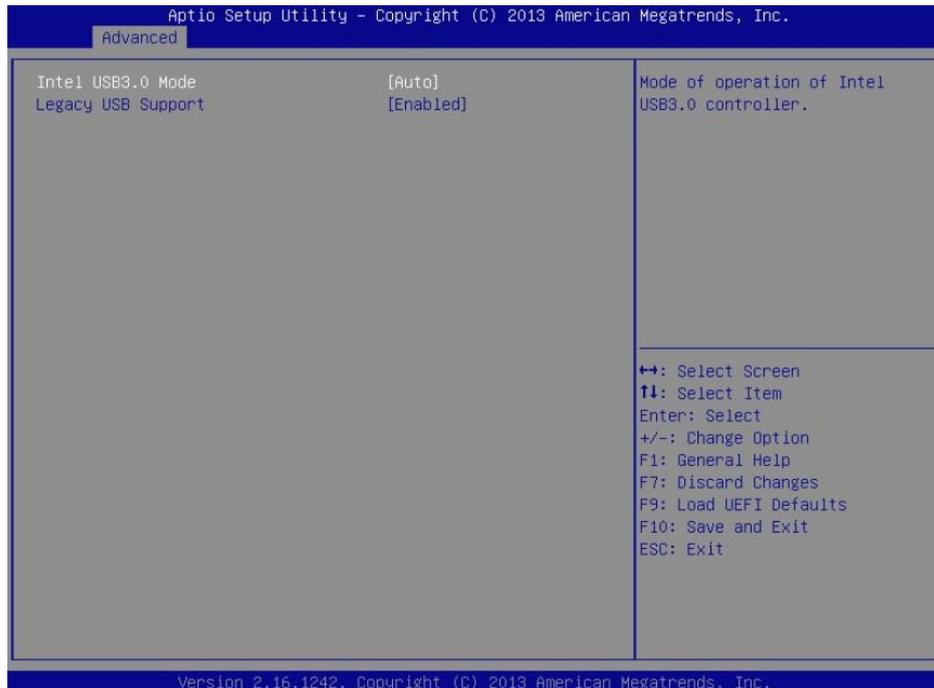
USB Keyboard/Remote Power On

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.

5.3.6 USB Configuration



Intel USB 3.0 Mode

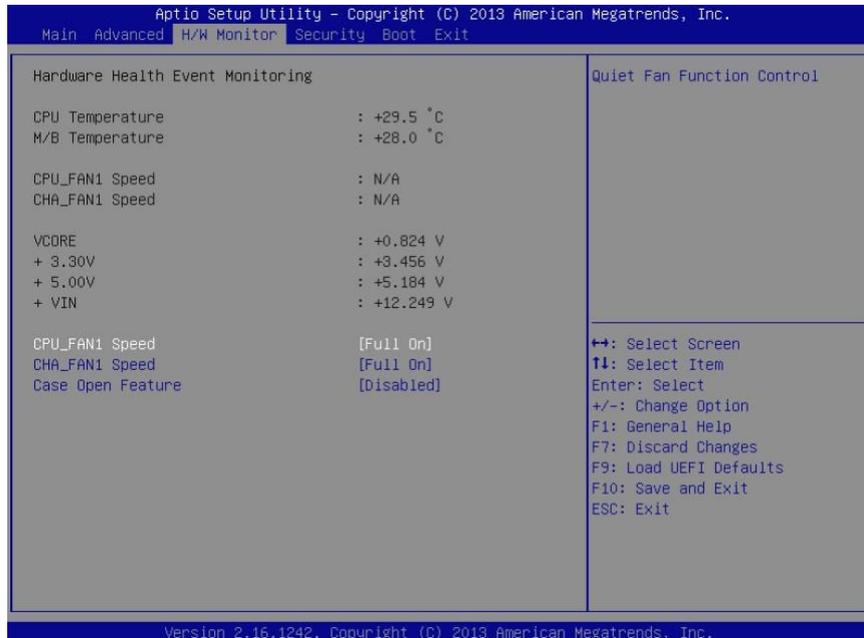
Select Intel® USB 3.0 controller mode. Set [Smart Auto] to keep the USB 3.0 driver enabled after rebooting (USB 3.0 is enabled in BIOS). Set [Auto] to automatically enable the USB 3.0 driver after entering the OS (USB 3.0 is disabled in BIOS). Set [Enabled] to keep the USB 3.0 driver enabled (Must install 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] - Legacy USB devices can only be used under UEFI setup and Windows / Linux OS.

5.4 Hardware Health Event Monitoring Screen

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

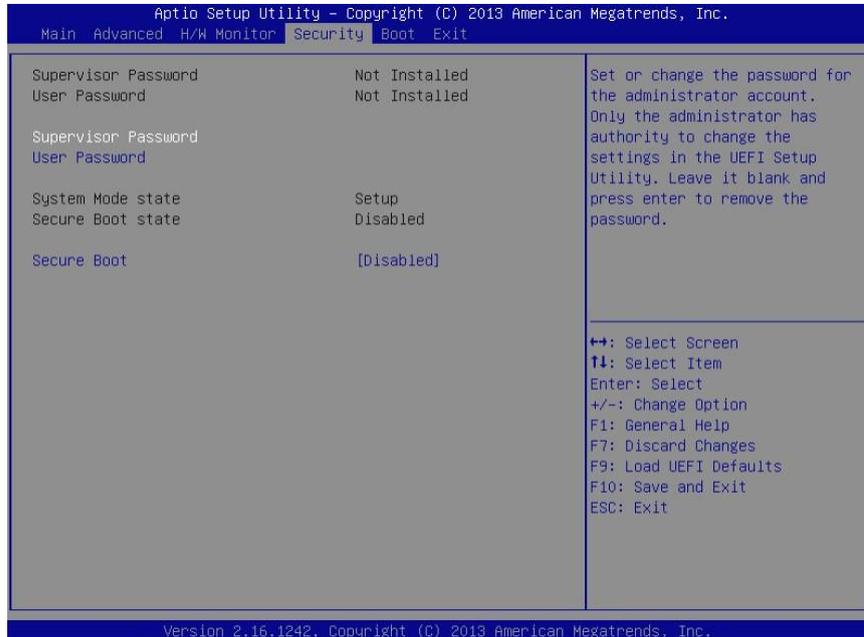
This allows you to enable or disable case open detection feature. The default is value [Disabled].

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.

5.5 Security Screen

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

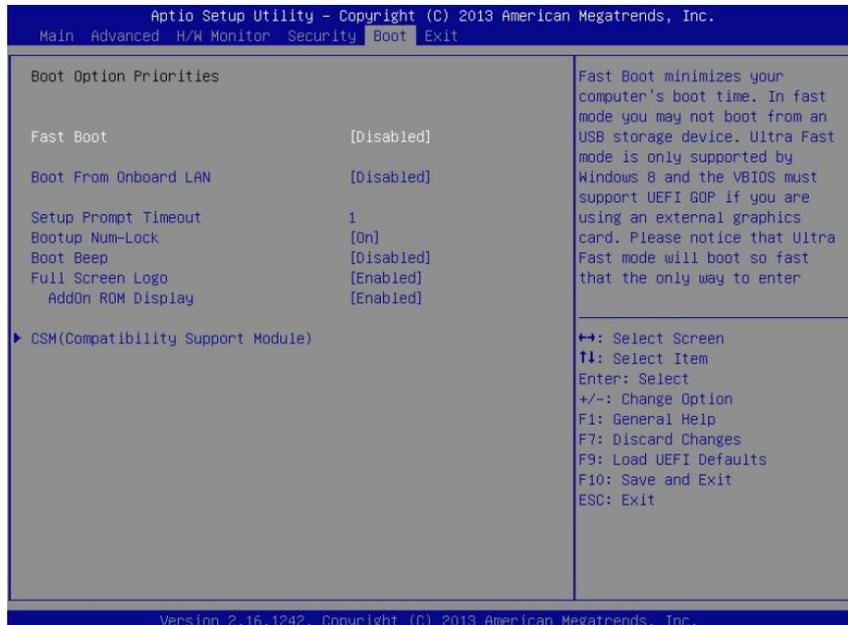
Set or change the password for the user account. Users are unable to change the settings in the UEFI Setup Utility. Leave it blank and press enter to remove the password.

Secure Boot

Enable to support Windows Secure Boot.

5.6 Boot Screen

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 and Windows® 10 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).

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.

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 a 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.

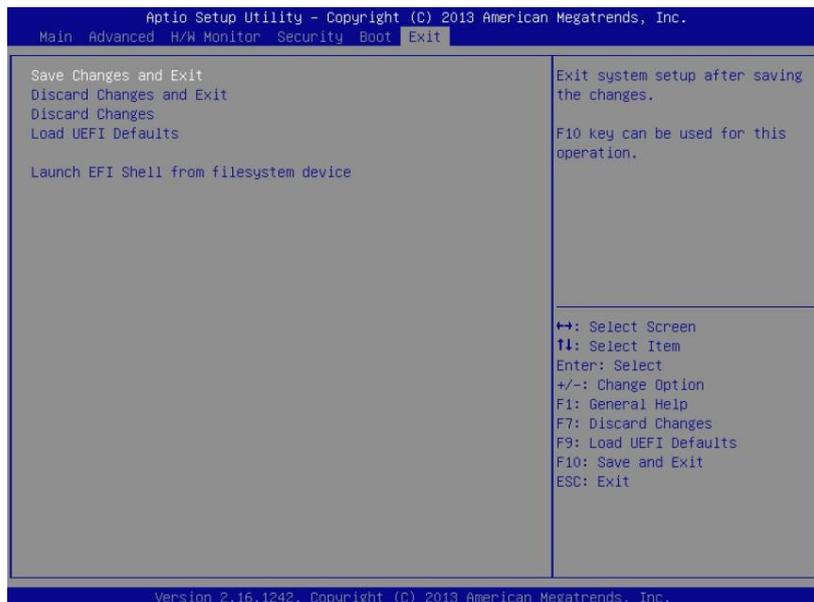
Launch Storage OpROM Policy

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.

5.7 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.