
ELIT-1050

**Digital Signage Player Powered by
Intel® Braswell SoC Processor**

User's Manual

Version 1.2

Revision History

Version	Date	Description
1.0	2017.11	Initial release
1.1	2018.01	Update certification, temperature, and power input information in "1.3 Specifications"
1.2	2018.04	Update Wi-Fi module related descriptons, including model and images

Revision History	ii
Contents	i
Preface.....	iii
Copyright Notice	iii
Declaration of Conformity	iii
CE.....	iii
FCC Class B.....	iii
RoHS	iv
SVHC / REACH	iv
Important Safety Instructions	v
Warning.....	vi
Lithium Battery Replacement.....	vi
Technical Support	vi
Warranty.....	vii
Chapter 1 - Introduction.....	1
1.1. Features.....	2
1.2. About this Manual	2
1.3. Specifications.....	3
1.4. Inside the Package	4
1.5. Ordering Information	5
1.5.1. Configure-to-Order Service.....	5
Chapter 2 - Getting Started.....	7
2.1. Dimensions	8
2.2. Tour the Computer	9
2.3. Driver Installation Note.....	10
Chapter 3 - Engine of the Computer.....	11
3.1. Board Layout.....	12
3.1.1. Pin Definition.....	12
Chapter 4 - Installation and Maintenance.....	15
4.1. Access the Inside of the Computer	16
4.1.1. Disassemble the Computer	16
4.1.2. Reassemble the Computer	18
4.2. Install Hardware	19
4.2.1. Install mSATA Storage	19
4.2.2. Install Wi-Fi Module	20
4.2.3. Install SIM Module	24
4.2.4. Install 4G Mini-PCIe Module (Optional)	25
4.2.3. Install Memory Module.....	29
4.3. Mounting the Computer (optional)	30

- 4.4. Installing Operating System 32
- 4.5. Using the Boot Manager 33
- Chapter 5 - BIOS 35**
- 5.1. Main 38
- 5.2. Advanced 39
 - 5.2.1. Trusted Computing 40
 - 5.2.2. Hardware Monitor 41
 - 5.2.3. Second Super IO Configuration 42
 - 5.2.4. S5 RTC Wake Settings 43
 - 5.2.5. CPU Configuration 44
 - 5.2.6. SATA Configuration 45
 - 5.2.7. OS Selection 46
 - 5.2.8. SDIO Configuration 47
 - 5.2.9. Platform Trust Configuration 48
 - 5.2.10. Security Configuration 49
- 5.3. Chipset 50
- 5.4. Security 52
- 5.5. Boot 54
- 5.6. Save & Exit 55

Copyright Notice

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Under no circumstances will the manufacturer be liable for any direct, indirect, special, incidental, or consequential damages arising from the use or inability to use the product or documentation, even if advised of the possibility of such damages.

This document contains proprietary information protected by copyright. All rights are reserved. No part of this document may be reproduced by any mechanical, electronic, or other means in any form without prior written permission of the manufacturer.

Declaration of Conformity

CE

The CE symbol on your product indicates that it is in compliance with the directives of the Union European (EU). A Certificate of Compliance is available by contacting Technical Support.

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This kind of cable is available from ARBOR. Please contact your local supplier for ordering information.

Warning

This is a class B product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

FCC Class B

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

NOTE:

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

RoHS

ARBOR Technology Corp. certifies that all components in its products are in compliance and conform to the European Union's Restriction of Use of Hazardous Substances in Electrical and Electronic Equipment (RoHS) Directive 2002/95/EC.

The above mentioned directive was published on 2/13/2003. The main purpose of the directive is to prohibit the use of lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB), and polybrominated diphenyl ethers (PBDE) in electrical and electronic products. Member states of the EU are to enforce by 7/1/2006.

ARBOR Technology Corp. hereby states that the listed products do not contain unintentional additions of lead, mercury, hex chrome, PBB or PBDB that exceed a maximum concentration value of 0.1% by weight or for cadmium exceed 0.01% by weight, per homogenous material. Homogenous material is defined as a substance or mixture of substances with uniform composition (such as solders, resins, plating, etc.). Lead-free solder is used for all terminations (Sn(96-96.5%), Ag(3.0-3.5%) and Cu(0.5%)).

SVHC / REACH

To minimize the environmental impact and take more responsibility to the earth we live, Arbor hereby confirms all products comply with the restriction of SVHC (Substances of Very High Concern) in (EC) 1907/2006 (REACH --Registration, Evaluation, Authorization, and Restriction of Chemicals) regulated by the European Union.

All substances listed in SVHC < 0.1 % by weight (1000 ppm)

Important Safety Instructions

Read these safety instructions carefully

1. Read all cautions and warnings on the equipment.
2. Place this equipment on a reliable surface when installing. Dropping it or letting it fall may cause damage
3. Make sure the correct voltage is connected to the equipment.
4. For pluggable equipment, the socket outlet should be near the equipment and should be easily accessible.
5. Keep this equipment away from humidity.
6. The openings on the enclosure are for air convection and protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
7. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
8. Never pour any liquid into opening. This may cause fire or electrical shock.
9. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
10. If one of the following situations arises, get the equipment checked by service personnel:
 - a. The power cord or plug is damaged.
 - b. Liquid has penetrated into the equipment.
 - c. The equipment has been exposed to moisture.
 - d. The equipment does not work well, or you cannot get it to work according to the user's manual.
 - e. The equipment has been dropped or damaged.
 - f. The equipment has obvious signs of breakage.
11. Keep this User's Manual for later reference.

Warning

The Box PC and its components contain very delicately Integrated Circuits (IC). To protect the Box PC and its components against damage caused by static electricity, you should always follow the precautions below when handling it:

1. Disconnect your Box PC from the power source when you want to work on the inside.
2. Use a grounded wrist strap when handling computer components.
3. Place components on a grounded antistatic pad or on the bag that came with the Box PC, whenever components are separated from the system.

Lithium Battery Replacement

Incorrect replacement of the lithium battery may lead to a risk of explosion.

The lithium battery must be replaced with an identical battery or a battery type recommended by the manufacturer.

Do not throw lithium batteries into the trash can. It must be disposed of in accordance with local regulations concerning special waste.

Technical Support

If you have any technical difficulties, please consult the user's manual first at:
<http://www.arbor.com.tw>

Please do not hesitate to call or e-mail our customer service when you still cannot find out the answer.

<http://www.arbor-technology.com>

E-mail:info@arbor.com.tw

Warranty

This product is warranted to be in good working order for a period of one year from the date of purchase. Should this product fail to be in good working order at any time during this period, we will, at our option, replace or repair it at no additional charge except as set forth in the following terms. This warranty does not apply to products damaged by misuse, modifications, accident or disaster.

Vendor assumes no liability for any damages, lost profits, lost savings or any other incidental or consequential damage resulting from the use, misuse of, or inability to use this product. Vendor will not be liable for any claim made by any other related party.

Vendors disclaim all other warranties, either expressed or implied, including but not limited to implied warranties of merchantability and fitness for a particular purpose, with respect to the hardware, the accompanying product's manual(s) and written materials, and any accompanying hardware. This limited warranty gives you specific legal rights.

Return authorization must be obtained from the vendor before returned merchandise will be accepted. Authorization can be obtained by calling or faxing the vendor and requesting a Return Merchandise Authorization (RMA) number. Returned goods should always be accompanied by a clear problem description.

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Chapter 1

Introduction

1.1. Features

- Fanless design
- Ultra low profile enclosure
- 32GB onboard eMMC memory
- 1 x full-size Mini-PCIe slot for 3G module or mSATA storage
- Support dual HDMI
- Support outside accessible MicroSD slot
- Support optional Wi-Fi Connection
- Supports Windows 7 and Windows 10



1.2. About this Manual

This manual is meant for the experienced users and integrators with hardware knowledge of personal computers. If you are not sure about the description in this manual, consult your vendor before further handling.

We recommend that you keep one copy of this manual for the quick reference for any necessary maintenance in the future. Thank you for choosing ARBOR products.

1.3. Specifications

System	
CPU	Soldered onboard Intel® Celeron® N3060, 1.6GHz
Memory	2 x 204-pin DDR3L SO-DIMM socket, supporting 1600MHz SDRAM up to 8GB (2GB DDR3L SO-DIMM pre-installed)
Chipset	SoC Integrated
Graphics	Intel® HD Graphics 400
ATA	1 x Serial ATA port with 600MB/s HDD transfer rate
LAN Chipset	2 x Realtek 8111HS GbE controllers
Watchdog Timer	1~255 levels reset
I/O	
Serial Port	1 x Micro-B RS232 half-duplex
USB Port	4 x USB 3.0 ports
	1 x Micro-B USB 2.0
LAN	2 x RJ-45 ports for GbE
Video Port	2 x HDMI, Max. resolution : 3840 x 2160 @ 30Hz or 2560 x 1600 @ 60Hz
Audio	Realtek ALC255 controller Supports 2/4/5.1/7.1 channel configurations via HDMI 1 x 3.5mm stereo headphone jack
Expansion Bus	1 x Full-size Mini-PCIe slot interconnected with SIM card socket (for 3G module or mSATA)
	1 x Half-size Mini-PCIe slot for optional WiFi+Bluetooth module
Environmental	
Operating Temp.	-10 ~ 55 °C (14 ~ 131°F)
Storage Temp.	-20 ~ 60°C (-4 ~ 140°F)
Operating Humidity	0%-85% @ 55 °C (non-condensing)
Vibration	3 Grms/5~500Hz/random operation
Shock	Operating 50G (11ms), Non-operating 80G with eMMC
Qualification	
Certification	CE, FCC Class B
Power Requirement	
Power Input	DC 19V input by 2.5mm power jack
Power Consumption	Max. 15W (w/o I/O card)

Storage	
Type	Onboard 32GB eMMC flash memory
	1 x mSATA
	1 x MicroSD socket, can be outside accessible
Mechanical	
Construction	Aluminum alloy
Mounting	Support VESA-mount
Weight	0.86Kg (1.89lb)
Dimensions (W x H x D)	141 x 34.8 x 107.6 (5.55" x 1.37" x 4.24")
OS Support	
Windows 7 / Windows 10 / Linux (Kernel: 3.1X)	

*For Windows 7, only system image is available.

1.4. Inside the Package

Upon opening the package, carefully inspect the contents. If any of the items is missing or appears damaged, contact your local dealer or distributor. The package should contain the following items:



1 x ELIT-1050



Standard Accessories contain the following items:

- Driver DVD
- User's manual
- Power adapter w/ US type power cord or EU type power cord

1.5. Ordering Information

ELIT-1050-US	Digital Signage Player by Intel® Celeron N3060 w/32GB eMMC, 2GB memory, and 65W Adapter (US type power cable)
ELIT-1050-EU	Digital Signage Player by Intel® Celeron N3060 w/32GB eMMC, 2GB memory, and 65W Adapter (EU type power cable)

1.5.1. Configure-to-Order Service

Make the computer more tailored to your needs by selecting one or more components from the list below to be fabricated to the computer.

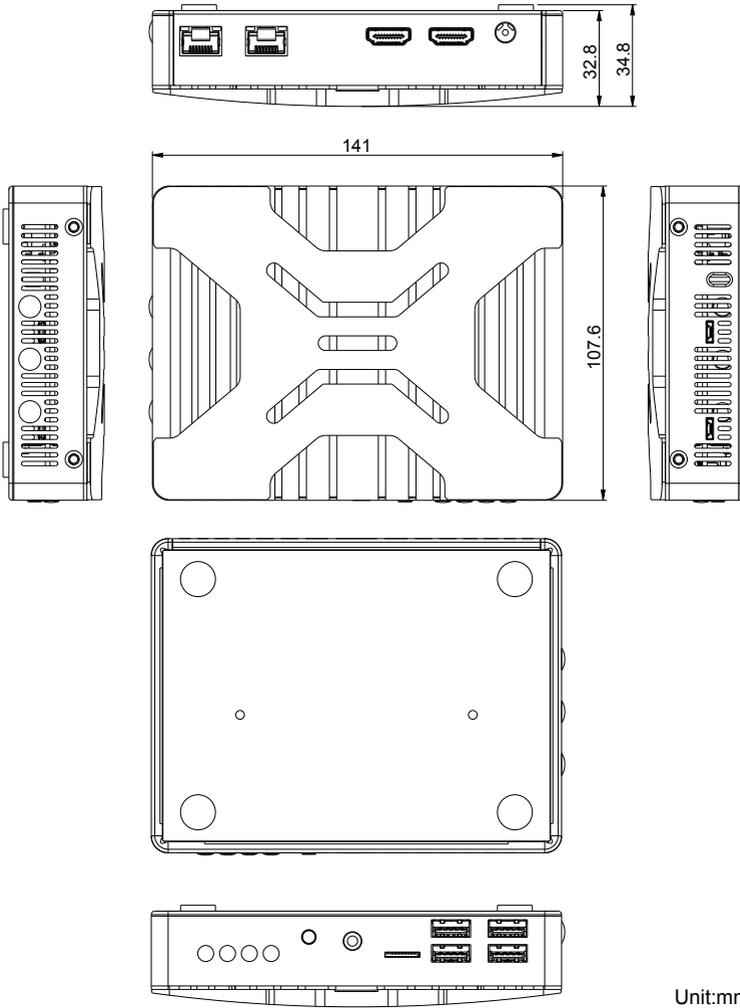
MM-3CL-4G	DDR3L-1600 4GB SDRAM	
32GB SSD	mSATA MLC 32GB	
WiFi-AT1550	AMPAK,AP6356SDPB WiFi module w/ 2*30cm internal wiring	
HSUPA-1450	HSUPA 3.75G module kit w/ 25cm internal wiring	
ANT-D11	1 x Wi-Fi Dual-band 2.4G/5G antenna	
ANT-H11	1 x 2dBi HSUPA Antenna Kit	
VMK-1050	VESA-mount kit for ELIT-1050	

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Chapter 2

Getting Started

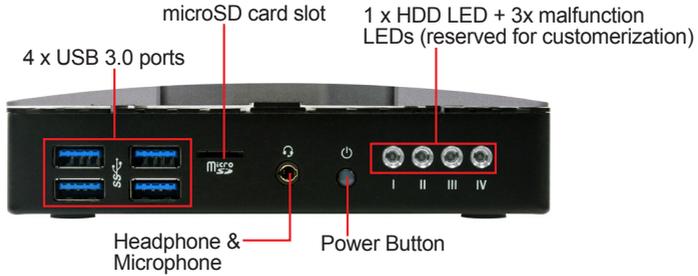
2.1. Dimensions



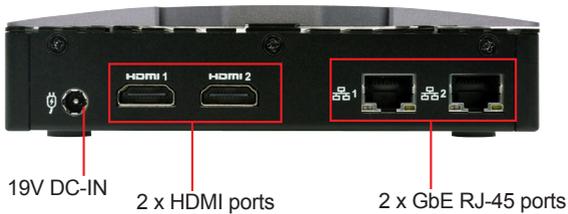
2.2. Tour the Computer

Take a look around the computer and find the external controls and connectors.

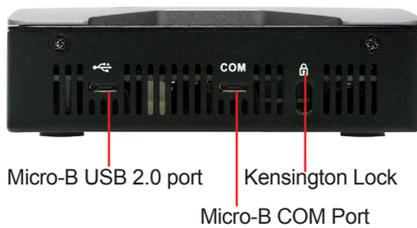
Front



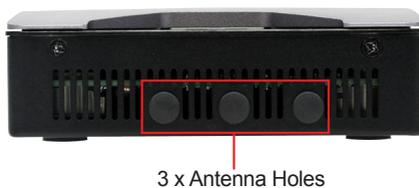
Rear



Right



Left



2.3. Driver Installation Note

The computer supports the operating systems Windows 7 and 10. For Windows 7, please use the provided system image for installation. For Windows 10, find the necessary device drivers on the DVD that comes with your purchase. Always follow the sequence below to install all drivers to prevent errors:

Chipset → Graphics → Audio → Ethernet → TXE → UART → Card Reader → Intel Serial IO

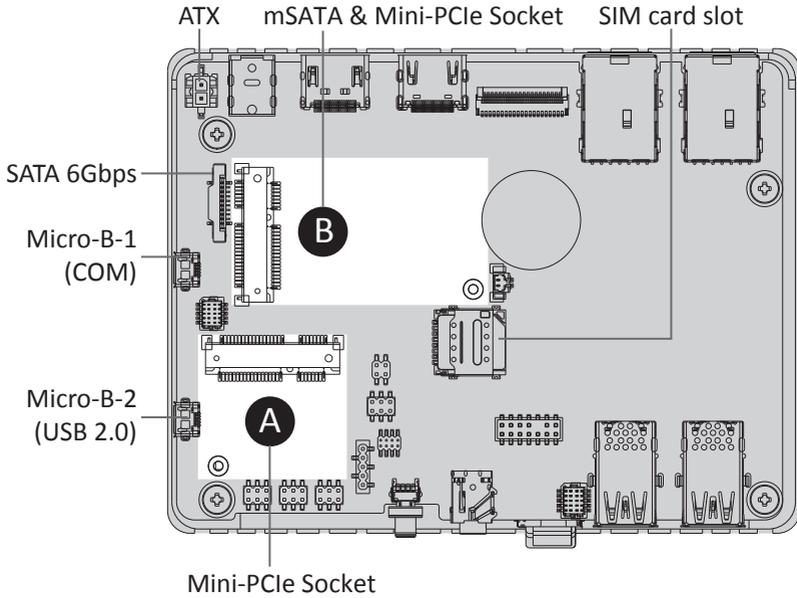
Windows 10 64-Bit

Device	Driver Path
Chipset	\\Intel INF Driver\\SetupChipset.exe
Graphics	\\Intel VGA Driver\\Setup.exe
Audio	\\Audio Driver\\SETUP.exe
Ethernet	\\Realtek LAN Driver\\SETUP.exe
TXE	\\Intel Trusted Execution Engine\\SetupTXE.exe
UART Driver	\\UART Driver\\DriverSetup_Win10.exe
Card Reader Driver	\\Card Reader Driver\\SETUP.exe
Intel Serial IO Driver	\\Intel Serial IO Driver\\LPSS_X64_Windows10_Install_152803.exe

Chapter 3

Engine of the Computer

3.1. Board Layout

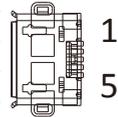


3.1.1. Pin Definition

Micro-B-1

Function: RS-232
Connector Type: Half-duplex RS-232
Setting:

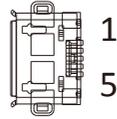
Pin	Description
1	NC
2	RS232-TX Data
3	RS232-RX Data
4	RS232-RTC
5	RS232-CTS



Micro-B-2

Function: USB 2.0
Connector Type: Half-duplex RS-232
Setting:

Pin	Description
1	5V
2	USB-DN
3	USB-DP
4	ID
5	Ground



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Chapter 4

Installation & Maintenance

4.1. Access the Inside of the Computer

To use onboard jumpers/connectors or to install/remove internal components, you will need to open the computer to access the inside of the computer. Follow through the guide below to access the inside of the computer.

4.1.1. Disassemble the Computer

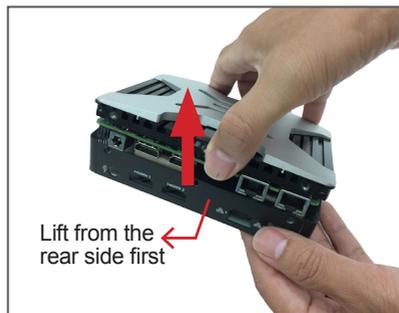
1. Remove the 3 screws on the rear panel of the chassis



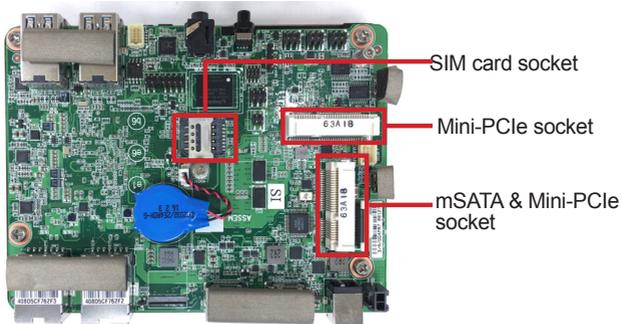
2. Remove the 4 screws on the left and right sides of the chassis.



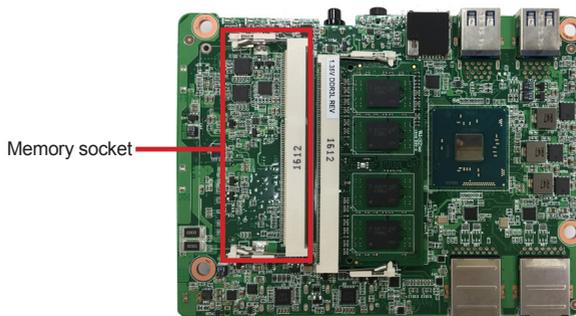
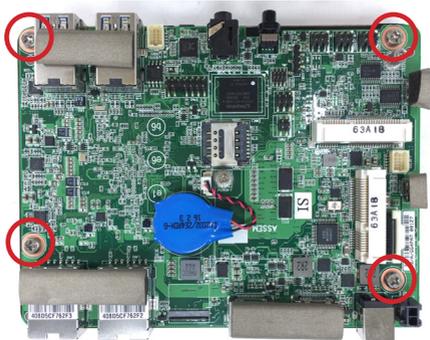
3. Remove the top case attached with the main board by lifting the rear side first. DO NOT lift the front side first to prevent damage to the connectors.



4. Then you are ready to access the components of the main board.



If you want to install RAM module, please remove the 4 screws as shown below to access the memory socket located at the bottom of the main board.



4.1.2. Reassemble the Computer

After you make required jumper settings and connections, follow through the guide below to reassemble the computer.

1. Position the top case in a slightly slanted position and attach the front side first. Then push down the rear end to restore the top case.



2. Fasten the 4 screws on the left and right sides of the chassis.



3. Fasten the 3 screws on the rear panel of the chassis.



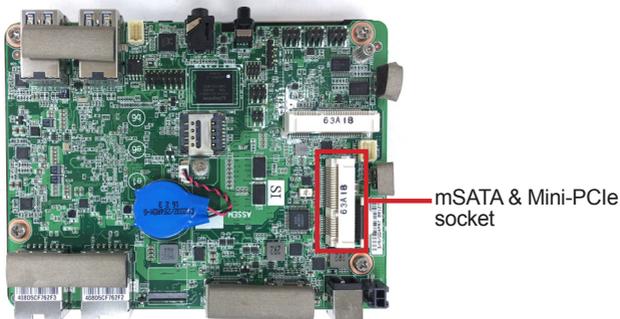
4.2. Install Hardware

4.2.1. Install mSATA Storage

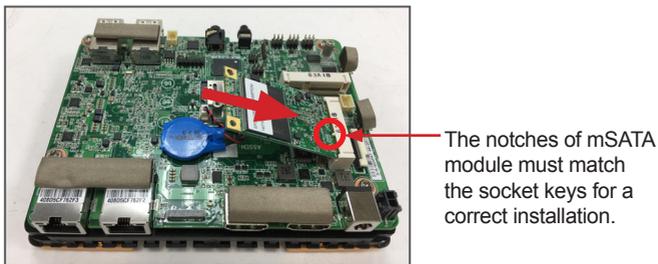
The computer's mini-PCIe socket supports 3G/4G and mSATA installation simultaneously. You can install either module as required.

To install an mSATA storage module to the computer:

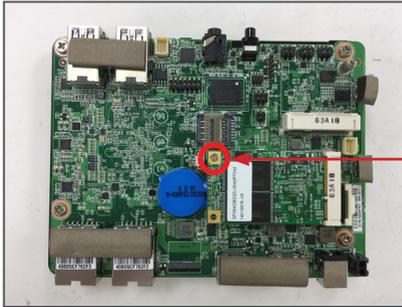
1. Find the socket for mSATA module as the picture below shows.



2. Align the notches on the mSATA card with the notches in the mSATA socket. By a slanted angle, fully insert the mSATA card until it cannot be inserted any more.



3. Press down the end of the mSATA card and then fix the card in place using one screw.



Secure the mSATA module in place with a small screw.

4.2.2. Install Wi-Fi Module

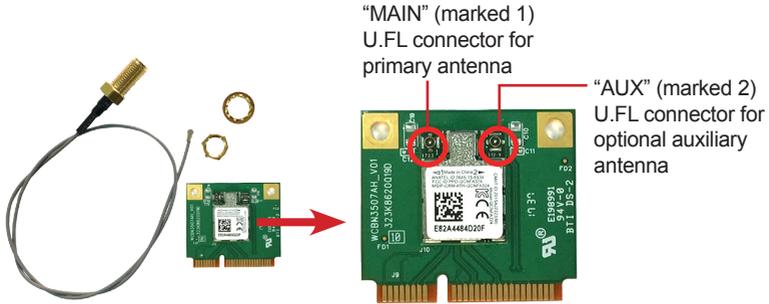
The computer comes with one half-size mini-PCIe socket to load the computer with a wireless module. This section will guide you to install the Wi-Fi module.

1. Locate the half-size **mini-PCIe** socket for wireless module.

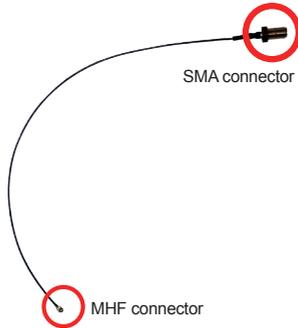


Mini-PCIe socket

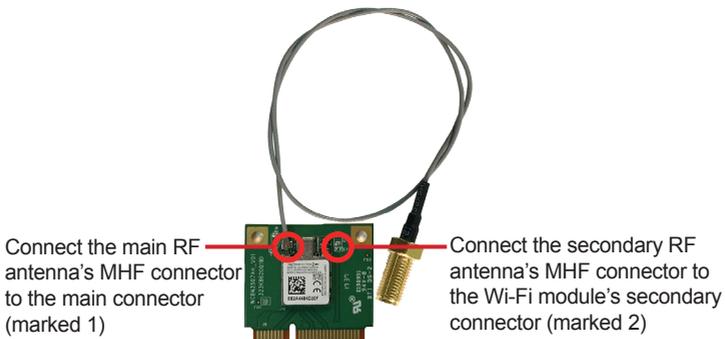
2. Prepare the Wi-Fi module kit. The module is a half-size module of **PCI Express Mini-card** form factor with two U.FL connectors, one is “MAIN” (marked 1), and the other is “AUX” (marked 2).



3. Have the RF antenna. The antenna has an SMA connector on one end and an MHF connector on the other.



4. Connect the RF antenna's MHF connector to the Wi-Fi module's main connector marked 1. If you are going to connect a secondary antenna, connect it to the connector marked 2.



5. Plug the Wi-Fi module to the socket's connector by a slanted angle. Fully plug the module, and note the notch on the wireless module should meet the break of the connector.



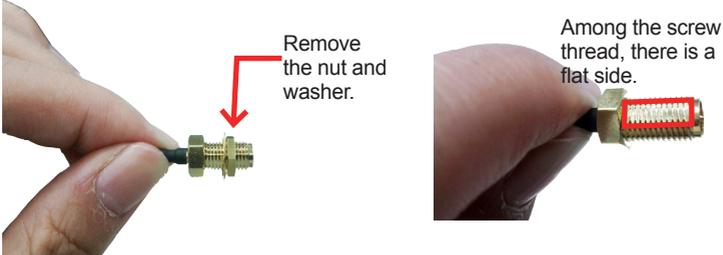
6. Press the module down and fix the module in place using one screw.



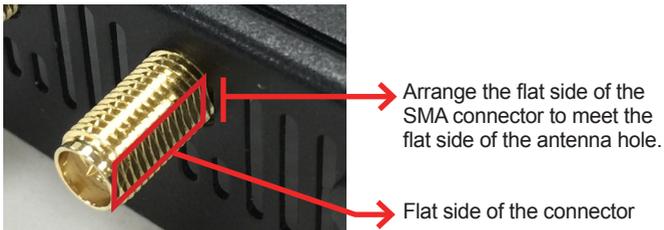
7. Remove the plastic plug(s) from the computer's rear panel to make antenna hole(s). Keep the plastic plug for any possible restoration in the future.



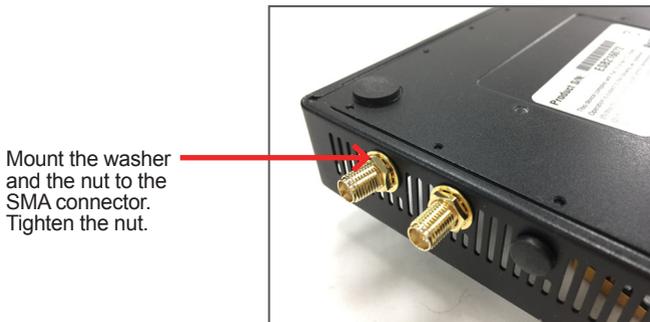
- From the other end of the RF antenna, which is an SMA connector, remove the washer and the nut. Save the washer and nut for later use. Note the SMA connector has the form of a threaded bolt, with one flat side.



- Pull the SMA connector through the above mentioned antenna hole. Note to meet the aforesaid flattened side with the antenna hole's flat side.



- Mount the washer first and then the nut to the SMA connector. Make sure the nut is tightened.



- Have the external antenna(s). Screw and tightly fasten the antenna(s) to the

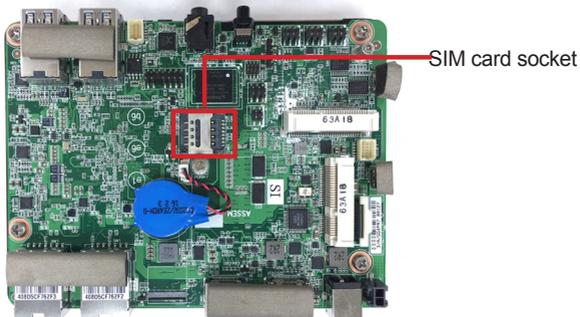
SMA connector(s).



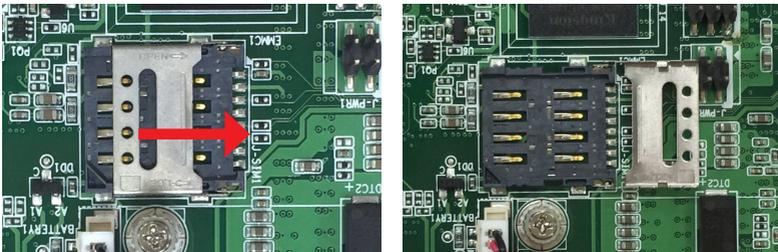
4.2.3. Install SIM Module

The computer comes with one micro SIM card slot. To install a SIM card:

1. Locate the SIM card socket.



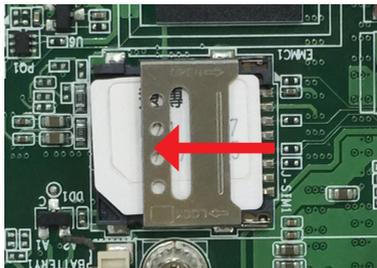
2. Slide the SIM card holder cover towards the UNLOCK edge and then lift the cover to open it.



- Put the SIM card into the card holder as shown below.



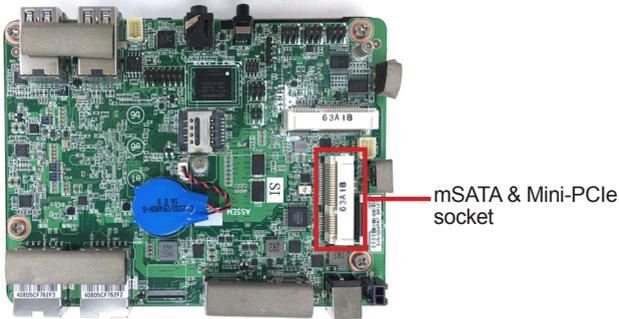
- Close the SIM card holder door and slide the door to the LOCK edge to lock into place.



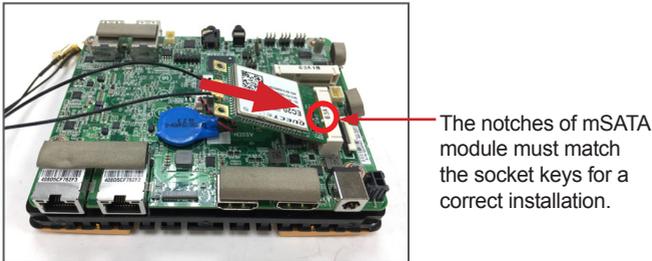
4.2.4. Install 4G Mini-PCIe Module (Optional)

The ELIT-1050 doesn't provide 4G mini PCIe module. But if you have a 4G mini-PCIe module and want to install it to the computer, please follow the steps below:

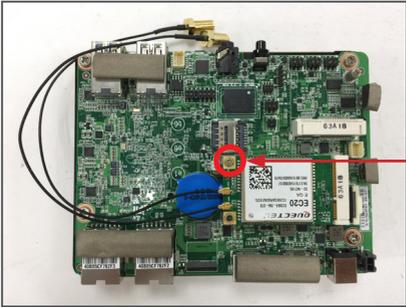
- Find the socket for mini-PCIe module as the picture below shows.



2. Prepare the 4G module kit. Connect the RF antenna's MHF connector to the 4G module's connector. The number of antennas depends on your requirement.
3. Align the notches on the mini-PCIe card with the notches in the mini-PCIe socket. By a slanted angle, fully insert the mini-PCIe card until it cannot be inserted any more.



4. Press down the end of the mini-PCIe card and then fix the card in place using one screw.

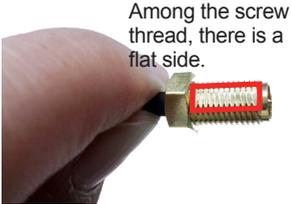
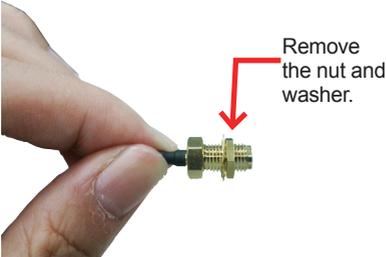


Secure the mSATA module in place with a small screw.

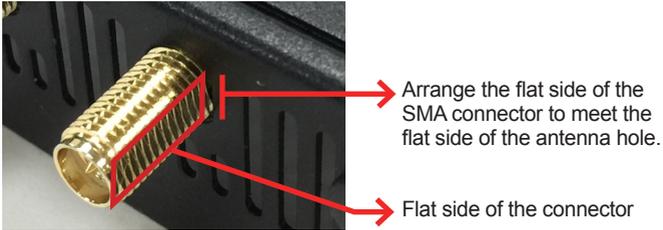
- 5. Remove the plastic plug(s) from the computer's rear panel to make antenna hole(s). Keep the plastic plug for any possible restoration in the future.



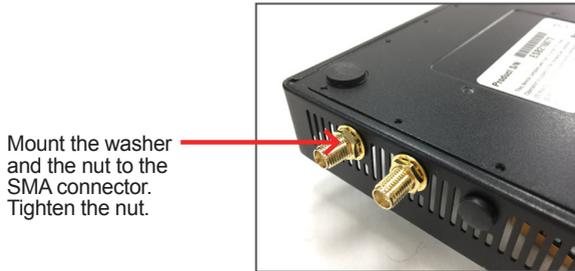
- 6. From the other end of the RF antenna, which is an SMA connector, remove the washer and the nut. Save the washer and nut for later use. Note the SMA connector has the form of a threaded bolt, with one flat side.



7. Pull the SMA connector through the above mentioned antenna hole. Note to meet the aforesaid flattened side with the antenna hole's flat side.



8. Mount the washer first and then the nut to the SMA connector. Make sure the nut is tightened.



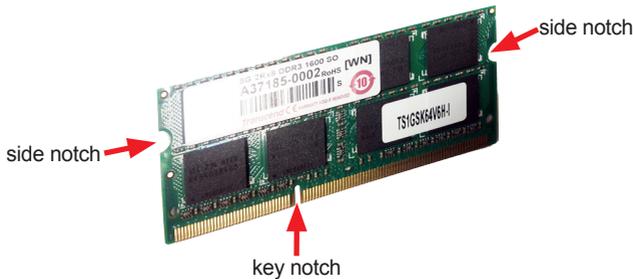
9. Have the external antenna(s). Screw and tightly fasten the antenna(s) to the SMA connector(s).

If you want to use the VESA mount bracket, please install the external antenna only after you have installed the VESA mount bracket as described in [4.3. Mounting the Computer \(optional\)](#).



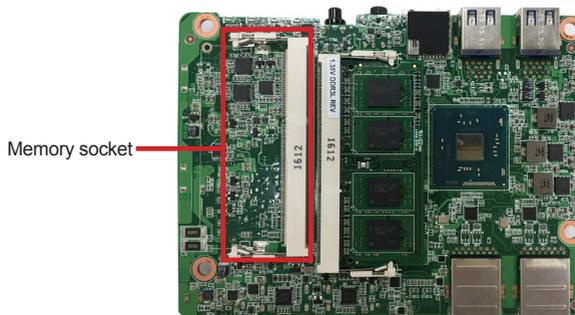
4.2.3. Install Memory Module

The main board has one dual inline memory module (DIMM) socket. Load the computer with a memory module to make the computer run programs. The memory module for the computer's SO-DIMM socket should be a 204-pin DDR3 L/DDR3 with a "key notch" off the centre among the pins, which enables the memory module for particular applications. There are another two notches at each left and right side of the memory module to help fix the module in the socket.

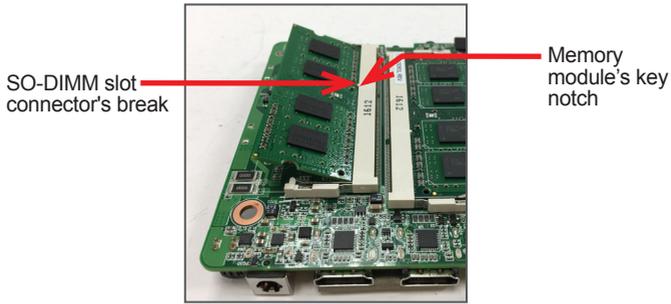


To install a memory module:

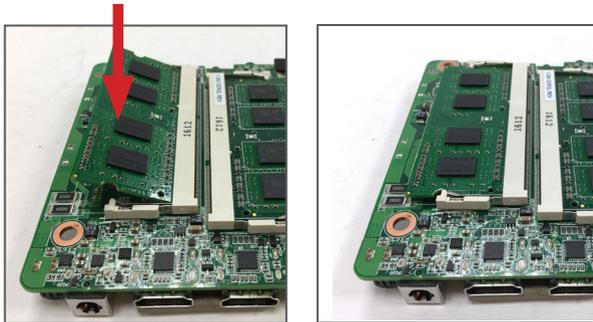
1. Locate the memory module socket beneath the main board.



2. Confront the memory module's edge connector with the SO-DIMM slot connector. Align the memory module's key notch at the break on the SO-DIMM slot connector. By a slanted angle, fully plug the memory module until it cannot be plugged any more.



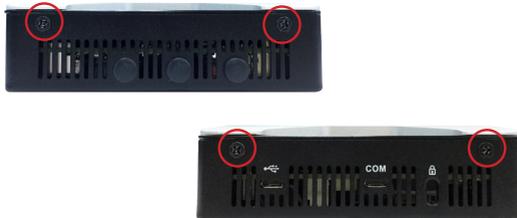
3. Press down the memory module until it is auto-locked in place.



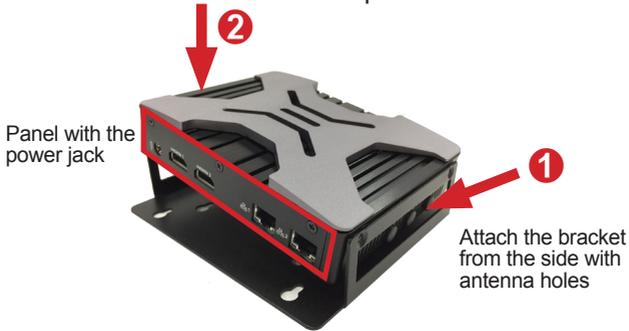
4.3. Mounting the Computer (optional)

To use the optionally provided VESA mount bracket to mount the computer:

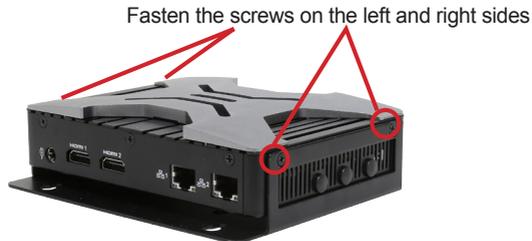
1. Remove the 4 screws on the left and right sides of the chassis.



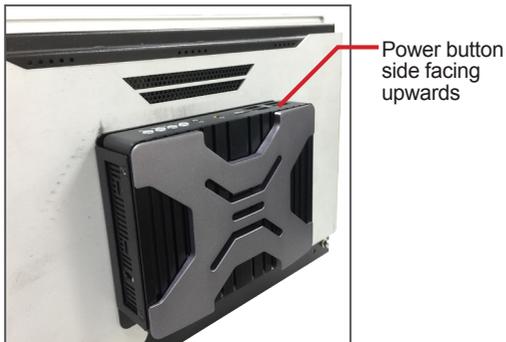
2. Orient the bracket as shown below and place the computer with the front panel (with power button) facing down. Attach the bracket from the side with the antenna holes first and then push the other side.



3. Using the 4 screws provided with the VESA bracket, secure the bracket to the chassis by fastening the screws on left and right sides.



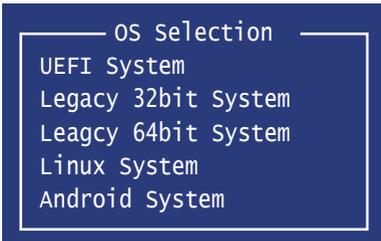
4. Now the computer can be attached to the rear of a compatible VESA-75/100 display by sliding the assembly into place.



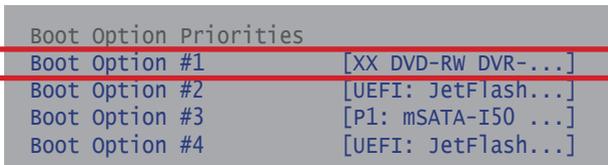
4.4. Installing Operating System

The computer supports multiple boot devices including the eMMC, mSTAT and USB storage device. If you want to install OS to the eMMC:

1. Get your installation media (USB flash drive or DVD) ready and connect to the USB port of the computer.
2. Enter the BIOS and ensure these settings:
Under **Advanced > OS selection**, use the default **UEFI System**.

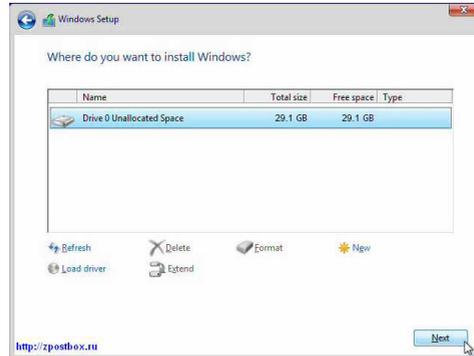


Under **Boot > Boot Option #1**, select the installation media you want to use as the first boot option.



3. Boot from the USB-connected installation media.
4. For Windows 7 installation using OS image: Just follow the on-screen instruction to proceed.

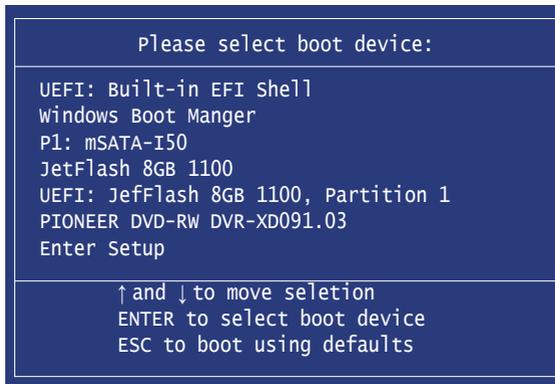
For Windows 10: When asked where to install the Windows, select **Drive 0** and click **Next**.



5. Follow the on-screen instructions to install the system.

4.5. Using the Boot Manager

The computer provides an instant boot manager tool. To get into the boot manager tool, press F12 upon powering on the computer.



Select the boot device you want to use and press Enter to select it.

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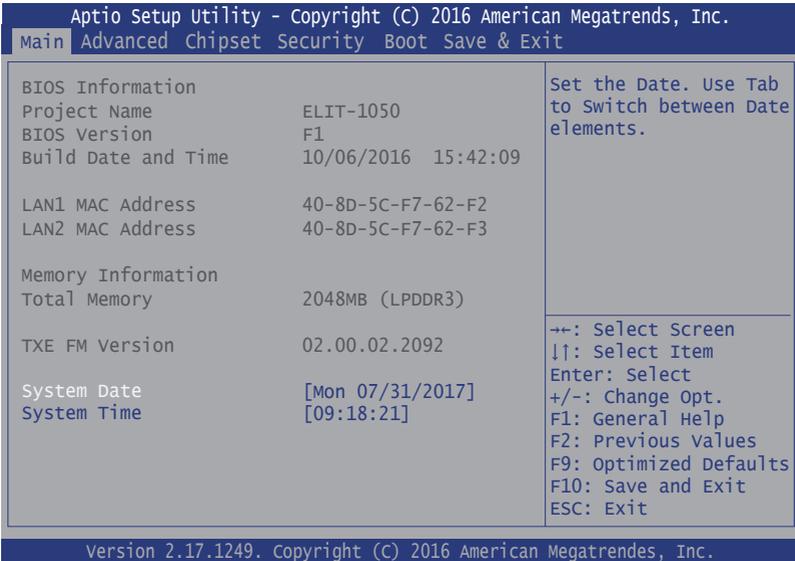
Chapter 5

BIOS

BIOS

The BIOS Setup utility is featured by American Megatrends Inc to configure the system settings stored in the system's BIOS ROM. The BIOS is activated once the computer powers on. When the computer is off, the battery on the main board supplies power to BIOS RAM.

To enter the BIOS Setup utility, keep hitting the "Delete" key upon powering on the computer.



Menu	Description
Main	See 5.1. Main on page 38
Advanced	See 5.2. Advanced on page 39
Chipset	See 5.3. Chipset on page 50
Security	See 5.4. Security on page 52
Boot	See 5.5. Boot on page 54
Save & Exit	See 5.6. Save & Exit on page 55

Key Commands

The BIOS Setup utility relies on a keyboard to receive user's instructions. Hit the following keys to navigate within the utility and use the utility.

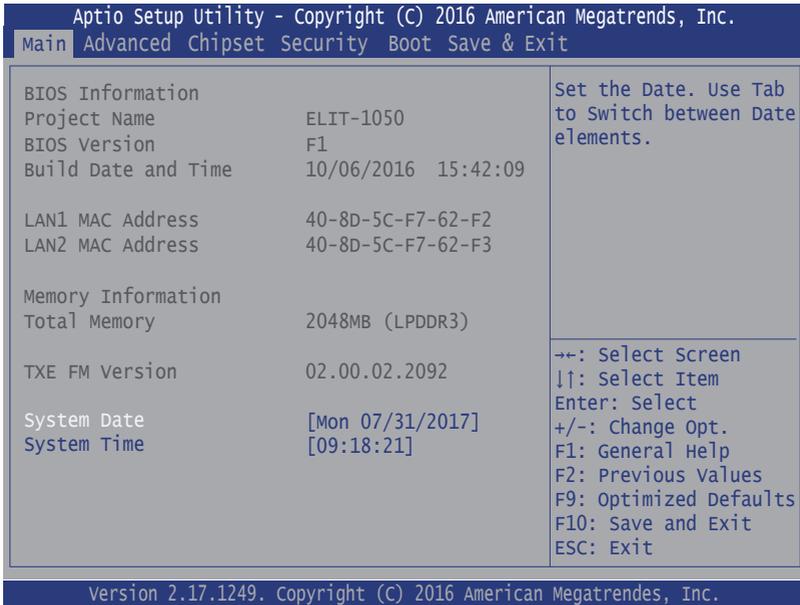
Keystroke	Function
← →	Moves left/right between the top menus.
↓ ↑	Moves up/down between highlight items.
Enter	Selects an highlighted item/field.
Esc	<ul style="list-style-type: none"> ▶ On the top menus: Use Esc to quit the utility without saving changes to CMOS. (The screen will prompt a message asking you to select OK or Cancel to exit discarding changes. ▶ On the submenus: Use Esc to quit current screen and return to the top menu.
Page Up / +	Increases current value to the next higher value or switches between available options.
Page Down / -	Decreases current value to the next lower value or switches between available options.
F1	Opens the Help of the BIOS Setup utility.
F2	Previous values
F9	Optimized defaults
F10	Exits the utility saving the changes that have been made. (The screen then prompts a message asking you to select OK or Cancel to exit saving changes.)

Note: Pay attention to the "WARNING" that shows at the left pane onscreen when making any change to the BIOS settings.

This BIOS Setup utility is updated from time to time to improve system performance and hence the screenshots hereinafter may not fully comply with what you actually have onscreen.

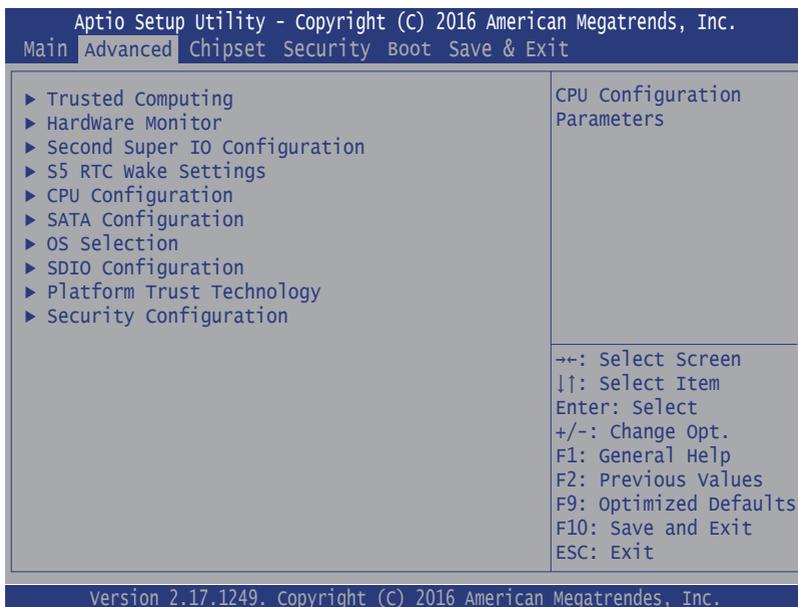
5.1. Main

The **Main** menu features the settings of **System Date** and **System Time** and displays some BIOS info.



Setting	Description
Project Name	Delivers the model name of the computer.
BIOS Version	Delivers the computer's BIOS version.
Build Date and Time	Delivers the date and time when the BIOS Setup utility was made/ updated.
LAN1/2 MAC Address	Delivers the MAC address of LAN1/2.
Total Memory	Delivers the total memory.
TXE FW Version	Delivers the TXE firmware version.
System Date	Sets system date.
System Time	Sets system time.

5.2. Advanced



Setting	Description
Trusted Computing	See 5.2.1. Trusted Computing on page 40
Hardware Monitor	See 5.2.2. Hardware Monitor on page 41
Second Super IO Configuration	See 5.2.3. Second Super IO Configuration on page 42
S5 RTC Wake Settings	See 5.2.4. S5 RTC Wake Settings on page 43
CPU Configuration	See 5.2.5. CPU Configuration on page 44
SATA Configuration	See 5.2.6. SATA Configuration on page 45
OS Seletion	See 5.2.7. OS Selection on page 46
SDIO Configuration	See 5.2.8. SDIO Configuration on page 47
Platfrom Trusted Technology	See 5.2.9. Platform Trust Configuration on page 48
Security Configuration	See 5.2.10. Security Configuration on page 49

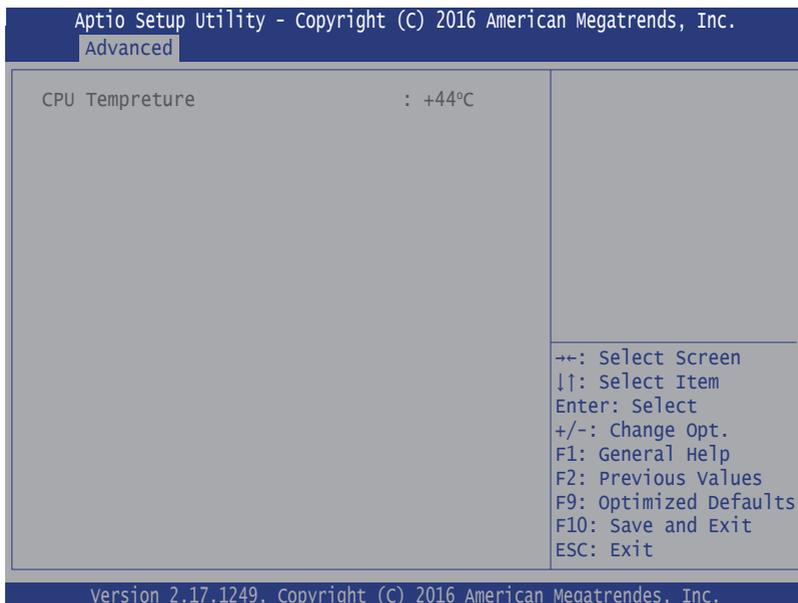
5.2.1. Trusted Computing



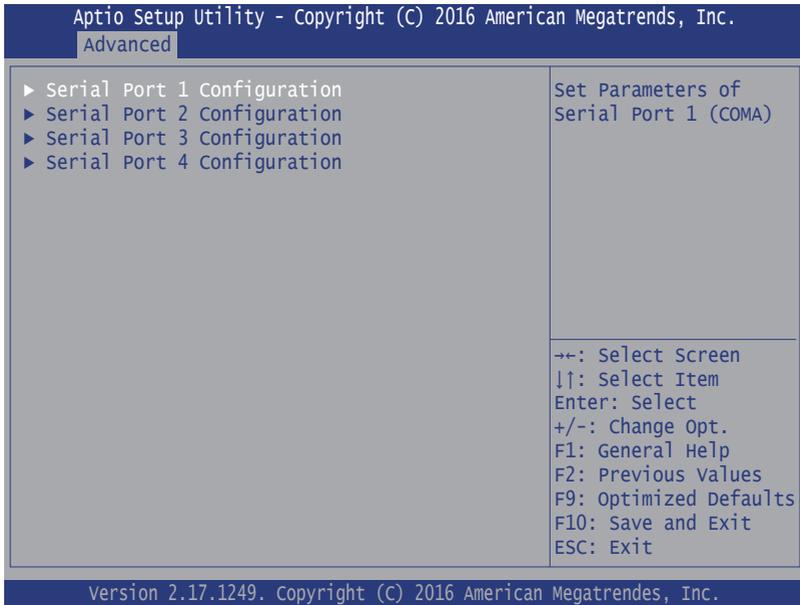
Setting	Description
Security Device Support	Enables or disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.

5.2.2. Hardware Monitor

Select this submenu to view the main board's hardware status. Select it to run a report of various info as depicted below:

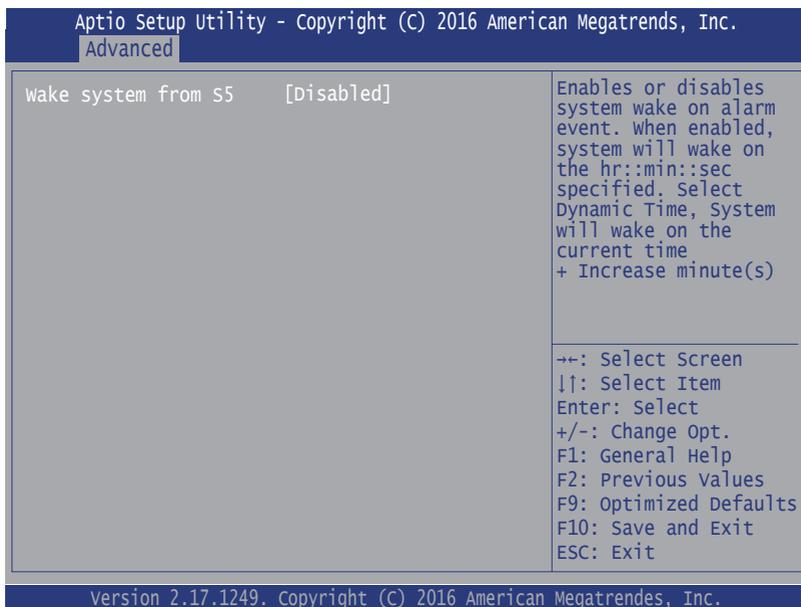


5.2.3. Second Super IO Configuration



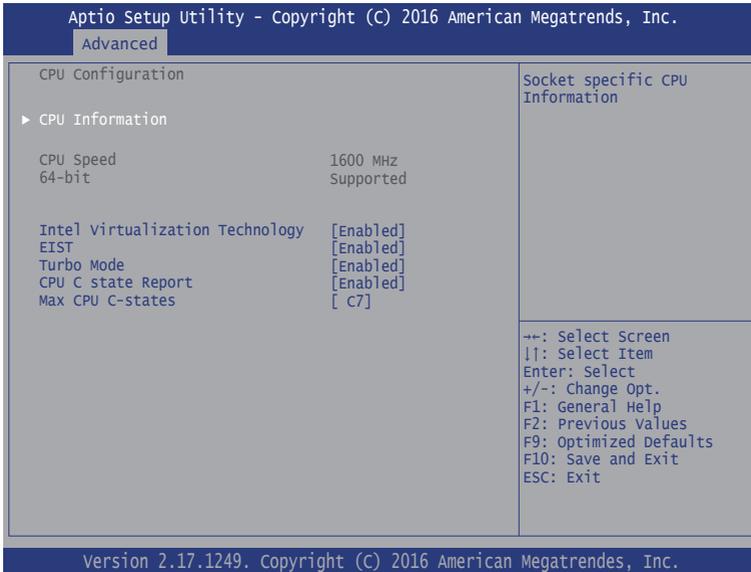
Setting	Description
Serial Port	Enable (default) or Disable Serial Port (COM).
Mode Select	Select RS-232 (default) or RS-485

5.2.4. S5 RTC Wake Settings



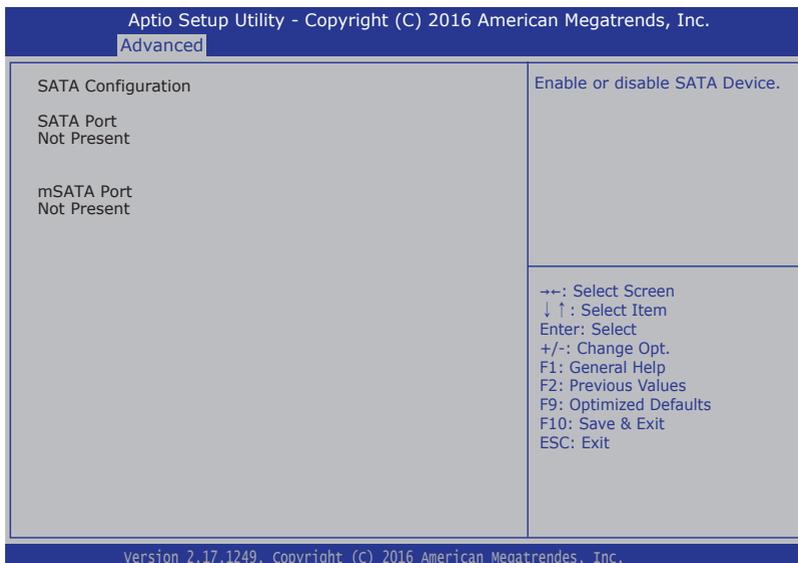
Setting	Description
Wake System from S5	<p>Enable or Disable (default) system wake on alarm event.</p> <p>► Options available are:</p> <p>Disabled (default):</p> <p>Fixed Time: System will wake on the hr::min::sec specified.</p> <p>DynamicTime: If selected, you need to set Wake up minute increase from 1 - 5. System will wake on the current time + increase minute(s).</p>

5.2.5. CPU Configuration



Setting	Description
CPU Information	Shows socket specific CPU Information.
CPU Speed	Shows CPU speed.
64-Bit	Shows support of 64-bit.
Intel Virtualization Technology	Enable (default) / Disable Intel virtualization technology. When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.
EIST	Enable (default) / Disable Intel SpeedStep
Turbo Mode	Only available when Intel Speed Step is Enabled . Enable (default) / Disable Turbo Mode.
CPU C State Report	Enable (default) / Disable CPU C State report to OS
Max CPU C-states	Only available when CPU C States is Enabled . Enable (default) / Disable C7. This option controls Max C state that the processor will support.

5.2.6 SATA Configuration



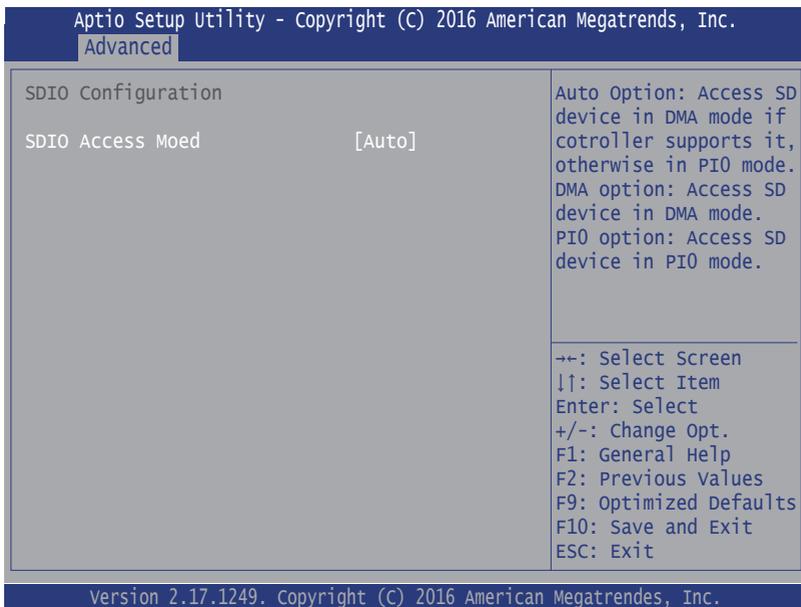
Setting	Description
SATA Port	Shows SATA device information if SATA storage device is inserted.
mSATA Port	Shows mSATA device information if mSATA storage device is inserted. ▶ Options: AHCI (default) and RAID .

5.2.7. OS Selection



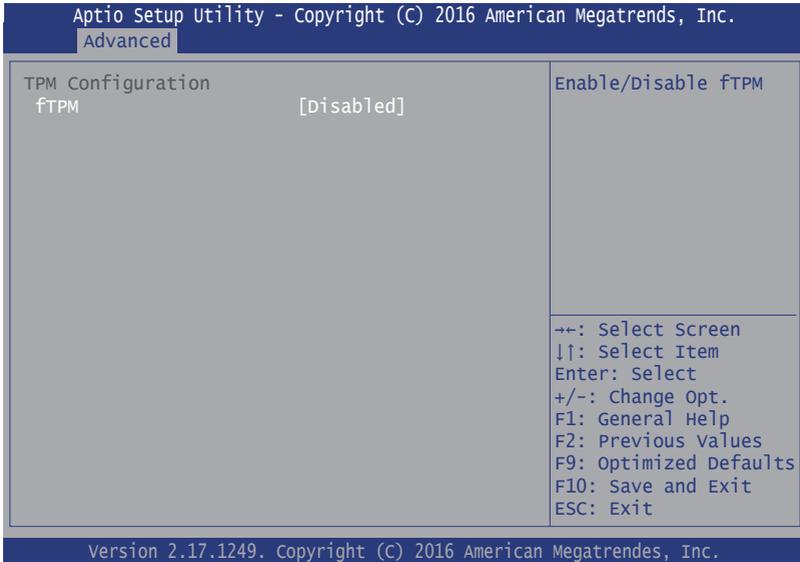
Setting	Description
OS Selection	<p>If to install WIN7 64bit into eMMC device, please select Legacy 32Bit system first during installation.</p> <p>► Options: UEFI System (default) Legacy 32bit System Legacy 64bit System Linux System (not supported) Android System (not supported)</p>
CMS Support	<p>Enables or disables UEIF CSM (Compatibility Support Module) to support a legacy PC boot process.</p> <p>► Options: Always (default) : Enables UEFI CSM. Never: Disables UEFI CSM and supports UEFI BIOS boot process only.</p>
LAN PXE OpROM	Enable / Disable (default) LAN PXE OpROM.
LAN EFI driver	Enable / Disable (default) LAN EFI driver.

5.2.8. SDIO Configuration



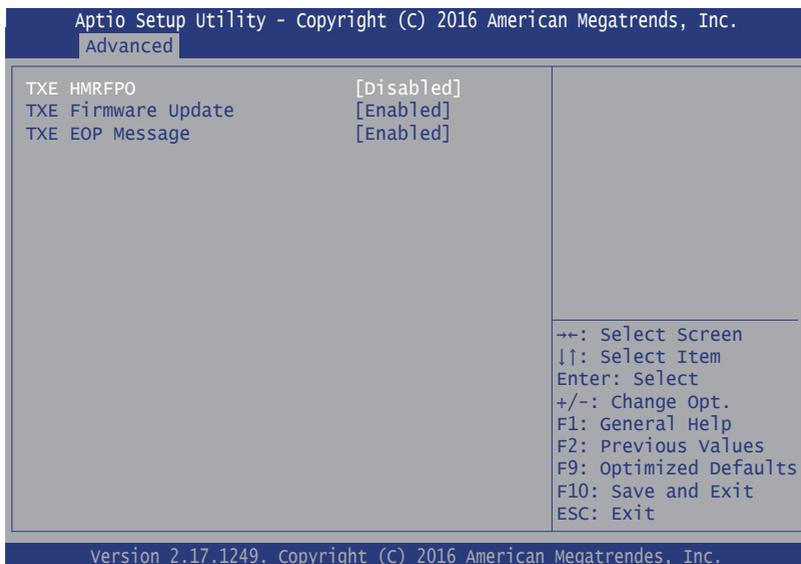
Setting	Description
SDIO Access Mode	<ul style="list-style-type: none"> ▶ Auto (default): Access SD device in DMA mode if cotroller supports it, otherwise in PIO mode. ▶ ADMA/SDMA: Access SD device in ADMA/SDMA mode. ▶ PIO option: Access SD device in PIO mode.

5.2.9. Platform Trust Configuration



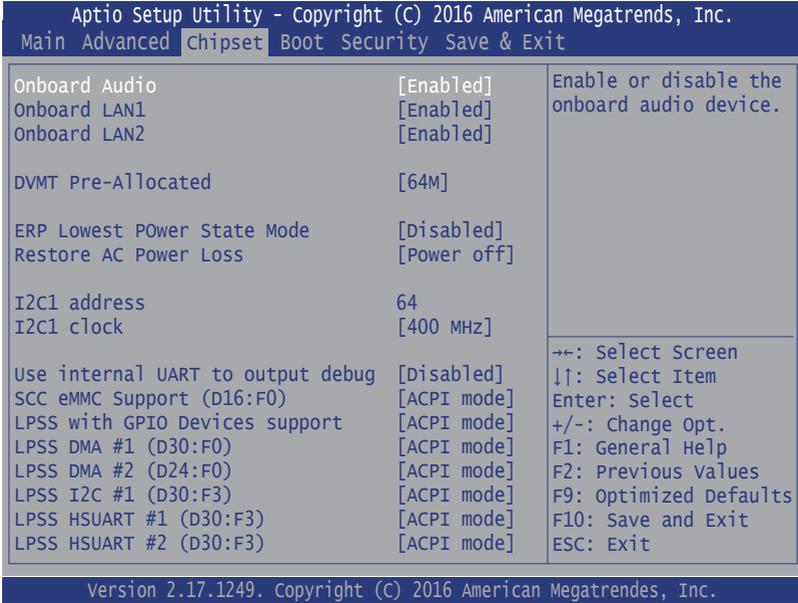
Setting	Description
fTPM	Enable / Disable (default) fTPM.

5.2.10. Security Configuration



Setting	Description
TXE HMRFPO	Enable / Disable (default) TXE HMRFPO.
TXE Firmware Update	Enable (default) / Disable TXE firmware update.
TXE EOP Message	Enable (default) or Disable TXE EOP message to send EOP message before entering OS.

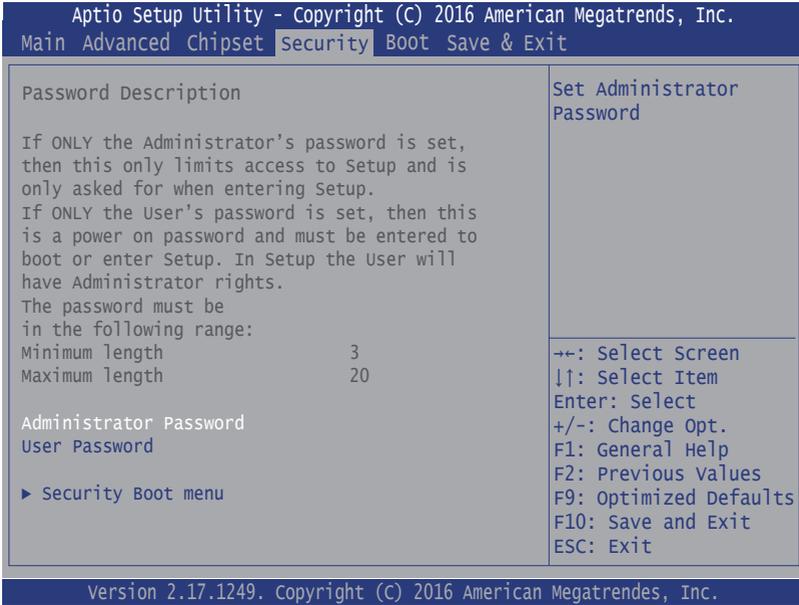
5.3. Chipset



Setting	Description
Onboard Audio	Enable (default) / Disable the onboard audio device.
Onboard LAN1/2	Enable (default) / Disable the onboard LAN1/2 device.
DVMT Pre-Allocated	Select DVMT 5.0 pre-allocated (fixed) graphics memory size used by the internal graphics device. ► Options: 32M , 64M (default), 128M , 256M and 512M
ERP Lowest Power State Mode	Enable or Disable (default) the ERP lowest power state mode. When this item is set to Enabled, the following functions will become unavailable: RTC Wake, PME event wake and wake on LAN.
Restore AC Power Loss	Select AC power state when power is re-applies after a power failure. ► Options: Power Off (default), Power On and Last State
I2C1 address	Input I2C1 slave address value 0~255.
I2C1 clock	Choose I2C1 connection speed. ► Options: 100 MHz , 400 MHz (default) and 3200 MHz .

Use internal UART to output debug	<ul style="list-style-type: none"> ▶ Enabled: Use internal UART to output debug message in OS; ▶ Disabled (default): No use internal UART to output debug message in OS.
SCC eMMC Support	<p>SCC eMMC support mode</p> <ul style="list-style-type: none"> ▶ Options: ACPI mode (default), PCI mode and Disabled
SCC eMMC on legacy	<p>Enable (default) or Disable SCC eMMC support on legacy eMMC</p>
LPSS with GPIO Devices support	<p>Enable (default) or Disable GPIO ACPI device support. Disable it will disable all LPSS devices.</p>
LPSS DMA #1/#2	<p>Enable/disable LPSS DMA #1/#2 support</p> <ul style="list-style-type: none"> ▶ Options: ACPI mode (default), PCI mode and Disabled
LPSS I2C #1	<p>Enable/disable LPSS I2C # support</p> <ul style="list-style-type: none"> ▶ Options: ACPI mode (default), PCI mode and Disabled
LPSS HSUART #1/#2	<p>Enable/disable LPSS HSUART #1/#2 support</p> <ul style="list-style-type: none"> ▶ Options: ACPI mode (default), PCI mode and Disabled

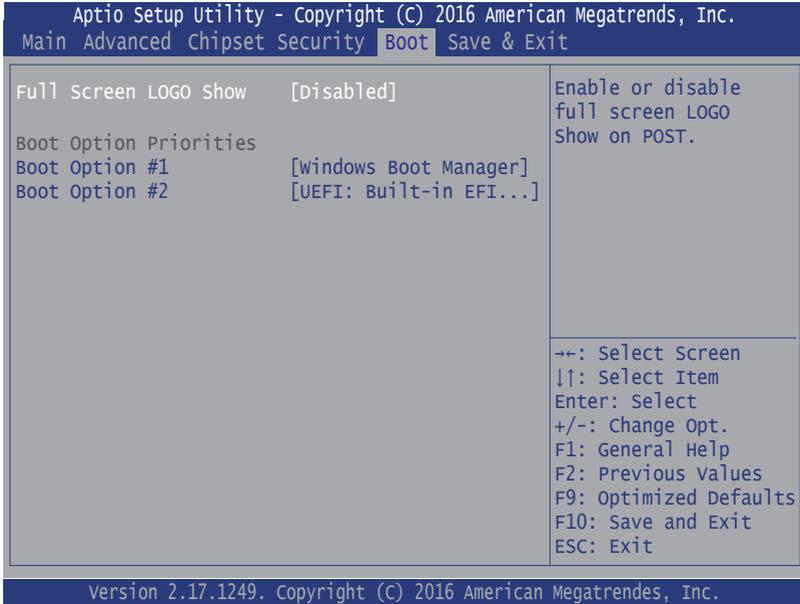
5.4. Security



Setting	Description
Administrator/ User Password	<p>If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup.</p> <p>If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User will have Administrator rights.</p> <p>The password must be less than 3 characters and no more than 20 characters.</p> <p>To set up an administrator/user password:</p> <ol style="list-style-type: none"> 1. Select Administrator/User Password. 2. An Create New Password dialog then pops up onscreen. 3. Enter your desired password that is no less than 3 characters and no more than 20 characters. 4. Hit [Enter] key to submit.

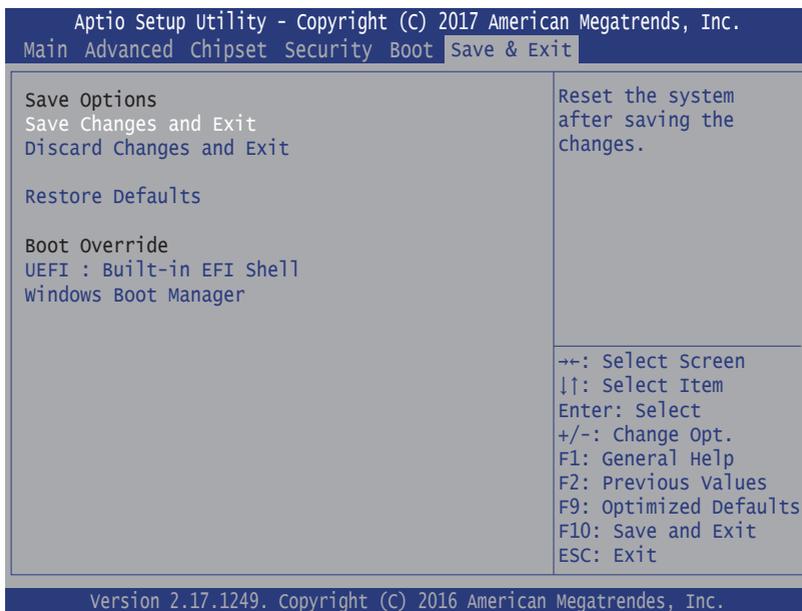
Secure Boot menu	<p>Secure Boot Secure Boot can be enabled if (1) System running in User mode with enrolled Platform Key (PK) and (2) CSM function is disabled.</p> <p>Secure Boot Mode Secure Boot Mode selector.</p> <ul style="list-style-type: none">▶ Options: Standard and Custom (default). "Custom" mode enables users to change Image Execution policy and manage Secure Boot Keys. <p>Key Management Enables experienced users to modify Secure Boot variables.</p>
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5.5. Boot



Setting	Description
Full Screen LOGO Show	Enable (default) or Disable full screen LOGO show on POST.
Boot Option	<p>Sets the system boot order. The options depends on your installation.</p> <ul style="list-style-type: none"> ▶ UEFI: Built-in EFI Shell (If no mSATA or USB storage device is installed, this will be the default.) ▶ Windows Boot Manager (This option appears only after you have installed OS.)
Hard Drive BBS Priorities	<ul style="list-style-type: none"> ▶ Only available if mSATA or USB storage device is installed. Use this option to set the order of the legacy devices in this group.

5.6. Save & Exit



Setting	Description
Save Changes and Reset	Saves the changes and quits the BIOS Setup utility.
Discard Changes and Exit	Quits the BIOS Setup utility without saving the change(s).
Restore Defaults	Restores all settings to defaults. ▶ This is a command to launch an action from the BIOS Setup utility.
Boot Override	Allows you to override the boot priorities and boot from a specific drive.