

User Manual

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USC-250

Ubiquitous Service Computer with 15" TFT LCD and Intel[®] Core[™] i5 6300U/i3 6100U/ Celeron[®] 3955U Processor



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Product Warranty (2 years)

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This warranty does not apply to any products that have been repaired or altered by persons other than repair personnel authorized by Advantech, or products that have been subject to misuse, abuse, accident, or improper installation. Under the terms of this warranty, Advantech assumes no liability as a consequence of such events.

Because of Advantech's high quality-control standards and rigorous testing, most customers never need to use our repair service. If an Advantech product is defective, it will be repaired or replaced free of charge during the warranty period. For out-of-warranty repairs, customers will be billed the cost of replacement materials, service time, and freight. Please consult your dealer for more details.

If you suspect your product is defective, follow the steps outlined below.

- 1. Collect all the information about the problem encountered. (For example, CPU speed, Advantech products used, other hardware and software used, etc.) Note anything abnormal and list any onscreen messages that are displayed when the problem occurs.
- 2. Call your dealer and describe the problem. Please have your manual, product, and any relevant information to hand.
- If your product is diagnosed as defective, obtain a return merchandize authorization (RMA) number from your dealer. This allows us to process your return more quickly.
- 4. Carefully pack the defective product, a completed Repair and Replacement Order Card, and a proof of purchase date (such as a photocopy of your sales receipt) into a shippable container. Products returned without a proof of purchase date are not eligible for warranty service.
- 5. Write the RMA number clearly on the outside and ship the package prepaid to your dealer.

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Warnings, Cautions, and Notes



Warning! Warnings indicate conditions that, if not observed, can cause personal injury!



Caution! Cautions are included to help prevent hardware damage or data losses. For example.



"New batteries are at risk of exploding if incorrectly installed. Do not attempt to recharge, force open, or heat the battery. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions."

Notes provide additional optional information.

Document Feedback

To assist us in improving this manual, we welcome any comments and constructive criticisms. Please send all feedback in writing to "support@advantech.com".

Technical Support and Assistance

- 1. Visit the Advantech website at http://support.advantech.com to obtain the latest product information.
- 2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before calling:
 - Product name and serial number
 - Description of your peripheral attachments
 - Description of your software (operating system, version, application software, etc.)
 - Comprehensive description of the problem
 - The exact wording of any error messages

Packing List

Before setting up the system, check that the items listed below are included with the product and in good condition.

- 1 x USC-250 series computer
- 1 x Warranty card
- 1 x Power adaptor
- 1 x USC-250 user manual
- 2 x COM cables
- 1 x Package of screws

If any of the above items are missing or damaged, contact your distributor or sales representative immediately.

Safety Instructions

- 1. Read these safety instructions carefully.
- 2. Retain this user manual for future reference.
- 3. Disconnect this equipment from all AC outlets before cleaning. Use only a damp cloth for cleaning. Do not use liquid or spray detergents.
- 4. For pluggable equipment, the power outlet socket must be located near the equipment and easily accessible.
- 5. Protect this equipment from humidity.
- 6. Place this equipment on a reliable surface during installation. Dropping or letting the device fall may cause damage.
- 7. The openings on the enclosure are for air convection. Protect the equipment from overheating. Do not cover the openings.
- 8. Ensure the voltage is correct before connecting the equipment to a power outlet.
- 9. Position the power cord away from high-traffic areas. Do not place anything over the power cord.
- 10. All cautions and warnings on the equipment should be noted.
- 11. If unused for a long time, disconnect the equipment from the power source to avoid damage from transient overvoltage.
- 12. Never pour liquid into an opening. This may cause fire or electrical shock.
- 13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
- 14. If one of the following situations occurs, have the equipment checked by service personnel:
 - The power cord or plug is damaged.
 - Liquid has penetrated the equipment.
 - The equipment has been exposed to moisture.
 - The equipment is malfunctioning, or does not operate according to the user manual.
 - The equipment has been dropped and damaged.
 - The equipment has obvious signs of breakage.
- Do not store this equipment in an environment with a temperature of below -20 °C (-4 °F) or above 60 °C (140 °F) as this may cause damage. The equipment should be stored in a controlled environment.
- 16. Batteries are at risk of exploding if incorrectly installed. Replace only with the same or equivalent type as recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

In accordance with the IEC 704-1:1982 specifications, the sound pressure level at the operator position does not exceed 70 dB (A).

DISCLAIMER: These instructions are provided according to the IEC 704-1 specifications. Advantech disclaims all responsibility for the accuracy of any statements contained herein.

Safety Precautions - Static Electricity

Follow these simple precautions to protect yourself from harm and the products from damage.

- To avoid electrical shock, always disconnect the power from the PC chassis before manual handling. Do not touch any components on the CPU card or other cards while the device is powered on.
- Disconnect the power before making any configuration changes. The sudden rush of power after connecting a jumper or installing a card may damage sensitive electronic components.

USC-250 User Manual

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General Information

This chapter provides basic information regarding USC-250.

- Introduction
- Device Layout
- Specifications
- Dimensions

1.1 Introduction

Advantech's USC-250 ubiquitous service computer is the latest addition to its Avalo product family. Powered by a 6th generation Intel® Core™ i5 6300U/i3 6100U/Celeron® 3955U processor that delivers high-performance computing, the USC-250 features a 15" TFT LCD panel and ultra-slim form factor for easy installation in limited-space environments. Furthermore, the provision of improved cable routing and management ensures convenient maintenance and usability for a wide range of service applications.

1.2 Device Layout



1.3 Specifications

1.3.1 General

- Processor: 6th generation Intel® Core[™] i5 6300U/i3 6100U/Celeron® 3955U
- Memory: Single-channel DDR4 SODIMM 2133 MHz (16 GB max.)
- Display: 15" TFT LCD (1024 x 768), 300 cd/m²
- Touch Panel: Flat glass panel with projected capacitive (PCAP) touch control and IP65-rated ingress protection
- Serial Ports:
 - 2 x COM RS232 ports on I/O board via RJ-48 connector, no power
 - 2 x COM RS232 ports on I/O board via DB9 connector, supports 5V/12V upon request
- USB Ports:
 - External: 4 x USB 3.0, 2 x USB 2.0, 2 x micro-USB (on the right side)
 - Internal: 2 x USB 2.0
- **Storage:** 2 x M.2 SSD 2242
- Audio: 2 x 2W speakers, 1 x Line-Out
- Cash Drawer: 1 x controls 2 x CR via optional Y cable (24V default, 12V upon request)
- **Display Output:** 1 x VGA
- Bus Expansion: 1 x M.2 2230 slot (for Wi-Fi and Bluetooth)

1.3.2 Ethernet

- Interface: 10/100/1000 Mbps
- Controller: LAN1: Intel[®] 1219LM, LAN2: Intel® i211

1.3.3 Power Requirements

- Power Input Voltage: 12 VDC, 7A
- Power Output Voltage: 12 VDC, 2.5 A

1.3.4 Miscellaneous

• **Power Switch** (Orange: standby/Green: power on)

1.3.5 Environment

- **Operating Temperature:** 0 ~ 40 °C (32 ~ 104°F)
- **Storage Temperature:** -40 ~ 60 °C (-40 ~ 140 °F)
- **Relative Humidity:** 90% @ 40 °C (non-condensing)

1.3.6 Physical Characteristics

- Dimensions (W x H x D): 352 x 316 x 240 mm (13.85 x 12.44 x 9.44 in)
- Weight: 5.2 kg (11.46 lb)

1.4 Dimensions

Dimensions

Unit: mm







System Setup

This chapter details the system setup process for USC-250.

- Initial Setup
- Jumper Settings
- RAM/Storage Installation
- Peripheral Installation
- Dual Display Touch Settings

2.1 Initial Setup

2.1.1 Connecting the Power Cord

This product only supports DC power (12 V_{DC} , 84 W). Be sure to hold the plug end when plugging or unplugging the power cord.

2.1.2 Connecting the Mouse and Keyboard

Connect the mouse and keyboard via the USB ports located in the I/O section at the rear of the computer.

2.1.3 Activating the Power Source

Verify that the power cord is connected to the power input port of the device and the plug end is connected to the power supply outlet. Then press the Power button of the device to initiate boot up.

2.2 Jumper Settings

The table below lists the function of each of the board jumpers. Instructions for setting jumpers and connecting external devices to the motherboard are provided in subsequent sections of this chapter.

Table 2.1: Jumper Settings						
Label	Function					
JP4	TPM compatibility					
JP6	Clear CMOS					
JCASH1	Cash drawer power select					
CN24	COM 1 and COM 2 /+5 V/+12 V select					

JP4: Pin 1-2: TPM 1.2, Pin 2-3: TPM 2.0 (default)

JP6: (This jumper allows users to clear the real-time clock (RTC) CMOS RAM.) Pin 1-2: Normal (default), Pin 2-3: Clear CMOS

JP_CASHV1: Pin 1-2: 12 V, Pin 2-3: 24 V

CN24: (This jumper allows users to set the COM port power mode) Default: RI

	RI-SEL	Default(RI)	5V	12V
	COM1	1-3	3-5	7-9
PH_5x2V_S2.0mm	COM2	2-4	4-6	8-10

Note: PCB silkscreen " \bigtriangledown "mark Pin 1.

2.3 RAM/Storage Installation

1. Remove the rear cover and cable cover.



2. Install the RAM and M.2 2242 storage.



3. Replace the cable cover and rear cover.



2.4 Peripheral Installation

2.4.1 MSR/iButton/RFID Module Installation

1. At the rear of the device on the left side is the peripheral socket. Insert the desired peripheral module into the socket.



2. Secure the module in place using two screws.



2.4.2 VESA Mount Installation

1. Install the VESA bracket onto the device and secure in place using two screws.



2.4.3 Rear-Mounted Screen Installation

1. Remove the rear cover and cable cover.



2. Install the screen module at the rear of the USC-250 device and secure in place using two screws.



3. Adjust the angle of the rear-mounted display screen.



2.4.4 Avalo Secondary Display Installation

1. Assemble the tube stand and secondary display.



2. Attach the USC-250 device to the tube stand and secure in place using screws.



2.4.5 Vacuum Florescent Display (VFD) Installation

1. Remove the rear cover and cable cover.



2. Connect the cables to the VFD module and the I/O port on the USC-250 device.



3. Install the VFD module and secure in place using screws.



4. Replace the cable cover and rear cover.



2.4.6 Barcode Scanner Installation

1. A barcode scanner module can be installed at the bottom or the right side of the USC-250 device. To install at the bottom of the device, simply attach the barcode scanner module to the device (as shown below) and secure in place using screws.



2. To install on the right of the device, simply attach the barcode scanner module to the device (as shown below) and secure in place using screws.



2.5 Dual Display Touch Settings

To configure the touch control function, follow the instructions provided below.

1. Access the Control Panel, and click on "Tablet PC Settings".

your computer's settings							
						View by: Large icons 🔻	
Color Management	0	Credential Manager	P	Date and Time	۲	Default Programs	-
Desktop Gadgets	i.	Device Manager	-	Devices and Printers	2	Display	
ase of Access Center	F	Folder Options	A	Fonts		Getting Started	
lomeGroup	æ	Indexing Options	P	Intel® HD Graphics	R	Internet Options	
(eyboard		Location and Other Sensors	Ĩ	Mouse	1	Network and Sharing Center	
Notification Area Icons	8	Parental Controls	1	Pen and Touch	14	Performance Informatior and Tools	١
Personalization	٩	Phone and Modem	۲	Power Options	1	Programs and Features	-
Realtek HD Audio Manager	R	Recovery	٩	Region and Language	-	RemoteApp and Desktop Connections	E.
Sound	Ŷ	Speech Recognition	۲	Sync Center		System	
ablet PC Settings		Taskbar and Start Menu		Troubleshooting	<u>.</u>	User Accounts	
Vindows Anytime Jpgrade	3	Windows CardSpace		Windows Defender	1	Windows Firewall	
Vindows Mobility Center	2	Windows Update					
	esktop Gadgets ase of Access Center omeGroup eyboard otification Area Icons ersonalization ealtek HD Audio Manager ound ablet PC Settings Vindows Anytime pgrade Vindows Mobility Center	esktop Gadgets ase of Access Center omeGroup eyboard otification Area Icons ersonalization ealtek HD Audio Manager ound ablet PC Settings /indows Anytime pgrade ())	esktop GadgetsImage: Image: Image: See of Access CenterImage: Image: Folder OptionsomeGroupImage: Image: SensorsImage: Image: Image: SensorsImage: Image: Sensorsotification Area IconsImage: Image: SensorsImage: SensorsImage: Sensorsotification Area IconsImage: Image: SensorsImage: SensorsImage: Sensorsotification Area IconsImage: Image: SensorsImage: SensorsImage: SensorsoundImage: 	esktop Gadgets ise of Access Center omeGroup eyboard otification Area Icons ersonalization altek HD Audio Manager ise of Access Center iso indexing Options iso index	esktop GadgetsImageImageImageesktop GadgetsImageImageImageImagease of Access CenterImageFolder OptionsImageFontsomeGroupImageIndexing OptionsImageImageIntel® HD GraphicseyboardImageImageImageImageImageotification Area IconsImageImageImageImageersonalizationImageImagePen and TouchImageeatek HD Audio ManageImageImageRecoveryImageoundImageImageSpeech RecognitionImageablet PC SettingsImage	esktop Gadgets See of Access Center See o	esktop Gadgets Image: Imag

2. From the drop-down menu (1), select the device to configure. Double click the <Setup> button (2).

Tablet PC Settings			✓ 4 Search
A Display Other			Vie
Configure 2 Configure your pen and touch displays.	e Tools	AutoPlay	🐌 в
Display options 1 Display: 1. ch7511b	inager	Date and Time	D
1. ch7511b Details: 2. LCD MONITOR	jer 🗧	Devices and Printers	D
Calibrate	IS	Fonts	G
Choose the order in which your screen rotates. Go to Orientation	ons	Intel® HD Graphics	🐏 Ir
	Other	J Mouse	S C
OK Cancel Apply	rols	Pen and Touch	a P
Personalization 🥥 Phone and I	Modem	Power Options	🔊 Р
🦻 Realtek HD Audio Manager 🛛 🎉 Recovery	6	Region and Language	R C
Sound Speech Rec	ognition	Sync Center	🛃 s

- 3. The message shown below will be displayed on the USC-250 screen. Touch the screen to confirm the touch function.
- 4. If a secondary display is integrated with the USC-250 device and it supports touch control, repeat Steps 2 and 3 to configure the touch function of the secondary display. If the secondary display does not support touch control, press <Enter> on the keyboard to configure the input function.

Touch this screen to identify it as the touchscreen.

If this is not the Tablet PC screen, press Enter to move to the next screen. To close the tool, press Esc.

- × 🕶 🍫 Sea Tablet PC Settings Display Other Vi Configure Configure your pen and touch displays. 🖲 Setup.. Tools AutoPlay 火 🕖 E Display options Date and Time nager Display: 1. ch7511b Touch Input Available Details: **Devices and Printers** -E 😌 Calibrate... 🛞 Reset.. Fonts 0 Choose the order in which your screen rotates. Go to Orientation Intel[®] HD Graphics I ns Other Mouse Pen and Touch OK Cancel Apply ols Personalization Phone and Modem **Power Options** 5 P N Realtek HD Audio Manager Region and Language Recovery Sync Center ib Speech Recognition Sound S 🚺
- 5. Then click <Ok> to finish the setup and exit the setup menu.



BIOS Setup

In most cases, the USC-250 device will have been setup and configured by the dealer or systems integrator prior to delivery. However, some of the BIOS settings may need adjustment to set the system configuration data, such as the current date and time, or type of hard drive installed. The setup program is stored in read-only memory (ROM) and can be accessed when activating or resetting the computer, or by pressing <Delete> upon boot up.

3.1 Introduction

With the AMI BIOS Setup Utility, users can modify BIOS settings to control the computer functions. The BIOS Setup Utility features a number of menus with configurable items for adjusting the settings. The basic navigation of the BIOS menu screens is described in this chapter.

3.2 BIOS Setup

The BIOS configuration settings are saved in Flash memory on the motherboard. When the power is turned off, the battery on the board supplies the necessary power to preserve the Flash memory. To access the BIOS CMOS Setup Utility, after system bootup, press the or <Esc> button during the BIOS POST (power-on Self test).

Control Keys				
$\leftarrow \!$	Select screen			
< ↑ >< ↓ >	Select item			
<enter></enter>	Select			
<+/->	Change options			
<f1></f1>	General help			
<f2></f2>	Previous values			
<f3></f3>	Optimized defaults			
<f4></f4>	Save and exit			
<esc></esc>	Exit			

3.2.1 Main Menu

Press or <Esc> to enter the AMI BIOS CMOS Setup Utility. The Main Menu will appear onscreen as shown below. Use the arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

Aptio Setup Utility – Main Advanced Chipset Security	Copyright (C) 2019 American Boot Save & Exit	Megatrends, Inc.
BIOS Information BIOS Vendor Core Version Compliancy Project Version Build Date and Time Access Level	American Megatrends 5.0.1.2 0.54 x64 UEFI 2.7; PI 1.6 UP02000SF60X011 04/30/2019 16:01:41 Administrator	Choose the system default language
Total Memory Memory Frequency	4096 MB 2133 MHz	
System Language	[English]	→+: Select Screen
System Date System Time	[Tue 04/30/2019] [17:33:40]	t↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.1271. Co	pyright (C) 2019 American M	egatrends, Inc.

The Main BIOS setup screen has two main frames. The left frame displays all the options that can be configured. Grayed-out options cannot be configured, whereas options in blue can be configured. The right frame displays the key legend.

Above the key legend is an area reserved for a text message. When an option is selected in the left frame, it is highlighted in white. Often a text message will accompany it.

System Time/System Date

Use this option to change the system time and date. Highlight System Time or System Date using the <Arrow> keys. Enter new values via the keyboard. Press the <Tab> or <Arrow> keys to move between fields. The date must be entered in MM/DD/YY format. The time must be entered in HH:MM:SS format.

3.2.2 Advanced BIOS Features

Select the Advanced tab from the BIOS setup menu to enter the Advanced BIOS setup screen. Users can select any of the items in the left frame of the screen, such as CPU Configuration, to access the sub-menu for that item. Display an Advanced BIOS setup option by highlighting it using the <Arrow> keys. All Advanced BIOS setup options are described in this section. The Advanced BIOS setup screen is shown below. The sub menus are described in the following sections.

Aptio Setup Utility – Copyright (C) 2019 American Main <mark>Advanced</mark> Chipset Security Boot Save & Exit	Megatrends, Inc.
 CPU Configuration PCH-FW Configuration Trusted Computing ACPI Settings NCT6106D Super IO Configuration HW Monitor S5 RTC Wake Settings USB Configuration Network Stack Configuration CSM Configuration 	CPU Configuration Parameters
	<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.20.1271. Copyright (C) 2019 American Me	egatrends, Inc.

3.2.2.1 CPU Configuration

Aptio Setup Utility Advanced	– Copyright (C) 2019 America	n Megatrends, Inc.
CPU Configuration		To turn on/off the MLC
Type ID Speed L1 Data Cache L1 Instruction Cache L2 Cache L3 Cache L4 Cache VMX	Intel(R) Core(TM) i3-6100U CPU @ 2.30GHz 0×406E3 2300 MHz 32 KB × 2 32 KB × 2 256 KB × 2 3 MB N/A Supported	streamer pretettner.
SMX/TXT	Not Supported	
Hardware Prefetcher Intel (VMX) Virtualization Technology Active Processor Cores Hyper-Threading	[Enabled] [Enabled] [All] [Enabled]	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>

3.2.2.2 PCH-FW Configuration



3.2.2.3 ACPI Settings

Aptio Setup Utility - Advanced	- Copyright (C) 2019 American	n Megatrends, Inc.
ACPI Settings		Select the highest ACPI sleep
Enable ACPI Auto Configuration	[Disabled]	when the SUSPEND button is pressed.
Enable Hibernation ACPI Sleep State	[Enabled] [S3 (Suspend to RAM)]	
	ACPI Sleep State Suspend Disabled S3 (Suspend to RAM)	++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.1271. (Copyright (C) 2019American M	√egatrends, Inc.

- Enable ACPI Auto Configuration [Disabled] This item allows users to enable or disable BIOS ACPI auto configuration.
- Enable Hibernation [Enabled] This item allows users to enable or disable hibernation. This option may be not available with some OS.

ACPI Sleep State [S3(Suspend to RAM)] This item allows users to set the ACPI sleep state.

Chapter 3 BIOS Setup

3.2.2.4 NCT6106D Super IO Configuration

Serial Port 1 Configuration



Serial Port 2 Configuration



Serial Port 3 Configuration

Aptio Setup Utility – Advanced	Copyright (C) 2019 American	Megatrends, Inc.
Serial Port 3 Configuration Serial Port Device Settings	(Enabled) IO=3E8h; IRQ=10;	Enable or Disable Serial Port (COM)
	Serial Port	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.20.1271. C	opyright (C) 2019 American M	egatrends, Inc.

Serial Port 4 Configuration

Aptio Setup Utility Advanced	– Copyright (C) 2019 American	h Megatrends, Inc.
Serial Port 4 Configuration Serial Port Device Settings	[Enabled] IO=240h; IRQ=7;	Enable or Disable Serial Port (СОМ)
	Serial Port - Disabled Enabled	<pre>++: Select Screen f1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.20.1271.	Copyright (C) 2019 American M	Megatrends, Inc.

Serial Port 5 Configuration

Aptio Setup Utility – Advanced	Copyright (C) 2019 American	Megatrends, Inc.
Serial Port 5 Configuration Serial Port Device Settings	[Enabled] IO=248h; IRQ=6;	Enable or Disable Serial Port (COM)
	Serial Port Disabled Enabled	++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.1271. Co	opyright (C) 2019 American M	egatrends, Inc.

Parallel Port Configuration

Aptio Setup Utility Advanced	– Copyright (C) 2019 Americar	Megatrends, Inc.
Parallel Port Configuration		Change the Printer Port mode.
Parallel Port Device Settings	[Enabled] IO=378h; IRQ=5;	
	Device Mode STD Printer Mode SPP Mode EPP-1.9 and SPP Mode ECP Mode ECP Mode ECP and EPP 1.9 Mode ECP and EPP 1.7 Mode	<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.20.1271.	Copyright (C) 2019American ⊨	egatrends, Inc.

3.2.2.5 Hardware Monitor

PC Health Status System temperature : +29°C CPU temperature : +29°C VCORE : +0.864 V 1.2V : +1.200 V +5V : +5.088 V 3.3V : +3.328 V AVCC : +3.344 V VBAT : +3.072 V +: Select Screen 11: Select Item Enter: Select : Change Opt. : General Help : P: Previous Values : Optimized Defaults : Save & Exit : ESC: Exit	Aptio Setup Advanced	Utility – Copyright	(C) 2019 American	Megatrends, Inc.
	Aptio Setup Advanced PC Health Status System temperature CPU temperature VCORE 1.2V +5V 3.3V AVCC VBAT	Utility - Copyright : +29°C : +29°C : +0.864 : +1.200 : +5.088 : +3.328 : +3.344 : +3.072	(C) 2019 American	Megatrends, Inc. ++: Select Screen 1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

3.2.2.6 S5 RTC Wake Settings

Aptio Set Advanced	up Utility – Copyright (C) 2019 Ameria	can Megatrends, Inc.
Wake system from S5	[Disabled]	Enable or disable System wake on alarm event. Select FixedTime, system will wake on the hr::min::sec specified. Select DynamicTime , System will wake on the current time + Increase minute(s)
	Wake system from S5	<pre>**: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version	2.20.1271. Copyright (C) 2019 America	n Megatrends, Inc.

3.2.2.7 USB Configuration



Aptio Setup Utility	– Copyright (C) 2019 Am	erican Megatrends, Inc.
Huvanceu		
USB Configuration		Enable/Disable USB Mass
		Storage Driver Support.
Legacy USB Support	[Enabled]	
USB Mass Storage Driver Support	[Enabled]	
Mass Storage Devices:		
KingstonDataTraveler 2.0PMAP	[Auto]	
USE	8 Mass Storage Driver Su	pport
Disab.	led	
Enable		lect Screen
		lect Item
		Enter: Select
		+/-: Change Opt.
		F1: General Help F2: Previous Values
		F3: Optimized Defaults
		F4: Save & Exit
		ESC: Exit
Vanatan 0.00 4074	Comuniatit (C) 2018 Arrow	icon Negotrando Tro
version 2.20.12/1.	copyright (C) 2019 Amer	ican Megatrends, inc.

- Legacy USB Support [Enabled] This item allows users to enable or disable legacy USB support. The Auto option disables legacy support if no USB devices are connected.
- XHCI Hand-Off [Enabled]
- USB Mass Storage Driver Support [Enabled]
- Mass Storage Devices [Auto]

This item shows USB mass storage device information.

3.2.2.8 Network Stack Configuration

Aptio Se Advanced	tup Utility – Copyright (C) 2019 America	n Megatrends, Inc.
Network Stack	[Disabled] Network Stack Disabled Enabled	Enable/Disable UEFI Network Stack ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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Chapter 3 BIOS Setup

3.2.2.9 CSM Configuration





Note: If the Windows OS is set to UEFI mode, the storage and video settings must be configured as "UEFI".

3.2.3 Chipset Configuration

Select the Chipset tab of the BIOS main menu to enter the Chipset setup screen. Users can select any item in the left frame of the screen. The Chipset screens are shown below. The sub-menus are shown in the following pages.

Aptio Setup U Main Advanced Chipset S	J <mark>tility – Copyright (C) 2019 American</mark> Security Boot Save & Exit	Megatrends, Inc.
 > System Agent (SA) Configura > PCH-IO Configuration 	ation	System Agent (SA) Parameters ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20).1271. Copyright (C) 2019 American Mu	egatrends, Inc.

	Aptio Setup Utility - Chipset	Copyright (C) 2019 American	Megatrends, Inc.
Γ	System Agent (SA) Configuration		Graphics Configuration
	SA PCIe Code Version VT-d	3.3.1.0 Supported	
	Memory Configuration Graphics Configuration		
	VT-d Above 4GB MMIO BIOS assignment	[Enabled] [Disabled]	
			++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
	Version 2.20.1271. Co	ppyright (C) 2019 American M	egatrends, Inc.











Restore AC Power Loss [Power Off]

This item allows users to specify what state to go to when power is re-applied after a power failure (G3 state).

Wake On LAN [Enable]

This item allows users to enable or disable Wake on LAN function.

3.2.3.1 SATA Configuration







Chapter 3 BIOS Setup

3.2.3.2 RAID Setup Configuration

For SATA mode configuration, selection "RAID".



Note: If Windows is set to legacy mode, configure RST Legacy OROM to "enabled". Save and exit the BIOS. Reboot the system. Then press <Ctrl + I> to access RAID setup.

Aptio Setup Utilit Chipset	y – Copyright (C) 2019 American	Megatrends, Inc.
Software Feature Mask Configurat	ion	Use RST Legacy OROM when CSM
Use RST Legacy OROM		is Enabled.
	Use RST Legacy OROM Disabled Enabled	<pre>**: Select Screen f1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.20.1271	Copyright (C) 2019 American M	egatrends, Inc.

Note: If Windows is set to UEFI mode, configure the Boot Option Filter to "UEFI only", and ensure the storage and video settings are configured as "UEFI". Save and exit the BIOS.

Aptio Setup Utility – Copyright (C) 2019 American Megatrends, Inc. Advanced			
Compatibility Support Module Co	nfiguration	Enable/Disable CSM Support.	
CSM Support			
CSM16 Module Version	07.81		
GateA20 Active INT19 Trap Response	[Upon Request] [Immediate]		
Boot option filter	[UEFI only]		
Option ROM execution			
Network Storage Video Other PCI devices	[Do not launch] [UEFI] [UEFI] [UEFI]	<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>	
Version 2.20.1271. Copyright (C) 2019 American Megatrends, Inc.			

Reboot the system and access the BIOS Setup Utility. Then navigate to the Advanced tab and select the "Intel Rapid Storage Technology" item and configure the settings as "enabled".

Aptio Setup Utility – Copyright (C) 2019 American Main <mark>Advanced</mark> Chipset Security Boot Save & Exit	Megatrends, Inc.
 CPU Configuration PCH-FW Configuration Intel(R) Rapid Storage Technology Trusted Computing ACPI Settings NCT6106D Super ID Configuration HW Monitor SS RTC Wake Settings USB Configuration Network Stack Configuration CSM Configuration 	This formset allows the user to manage RAID volumes on the Intel(R) RAID Controller
	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.20.1271. Copyright (C) 2019 American Me	egatrends, Inc.

Aptio Setup Utility – Copyright (C) 2019 American Advanced	Megatrends, Inc.
Intel(R) RST 15.9.0.3194 RAID Driver ▶ Create RAID Volume	This page allows you to create a RAID volume
Non-RAID Physical Disks: ▶ SATA 0.0, LITEON CVI-SB32 0029191014ER, 29.8GB ▶ SATA 0.1, LITEON CV1-SB32 0029191014AB, 29.8GB	
	<pre>++: Select Screen tl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.20.1271. Copyright (C) 2019 American M	egatrends. Inc.

Aptio Setup Utility Advanced	– Copyright (C) 2019 Americ	can Megatrends, Inc.
Create RAID Volume		Enter a unique volume name
Name: RAID Level:	Volume1 [RAIDO (Stripe)]	and is 16 characters or less.
Select Disks: SATA 0.0, LITEON CV1-SB32 0029191014ER, 29.86B	[]	
SATA 0.1, LITEON CV1-SB32 0029191014AB, 29.8GB	[]	
Strip Size:	[16KB]	
Capacity (MB): ▶ Create Volume	U	↔: Select Screen ↑↓: Select Item
Select at least two disks		Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.1271. Copyright (C) 2019 American Megatrends, Inc.		



Aptio Setup Utili Advanced	ty – Copyright (C) 2019 America	an Megatrends, Inc.
Create RAID Volume		X - to Select Disk
Name: RAID Level:	Volume1 [RAIDO (Stripe)]	
Select Disks: SATA 0.0, LITEDN CV1-SB32 0029191014ER, 29.8GB SATA 0.1, LITEON CV1-SB32 002919101408 29.858		
Strip Size: Capacity (MB):	D, LITEON CV1-SB32 0029191014EF	R, 29.868
▶ Create Volume		em Enter: Select
Select at least two disks		+/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.127:	1. Copyright (C) 2019 American	Megatrends, Inc.

Aptio Setup Utili Advanced	ty – Copyright (C) 2019 Ame	rican Megatrends, Inc.
Create RAID Volume		X – to Select Disk
Name: RAID Level:	Volume1 [RAIDO (Stripe)]	
Select Disks: SATA 0.0, LITEON CV1-SB32 0029191014ER, 29.8GB SATA 0.1, LITEON CV1-SB32 0029191014AB, 29.8GB	[X] []	
Strip Size: Capacity (MB):	[16KB] 61063	
▶ Create Volume Select at least two disks		<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Vencion 2 20 127	L Copunight (C) 2019 Amoniu	can Merathande The

Aptio Setup Utili Advanced	ty – Copyright (C) 2019 Ame	rican Megatrends, Inc.
Create RAID Volume		X – to Select Disk
Name: RAID Level:	Volume1 [RAIDO (Stripe)]	
Select Disks: SATA 0.0, LITEON CV1-8B32 0029191014ER, 29.8GB SATA 0.1, LITEON CV1-SB32 0029191014AB, 29.8GB	[X] [X]	
Strip Size: Capacity (MB): • Create Volume	[16KB] 61063	++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.127	1. Copyright (C) 2019 Ameri	can Megatrends, Inc.

Create RAID Volume		X – to Select Disk
Name: RAID Level:	Volume1 [RAID1 (Mirror)]	
Select Disks: SATA 0.0, LITEON CV1-SB32 0029191014ER, 29.8GB SATA 0.1, LITEON CV1-SB32 0029191014AB, 29.8GB	[X] [X]	
Capacity (MB):	30531	
▶ Create Volume		<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>



3.2.4 Security Configuration

Aptio Setup Ut Main Advanced Chipset Se	<mark>ility – Copyright (C) 2017</mark> Curity <mark>Boot Save & Exit</mark>	American Megatrends, Inc.
Password Description		Set Administrator Password
If ONLY the Administrator's (then this only limits access only asked for when entering If ONLY the User's password is a power on password and m boot or enter Setup. In Setu have Administrator rights. The password length must be in the following range: Minimum length	aassword is set, to Setup and is Setup. is set, then this ust be entered to o the User will	
Maximum length	20	++: Select Screen
User Password		Enter: Select +/-: Change Opt. F1: General Helo
HDD Security Configuration: P1:ST5OOLT012–1		F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.17.	1255, Conuright (C) 2017 Ame	erican Megatrends. Inc.

Administrator Password

This item allows users to set the administrator password. Click on the item and type in the password and then press <Enter> to set the administrator password.

User Password

This item allows users to set the user password. Click on the item and type in the password and then press <Enter> to set the user password.

3.2.5 Boot Configuration

Aptio Setup Utility – Main Advanced Chipset Security	Copyright (C) 2019 American Boot Save & Exit	Megatrends, Inc.
Boot Configuration Setup Prompt Timeout Bootup NumLock State Quiet Boot	1 [On] [Disabled]	Set the order of the legacy devices in this group
Boot Option Priorities Boot Option #1	[UEFI: KingstonDataTraveler 2.0PMAP. Partition 1]	
Boot Option #2	[KingstonDataTraveler 2.0PMAP]	
Boot Option #3	[UEFI: Built-in EFI Shell]	
Fast Boot	[Disabled]	↔: Select Screen ↑↓: Select Item Enter: Select
Hard Drive BBS Priorities		+/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2 20 1271 C	nuright (C) 2019 American M	egatrends Inc

Setup Prompt Timeout

This item allows users to configure the number of seconds that the system waits for a setup activation key. Use the <+> and <-> keys to adjust the number of seconds to wait for setup activation key.65535 (0xFFFF) means indefinite waiting.

Bootup NumLock State [On]

This item allows users to configure the keyboard NumLock state.

Boot Option #1/#2/#3

This item allows users to configure the device boot order.

3.2.6 Save & Exit Configuration

Aptio Setup Utility – Copyright (C) 2019 American Main Advanced Chipset Security Boot <mark>Save & Exit</mark>	Megatrends, Inc.
Save Options Save Changes and Exit Discard Changes and Exit Save Changes and Reset Discard Changes and Reset Save Changes Discard Changes Default Options Restore Defaults	Exit system setup after saving the changes.
Restore User Defaults Boot Override KingstonDataTraveler 2.0PMAP UEFI: KingstonDataTraveler 2.0PMAP, Partition 1 UEFI: Built-in EFI Shell Launch EFI Shell from filesystem device	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
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Save Changes and Reset

This item allows users to save all configuration changes, exit the BIOS Setup Utility, and reboot the computer for all changes to take effect.

Discard Changes and Reset

This item allows users to exit the BIOS Setup Utility and reboot the computer without saving any changes to the system configuration.

Restore Default

This item allows users to restore/load default values for all configuration options. The BIOS automatically configures all setup items to optimal settings for maximum system performance, but they may not work best for all applications. Do not use default settings if the computer is experiencing configuration problems.

Boot Override

This item allows users to enable or disable the boot priority override function.



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