SPC-1533-B1

15" rugged Stainless steel panel PC

Quick Reference Guide

1st Ed – 29 November 2021

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(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE.

(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

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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 INSTATLLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS.

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To receive the latest version of the user's manual; please visit our Web site at: http://www.avalue.com.tw/

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1. Getting Started

1.1 Safety Precautions

Warning!



Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronics personnel should open the PC chassis.

Caution!



Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

1.2 Packing List

1 x SPC-1533-B1 Stainless Steel Panel PC (without adapter)



If any of the above items is damaged or missing, contact your retailer.

1.3 System Specifications

Component			
Mother Board	EMX-APLP(J3455)		
CPU	Intel® Celeron® J3455 (F1 stepping)		
CPU Cooler (Type)	Fanless Heatsink		
Memory	2 x 204-pin DDR3L 1600 & 1333MHz SO-DIMM supports up to 16GB		
Power Supply	External power adapter		
Adapter	AC/DC adapter 24V/2.5A 90 Plug Type		
System Fan	Fanless		
Wireless LAN	Optional M.2 Wi-Fi/BT module with waterproof antenna		
Bluetooth	Optional M.2 Wi-Fi/BT module with waterproof antenna		
	Windows 10		
Operating System	Ubuntu 16.04		
	Android x86 8.1		
Storage			
Solid State Drive	1x 2.5" Drive Bay (option)		
Solid State Drive	(Suggest using wide temp SSD: ACC-2S3S-32G-10R)		
Other Storage Device	1 x mSATA (Default)		
Other Storage Device	(Suggest using wide temp mSATAACC-MSA-64G-11R)		
Panel			
LCD Panel	15" XGA TFT LED Panel CMI G150XNE-L03		
LCD Control Board	Built-in		
B/L Inverter/Converter	Built-in		
PCap Touch Screen	15" PCap Touch		
Others	15" CMI G150XNE-L03		
External I/O			
Sorial Port	1 x M12 8-pin (male) COM1, RS-232		
Senarron	(RS-232/422/485 by EMX-APLP) with waterproof cover and chain		
USB Port	2 x M12 8-pin (male) for 2 x USB 2.0 with waterproof cover and chain		
LAN Port	1 x M12 8-pin (male) for LAN with waterproof cover and chain		
Wireless LAN Antenna	Optional Wi-Fi with PCB type antenna with waterproof cover		
Others	1 x IP66 Air pressure relief valve		
Mechanical			
Power Type	AT/ATX(+12V~24V)		
Power button	1 x Power Switch on the back		
Power Connector	1 x M12 3-pip (male) for DC power with waterproof cover and chain		
Туре			

Dimension	393 mm x 315.8mm x 49 mm, thickness needs be under 50mm		
Weight	5.7 Kgs		
Color	Silver stainless		
Fan-less	Full System Fan-less		
	Windows 10		
OS Support	Ubuntu 16.04		
	Android x86 8.1		
Reliability			
EMI Test	CE/FCC Class A		
Dust and Rain Test	Full IP66/IP69K		
	Random Vibration Operation		
	1 Test PSD : 0.00454G²/Hz , 1.5 Grms		
	2 System condition : operation mode		
	3 Test frequency : 5~500 Hz		
	4 Test axis : X,Y and Z axis		
	5 Test time : 30 minutes per each axis		
	6 IEC60068-2-64 Test Fh		
	6 Storage : SSD/mSATA		
	Sine Vibration test (Non-operation)		
	1 Test Acceleration : 2G		
Vibration Test	2 Test frequency : 5~500 Hz		
vibration rest	3 Sweep:1 Oct/ per one minute. (logarithmic)		
	4 Test Axis: X,Y and Z axis		
	5 Test time :30 min. each axis		
	6 System condition : Non-Operating mode		
	7. Reference IEC 60068-2-6 Testing procedures		
	Package Vibration Test:		
	1 Test PSD : 0.026G²/Hz , 2.16 Grms		
	2 Test frequency : 5~500 Hz		
	3 Test axis : X,Y and Z axis		
	4 Test time : 30 minutes per each axis		
	5 IEC 60068-2-64 Test Fh		
	1 Wave from : Half Sine wave		
	2 Acceleration Rate : 10g for operation mode		
Mechanical Shock	3 Duration Time : 11ms		
Test	4 No. of shock : Z axis 300 times		
	5 Test Axis : Z axis		
	6 operation mode		

	7 Reference IEC 60068-2-27 testing procedures
	Test Eb : Shock Test
	Package drop test
	Reference ISTA 2A, Method : IEC-60068-2-32 Test:Ed
	Test Ea : Drop Test
	1 Test phase : One corner, three edges, six faces
Dren Test	2 Test high : 96.5cm
Drop Test	3 Package weight : 5Kg
	4 Test drawing
	4-feet drop resistance without package
	MIL-STD-810G
Operating	
Temperature	-10° C ~ 50° C (14° F ~ 122° F), by flow = 0.5
Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing
Storage Temperature	-20°C ~ 60°C (-4°F ~ 140°F)

Note:

*(Suggestion accessory when adapter needed):

ACC-ADP-060N-09R (AC/DC adapter 24V/2.5A 90 Plug Type)

E170W050030R (Waterproof M12 DC Cable (M12/3Pin- D2.5DC-Plug 200cm))

*Specifications are subject to change without notice.

1.4 Sy	vstem Overviev	N				
1.4.1	Bottom View					
٢	DC IN		USB	USE	COM	Air Vent Valve
Conne	ectors					
Label	Fur	nction			Note	
COM	Wa	terproof M12	2 8-pin (male)			
COM	CO	M1(RS-232(default)/422/4	85)		
USB	Wa	terproof M12	2 8-pin (male)	for 2 x USB 2	.0	
LAN	Wa	Waterproof M12 8-pin (male) for LAN				

LAN	Waterproof M12 8-pin (male) for LAN
DC IN	Waterproof M12 3-pin (male) for DC power
POWER	System power indicator
ALTW	Air Vent Value



2. Hardware Configuration

For advanced information, please refer to:

1- EMX-APLP User's Manual



Note: If you need more information, please visit our website: http://www.avalue.com.tw

2.1 SPC-1533-B1 connector mapping

2.1.1 Waterproof M12 8-pin (male) for 2 x USB 2.0 (USB)





CN1	Signal	
1	USB1 5V	
3	D1-	
4	D1+	
7	GND	
2	USB2 5V	
5	D2-	
6	D2+	
8	GND	

2.1.2 Waterproof M12 8-pin (male) COM1(RS-232(default)/422/485) (COM)







LINER



n sp



CN1	RS-232/422/485
1	DCD / 422R+
2	RXD / 422R-
3	TXD / 422T- / 485-
4	DTR / 422T+ / 485+
5	GND
6	DSR
7	RTS
8	CTS

2.1.3 Waterproof M12 8-pin (male) for LAN (LAN)

CON





CN1	Pin Define		
1	LAN1_0+		
2	LAN1_0-		
3	LAN1_1+		
4	LAN1_1-		
5	LAN1_2+		
6	LAN1_2-		
7	LAN1_3+		
8	LAN1_3-		

2.1.4 Waterproof M12 3-pin (male) for DC power (DC IN)





CN1	Pin Define
1	NC
3	VCC
4	GND







2.3 Jumper and Connector List

USB1/2

USB connector 1/2

Jumpers		
Label	Function	Note
JRI1/2/3/4/5/6	Serial port 1/2/3/4/5/6 pin9 signal select	3 x 2 header, pitch 2.00mm
JMSW1	SATA2/MSATA1 mPCle slot selector	6 x 2 header, pitch 2.00mm
JSBKL1	LVDS Back Light power selection	3 x 1 header, pitch 2.54mm
JSATX1	AT/ATX Power Mode Select	3 x 1 header, pitch 2.54mm
CMOS1	Clear CMOS	3 x 1 header, pitch 2.00mm
Connectors		
Label	Function	Note
FAN1	CPU fan connector	4 x 1 wafer, pitch 2.54mm
FPT1	Front Panel connector 1	5 x 2 header, pitch 2.54mm
FPT2	Front Panel connector 2	5 x 2 header, pitch 2.54mm
DIMM1/2	204-pin DDR3L DIMM socket	
FAUD1	Front Audio connector	5 x 2 header, pitch 2.54mm
JBKL1	LCD Inverter connector	5 x 1 wafer, pitch 2.00mm Compatible with Connector: JST PHR-5
SPI1	SPI connector	4 x 2 header, pitch 2.00mm
COM1	Serial Port 1 connector	5 x 2 header, pitch 2.00mm
COM2	Serial Port 2 connector	5 x 2 header, pitch 2.00mm
COM3	Serial Port 3 connector	5 x 2 header, pitch 2.00mm
COM4	Serial Port 4 connector	5 x 2 header, pitch 2.00mm
COM5	Serial Port 5 connector	5 x 2 header, pitch 2.00mm
COM6	Serial Port 6 connector	5 x 2 header, pitch 2.00mm
	Serial Port 1 RS485/422 Mode	3 x 2 boador pitch 2 00mm
513405	connector	3 x 2 fieader, pitch 2.00mm
DIO1	General purpose I/O connector	10 x 2 header, pitch 2.00mm
SPK1	Speaker connector	4 x 1 wafer, pitch 2.00mm
LVDS1	LVDS Connector	DIN 40-pin wafer, pitch 1.25mm Compatible with Connector: Hirose DF13-40DS-1.25C

USB3	USB 2.0 connector	5 x 2 header, pitch 2.54mm
USBH1	USB 2.0 connector	5 x 2 header, pitch 2.54mm
USBH2	USB 2.0 connector	5 x 1 header, pitch 2.54mm
SPDIF1	Sony/Philips Digital Interface	3 x 1 header, pitch 2.54mm
LAN1/2	RJ-45 Ethernet 1/2	
PCIE1	PCIe connector	
LED1	LED indicator connector 1	4 x 1 header, pitch 2.00mm
LED2	LED indicator connector 2	4 x 1 header, pitch 2.00mm
DP1/2	DP connector 1/2	
EDP1	eDP connector	10 x 2 wafer, pitch 1.25mm
BT1	Battery connector	2 x 1 wafer, pitch 1.25mm
M2KA1	M.2 Type A 2230 connector	
MPCIE1	Mini-PCIe connector 1	
JLPC1	LPC connector	5 x 2 header, pitch 2.00mm
PWR1	Power connector	2 x 2 wafer, pitch 4.20mm
SATA1/2	Serial ATA connector 1/2	
SPWR1/2	SATA Power connector 1/2	4 x 1 wafer, pitch 2.54mm
EC1	EC_Program	5 x 2 header, pitch 2.00mm
DCIN1	DC Power-in connector	
I2C1	I2C connector	5 x 1 header, pitch 2.00mm
HDMI1	HDMI connector	
LOUT1	Line-out audio jack	
MIC1	Mic-in audio jack	
DMIC1	Digital Microphone connector	5 x 1 header, pitch 2.54mm
SIM1	SIM card slot	



* Default

2.4.2 SATA2/MSATA1 mPCle slot selector (JMSW1)



* Default

Note:

SATA2/MSATA1 shared SATA signal, can not be used simultaneously.

SATA2 Connector*

(SATA2 Connector enabled, MSATA1 slot Disabled)

1			11

MSATA1 mPCle slot

(MSATA1 slot enabled, SATA2 Connector Disabled)

1			11

2.4.3 LVDS Back Light power selection (JSBKL1)



PWM Mode*(Max current: 2A)



DC Mode(Max current: 2A)

3	1

* Default

2.4.4 AT/ATX Power Mode Select (JSATX1)



ATX*





- 1

* Default

2.4.5 Clear CMOS (CMOS1)



* Default

2.4.6 LCD Inverter connector (JBKL1)







Clear CMOS

3	1

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	5			1	I

PIN	Signal			
1	+12V			
2	GND			
3	LVDS_BKLTEN			
4	LVDS_BKLADJ			
5	+5V			

2.4.7 Serial port 1/2 connector (COM1/2)



1		9

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

2.4.8 Serial port 3/4/6 connector (COM3/4/6)



	9
	1

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

2.4.9 Serial port 5 connector (COM5)



9		1

Signal	PIN	PIN	Signal
NDCD#	1	2	NRXD
NTXD	3	4	NDTR#
GND	5	6	NDSR#
NRTS#	7	8	NCTS#
NRI#	9	10	NC

2.4.10 Serial Port 1 RS485/422 Mode connector (JRS485)



1	5

Signal	PIN	PIN	Signal
485TX-	1	2	422RX-
485TX+	3	4	422RX+
GND	5	6	GND

2.4.11 General purpose I/O connector (DIO1)



1					19

Signal	PIN	PIN	Signal
DI0	1	2	DO0
DI1	3	4	DO1
DI2	5	6	DO2
DI3	7	8	DO3
DI4	9	10	DO4
DI5	11	12	DO5
DI6	13	14	DO6
DI7	15	16	DO7
SMB_CLK	17	18	SMB_DATA
GND	19	20	+5V

2.4.12 SATA Power connector 1/2 (SPWR1/2)





PIN	Signal			
1	+V5S_SATA			
2	GND			
3	GND			
4	+V12S_SATA			



2.4.13 Power connector (PWR1)



Signal	PIN	PIN	Signal
GND	1	2	GND
+V12-24_DCIN	3	4	+V12-24_DCIN

2.4.14 USB2.0 connector (USB3)



7		1

Signal	PIN	PIN	Signal
+5VSB	1	2	+5VSB
USBDN4	3	4	USBDN5
USBDP4	5	6	USBDP5
GND	7	8	GND
		10	NC



2.4.15 USB2.0 connector (USBH1)

7		1

Signal	PIN	PIN	Signal
+5VSB	1	2	+5VSB
USB_HDN1	3	4	USB_HDN2
USB_HDP1	5	6	USB_HDP2
GND	7	8	GND
		10	NC

2.4.16 USB2.0 connector (USBH2)



	1

PIN	Signal			
5	NC			
4	GND			
3	USB_HDP4			
2	USB_HDN4			
1	+5VSB			

2.4.17 LVDS connector (LVDS1)





Signal	PIN	PIN	Signal
+3.3V	1	2	+5V
+3.3V	3	4	+5V
NC	5	6	NC
GND	7	8	GND
LVDS_DATAP1	9	10	LVDS_DATAP0
LVDS_DATAN1	11	12	LVDS_DATAN0
GND	13	14	GND
LVDS_DATAP3	15	16	LVDS_DATAP2
LVDS_DATAN3	17	18	LVDS_DATAN2
GND	19	20	GND
LVDS_DATAP5	21	22	LVDS_DATAP4
LVDS_DATAN5	23	24	LVDS_DATAN4
GND	25	26	GND
LVDS_DATAP7	27	28	LVDS_DATAP6
LVDS_DATAN7	29	30	LVDS_DATAN6
GND	31	32	GND
LVDS_CLK2P	33	34	LVDS_CLK1P
LVDS_CLK2N	35	36	LVDS_CLK1N
GND	37	38	GND
+12V	39	40	+12V





PIN	Signal
1	+3.3VSB
2	GND

2.4.19 Front Audio connector (FAUD1)



	9
	1

Signal	PIN	PIN	Signal
LINE2_JD	10	9	LINE2_L
		7	SENSE_B
MIC2_JD	6	5	LINE2_R
AUD_FRONT_DET	4	3	MIC2_R
GND	2	1	MIC2_L

2.4.19.1 Signal Description – Front Audio connector (FAUD1)

Signal	Signal Description
LINE2_JD	AUDIO IN (LINE_RIN/LIN)sense pin
MIC2_JD	MIC IN (MIC_RIN/LIN) sense pin

2.4.20 LPC connector (JLPC1)



1		9

Signal	PIN	PIN	Signal
LPC_AD0	1	2	+3.3V
LPC_AD1	3	4	PLT_RST#
LPC_AD2	5	6	LPC_FRAME#
LPC_AD3	7	8	LPC_CLK_DEB
LPC_SERIRQ	9	10	GND

2.4.21 EC_Program (EC1)



1		9

Signal	PIN	PIN	Signal
+3.3A_ECSPI	1	2	GND
EC_FSCE#	3	4	EC_FSCK
EC_FSMIOSO	5	6	EC_FSMOSI
EC_HOLD#	7	8	NC
EC_SMBCLK	9	10	EC_SMBDATA

2.4.22 SPI connector (SPI1)



7		1

Signal	PIN	PIN	Signal
+1.8VSB	1	2	GND
SPI_CS0#	3	4	SPI_CLK
SPI_MISO	5	6	SPI_MOSI
SPI_HOLD#	7		

2.4.23 Sony/Philips Digital Interface (SPDIF1)



_	
	1

PIN	Signal	
3	GND	
2	SPDIF_OUT	
1	+5V	



2.4.24 Speaker connector (SPK1)



PIN	Signal	
4	RSPK-	
3	RSPK+	
2	LSPK-	
1	LSPK+	

2.4.25 Front Panel connector 1 (FPT1)



1		9

Signal	PIN	PIN	Signal
+HD_LED	1	2	+PWR_LED
-HD_LED	3	4	-PWE_LED
+Reset	5	6	+PWR_BNT
-Reset	7	8	-PWR_BNT
NC	9		

2.4.26 Front Panel connector 2 (FPT2)



1	-	-	 9

Signal	PIN	PIN	Signal
Speaker+	1	2	BLK_VR(10K)
NC	3	4	BLK_UP
NC	5	6	BLK_DN
Speaker-	7	8	GND
NC	9	10	

Note:

1. Pin2 with GND: Control LVDS Backlight by use Variable Resistor.

2. BLK_UP with GND/BLK_DN with GND: Step control LVDS Backlight by use button and BIOS must to be set "BR Button". (Please refer to page.61)

2.4.27 LED indicator connector 1 (LED1)



1

PIN	Signal
4	L1_1000#_LED
3	L1_100#_LED
2	L1_ACT_N
1	L1_ACT_P

2.4.28 LED indicator connector 2 (LED2)





PIN	Signal
4	L2_1000#_LED
3	L2_100#_LED
2	L2_ACT_N
1	L2_ACT_P

2.4.29 CPU fan connector (FAN1)





PIN	Signal	
1	GND	
2	+12V	
3	CPU_FANIN	
4	CPU_FANOUT	

2.4.30 Digital Microphone connector (DMIC1)



2.4.31 eDP connector (EDP1)





PIN	Signal		
5			
4	DMIC_CLK		
3	GND		
2	DMIC_DAT		
1	+3.3VSB		



Signal	PIN	PIN	Signal
GND	1	2	GND
EDP_TXN0	3	4	EDP_TXN3
EDP_TXP0	5	6	EDP_TXP3
GND	7	8	NC
EDP_TXN1	9	10	GND
EDP_TXP1	11	12	EDP_AUXN
GND	13	14	EDP_AUXP
EDP_TXN2	15	16	GND
EDP_TXP2	17	18	EDP_C_HPD
EDP_VCC_PAL	19	20	EDP_VCC_PAL

2.4.32 I2C connector (I2C1)





PIN	Signal		
1	+3.3V		
2	I2C5_INT#		
3	I2C5_LS_CLK		
4	I2C5_LS_DATA		
5	GND		




3.1 Introduction

The BIOS setup program allows users to modify the basic system configuration. In this following chapter will describe how to access the BIOS setup program and the configuration options that may be changed.

3.2 Starting Setup

The AMI BIOS[™] is immediately activated when you first power on the computer. The BIOS reads the system information contained in the NVRAM and begins the process of checking out the system and configuring it. When it finishes, the BIOS will seek an operating system on one of the disks and then launch and turn control over to the operating system.

While the BIOS is in control, the Setup program can be activated in one of two ways:

By pressing or <F2> immediately after switching the system on, or

By pressing the or <F2> key when the following message appears briefly at the left-top of the screen during the POST (Power On Self Test).

Press or <F2> to enter SETUP

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

Press F1 to Continue, DEL to enter SETUP

3.3 Using Setup

In general, you use the arrow keys to highlight items, press <Enter> to select, use the PageUp and PageDown keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more detail about how to navigate in the Setup program using the keyboard.

Button	Description
1	Move to previous item
\downarrow	Move to next item
<i>←</i>	Move to the item in the left hand
\rightarrow	Move to the item in the right hand
Esc key	Main Menu Quit and not save changes into NVRAM Status Page Setup Menu and Option Page Setup Menu Exit current page and return to Main Menu
+ key	Increase the numeric value or make changes
- key	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
F2 key	Previous Values.
F3 key	Optimized defaults
F4 key	Save & Exit Setup

• Navigating Through The Menu Bar

Use the left and right arrow keys to choose the menu you want to be in.



Note: Some of the navigation keys differ from one screen to another.

• To Display a Sub Menu

Use the arrow keys to move the cursor to the sub menu you want. Then press <Enter>. A " \geq " pointer marks all sub menus.

3.4 Getting Help

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

3.5 In Case of Problems

If, after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the AMI BIOS supports an override to the NVRAM settings which resets your system to its defaults.

The best advice is to only alter settings which you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both BIOS Vendor and your systems manufacturer to provide the absolute maximum performance and reliability. Even a seemingly small change to the chipset setup has the potential for causing you to use the override.

3.6 BIOS setup

Once you enter the Aptio Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions and exit choices. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.

3.6.1 Main Menu

This section allows you to record some basic hardware configurations in your computer and set the system clock.

Main Advanced Chipset Security Boot Save & Exit	
BIOS Information BIOS Vendor American Megatrends Core Version 5.12 Compliancy UEFI 2.5; PI 1.4 Project Version 1ATJS 0.54 x64 Build Date and Time 11/05/2021 18:04:24 Access Level Administrator EC 8528 Firmware 17 BIOS Name SP15B-04 System Language [English]	Choose the system default language
System Date [Thu 12/09/2021] System Time [16:49:32]	<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 2.18.1263. Copyright (C) 2021 American	Megatrends, Inc.
Aptio Setup Utility – Copyright (C) 2021 Americ Main	an Megatrends, Inc.
Intel RC Version	
Platform firmware Information BXT SOC F1 MRC Version 0.56 PUNIT FW 1E PMC FW 03.20 TXE FW 3.1.65.2288 ISH FW N/A GOP 10.0.1030 CPU Flavor BXT Notebook/Desktop Board ID DXbow Hill CRB (06) Fab ID FAB A Memory Information Total Memory 2043 MB Memory Speed 1600 MHz	++: Select Screen 1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

3.6.1.1 System Language

This option allows choosing the system default language.

3.6.1.2 System Date

Use the system date option to set the system date. Manually enter the day, month and year.

3.6.1.3 System Time

Use the system time option to set the system time. Manually enter the hours, minutes and seconds.



Note: The BIOS setup screens shown in this chapter are for reference purposes only, and may not exactly match what you see on your screen. Visit the Avalue website (<u>www.avalue.com.tw</u>) to download the latest product and BIOS information.

3.6.2 Advanced Menu

This section allows you to configure your CPU and other system devices for basic operation through the following sub-menus.



3.6.2.1 Trusted Computing

Aptio Setup Uti: Advanced	lity – Copyright (C) 2021 American	Megatrends, Inc.
Configuration Security Device Support NO Security Device Found	(Enable)		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.
			<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 2.18.12	263. Copyright (C)	2021 American Me	egatrends, Inc.

Item	Options	Description
Security Device Support	Disable, Enable [Default]	Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1Ainterface will not be available.

3.6.2.2 ACPI Settings

Aptio Setup Utility –	Copyright (C) 2021 American	Megatrends, Inc.
Advanced		
ACPI Settings		Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may
Enable Hibernation ACPI Sleep State	[Enabled] [S3 (Suspend to RAM)]	be not effective with some OS.
ErP Function PWR-On After PWR-Fail Watch Dog USB Standby Power Setting Wake Up by Ring	[Disabled] [Off] [Disabled] [Enabled] [Enabled]	
		++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.18.1263. Co	pyright (C) 2021 American M	egatrends, Inc.

ltem	Options	Description
Enable Hibernation	Disabled Enabled [Default] ,	Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some

Quick Reference Guide

		OS.
ACPI Sleep State	Suspend Disabled, S3 (Suspend to RAM) [Default]	Select the highest ACPI sleep state the system will enter when the SUSPEDN button is pressed.
ErP Function	Disabled [Default] , Enabled	ErP Function (Deep S5).
PWR-On After PWR-Fail	Off [Default] On Last state	AC loss resume.
Watch Dog	Disabled [Default] , 30 sec 40 sec 50 sec 1 min 2 min 10 min 30 min	Select WatchDog.
USB Standby Power Setting	Disabled Enabled [Default] ,	Enabled/Disabled USB Standby Power during S3/S4/S5.
Wake Up by Ring	Disabled Enabled [Default] ,	Wake Up by Ring from S3/S4/S5.

3.6.2.3 IT8528 Super IO Configuration

You can use this item to set up or change the IT8528 Super IO configuration for serial ports. Please refer to 3.6.2.3.1 for more information.

Aptio Setup Utility Advanced	– Copyright (C) 2021 Ame	erican Megatrends, Inc.
IT8528 Super IO Configuration		Set Parameters of Serial Port
Super IO Chip ▶ Serial Port 1 Configuration	IT8528	I (comp)
		<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 2.18.1263.	Copyright (C) 2021 Ameri	ican Megatrends, Inc.

ltem	Description
Serial Port 1 Configuration	Set Parameters of Serial Port 1 (COMA).

3.6.2.3.1 Serial Port 1 Configuration



ltem	Option	Description
Serial Port	Enabled [Default] , Disabled	Enable or Disable Serial Port (COM).
UART 232 422 485	UART 232 [Default] , UART 422, UART 485	Change the Serial Port as RS232/422/485.

3.6.2.4 H/W Monitor

Pc Health Status Smart Fan Function		Enable or Disable Smart Fan
CPU temperature Fan1 Speed VDIMM VCORE	: +33 C : N/A : +1.371 V : +0.890 V	
	Smart Fan Function 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

Item	Options	Description
Smart Fan Function	Enabled, Disabled [Default]	Enable or Disable Smart Fan.

Aptio Cotur Utility	Comunicht (C) 2017 America	Norotpopdo Teo
Advanced	– copyright (c) 2017 America	n Megatrenus, Inc.
Const Con Made Configuration		CDUL Ormant For Mode Colort
Smart Fan Mode Configuration		CPU Smart Fan Mode Select
CPU Smart Fan Mode	[Manual Mode]	
ran rwm	255	
		++: Select Screen
		f↓: Select Item Enter: Select
		+/-: Change Opt.
		F1: General Help E2: Previous Values
		F3: Optimized Defaults
		F4: Save & Exit
		LUG. LAIT
Vancian 2 10 1262	Conunidat (C) 2017 American I	Negationale The

3.6.2.4.1 Smart Fan Mode Configuration

Item	Option	Description
	Manual Mode[Default]/Mode 01/Mode	
	02/Mode 03/Mode 04/Mode 05/Mode 06/Mode	
CPU Smart Fan Mode	07/Mode 08/Mode 09/Mode 10/Mode 11/Mode	CPU Smart Fan Mode Select.
	12/Mode 13/Mode 14/Mode 15/Mode 16/Mode	
	17/Mode 18/Mode 19/Mode 20	
Fan PWM	0-255	Fan PWM duty.

3.6.2.5 S5 RTC Wake Settings

Aptio Setup Utility Advanced	– Copyright (C) 2021 America	n Megatrends, Inc.
Wake system from S5 Wake up minute increase	[Dynamic Time] 1	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)
		++: Select Screen 1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Vereion 2 18 1263	Popunight (P) 2021 American	Megatrends Trc

Item	Options	Description
		Enable or disable System wake on alarm
	Disabled[Default],	event. Select Fixed Time, system will wake on
Wake system from S5	Fixed Time	the hr::min::sec specified. Select Dynamic
	Dynamic Time	Time, System will wake on the current time +
		Increase minute(s).
Wake up minute increase	1-5	Wake up minute increase.



Item	Options	Description
		Enable or disable System wake on alarm
	Disabled,	event. Select Fixed Time, system will wake on
Wake system from S5	Fixed Time[Default]	the hr::min::sec specified. Select Dynamic
	Dynamic Time	Time, System will wake on the current time +
		Increase minute(s).
	Disabled[Default]	Wake up day of week (Menday Friday) or
Wake up day of week	Monday-Friday	(Monday Saturday)
	Monday-Saturday	(Noriday-Saturday).
		Select 0 for daily system wake up 1-31 for
Wake up day	1-31	which day of the month that you would like the
		system to wake up.
		Select 0-23 For example enter 3 for 3am and
Wake up hour	0-23	15 for 3pm.
Wake up minute	0-23	Select 0-23 For example enter 3 for 3am and
Wake up minute	0 20	15 for 3pm.
		Soloct 0.22 For example optor 2 for 2cm and
Wake up second	0-23	15 for 3pm

3.6.2.6 Serial Port Console Redirection

Aptio Setup Utility — C Advanced	opyright (C) 2021 Americar	n Megatrends, Inc.
COMO Console Redirection Console Redirection Settings Legacy Console Redirection Legacy Console Redirection Settings	[Disabled]	Console Redirection Enable or Disable.
Serial Port for Out-of-Band Managemen Windows Emergency Management Services Console Redirection Console Redirection Settings	t∕ (EMS) [Disabled]	
		<pre>++: Select Screen f↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
Version 2.18.1263. Cop	yright (C) 2021 American ⊧	ESC: Exit legatrends, Inc.

Item	Options	Description
Console Redirection	Disabled[Default],	Canada Radiraction Enable or Disable
	Enabled	Console Redirection Enable of Disable.

3.6.2.7 CPU Configuration

Use the CPU configuration menu to view detailed CPU specification and configure the CPU.



Item	Options	Description
Active Processor Cores	Disabled[Default],	Number of cores to enable in each processor
Active Processor Cores	Enabled	package.
	Disabled	When enabled, a VMM can utilize the
Intel Virtualization Technology	Enabled [Default]	additional hardware capabilities provided by
		Virtualization Technology.
b-TV	Disabled[Default],	Enable/Disable CPU VT-d
VI-0	Enabled	
		When a processor thermal sensor trips (either
Bi-directional BBOCHOT	Disabled,	core), the PROCHOT# will be driven. If
Bi-directional Procenor	Enabled[Default]	bi-direction is enabled, external agents can
		drive PROCHOT# to throttle the processor.
	Disabled.	
Thermal Monitor	Enabled[Default]	Enable/Disable Thermal Monitor.
	Disabled,	
Monitor Mwait	Enabled	Enable/Disable Monitor Mwait.
	Auto[Default]	
	HW_ALL[Default]	
P-STATE Coordination	SW_ALL	Change P-STATE Coordination type.
	SW_ANY	
DTS	Disabled [Default] ,	
	Enabled	Enable/Disable Digital Thermal Sensor.

3.6.2.7.1 Socket 0 CPU Information

Aptio Setup Utility – Advanced	Copyright (C) 2021 American	Megatrends, Inc.
Socket 0 CPU Information Intel(R) Pentium(R) CPU N4200 @ 1.10 CPU Signature Microcode Patch Max CPU Speed Min CPU Speed Processor Cores Intel HT Technology Intel VT-x Technology L1 Data Cache L1 Code Cache L2 Cache L3 Cache	DGHZ 506CA 1E 1100 MHZ 800 MHZ 4 Not Supported Supported 24 kB × 4 32 kB × 4 1024 kB × 2 Not Present	++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.18.1263. Co	opyright (C) 2021 American M	egatrends, Inc.



3.6.2.7.2 CPU Power Management Configuration

Item	Options	Description
EIST	Disabled, Enabled [Default]	Enable/Disable Intel SpeedStep.
Turbo Mode	Disabled, Enabled [Default]	Turbo Mode.
C-States	Disabled, Enabled [Default]	Enable/Disable C State.
Enhanced C-states	Disabled, Enabled [Default]	Enable/Disable C1E. When enabled, CPU will switch to minimum speed when all cores enter C-State.
Max Core C State	Fused value [Default] Core C10 Core C9 Core C8 Core C7 Core C6 Core C1 Unlimited	This option controls the Max Core C State that cores will support.
C-State Auto Demotion	Disabled C1 [Default]	Configure C-State Auto Demotion.
C-State Un-demotion	Disabled C1 [Default]	Configure C-State Un-demotion.

3.6.2.8 Network Stack Configuration



Item	Options	Description
Network Stack	Disabled [Default] Enabled	Enable/Disable UEFI Network Stack.
	Disabled[Default]	Enable Ipv4 PXE Boot Support. If disabled
Ipv4 PXE Support	Enabled	IPV4 PXE boot option will not be created.
	Disabled[Default]	Enable Ipv4 HTTP Boot Support. If disabled
Ipv4 HTTP Support	Enabled	IPV4 HTTP boot option will not be created.
	Ipv6 PXE Support Disabled[Default] Enabled	Enable Ipv6 PXE Boot Support. If disabled
Ipv6 PXE Support		IPV6 PXE boot option will not be created.
	Disabled [Default] Enabled	Enable Ipv6 HTTP Boot Support. If disabled
Ipv6 HTTP Support		IPV6 HTTP boot option will not be created.
PXE boot wait time 0	0	Wait time to press ESC key to abort the PXE
	0	boot.
Media detect count	1	Number of times presence of media will be
		checked.

3.6.2.9 CSM Configuration

Aptio Setup Utility – Copyright (C) 2021 American Megatrends, Inc. Advanced			
Compatibility Support Module Configu	ration	Enable/Disable CSM Support.	
CSM Support			
CSM16 Module Version	80.C1		
GateA20 Active Option ROM Messages INT19 Trap Response	(Upon Request) [Force BIOS] [Immediate]		
Boot option filter	[Legacy only]		
Option ROM execution		→+: Select Screen	
Network Storage Video Other PCI devices	[Do not launch] [Do not launch] [Legacy] [Legacy]	<pre>t4: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>	
Version 2.18.1263. Copyright (C) 2021 American Megatrends, Inc.			

Item	Options	Description
CSM Support	Disabled [Default] , Enabled	Enable/Disable CSM Support.
GateA20 Active	Upon Request [Default] Always	UPON REQUEST – GA20 can be disabled using BIOS services. ALWAYS – do not allow disabling GA20; this option is useful when any RT code is executed above 1MB.
Option ROM Messages	Force BIOS Keep Current [Default]	Set display mode for Option ROM.
INT19 Trap Response	Immediate [Default] Postponed	BIOS reaction on INT19 trapping by Option ROM: IMMEDIATE – execute the trap right away; POSTPONED – execute the trap during legacy boot.
Boot option filter	UEFI and Legacy Legacy only [Default] UEFI only	This option controls Legacy/UEFI ROMs priority.
Network	Do not launch [Default] UEFI Legacy	Controls the execution of UEFI and Legacy PXE OpROM.
Storage	Do not launch [Default] UEFI Legacy	Controls the execution of UEFI and Legacy Storage OpROM.
Video	Do not launch UEFI Legacy [Default]	Controls the execution of UEFI and Legacy Video OpROM.

	Do not launch	Determines OpROM execution policy for
Other PCI devices	UEFI	devices other than Network, Storage, or
	Legacy[Default]	Video.

3.6.2.10 NVMe Configuration



3.6.2.11 USB Configuration

The USB Configuration menu helps read USB information and configures USB settings.

Aptio Setup Utility - Advanced	· Copyright (C) 2021 American	Megatrends, Inc.
USB Configuration		Enables Legacy USB support.
USB Module Version	17	AUTO option disables legacy support if no USB devices are
USB Controllers: 1 XHCI		keep USB devices available only for EFI applications.
USB Devices: 1 Drive, 1 Keyboard, 1 Mouse,	2 Hubs	
Legacy USB Support XHCI Hand-off USB Mass Storage Driver Support	[Enabled] [Enabled] [Enabled]	
USB hardware delays and time_outs:		
USB transfer time-out	[20_sec]	11: Select Item
Device reset time-out	[20 sec]	Enter: Select
Device power-up delay	[Auto]	+/-: Change Opt.
		F1: General Help
Mass Storage Devices:		F2: Previous Values
JetFlashTranscend 4GB 1100	[Auto]	F3: Optimized Defaults
		F4: Save & Exit
		ESC: Exit
Version 2.18.1263. C	Copyright (C) 2021 American M	legatrends, Inc.

Item	Options	Description
Legacy USB Support	Enabled [Default] Disabled Auto	Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
XHCI Hand-off	Enabled [Default] Disabled	This is a workaround for OSew without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.
USB Mass Storage Driver Support	Disabled Enabled [Default]	Enable/Disable USB Mass Storage Driver Support.
USB transfer time-out	1 sec 5 sec 10 sec 20 sec [Default]	The time-out value for Control, Bulk, and Interrupt transfers.
Device reset time-out	10 sec 20 sec [Default] 30 sec 40 sec	USB mass storage device Start Unit command time-out.
Device power-up delay	Auto [Default] Manual	Maximum time the device will take before it properly reports itself to the Host Controller. 'Auto' uses default value: for a Root port it is 100ms, for a Hub port the delay is taken form Hub descriptor.

3.6.2.12 Security Configuration

Advance	Aptio Setup Utility – Copyright (C) 2021 American B	Megatrends, Inc.
TXE HMRFPO TXE EDP Messag	[Disabled] [Enabled]	++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
	Version 2.18.1263. Copyright (C) 2021 American M	egatrends, Inc.

Item	Options	Description
TXE HMRFPO	Enabled, Disabled [Default]	TXE HMRFPO.
TXE EOP Message	Enabled [Default] , Disabled	Send EOP Message Before Enter OS.

3.6.2.13 System Component

Advance	Aptio Setup Utility d	– Copyright (C)	2021 American	Megatrends, Inc.
OS Reset Selec	t	[Harm Reset] OS Reset S Harm Reset Cold Reset	elect —	Select the reset type in FACP table ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
	Version 2.18.1263.	Copyright (C) 2	021 American Me	egatrends, Inc.

Item	Options	Description
OS Reset Select	Warm Reset Cold Reset [Default]	Select the reset type in FACP table.

3.6.3 Chipset

Aptio Setup Utility – Copyright (C) 2021 Americ Main Advanced <mark>Chipset</mark> Security Boot Save & Exit	can Megatrends, Inc.
 North Bridge South Bridge Uncore Configuration South Cluster Configuration 	North Bridge Parameters **: Select Screen 11: Select Item Enter: Select */-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.18.1263. Copyright (C) 2021 America	n Megatrends, Inc.

3.6.3.1 North Bridge



Item	Option	Description
	2 GB[Default]	
	2.25 GB	
	2.5 GB	
	2.75 GB	
		Enable/Disable above 4GB MemoryMappedIO
Above 4GB MMIO BIOS	Enabled,	BIOS assignment. This is disabled
assignment	Disabled[Default]	automatically when Aperture Size is set to
		2048MB.

3.6.3.2 South Bridge

	Aptio Setup Utility - Chipset	Copyright (C) 2021	1 American	Megatrends, Inc.
Serial IRQ Mo OS Selection	de	[Continuous] [Windows]		Select the target OS.
		OS Selection Windows Android Intel Linux		<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 2.18.1263. C	opyright (C) 2021 A	American M	egatrends, Inc.

Item	Option	Description
Sorial IPO Mode	Quiet	Configure Seriel IBO Mede
Serial IRQ Mode	Continuous[Default]	Conligure Senar IRQ Mode.
	Windows[Default]	
OS Selection	Android	Select the target OS.
	Intel Linux	

3.6.3.3 Uncore Configuration

Aptio Setup Utility - Chipset	· Copyright (C) 2021 Ar	merican Megatrends, Inc.
GOP Configuration GOP Driver	[Enable]	Enable GOP Driver will unload VBIOS; Disable it will load VBIOS
IGD Configuration Cd Clock Frequency	[624 MHz]	
IGD - LCD Control Active LVDS(Ch7511) CH7511 EDID Panel Option Brightness Control Method LVDS Back Light PNM LVDS Back Light PNM Frequency	[Enabled] [1024x768 24/1] [BIOS] [100%] [200]	
		<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
Version 2.18.1263. C	opyright (C) 2021 Amer	rican Megatrends, Inc.

Item	Option	Description	
Enable[Default]		Enable GOP Driver will unload VBIOS;	
GOP Driver	Disable	Disabled it will load VBIOS.	
	144 MHz		
	288 MHz	Salast the highest Cd Cleak frequency	
Cd Clock Frequency	384 MHz	Select the highest Cd Clock hequency	
	576 MHz	supported by the platform.	
	624 MHz [Default]		
Active LVDS (Ch7511)	Disabled[Default]	Active Internel LVDS(oDD > Ch7511 to LVDS)	
Active LVDS (CII7511)	Enabled		
	1024x768 24/1[Default]		
	800x600 18/1		
	1024x768 18/1		
	1366x768 18/1		
	1024x600 18/1		
	1280x800 18/1		
CH7511 EDID Panal Ontion	1920x1200 24/2	Port1-EDP to LVDS(Chrotel 7511) Panel EDID	
	1920x1080 18/2	Option.	
	1280x1024 24/2		
	1440x900 18/2		
	1600x1200 24/2		
	1366x768 24/1		
	1920x1080 24/2		
	1680x1050 24/2		
	BIOS[Default]	I VDS Brightness Control Method 1 BIOS	
Brightness Control Method	BR Button	2 Brightness Button 3 Variable Resistor 4 OS	
Brightness control method	VR	Driver	
	OS Driver		
	00%		
	25%		
LVDS Back Light PWM	50%	Select LVDS back light PWM duty.	
	75%		
	100%[Default]		
	200[Default]		
	300		
	400		
	500		
LVDS Back Light PWM	700		
Frequency	1k	Select LVDS back light PWM Frequency.	
requeitcy	2k		
	3k		
	5k		
	10k		
	20k		

3.6.3.4 South Cluster Configuration



3.6.3.4.1 HD-Audio Configuration

Apt	io Setup Utility – Chipset	Copyright (C) 2021 American	Megatrends, Inc.
HD-Audio Configur: HD-Audio Support AMP Gain Setting	ation	[Disable] [14db]		Enable/Disable HD-Audio Support ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
				ESC: Exit

ltem	Option	Description	
HD-Audio Support	Disable [Default] Enable	Enable/Disable HD-Audio Support.	
	11db		
AMP Gain Setting	14db [Default]	Select AMD Coin dh	
	19db	Select AMP Gain db.	
	25db		

3.6.3.4.2 PCI Express Configuration

PCI Express Configuration Compliance Mode [Disabled] PCI Express Root Port 3(1210/211) Compliance Mode Enable/Disabled PCI Express Root Port 5(M.2/PCIE slot) PCI Express Root Port 6(mPCIe) PCIE port5-Slot or M.2 select [M.2] **: Select Screen 11: Select Item Enter: Select Item Enter: Select */-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	Aptio Setup Utility – Co <mark>Chipset</mark>	opyright (C) 2021 American	Megatrends, Inc.
++: Select Screen ++: Select Screen +1: Select Ttem Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	<pre>PCI Express Configuration Compliance Mode > PCI Express Root Port 3(1210/211) > PCI Express Root Port 5(M.2/PCIe slot) > PCI Express Root Port 6(mPCIe) PCIe port5-Slot or M.2 select</pre>	[Disabled]) [M.2]	Compliance Mode Enable/Disable
			<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>

Item	Option	Description
Compliance Mode	Disable [Default] Enable	Compliance Mode Enable/Disable.
PCIe port5-Slot or M.2 select	PCIe slot M.2 [Default],	PCIe port5 mapping to PCIe slot or M.2.

3.6.3.4.2.1 PCI Express Root Port 3(i210/211)

Aptio Setup Utility – <mark>Chipset</mark>	Copyright (C) 2021 A	American Megatrends, Inc.
PCI Express Root Port 3(i210/211) ASPM L1 Substates PCIe Speed	[Enable] [Disable] [Disabled] [Auto]	Control the PCI Express Root Port. AUTD: To disable unused root port automatically for the most optimum power savings. Enable: Enable PCIe root port Disable: Disable PCIe root port ++: Select Screen 14: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.18.1263. C	onuright (C) 2021 Ame	rican Megatrends. Inc.

ltem	Option	Description
PCI Express Root Port 3(i210/211)	Disable Enable [Default]	Control the PCI Express Root Port. AUTO: To disable unused root port automatically for the most optimum power savings. Enable: Enable PCIe root port Disable: Disable PCIe root port.
ASPM	Disable [Default] L0s L1 L0sL1 Auto	PCI Express Active State Power Management settings.
L1 Substates	Disabled [Default] L1.1 L1.2 L1.1 & L1.2	PCI Express L1 Substates settings.
PCIe Speed	Auto [Default] Gen 1 Gen 2	Configure PCIe Speed.

3.6.3.4.2.2 PCI Express Root Port 5(M.2/PCIe slot)

Contr PCI Express Root Port 5(M.2/PCIe s [Enable] Port	trol the PCI Evoness Root
ASPM [Disable] AUTO L1 Substates [Disabled] port PCIe Speed [Auto] most Enab. Disal	 the rest express work to disable unused root t automatically for the st optimum power savings. able: Enable PCIe root port sable: Disable PCIe root port
++::(11::) Enter +/-: F1:(F2:F F3:(F4::) ESC:	: Select Screen : Select Item :er: Select : Change Opt. : General Help : Previous Values : Optimized Defaults : Save & Exit : Exit

Item	Option	Description
PCI Express Root Port 5(M.2/PCIe slot)	Disable Enable [Default]	Control the PCI Express Root Port. AUTO: To disable unused root port automatically for the most optimum power savings. Enable: Enable PCIe root port Disable: Disable PCIe root port.
ASPM	Disable [Default] L0s	PCI Express Active State Power Management settings.

	L1	
	L0sL1	
	Auto	
	Disabled[Default]	
L 4 Cubatataa	L1.1	DCI Everage 14 Substates actings
LT Substates	L1.2	POT Express LT Substates settings.
	L1.1 & L1.2	
	Auto[Default]	
PCIe Speed	Gen 1	Configure PCIe Speed.
	Gen 2	

3.6.3.4.2.3 PCI Express Root Port 6(mPCle)

Aptio Setup Utility - Chipset	Copyright (C) 2021 American	Megatrends, Inc.
PCI Express Root Port 6(mPCIe) ASPM L1 Substates PCIe Speed	[Enable] [Disable] [Disabled] [Auto]	Control the PCI Express Root Port. AUTO: To disable unused root port automatically for the most optimum power savings. Enable: Enable PCIe root port Disable: Disable PCIe root port ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
	punight (C) 2021 American M	edatrends Inc

Item	Option	Description
PCI Express Root Port 6(mPCle)	Disable Enable [Default]	Control the PCI Express Root Port. AUTO: To disable unused root port automatically for the most optimum power savings. Enable: Enable PCIe root port Disable: Disable PCIe root port.
ASPM	Disable [Default] L0s L1 L0sL1 Auto	PCI Express Active State Power Management settings.
L1 Substates	Disabled [Default] L1.1 L1.2 L1.1 & L1.2	PCI Express L1 Substates settings.

	Auto[Default]	
PCIe Speed	Gen 1	Configure PCIe Speed.
	Gen 2	

3.6.3.4.3 SATA Drives

Aptio Setup Utility — <mark>Chipset</mark>	Copyright (C) 2021 American	Megatrends, Inc.
SATA Drives Chipset-SATA Controller Configuration Chipset SATA SATA Mode Selection Aggressive LPM Support	on [Enable] [AHCI] [Disabled]	Enables or Disables the Chipset SATA Controller. The Chipset SATA controller supports the 2 black internal SATA ports (up to 3Gb/s supported per port).
SATA Port 0 Software Preserve Port 0 SATA Device Type SATA Port 0 DevS1p	[Not Installed] Unknown [Enabled] [Hard Disk Drive] [Disabled]	
SATA Port 1 Software Preserve Port 1 SATA Device Type SATA Port 1 DevSlp	[Not Installed] Unknown [Enabled] [Hard Disk Drive] [Disabled]	<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 2.18.1263. C	opyright (C) 2021 American M	egatrends, Inc.

Item	Option	Description	
		Enables or Disables the Chipset the SATA	
Chinsot SATA	Enable [Default] ,	Controller. The Chipset SATA controller	
Chipset SATA	Disable	supports the 2 black internal SATA ports (up to	
		3Gb/s supported per port).	
Aggressive I PM Support	Disabled[Default]	Enable PCH to aggressively enter link power	
Aggressive LPM Support	Enabled	state.	
Port 0/1	Disabled	Enchlo or Dischlo SATA Port	
FOIL 0/1	Enabled[Default]	Enable of Disable SATA Polt.	
SATA Davias Tura	Hard Disk Drive[Default]	Identify the SATA port is connected to Solid	
SATA Device Type	Solid State Drive	State Driver or Hard Disk Drive.	
SATA Dart 0/4 DaySin	Disabled[Default]	Enable/Disable SATA Port 0/1 DevSlp. Board	
SATA FOIL 0/1 DevSip	Enabled	rework for LP needed before enable.	

3.6.3.4.4 SCC Configuration

Aptio Setup Chipset	Utility – Copyright (C) 2021 America	an Megatrends, Inc.
SCC eMMC Support (D28:FO)	[Disable]	Enable/Disable SCC eMMC Support ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.:	18.1263. Copyright (C) 2021 American	Megatrends, Inc.

Item	Option	Description
SCC eMMC Support (D28:F0)	Disable [Default] , Enable	Enable/Disable SCC eMMC Support.

3.6.3.5 DMI

SHOW DMI INFO [Disabled] SHOW DMI INFO **: Select Screen **: Select Screen 11: Select Item Enter: Select */-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit		Aptio Setup Utility – Co Chipset	opyright (C) 2021 American	Megatrends, Inc.
++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	SHOW DMI INFO		[Disabled]	SHOW DMI INFO
				++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Item	Option	Description
SHOW DMI INF0	Disable [Default] , Enable	SHOW DMI INF0

3.6.4 Security

Aptio Setup Utility – Main Advanced Chipset <mark>Security</mark>	Copyright (C) 2021 American Boot Save & Exit	Megatrends, Inc.
Password Description If ONLY the Administrator's password then this only limits access to Setu only asked for when entering Setup. If ONLY the User's password is set, is a power on password and must be e boot or enter Setup. In Setup the Us have Administrator rights. The password length must be	is set, p and is then this ntered to er will	Set Setup Administrator Password
in the following range: Minimum length Maximum length	3	
Setup Administrator Password User Password		++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help
▶ Secure Boot		F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.18.1263. Co	pyright (C) 2021 American M	egatrends, Inc.

• Setup Administrator Password

Set setup Administrator Password

• User Password

Set User Password

3.6.4.1 Secure Boot



ltem	Option	Description
Attempt Secure Boot	Disabled[Default]	Secure Boot activated when Platform Key(PK) is
Attempt Secure Boot	Enabled	enrolled, and CSM function is disabled.
Secure Boot Mode	Standard [Default] Customized	Secure Boot Mode –Custom_Standard, Set UEFI Secure Boot Mode to STANDARD mode or CUSTOM mode or CUSTOM mode, this change is effect after save. And after reset, the mode will return to STANDARD mode

3.6.5 Boot



ltem	Option	Description
Setup Prompt Timeout	1~ 65535	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.
Bootup NumLock State	On [Default] Off	Select the Keyboard NumLock state
Quiet Boot	Disabled [Default] Enabled	Enables or disables Quiet Boot option
Boot Option #1	Set the system boot order.	

3.6.6 Save and exit

Save Options Reset the system after saving the changes. Discard Changes and Reset Default Options Restore Defaults Boot Override UEFI: JetFlashTranscend 4GB 1100, Partition 1 the changes. Launch EFI Shell from filesystem device ++: Select Screen ++: Select Item Enter: Select +-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	Aptio Setup Utility – Copyright (C) 2021 American Main Advanced Chipset Security Boot Save & Exit	Megatrends, Inc.
Default Options Restore Defaults Boot Override UEFI: JetFlashTranscend 4GB 1100, Partition 1 Launch EFI Shell from filesystem device	Save Options Save Changes and Reset Discard Changes and Reset	Reset the system after saving the changes.
Boot Override UEFI: JetFlashTranscend 4GB 1100, Partition 1 Launch EFI Shell from filesystem device	Default Options Restore Defaults	
++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	Boot Override UEFI: JetFlashTranscend 4GB 1100, Partition 1 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>
Version 2.18.1263. Copyright (C) 2021 American Megatrends, Inc.	Version 2.18.1263. Copyright (C) 2021 American M	egatrends. Inc.

3.6.6.1 Save Changes and Reset

Reset the system after saving the changes.

3.6.6.2 Discard Changes and Reset

Any changes made to BIOS settings during this session of the BIOS setup program are discarded. The setup program then exits and reboots the controller.

3.6.6.3 Restore Defaults

This option restores all BIOS settings to the factory default. This option is useful if the controller exhibits unpredictable behavior due to an incorrect or inappropriate BIOS setting.

3.6.6.4 Launch EFI Shell from filesystem device

Attempts to Launch EFI Shell application (Shellx64.efi) from one of the available filesystem devices.





Note: Installation procedures and screen shots in this section are for your reference and may not be exactly the same as shown on your screen.

4.1 Install Chipset Driver

All drivers can be found on the Avalue Official Website:

http://www.avalue.com.tw.



Note: The installation procedures and screen shots in this section are based on Windows 10 operation system. If the warning message appears while the installation process, click Continue to go on.



Step 3. Click Install.



Intel(R) Chipset Device Software Completion You have successfully installed the following product: Intel(R) Chipset Device Software You must restart this computer for the changes to take effect. Yiew Log Files Restart Now Restart Later

Step 4. Click Finish to complete setup.

Step1. Click Next.



Step 2. Click Accept.

4.2 Install VGA Driver

All drivers can be found on the Avalue Official Website:

http://www.avalue.com.tw.



Note: The installation procedures and screen shots in this section are based on Windows 10 operation system. If the warning message appears while the installation process, click Continue to go on.



Step 3. Click Next.



Step 1. Click Next to continue installation.



Step 2.

Click **Yes** to accept license agreement.



Step 4. Click Next.



Step 5. Click Finish to complete setup.

4.3 Install Serial IO Driver

All drivers can be found on the Avalue Official Website:

http://www.avalue.com.tw.



Note: The installation procedures and screen shots in this section are based on Windows 10 operation system. If the warning message appears while the installation process, click Continue to go on.

Setup		×
Intel® Serial IO Welcome	(intel	
You are about to install the following product:		
Intel® Serial IO		
It is strongly recommended that you exit all programs before continuing. Click Next to continue, or click Cancel to exit the setup program.		
Intel Corporation < Back	Next >	<u>C</u> ancel

Step 1. Click Next to continue setup.



Step 2. Click Next.

Setup			×
Intel® Serial IO Readme File Information		(intel	
		\sim	
*	*********	********	***** ^
* Production Version Release			- 11
* Microsoft Windows* 10 64 bit *			
* Intel(R) Serial IO Driver *			
* May 2016 *			
 NOTE: This document refers to systems containing the following Intel processors/chipsets: 			
* Apollo Lake SoC *			
* Installation Information *			
 This document makes references to products developed b Intel. There are some restrictions on how these products may be used, and what information may be disclosed to 	у		~
Intel Corporation	< <u>B</u> ack	<u>N</u> ext >	<u>C</u> ancel

Step 3. Click Next.

Setup	×
Intel® Serial IO Confirmation	(intel)
You are about to install the following components: - Intel® Serial IO GPIO Driver	
Intel Corporation	< <u>Back</u> <u>Next</u> > <u>C</u> ancel





Step 5. Click Finish to complete the setup.

4.4 Install TXE Driver

All drivers can be found on the Avalue Official Website:

http://www.avalue.com.tw.



Note: The installation procedures and screen shots in this section are based on Windows 10 operation system. If the warning message appears while the installation process, click Continue to go on.

Setup			×
Intel® Trusted Execution Engine Confirmation		(intel	
You are about to install the following components: - Intel® Trusted Execution Engine - Intel® Trusted Execution Engine Storage Proxy Driver - Intel® Dynamic Application Loader - Intel® Trusted Connect Service			-
Intel Corporation	< <u>B</u> ack	<u>√</u> ext >	<u>C</u> ancel

Step 3. Click Next.



Step 1. Click Next to continue setup.



Step 2. Click Next.

Step 4. Click **Finish** to complete the setup.
4.5 Install Audio Driver (For Realtek ALC662 HD Audio)

All drivers can be found on the Avalue Official Website:

http://www.avalue.com.tw.



Note: The installation procedures and screen shots in this section are based on Windows 10 operation system. If the warning message appears while the installation process, click Continue to go on.



Step1. Click Next to Install.



Step 2. Select **Finish** to complete Installation.

4.6 Install LAN Driver (For Intel I211AT)

All drivers can be found on the Avalue Official Website:

http://www.avalue.com.tw.



Note: The installation procedures and screen shots in this section are based on Windows 10 operation system. If the warning message appears while the installation process, click Continue to go on.



Step 1. Click Install Drivers and Software.



Step 2. Click Next.



Step 3. Click Next.

Intel(R) Network Connections Install Wizard	×
Setup Options Select the program features you want installed.	(intel)
Install:	
Orivers Orivers Orite(R) PROSet for Windows* Device Manager Orite(R) PROSet for Windows* Provices Owindows* PowerShell Module Owindows* PowerShell Module Owindows* PowerShell Module Owindows* PowerShell Module	
Feature Description	
< <u>B</u> ack <u>N</u> ext >	Cancel









📅 Intel(R) Network Connections Install Wizard	×
Install wizard Completed	(intel)
To access new features, open Device Manager, and view the properties of the network adapters.	
< <u>B</u> adk Einish	Cancel

Step 6. Click Install.

Step 7. Click Finish to complete setup.

