ARC-21W34

21.5" with Full-HD PCAP Multi-touch Intel® Core™ i5-7300U Rugged Touch Panel PC with IET Expansion

Quick Reference Guide

1st Ed – 07 December 2020

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Part No. E2017A134A0R

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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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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 ARC-21W34 Panel PC
- 1 x Power Adapter
- 4 x screws for VESA
- 4 x screws for HDD
- 12 x screws for Wall Mount
- 12 x brackets for Wall Mount
- 12 x plastics spacer for Wall Mount



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

1.3 System Specifications

Component				
Mother Board	ARC-KBLU			
CPU	7th Gen Intel® Core™ i5-7300U, 2-Core, 2.6GHz processor			
CPU Cooler(Type)	Fanless Heatsink			
Memory	One 260-pin SODIMM Socket Up to 16GB DDR4 2133 SDRAM			
Power Supply	DC in			
Adapter	60W power adaptor (ACC-ADP-060N-08R)			
Speaker	2 W*2			
Wireless LAN	Optional USB or MPCIe module			
Bluetooth	Optional			
Operating System	Ubuntu, Windows 10			
	Compatible to all ARC-BYT DB modules (BIOS auto adjusted)			
Expansion Card	Expandable interface (1 x DP, 1 x PCIex1, 4 x USB, 1 x LPC, 1 x Audio (line			
	in, line out, mic in)			
Storage				
Hard Disk Drive	1 x 2.5" Drive Bay			
Solid State Drive	1 x 2.5" Drive Bay			
Other Storage Device	1 x mSATA supports on the 1st Mini PCIe slot, Auto switch for mSATA or Mini			
	PCIe			
Panel	PCIe			
Panel LCD Panel	PCIe 21.5", 1920x1080 (E9689421501R, INNOLUX , M215HJJ-L30)			
Panel LCD Panel B/L Inverter/Converter	PCIe 21.5", 1920x1080 (E9689421501R, INNOLUX , M215HJJ-L30) LED Driving BD			
Panel LCD Panel B/L Inverter/Converter Touch Screen	PCIe 21.5", 1920x1080 (E9689421501R, INNOLUX , M215HJJ-L30) LED Driving BD P-cap (E968X000198R /Young Fast H8593H)			
Panel LCD Panel B/L Inverter/Converter Touch Screen Touch Controller	PCIe 21.5", 1920x1080 (E9689421501R, INNOLUX , M215HJJ-L30) LED Driving BD P-cap (E968X000198R /Young Fast H8593H) EETI EXC84H5680			
Panel LCD Panel B/L Inverter/Converter Touch Screen Touch Controller External I/O	PCIe 21.5", 1920x1080 (E9689421501R, INNOLUX , M215HJJ-L30) LED Driving BD P-cap (E968X000198R /Young Fast H8593H) EETI EXC84H5680			
Panel LCD Panel B/L Inverter/Converter Touch Screen Touch Controller External I/O	PCIe 21.5", 1920x1080 (E9689421501R, INNOLUX , M215HJJ-L30) LED Driving BD P-cap (E968X000198R /Young Fast H8593H) EETI EXC84H5680 1 x DB-9 COM1 (RS-232/422/485, selectable by BIOS & JUPMER, RS-485			
Panel LCD Panel B/L Inverter/Converter Touch Screen Touch Controller External I/O Serial Port	PCIe 21.5", 1920x1080 (E9689421501R, INNOLUX , M215HJJ-L30) LED Driving BD P-cap (E968X000198R /Young Fast H8593H) EETI EXC84H5680 1 x DB-9 COM1 (RS-232/422/485, selectable by BIOS & JUPMER, RS-485 supports Auto Flow, Pin-9 selected by Ring/+5V/+12V)			
Panel LCD Panel B/L Inverter/Converter Touch Screen Touch Controller External I/O Serial Port	PCIe 21.5", 1920x1080 (E9689421501R, INNOLUX , M215HJJ-L30) LED Driving BD P-cap (E968X000198R /Young Fast H8593H) EETI EXC84H5680 1 x DB-9 COM1 (RS-232/422/485, selectable by BIOS & JUPMER, RS-485 supports Auto Flow, Pin-9 selected by Ring/+5V/+12V) 1 x DB-9 COM2 (RS-232, Pin-9 selected by Ring/+5V/+12V)			
Panel LCD Panel B/L Inverter/Converter Touch Screen Touch Controller External I/O Serial Port USB Port	PCIe 21.5", 1920x1080 (E9689421501R, INNOLUX , M215HJJ-L30) LED Driving BD P-cap (E968X000198R /Young Fast H8593H) EETI EXC84H5680 1 x DB-9 COM1 (RS-232/422/485, selectable by BIOS & JUPMER, RS-485 supports Auto Flow, Pin-9 selected by Ring/+5V/+12V) 1 x DB-9 COM2 (RS-232, Pin-9 selected by Ring/+5V/+12V) 4 x USB3.0 (2 x Double deck)			
Panel LCD Panel B/L Inverter/Converter Touch Screen Touch Controller External I/O Serial Port USB Port DIO Port	PCIe 21.5", 1920x1080 (E9689421501R, INNOLUX , M215HJJ-L30) LED Driving BD P-cap (E968X000198R /Young Fast H8593H) EETI EXC84H5680 1 x DB-9 COM1 (RS-232/422/485, selectable by BIOS & JUPMER, RS-485 supports Auto Flow, Pin-9 selected by Ring/+5V/+12V) 1 x DB-9 COM2 (RS-232, Pin-9 selected by Ring/+5V/+12V) 4 x USB3.0 (2 x Double deck) 1 x 16-bit GPIO (by ARC-BYT DB-E)			
Panel LCD Panel B/L Inverter/Converter Touch Screen Touch Controller External I/O Serial Port USB Port DIO Port Video Port	PCIe 21.5", 1920x1080 (E9689421501R, INNOLUX , M215HJJ-L30) LED Driving BD P-cap (E968X000198R /Young Fast H8593H) EETI EXC84H5680 1 x DB-9 COM1 (RS-232/422/485, selectable by BIOS & JUPMER, RS-485 supports Auto Flow, Pin-9 selected by Ring/+5V/+12V) 1 x DB-9 COM2 (RS-232, Pin-9 selected by Ring/+5V/+12V) 4 x USB3.0 (2 x Double deck) 1 x 16-bit GPIO (by ARC-BYT DB-E) 1 x HDMI (by ARC-BYT DB-C)			
Panel LCD Panel B/L Inverter/Converter Touch Screen Touch Controller External I/O Serial Port USB Port DIO Port Video Port Audio Port	PCIe 21.5", 1920x1080 (E9689421501R, INNOLUX , M215HJJ-L30) LED Driving BD P-cap (E968X000198R /Young Fast H8593H) EETI EXC84H5680 1 x DB-9 COM1 (RS-232/422/485, selectable by BIOS & JUPMER, RS-485 supports Auto Flow, Pin-9 selected by Ring/+5V/+12V) 1 x DB-9 COM2 (RS-232, Pin-9 selected by Ring/+5V/+12V) 4 x USB3.0 (2 x Double deck) 1 x 16-bit GPIO (by ARC-BYT DB-E) 1 x HDMI (by ARC-BYT DB-C) Realtek ALC892 HD codec			
Panel LCD Panel B/L Inverter/Converter Touch Screen Touch Controller External I/O Serial Port USB Port DIO Port Video Port Audio Port LAN Port	PCIe 21.5", 1920x1080 (E9689421501R, INNOLUX , M215HJJ-L30) LED Driving BD P-cap (E968X000198R /Young Fast H8593H) EETI EXC84H5680 1 x DB-9 COM1 (RS-232/422/485, selectable by BIOS & JUPMER, RS-485 supports Auto Flow, Pin-9 selected by Ring/+5V/+12V) 1 x DB-9 COM2 (RS-232, Pin-9 selected by Ring/+5V/+12V) 1 x DB-9 COM2 (RS-232, Pin-9 selected by Ring/+5V/+12V) 4 x USB3.0 (2 x Double deck) 1 x 16-bit GPIO (by ARC-BYT DB-E) 1 x HDMI (by ARC-BYT DB-C) Realtek ALC892 HD codec 1 x I219LM PHY, 1 x Intel I211AT GbE controller			
Panel LCD Panel B/L Inverter/Converter Touch Screen Touch Controller External I/O Serial Port USB Port USB Port UIO Port Video Port Audio Port LAN Port Wireless LAN Antenna	PCIe 21.5", 1920x1080 (E9689421501R, INNOLUX , M215HJJ-L30) LED Driving BD P-cap (E968X000198R /Young Fast H8593H) EETI EXC84H5680 1 x DB-9 COM1 (RS-232/422/485, selectable by BIOS & JUPMER, RS-485 supports Auto Flow, Pin-9 selected by Ring/+5V/+12V) 1 x DB-9 COM2 (RS-232, Pin-9 selected by Ring/+5V/+12V) 4 x USB3.0 (2 x Double deck) 1 x 16-bit GPIO (by ARC-BYT DB-E) 1 x HDMI (by ARC-BYT DB-C) Realtek ALC892 HD codec 1 x I219LM PHY, 1 x Intel I211AT GbE controller 3 x Antenna			
Panel LCD Panel B/L Inverter/Converter Touch Screen Touch Controller External I/O Serial Port USB Port DIO Port Video Port Audio Port LAN Port Wireless LAN Antenna Indicator Light	PCIe 21.5", 1920x1080 (E9689421501R, INNOLUX , M215HJJ-L30) LED Driving BD P-cap (E968X000198R /Young Fast H8593H) EETI EXC84H5680 1 x DB-9 COM1 (RS-232/422/485, selectable by BIOS & JUPMER, RS-485 supports Auto Flow, Pin-9 selected by Ring/+5V/+12V) 1 x DB-9 COM2 (RS-232, Pin-9 selected by Ring/+5V/+12V) 4 x USB3.0 (2 x Double deck) 1 x 16-bit GPIO (by ARC-BYT DB-E) 1 x HDMI (by ARC-BYT DB-C) Realtek ALC892 HD codec 1 x I219LM PHY, 1 x Intel I211AT GbE controller 3 x Antenna HDD LED, Power LED (Green for Power, Yellow for HDD)			

	1 x mSATA supports on the 1st Mini PCIe slot, Auto switch for mSATA or Mini			
	PCIe			
	1 x SATA connector & 1 x 2-pin wafer SATA power connector			
	1 x 2 x 20-pin Hirose connector for 2 x 24-bit LVDS			
	(Optional eDP connector on bottom edge side for 4 lane to 4K by			
	E1672520110H, Hirose DF19G-20P-1H)			
	1 x 5-pin lockable connector for inverter backlight control with dimming			
	(PWM/DC mode & backlight brightness selected by BIOS as standard)			
	2 x 3-pin header for LCD backlight brightness adjustment (dimming) (as			
	ECM-BYT2 w/ light/dark, VR, DC/PWM)			
	1 x 3-pin header for CMOS (protect*Clear)			
	1 x 2 x 3-pin header for COM1/ 2 pin 9 signal selection (+5, +12, Ring,			
	selected by jumper)			
Internal I/O	1 x 2 x 7-pin header for LPC (for test)			
	1 x 2 x 3-Pin header for SPI			
	1 x 2 x 6-pin wafer for front panel			
	1 x 2-pin DIP Switch for Power mode (AT/ATX)			
	1 x Buzzer			
	2 x 2-pin wafer for speaker out (as ARC-KBLU)			
	1 x 5-pin 90 degree pin header for touch connector			
	1 x 1 x 5 pin wafer for 1 USB 2.0 (For USB WiFi)			
	2 x 6 pin wafer for SM bus (Reserved for smart battery)and 8bit GPIO			
	1 x 80-pin board to board connector for Expansion board			
	(Hirose FX18-80P-0.8SH & FX18-80S-0.8SH)			
Mechanical				
Power Type	AT/ATX			
	DC +12V \sim +26V, wide voltage single power input			
Power Requirement	TVS component for surge protection			
	Reverse current/voltage protection			
ACPI	Single power ATX Support S0, S3, S4, S5 and ACPI 3.0 Compliant			
Power Connector	2.5mm Lockable DC Jack, co-Jay with phoenix connector			
Туре				
Dimension	538.05 x 341.05 x 60.5mm			
Weight	7.1 Kgs			
Color	Front: Die-Casting with Cover lens; Rear: Black Casting-Aluminum			
Fanless	Yes			
OS Support	Linux, Ubuntu, Windows 10			
Reliability				
EMI Test	CE/ FCC class B			

Dust and Rain Test	Front Panel IP65, Rear IP41 except I/O		
Vibration Test	Random Vibration Operation:		
	1. PSD: 0.00454G²/Hz , 1.5 Grms		
	2. operation mode		
	3. Test Frequency : 5-500Hz		
	4. Test Axis : X,Y and Z axis		
	5. 30 minutes per each axis		
	6. IEC 60068-2-64 Test:Fh		
	7. Storage : CF or SSD		
	Sine Vibration test (Non-operation)		
	1 Test Acceleration : 2G		
	2 Test frequency : 5~500 Hz		
	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. PSD: 0.026G²/Hz , 2.16 Grms		
	2. Non-operation mode		
	3. Test Frequency : 5-500Hz		
	4. Test Axis : X,Y and Z axis		
	5. 30 min. per each axis		
	6. IEC 60068-2-64 Test:Fh		
	1. Wave form : Half Sine wave		
	2. Acceleration Rate : 20g for operation mode		
Mechanical Shock	3. Duration Time:11ms		
Test	4. No. of Shock : +/- X,Y,Z axis 3 times		
	5. Test Axis: +/- X,Y,Z axis		
	6. Operation mode		
	7. Reference IEC 60068-2-27 Testing procedures Test Eb : Shock Test		
	Package drop test		
Drop Test	1 One corner , three edges, six faces		
	2 ISTA 2A, IEC-60068-2-32 Test:Ed		
Operating	-10~+50 degree C SSD		
Temperature	0~40 degree C HDD		
Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing		
Storage Temperature	-20 ~ 60 degree		

Compliant with	
following Flexible	
Expansion Modules	
ARC-BYT DB-A	4 x USB3.0 module
ARC-BYT DB-B	3 x Audio Jack (Line in/Line out/Mic in)+HDMI
ARC-BYT DB-C	HDMI + Mini PCIe (w/ SIM slot)
ARC-BYT DB-D	2 x COM Isolation module
ARC-BYT DB-E	12-bit GPIO+CAN Bus
ARC-BYT DB-F	CAN Bus for OBDII
ARC-BYT DB-G	3 x COM (w/o isolation, RS-232 only)
ARC-BYT DB-H	2COM (RS-232) + 1USB 2.0
ARC-BYT DB-K	2COM (RS-232) + 1LAN

Ø

Note: Specifications are subject to change without notice.

1.4 System Overview

1.4.1 I/O View





Connectors			
Label	Function	Note	
	DC Power in connector	Default: Lockable DC Jack	
	DC POwer-In connector	Option: Phoenix Connector(MOQ apply)	
COM1/2	Serial port 1/2 connector	DB-9 male connector	
USB	4 x USB 3.0 connector		
LAN1/2	RJ-45 Ethernet 1/2		
LED	HDD/Power LED indicator		
Power Switch	Power on button		



(Unit: mm)



2.1 ARC-21W34 connector mapping

2.1.1 Serial port 1 connector (COM1)

RS-485					
Signal	PIN	PIN	Signal		
DATA-	1	6	NC		
DATA+	2	7	NC		
NC	3	8	NC		
NC	4	9	NC		
GND	5				

Please set BIOS & JCOM1_SEL1



RS-232						
Signal	PIN	PIN	Signal			
NDCDA#	1	6	NDSRA#			
NRXDA	2	7	NRTSA#			
NTXDA	3	8	NCTSA#			
NDTRA#	4	9	NRIA#			
GND	5					

RS-422								
Signal	PIN	PIN	Signal					
TxD-	1	6	NC					
TxD+	2	7	NC					
RxD+	3	8	NC					
RxD-	4	9	NC					
GND	5							

Please set BIOS & JCOM1_SEL1

2.1.2 Serial port 2 connector (COM2)



Signal	PIN	PIN	Signal
NDCDB#	1	6	NDSRB#
NRXDB	2	7	NRTSB#
NTXDB	3	8	NCTSB#
NDTRB#	4	9	NRIB#
GND	5		



2.2 Installing Hard Disk & Memory

Step 1. Memory Installation: Remove 3 screws to release the chassis cover, and remove it.

Step 2.1 Insert the SODIMM into the memory socket.

Step 2.2 Re-assemble your system back through previous steps to complete the installation.





Step 3. HDD Installation: Insert the HDD into the Drive Bay and fasten 2 screws.

2.3 Installing ARC-BYT DB

Step 1. Unfasten 2 screws of the HDD bracket and take it off.



Step 2. Remove 4 screws to release the chassis cover, and remove it.



Step 2.1 Insert the ARC-BYT DB into the socket and fasten 3 screws.

Step 2.2 Re-assemble your system back through previous steps to complete the installation



2.4 ARC-KBLU Overviews



2.5 ARC-KBLU Jumper and Connector list

Jumper		
Label	Function	Note
JCOMS1	Clear CMOS	3 x 1 header, pitch 2.00mm
JRI1/2	Serial port 1/2 pin9 signal select	3 x 2 header, pitch 2.00mm
JCOM1_SEL1	Serial port 1 in RS-232/422/485 mode	4 x 3 header, pitch 2.00mm
JBKLSEL1	LCD backlight brightness adjustment	3 x 1 header, pitch 2.00mm
JAT1	AT/ATX Input power select	3 x 1 header, pitch 2.00mm

Connectors

Label	Function	Note
SODIMM1	1 x 260-Pin DDR4 2133MHz SO-DIM	И
JBKL1	LCD Inverter connector	5 x 1 wafer, pitch 2.00mm
COM1/2	Serial Port 1/2 connector	D-sub 9 pin, male
JSPR1	AMPLIFIER_R	2 x 1 wafer, pitch 2.00mm
JSPL1	AMPLIFIER_L	2 x 1 wafer, pitch 2.00mm
JB2B1	B2B connector	40 x 2 wafer, pitch 0.80mm
JBKLCTL1	LCD backlight brightness adjustment	3 x 2 header, pitch 2.00mm
LED1	HDD/Power LED indicator	
JLVDS1	LVDS connector	DIN 40-pin wafer, pitch 1.25mm
USB1/2	USB connector 1/2	
JUSB1	On-board header for USB2.0	5 x 1 wafer, pitch 2.00mm
JUSB2	On-board header for USB2.0	5 x 2 wafer, pitch 2.00mm
JTP1	Touch panel connector	5 x 1 wafer, pitch 2.54mm
LAN1/2	RJ-45 Ethernet 1/2	
MPCIE1	Mini-PCIe connector	
JBAT1	Battery connector	2 x 1 wafer, pitch 1.25mm
JGPIO1	General purpose I/O connector	6 x 2 wafer, pitch 2.00mm
JPWR1	Power connector	
JSPI1	SPI connector	4 x 2 header, pitch 2.00mm
JEC1	EC Debug connector	2 x 1 header, pitch 2.00 mm
SATA1	Serial ATA connector	
SATAPW1	SATA Power connector	2 x 1 wafer, pitch 2.00mm

2.6 ARC-KBLU Jumpers & Connectors settings

2.6.1 Clear CMOS (JCOMS1)







Clear CMOS



*Default

2.6.2 Serial port 1/2 pin9 signal select (JRI1/JRI2)



Ring*



+12V

1	
5	





PWM Mode*



DC Mode

1	3

* Default

2.6.4 AT/ATX Input power select (JAT1)



* Default

ATX*



2.6.5 Serial port 1 in RS-232/422/485 mode (JCOM1_SEL1)



	R	S23	2*			R	S42	22			R	S48	15	
1				3	1				3	1				3
10	٥			12	10				12	10				12

PIN	Signal	PIN	Signal	PIN	Signal
12	422RX1-	11	COM1-4	10	NDTRA#
9	485_422TX1+	8	COM1-2	7	NRXDA
6	422RX1+	5	COM1-3	4	NTXDA
3	485_422TX1-	2	COM1-1	1	NDCDA#

Note:

This connector is available after modify the mode of COM1 in BIOS setting.

* Default

2.6.6 LCD Inverter connector (JBKL1)



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Signal	PIN
+5V	5
LVDS_BKLT_CTL	4
LVDS_BKLT_EN	3
GND	2
+12V	1



2.6.7 On-board header for USB2.0 (JUSB1)



Signal	PIN
+5VSB	1
USB_z_PN10	2
USB_z_PP10	3
GND	4
GND	5

2.6.8 On-board header for USB2.0 (JUSB2)



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Signal	PIN	PIN	Signal
+5VSB	2	1	+5VSB
USB_z_PN6	4	3	USB_z_PN5
USB_z_PP6	6	5	USB_z_PP5
GND	8	7	GND
GND	10	9	GND





Signal	PIN
+RTCBAT	1
GND	2

2.6.10 LCD backlight brightness adjustment (JBLK_CTRL1)



1	
5	

PIN	Signal	Note
1-2	BLK_VR_MOD	VR must select 10K/1%
3-4	BLK_BRI_UP	Low pulse button for backlight brighter
5-6	BLK_BRI_DN	Low pulse button for backlight dim

2.6.9 Battery connector (JBAT1)

2.6.11 LVDS connector (JLVDS1)



Signal	PIN	PIN	Signal
+5V	2	1	+3.3V
+5V	4	3	+3.3V
NC	6	5	NC
GND	8	7	GND
LVDS_DATA0_P	10	9	LVDS_DATA1_P
LVDS_DATA0_N	12	11	LVDS_DATA1_N
GND	14	13	GND
LVDS_DATA2_P	16	15	LVDS_DATA3_P
LVDS_DATA2_N	18	17	LVDS_DATA3_N
GND	20	19	GND
LVDS_DATA4_P	22	21	LVDS_DATA5_P
LVDS_DATA4_N	24	23	LVDS_DATA5_N
GND	26	25	GND
LVDS_DATA6_P	28	27	LVDS_DATA7_P
LVDS_DATA6_N	30	29	LVDS_DATA7_N
GND	32	31	GND
LVDS_CLK1_P	34	33	LVDS_CLK2_P
LVDS_CLK1_N	36	35	LVDS_CLK2_N
GND	38	37	GND
+12V	40	39	+12V

2.6.12 AMPLIFIER_R (JSPR1)





Signal	PIN
SPK_R-	2
SPK_R+	1

2.6.13 AMPLIFIER_L (JSPL1)



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Signal	PIN
SPK_L-	2
SPK_L+	1

2.6.14 SPI connector (JSPI1)



7		1

Signal	PIN	PIN	Signal
+3.3VSB	1	2	GND
SPI0_CS0#	3	4	SPI_CLK
SPI_SO	5	6	SPI_SI
HOLD#	7		

2.6.15 EC Debug connector (JEC1)



		1	
Sig	nal		PIN
EC_SMCL	K_D	EBUG	1
EC_SMDA	T_D	EBUG	2

2.6.16 B2B connector (JB2B1)



1	40
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 	••••••••••••••••••••••••••••••••••••••
2	80

Signal	PIN	PIN	Signal
GND	1	41	GND
GND	2	42	GND
+12V	3	43	GND
+12V	4	44	GND
GND	5	45	GND
LPC_SERIRQ	6	46	+5VSB
LPC_LFRAME#	7	47	+5VSB
CLK3_LPC_B2B	8	48	+5VSB
LPC_AD0	9	49	+5VSB
LPC_AD1	10	50	+5VSB

Signal	PIN	PIN	Signal
LPC_AD2	11	51	GND
LPC_AD3	12	52	USB_PP8
PS_ON_B2B	13	53	USB_PN8
PLT_RST#	14	54	GND
PCH_SLP_S3#	15	55	SMBCLK
HDMI_HPD	16	56	SMBDATA
GND	17	57	GND
HDMI1_CTRL_CLK	18	58	BOARD_ID
HDMI1_CTRL_DAT	19	59	PCIEUSB3_PONRSTB
GND	20	60	PCIEUSB3_SMIB_INT#
HDMI1_TXN_2	21	61	B2BPCIE_WAKE#
HDMI1_TXP_2	22	62	RST_B2BPCIE#
GND	23	63	B2BPCIE_CLK_REQ#
HDMI1_TXN_1	24	64	GND
HDMI1_TXP_1	25	65	PCIE_TXN8
GND	26	66	PCIE_TXP8
HDMI1_TXN_0	27	67	GND
HDMI1_TXP_0	28	68	PCIE_RXN8
GND	29	69	PCIE_RXP8
HDMI1_CLKN	30	70	GND
HDMI1_CLKP	31	71	CLK_B2BPCIE_N2
GND	32	72	CLK_B2BPCIE_P2
GND	33	73	GND
MIC_RIN	34	74	GND
MIC_LIN	35	75	MIC1_JD
GND	36	76	GND
LINEOUT1_JD	37	77	LINE1_JD
LINEOUT_R	38	78	LINE1_RIN
LINEOUT_L	39	79	LNE1_LIN
GND	40	80	GND



2.6.17 Touch panel connector (JTP1)



Signal	PIN
Y-	1
Y+	2
SENSE	3
Х-	4
X+	5

2.6.18 General purpose I/O connector (JGPIO1)



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Signal	PIN	PIN	Signal
+3.3V	11	12	GND
SMB_DATA	9	10	SMB_CLK
DIO_GP23	7	8	DIO_GP13
DIO_GP22	5	6	DIO_GP12
DIO_GP21	3	4	DIO_GP11
DIO_GP20	1	2	DIO_GP10



2.6.19 SATA Power connector (SATAPW1)



Signal	PIN
GND	1
+5V	2

2.6.20 Power connector (PWR1)





*Option: Phoenix Connector

Signal	PIN
+DCIN	1
GND	2

2.7 ARC-BYT DB-A/B/C/D/E/F/G/H/K Overviews

2.7.1 ARC-BYT DB-A



2.7.2 ARC-BYT DB-B



2.7.3 ARC-BYT DB-C



ARC-21W34

2.7.4 ARC-BYT DB-D



2.7.5 ARC-BYT DB-E



2.7.6 ARC-BYT DB-F



2.7.7 ARC-BYT DB-G



2.7.8 ARC-BYT DB-H



2.7.9 ARC-BYT DB-K



2.8 ARC-BYT DB-A/B/C/D/E/F/G/H/K Connector list

2.8.1 ARC-BYT DB-A

Connectors

Label	Function	Note
A_JUSB1~4	USB3.0 connector 1~4	
A_JB2B1	B2B connector	

2.8.2 ARC-BYT DB-B

С	or	n	ec	to	ſS

Label	Function	Note
B_LINE_OUT1	Line-out audio jack	
B_LINE_IN1	Line-in audio jack	
B_MIC_IN1	Mic-in audio jack	
B_JHDMI1	HDMI connector	
B_JB2B1	B2B connector	

2.8.3 ARC-BYT DB-C

Connectors

Label	Function	Note
C_JPCIE1	Mini PCI Express connector	
C_JSIM1	SIM card slot (Push-push)	
C_JHDMI1	HDMI connector	
C_JB2B1	B2B connector	

2.8.4 ARC-BYT DB-D

Connectors		
Label	Function	Note
D_COM1/2	Serial Port 1/2 connector	DB-9 male connector
D_JB2B1	B2B connector	

2.8.5 ARC-BYT DB-E

Jumpers			
Label	Function	Note	
E_JCAN20	CAN2.0 Switch	3 x 1 header, pitch 2.00mm	
E_JIAP1	For user update FW	3 x 1 header, pitch 2.00mm	
E JBOOTU For user update FW 3 X T neader, pitch 2.00mm	E JBOOT0	For user update FW	3 x 1 header, pitch 2.00mm
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Connectors		
Label	Function	Note
E_GPIO1	General purpose I/O connector	14 x 1 terminal, pitch 2.50mm
E_CN1	For user update FW	5 x 1 header, pitch 2.54mm
E_CAN1	CAN Bus connector	3 x 1 terminal, pitch 2.50mm
E_JB2B1	B2B connector	

2.8.6 ARC-BYT DB-F

Connectors

Label	Function	Note
F_CAN1	CAN Bus connector 1	7 x 2 header, pitch 2.00mm
F_CAN2	CAN Bus connector 2	
F_JB2B1	B2B connector	

2.8.7 ARC-BYT DB-G

Connectors

Label Function		Note	
G_COM1/2/3	Serial Port 1/2/3 connector	DB-9 male connector	
G_JB2B1	B2B connector		

2.8.8 ARC-BYT DB-H

Jumpers

Label	Function	Note
H_USB_PWR_SEL1	USB Power selector	3 x 1 header, pitch 2.00mm

Connectors		
Label	Function	Note
H_JUSB1	USB3.0 connector	
H_COM1/2	Serial Port 1/2 connector	DB-9 male connector
H_JB2B1	B2B connector	

2.8.9 ARC-BYT DB-K

Connectors		
Label	Function	Note

ARC-21W34

I_JLAN1	RJ-45 Ethernet	
I_COM1/2	Serial Port 1/2 connector	DB-9 male connector
I_JB2B1	B2B connector	

2.9 ARC-BYT DB-D Connectors settings

2.9.1 Serial Port 1 connector (D_COM1)





Signal	PIN	PIN	Signal
NDCD#_3_D	1	6	NDSR#_3_D
NRXD_3_D	2	7	NRTS#_3_D
NTXD_3_D	3	8	NCTS#_3_D
NDTR#_3_D	4	9	NRI#_3_D
GND	5		

2.9.2 Serial Port 2 connector (D_COM2)





Signal	PIN	PIN	Signal
NDCD#_2_D	1	6	NDSR#_2_D
NRXD_2_D	2	7	NRTS#_2_D
NTXD_2_D	3	8	NCTS#_2_D
NDTR#_2_D	4	9	NRI#_2_D
GND	5		

2.10 ARC-BYT DB-E Jumpers & Connectors settings

2.10.1 CAN2.0 Switch (E_JCAN20)



CAN2.0A (11-bit)*



CAN2.0B (29-bit)



*Default

2.10.2 For user update FW (E_JBOOT0)



*Default

Default*

1
3

For user update FW



2.10.3 For user update FW (E_JIAP1)

Default*



For user update FW



*Default

2.10.4 For user update FW (E_CN1)



1		5	_

Signal	PIN
+3.3V	1
SWDIO	2
SWCLK	3
CAN_BUS_RESET#	4
GND	5

2.10.5 General purpose I/O connector (E_GPIO1)





Signal	PIN
GND	14
+3.3V	13
DO5	12
DO4	11
DO3	10
DO2	9
DO1	8
DO0	7
DI5	6
DI4	5
DI3	4
DI2	3
DI1	2
DIO	1

2.10.6 CAN Bus connector (E_CAN1)



1	3
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Signal	PIN
CANH	1
CANL	2
GND	3

2.11 ARC-BYT DB-F Connectors settings

2.11.1 CAN Bus connector 1 (F_CAN1)



13			1

Signal	PIN	PIN	Signal
CAN_PWR	1	2	CAN_8
CAN_IND	3	4	CAN_9
GND	5	6	BAT_GND
CAN_WAKE	7	8	CAN_11
UART_RXD_1_F	9	10	CAN_12
UART_TXD_1_F	11	12	CAN_13
+5V	13	14	CAN_14

2.11.2 CAN Bus connector 2 (F_CAN2)





Signal	PIN	PIN	Signal
BAT_PWR	1	6	CAN_12
CAN_8	2	7	CAN_13
CAN_9	3	8	CAN_14
BAT_GND	4	9	NC
CAN_11	5		

2.12 ARC-BYT DB-G Connectors settings

2.12.1 Serial Port 1 connector (G_COM1)



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Signal	PIN	PIN	Signal
NDCD#_3_G	1	6	NDSR#_3_G
NRXD_3_G	2	7	NRTS#_3_G
NTXD_3_G	3	8	NCTS#_3_G
NDTR#_3_G	4	9	NRI#_3_G
GND	5		

2.12.2 Serial Port 2 connector (G_COM2)





Signal	PIN	PIN	Signal
NDCD#_2_G	1	6	NDSR#_2_G
NRXD_2_G	2	7	NRTS#_2_G
NTXD_2_G	3	8	NCTS#_2_G
NDTR#_2_G	4	9	NRI#_2_G
GND	5		

2.12.3 Serial Port 3 connector (G_COM3)





Signal	PIN	PIN	Signal
NDCD#_1_G	1	6	NDSR#_1_G
NRXD_1_G	2	7	NRTS#_1_G
NTXD_1_G	3	8	NCTS#_1_G
NDTR#_1_G	4	9	NRI#_1_G
GND	5		

2.13 ARC-BYT DB-H Jumpers settings

2.13.1 USB Power selector (H_USB_PWR_SEL1)



+5VSB*



+5V

*Default

2.14 ARC-BYT DB-H Connectors settings

2.14.1 Serial Port 1 connector (H_COM1)



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Signal	PIN	PIN	Signal
NDCD#_1_H	1	6	NDSR#_1_H
NRXD_1_H	2	7	NRTS#_1_H
NTXD_1_H	3	8	NCTS#_1_H
NDTR#_1_H	4	9	NRI#_1_H
GND	5		

2.14.2 Serial Port 2 connector (H_COM2)





Signal	PIN	PIN	Signal
NDCD#_2_H	1	6	NDSR#_2_H
NRXD_2_H	2	7	NRTS#_2_H
NTXD_2_H	3	8	NCTS#_2_H
NDTR#_2_H	4	9	NRI#_2_H
GND	5		

2.15 ARC-BYT DB-K Connectors settings

2.15.1 Serial Port 1 connector (I_COM1)





Signal	PIN	PIN	Signal
NDCD#_1_I	1	6	NDSR#_1_I
NRXD_1_I	2	7	NRTS#_1_I
NTXD_1_I	3	8	NCTS#_1_I
NDTR#_1_I	4	9	NRI#_1_I
GND	5		

2.15.2 Serial Port 2 connector (I_COM2)





Signal	PIN	PIN	Signal
NDCD#_2_I	1	6	NDSR#_2_I
NRXD_2_I	2	7	NRTS#_2_I
NTXD_2_I	3	8	NCTS#_2_I
NDTR#_2_I	4	9	NRI#_2_I
GND	5		





3.1 Introduction

The AMI 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
↑	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.

	Aptio Setup Utility Main Advanced Chipset Security	- Copyright (C) 2020 American Boot Save & Exit	Megatrends, Inc.
•	BIOS Information BIOS Vendor Core Version Compliancy Project Version Build Date and Time Access Level EC 8528 Firmware BIOS Name System Language Board Information	American Megatrends 5.12 UEFI 2.7; PI 1.6 1ATQO 0.81 x64 10/12/2020 14:24:12 Administrator 19 AR2134K1 [English]	Choose the system default language
	System Date System Time	[Mon 12/14/2020] [11:51:03]	<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 2.20.1274.	Copyright (C) 2020 American M	egatrends, Inc.

Aptio Setup Util.	ity – Copyright (C) 2020 America	an Megatrends, Inc.
Main		
Roand Information		
Board ID		
EDUATU ID	HRU-RDLU(HRZI34KI)	
FAD ID	Default String	
LAN PAY REVISION	H6 (B2 Stepping)	
Processor Information		
Name	Kabylake ULT	
Туре	Intel(R) Core(TM)	
	i5–7300U CPU @ 2.60GHz	
Speed	2700 MHz	
ID	0×806E9	
Stepping	H0/J0	
Package	Not Implemented Yet	↔+: Select Screen
Number of Processors	2Core(s) / 4Thread(s)	↑↓: Select Item
Microcode Revision	CA	Enter: Select
GT Info	GT2 (0×5916)	+/-: Change Opt.
eDRAM Size	N/A	F1: General Help
		F2: Previous Values
IGFX VBIOS Version	NZA	F3: Optimized Defaults
IGFX GOP Version	N/A	F4: Save & Exit
Memory RC Version	3.7.7.1	ESC: Exit
Total Memory	4096 MB	
Memory Frequency	2133 MHz	
		▼
Version 2.20.12	74. Copyright (C) 2020 American	Megatrends, Inc.

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.

Aptio Setup Utility – Copyright (C) 2020 American Main <mark>Advanced</mark> Chipset Security Boot Save & Exit	Megatrends, Inc.
 CPU Configuration Power & Performance PCH-FW Configuration Network Stack Configuration Trusted Computing ACPI Settings IT8528 Super IO Configuration EC 8528 HW monitor SS RTC Wake Settings Serial Port Console Redirection Intel TXT Information USB Configuration CSM Configuration NVMe Configuration 	CPU Configuration 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 2.20.1274. Copyright (C) 2020 American Me	egatrends, Inc.

3.6.2.1 CPU Configuration

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

Aptio Setup Utility - Advanced	Copyright (C) 2020 American	Megatrends, Inc.
CPU Configuration		When enabled, a VMM can
Type ID Speed L1 Data Cache L1 Instruction Cache L2 Cache L3 Cache L4 Cache VMX VMX	Intel(R) Core(TM) i5-7300U CPU @ 2.60GHz 0x806E9 2700 MHz 32 KB x 2 32 KB x 2 256 KB x 2 3 MB N/A Supported Euroported	hardware capabilities provided by Vanderpool Technology.
3877171	Supporteu	++: Select Screen
Thei (VMX) virtualization Technology	[Enabled]	Enter: Select Item
Active Processor Cores Hyper-Threading	[A11] [Enabled]	<pre>+/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
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Item	Options	Description
Intel(VMX) Virtualization Technology	Disabled Enabled [Default]	When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.
Active Processor Cores	All [Default] 1 2 3 4 5 6 7 8	Number of cores to enable in each processor package.
Hyper-Threading	Disabled Enabled [Default]	Enabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology).

3.6.2.2 Power & Performance



3.6.2.2.1 CPU-Power Management Control



ltem	Option	Description
Intol® SpeedSted™	Enabled[Default],	Allows more than two frequency ranges to be
Intel® SpeedSted 11	Disabled	supported.
Turbo Mode	Enchlad [Default]	Enable/Disable processor Turbo Mode (requires
	Enabled[Default],	EMTTM enabled too). AUTO means enabled, unless
	Disabled	max turbo ratio is bigger than 16 SKL A0 W/A.

C states Enabled[De	Enabled[Default],	Enable/Disable CPU Power Management. Allows CPU
- C states	Disabled	to go to C states when it's not 100% utilized.

3.6.2.2.1.1 View/Configure Turbo Options

Aptio Setup Utility Advanced	– Copyright (C) 2020 Americ	can Megatrends, Inc.
Current Turbo Settings		Enable/Disable Energy Efficient P–state feature.
Max Turbo Power Limit	4095.875	When set to 0, will disable
Min Turbo Power Limit	0.0	access to
Package TDP Limit	15.0	ENERGY_PERFORMANCE_BIAS MSR
Power Limit 1	15.0	and CPUID Function 6 ECX[3]
Power Limit 2	25.0	will read O indicating no
1–core Turbo Ratio	35	support for Energy Efficient
2–core Turbo Ratio	35	policy setting. When set to 1
		will enable access to
Energy Efficient P–state		ENERGY_PERFORMANCE_BIAS_MSR
Package Power Limit MSR Lock	[Disabled]	
1–Core Ratio Limit Override	0	
2–Core Ratio Limit Override	0	↔: Select Screen
Energy Efficient Turbo	[Auto]	↑↓: Select Item
		Enter: Select
		+/-: Change Opt.
		F1: General Help
		F2: Previous Values
		F3: Optimized Defaults
		F4: Save & Exit
		ESC: Exit
	Annumintat (A) Annumina	- Mastala - Tua

Item	Option	Description
Energy Efficient P-state	Enabled [Default] , Disabled	Enable/Disable Energy Efficient P-state feature. When set to 0, will disable access to ENERGY_PERFORMANCE_BIAS MSR and CPUID Function 6 ECX[3] will read 0 indicating no support for Energy Efficient policy setting. When set to 1 will enable access to ENERGY_PERFORMANCE_BIAS MSR 1B0.
Package Power Limit MSR Lock	Enabled, Disabled [Default]	Enable/Disable locking of Package Power Limit settings. When enabled, PACKAGE_POWER_LIMIT MSR will be locked and a reset will be required to unlock the register.
1-Core Ratio Limit Override	0	1-Core Ratio Limit with range of (Max Non-Turbo Ratio – 255). Min = Max Non-Turbo Ratio. Max = fused turbo ratio, or 255 if CPU is unlocked for overclocking. This 1-Core Ratio Limit must be greater than or equal all other ratio values.
2-Core Ratio Limit Override	0	2-Core Ratio Limit with range of (Max Non-Turbo Ratio – 255). Min = Max Non-Turbo Ratio. Max = fused turbo ratio, or 255 if CPU is unlocked for overclocking. This 2-Core Ratio Limit Must be <= to 1-Core

		Ratio Limit.
Energy Efficient Turbo	Disabled Enabled Auto [Default]	Enable/Disable Energy Efficient Turbo Feature. This feature will opportunistically lower the turbo frequency to increase efficiency. Recommeded only to disable in overlocking situations where turbo frequency must remain constant. Otherwise, leave enabled.

3.6.2.2.2 GT-Power Management Control

Aptio Setup Utility - Advanced	∙ Copyright	(C) 2	2020 American	Megatrends, Inc.
GT – Power Management Control RC6(Render Standby) Maximum GT frequency	[Enabled] [Default	Max F	Frequency]	Check to enable render standby support.
				++: Select Screen ++: Select Item Enter: Select +/-: Change Opt. F1: General Help
				F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Unation 0.00.4074			00. Augustanus 11.	

ltem	Option	Description
PC6 (Pondor Stondby)	Enabled [Default] ,	Check to enable render standby
RC6 (Render Standby)	Disabled	support.
	Default Max Frequency[Default],	
	100Mhz/150Mhz/200Mhz/	
	250Mhz/300Mhz/350Mhz/	
	400Mhz/450Mhz/500Mhz/	
Maximum GT frequency	550Mhz/600Mhz/650Mhz/	Auto Updated.
	700Mhz/750Mhz/800Mhz/	
	850Mhz/900Mhz/950Mhz/	
	1000Mhz/1050Mhz/1100Mhz/	
	1150Mhz/1200Mhz	

3.6.2.3 PCH-FW Configuration



ltem	Option	Description
ME Unconfig on RTC Clear	Enabled [Default] ,	When Disabled ME will not be
	Disabled	unconfigured on RTC Clear.

3.6.2.3.1 Firmware Update Configuration

Re-Flash function. ++: Select Screen +1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit	Re-Flash function. ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit		Enable/Disable Me FW Imag
++: Select Screen †1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit	++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit		Re-Flash function.
+/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit	+/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit		++: Select Screen 14: Select Item Enter: Select
	ESC: Exit		+/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit

ltem	Option	Description
Mo EW/Imaga Bo Elach	Enabled [Default] ,	Check to enable render standby
Me FW Illiage Re-Flash	Disabled	support.

3.6.2.4 PTT Configuration



ltem	Option	Description
		Selects TPM device: PTT or dTPM. PTT-Enables
TPM Davice Selection	dTPM	PTT in SkuMgr dTPM 1.2-Disables PTT in
TPM Device Selection	PTT [Default] ,	SkuMgr Warning! PTT/dTPM will be disabled and
		all data saved on it will be lost.

3.6.2.5 Network Stack Configuration

Advanced		
Network Stack	[Disabled]	Enable∕Disable UEFI Network Stack
		<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>
Unacione O.	0. 4074	ican Marshanda Tan
Version 2.2	20.1274. copyright (C) 2020 Amer	ican Megatrends, inc.

ltem	Options	Description
Network Stack	Enabled Disabled [Default]	Enable/Disable UEFI Network Stack.

3.6.2.6 Trusted Computing



Item	Options	Description
		Enables or Disables BIOS support for
Security Device Support	Disable,	security device. O.S. will not show
Security Device Support	Enable[Default]	Security Device. TCG EFI protocol and
		INT1A interface will not be available.

3.6.2.7 APCI Settings

Aptio Setup Utility - Advanced	– Copyright (C) 2020 Americ	an Megatrends, Inc.
ACPI Settings		Enables or Disables System ability to Hibernate (OS/S4 Sleen State). This option may
Enable Hibernation	[Enabled]	not be effective with some
ACPI Sleep State	[S3 (Suspend to RAM)]	operating systems.
ErP Function	[Disabled]	
PWR-On Atter PWR-Fail Watch Dog	[Ott] [Disabled]	
USB Standby Power Setting	[Enabled]	
		++: Select Screen
		Fnter: Select
		+/-: Change Opt.
		F1: General Help
		F3: Optimized Defaults
		F4: Save & Exit
		ESC: Exit
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Item	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 OS.
ACPI Sleep State	Suspend Disabled, S3 (Suspend to RAM) [Default]	Select the highest ACPI sleep state the system will enter when the SUSPEND 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.

3.6.2.8 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 3.6.2.8.1~ 3.6.2.8.5 for more information.

Aptio Setup Utility - Advanced	Copyright (C) 2020 American	Megatrends, Inc.
IT8528 Super IO Configuration		Set Parameters of Serial Port
Super IO Chip ▶ Serial Port 1 Configuration ▶ Serial Port 2 Configuration	IT8528	1 (0000)
DB board ▶ Serial Port 3 Configuration ▶ Serial Port 4 Configuration ▶ Serial Port 5 Configuration	[M/B mode test]	
		<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 2.20.1274. C	opyright (C) 2020 American M	egatrends, Inc.

ltem	Options	Description
	DB-A/C/E/J	
	DB-B	
DB board	DB-F 1COM	DB board A-K. DA-A/B/C/E/J w/o UART DB-G w/t
DB board	DB-D/H/K 2COM	3UART DB-D/H/K w/t 2UART DB-F w/t 1UART.
	DB-G 3COM	
	M/B mode test[Default],	
Serial Port 1 Configuration	Set Parameters of Serial Port 1 (COMA).	
Serial Port 2 Configuration	Set Parameters of Serial Port 2 (COMB).	
Serial Port 3 Configuration	Set Parameters of Serial Port 3 (COMC).	
Serial Port 4 Configuration	Set Parameters of Serial Port 4 (COMD).	
Serial Port 5 Configuration	Set Parameters of Serial Port 5 (COME).	

3.6.2.8.1 Serial Port 1 Configuration

Aptio Setup Utilit Advanced	y – Copyright (C) 2020 Ameri	can Megatrends, Inc.
Serial Port 1 Configuration		Enable or Disable Serial Port
Serial Port Device Settings	[Enabled] IO=3F8h; IRQ=4;	(cun)
UART 232 422 485	[UART 232]	
		<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 2.20.1274	. Copyright (C) 2020 America	n Megatrends, Inc.

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

3.6.2.8.2 Serial Port 2 Configuration



Item	Option	Description
Serial Port	Enabled [Default] , Disabled	Enable or Disable Serial Port (COM).

3.6.2.8.3 Serial Port 3 Configuration

Aptio Setup Utility - Advanced	- Copyright (C) 2020 Americar) Megatrends, Inc.
Serial Port 3 Configuration		Enable or Disable Serial Port
Serial Port Device Settings	[Enabled] Reset Required	(COM)
		<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>
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Item	Option	Description
Serial Port	Enabled [Default] , Disabled	Enable or Disable Serial Port (COM).

3.6.2.8.4 Serial Port 4 Configuration

Aptio Setup Util Advanced	Lity – Copyright (C) 2020 America	n Megatrends, Inc.
Serial Port 4 Configuration		Enable or Disable Serial Port
Serial Port Device Settings	[Enabled] Reset Required	
		<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 2.20.12	274. Copyright (C) 2020 American H	Megatrends, Inc.

Item	Option	Description
Serial Port	Enabled [Default] , Disabled	Enable or Disable Serial Port (COM).

3.6.2.8.5 Serial Port 5 Configuration

Aptio Setup Utility - Advanced	- Copyright (C) 2020 Americar	Megatrends, Inc.
Serial Port 5 Configuration		Enable or Disable Serial Port
Serial Port Device Settings	[Enabled] Reset Required	
		<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 2.20.1274. (Copyright (C) 2020American ⊧	legatrends, Inc.

Item	Option	Description
Serial Port	Enabled [Default] , Disabled	Enable or Disable Serial Port (COM).

3.6.2.9 H/W Monitor

Advance	Aptio Setup Utility d	y – Copyright (C) 2020	American Megatrends, Inc.
Pc Health Stat	us		
CPU temperatur VIN_L VCORE	e	: +43 C : +12.117 V : +0.843 V	++: 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 20 1274	Conucidht (C) 2020 A	menican Megatrends Inc

3.6.2.10 S5 RTC Wake Settings

Aptio Setup Ut Advanced	iility – Copyright (C) 2020 An	merican 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)
		++: 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.	.1274. Copyright (C) 2020 Amer	rican Megatrends, Inc.

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

3.6.2.11 Serial Port Console Redirection



ltem	Options	Description
Console Redirection	Disabled [Default] , Enabled	Console Redirection Enable or Disable.

3.6.2.11.1 Legacy Console Redirection Settings

Aptio Setup Utility - Advanced	Copyright (C) 2020 American	Megatrends, Inc.
Legacy Console Redirection Settings Redirection COM Port Resolution Redirect After POST	[COM1] [80x24] [Always Enable]	Select a COM port to display redirection of Legacy OS and Legacy OPROM Messages
		<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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Item	Option	Description	
		Select a COM port to display redirection of	
Redirection COM Port	COM1[Default],	Legacy OS and Legacy OPROM	
		Messages.	
Popolution	80x24[Default]	On Legacy OS, the Number of Rows and	
Resolution	80x25	Columns supported redirection.	
Redirect After POST	Always Enable [Default] BootLoader	When Bootloader is selected, then Legacy	
		Console Redirection is disabled before	
		booting to legacy OS. When Always Enable	
		is selected, then Legacy Console	
		Redirection is enabled for legacy OS.	
		Default setting for this option is set to	
		Always Enable.	

3.6.2.12 Intel TXT Configuration



3.6.2.13 USB Configuration

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

Aptio Setup Utility - Advanced	Copyright (C) 2020 American	Megatrends, Inc.
USB Configuration		Enables Legacy USB support.
USB Module Version	23	support if no USB devices are connected. DISABLE option will
USB Controllers: 1 XHCI		keep USB devices available only for EFI applications.
USB Devices: 1 Drive, 1 Keyboard, 2 Mice, 1	Hub	
Legacy USB Support	[Enabled]	
USB Mass Storage Driver Support	[Enabled] [Disabled]	
		↔: Select Screen
USB transfer time-out	[20_sec]	Enter: Select
Device reset time-out	[20 sec]	+/-: Change Opt.
Device power-up delay	[Auto]	F1: General Help
		F2: Previous Values
Mass Storage Devices:		F3: Optimized Defaults
JetFlashTranscend 8GB 1100	[Auto]	F4: Save & Exit
		ESC: Exit

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 OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.
USB Mass Storage Driver Support	Enabled [Default] Disabled	Enable/Disable USB Mass Storage Driver Support.
Port 60/64 Emulation	Enabled Disabled [Default]	Enable I/O port 60h/64h emulation support. This should be enabled for the complete USB keyboard legacy support for non-USB aware OSes.
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

Quick Reference Guide

		100ms, for a Hub port the delay is taken form Hub descriptor.
	Auto[Default]	Mass storage device emulation type. 'AUTO'
	Floppy	enumerates devices according to their media
JetFlashTranscend 8GB 1100	Forced FDD	format. Optical drives are emulated as
	Hard Disk	'CDROM', drives with no media will be
	CD-ROM	emulated according to a drive type.

3.6.2.14 CSM Configuration

Advance	Aptio Setup Utility - ed	Copyright (C) 2020 American	Megatrends, Inc.
Compatibility	Support Module Configu	ration	Enable/Disable CSM Support.
CSM Support		[Disabled]	
			↔: Select Screen t↓: Select Item
			Enter: Select +/-: Change Opt.
			F1: General Help F2: Previous Values
			F3: Optimized Defaults F4: Save & Exit
			ESC: Exit
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ltem	Options	Description
CSM Support	Enabled Disabled [Default]	Enable/Disable CSM Support.

3.6.2.15 NVMe Configuration



3.6.3 Chipset

Main	Aptio Setup Advanced Chipset	Utility – Co Security Bo	pyright (C) ot Save &	2020 America Exit	n Megatrends, Inc	
System PCH-IO	Agent (SA) Configu Configuration	ration			System Agent (Si ++: Select Scree 14: Select Item Enter: Select +/-: Change Opt F1: General Help F2: Previous Va F3: Optimized Du F4: Save & Exit ESC: Exit	 Parameters Parameters
	versiun 2.	20.1274. CUP <u>y</u>	Fight (6) 2	vzv Hilenican	megatrenus, INC.	

3.6.3.1 System Agent (SA) Configuration



Item	Option	Description
VT-d	Enabled [Default] Disabled	VT-d capability.

3.6.3.1.1 Memory Configuration

Aptio Setup Utility - Chipset	Copyright (C) 2020 American	Megatrends, Inc.
Memory Configuration		Maximum Value of TOLUD.
Memory RC Version Memory Frequency Memory Timings (tCL-tRCD-tRP-tRAS)	3.7.7.1 2133 MHz 15-15-15-35	adjust TOLUD automatically based on largest MMIO length of installed graphic controller
Channel O Slot O Size Number of Ranks Manufacturer Max TOLUD	Populated & Enabled 4096 MB (DDR4) 1 UnKnown [Dynamic]	
		<pre>++: Select Screen t4: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.20.1274. Co	pyright (C) 2020 American M	egatrends, Inc.

Item	Option	Description
Max TOLUD	Dynamic [Default] 1GB/1.25GB/1.5GB/1.75GB /2GB/2.25GB/2.5GB/2.75GB	Maximum Value of TOLUD. Dynamic assignment would adjust TOLUD automatically based on largest MMIO length of installed graphic controller.

3.6.3.1.2 Graphics Configuration

Aptio Setup Utility - Chipset	Copyright (C) 2020 American	Megatrends, Inc.
Graphics Configuration		Select the Aperture Size Note : Above 4GB MMIO BIOS assignment is automatically
Aperture Size DVMT Total Gfx Mem	[256MB] [256M]	enabled when selecting 2048MB aperture. To use this feature, please disable CSM Support.
Active LVDS(Ch7511) CH7511 EDID Panel Option LVDS Back Light Brightness LVDS Back Light PWM Frequency Onboard Touch(PenMount_6000)	[Enabled] [1920x1080 24/2] [100%] [200] [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 2.20.1274. Co	pyright (C) 2020 American M	egatrends. Inc.

Item	Option	Description	
	128MB[Default]	Select the Aperture Size Note: Above	
	256MB	4GB MMIO BIOS assignment is	
Aperture Size	512MB	automatically enabled when selecting	
	1024MB	2048MB aperture. To use this	
	2048MB	feature, please disable CSM Support.	
	256M[Default]	Select DVMT5.0 Total Graphic	
DVMT Total Gfx Mem	128M	Memory size used by the Internal	
	MAX	Graphics Device.	
	Enabled[Default]	Active Internal LVDS (eDP->Ch7511-	
Active LVDS (CH7511)	Disabled	to-LVDS).	
	1024x768 24/1		
	800x600 18/1		
	1024x768 18/1		
	1366x768 18/1		
	1024x600 18/1	Dort1 EDD to LV/DS (Chrontol 7511)	
CH7511 EDID Panel Option	1280x800 18/1	Point-EDF to EVDS (Chilomer 7511)	
	1920x1200 24/2		
	1920x1080 18/2		
	1280x1024 24/2		
	1440x900 18/2		
	1600x1200 24/2		
	1366x768 24/1		
----------------------------	-------------------------	----------------------------------	
	1920x1080 24/2[Default]		
	1680x1050 24/2		
	00%		
	25%		
LVDS Back Light Brightness	50%	Select LVDS back light PWM duty.	
	75%		
	100%[Default]		
	200[Default]		
	300		
	400		
	500		
LVDS Back Light DW/M	700	Select LVDS back light PWM	
EVDS Back Light FWW	1k		
Frequency	2k	Frequency.	
	3k		
	5k		
	10k		
	20k		
Onboard	Disabled[Default]	Enabled/Disabled LISP Touch	
Touch(PenMount_6000)	Enabled		

3.6.3.2 PCH-IO Configuration

Aptio Setup Utility - Chipset	- Copyright ((C) 2020 American	Megatrends,	Inc.
PCH-IO Configuration ► PCI Express Configuration ► SATA And RST Configuration ► USB Configuration ► HD Audio Configuration			PCI Express settings	Configuration
PCH LAN Controller	[Enabled]		→+: Select : 14: Select Enter: Select +/-: Change F1: General F2: Previou: F3: Optimiz: F4: Save & 1 ESC: Exit	Screen Item St Opt. Help s Values ed Defaults Exit
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Item	Option	Description
PCH LAN Controller	Disabled Enabled [Default]	Enable or disable onboard NIC.

3.6.3.2.1 PCI Express Configuration

Aptio Setup Utility - Chipset	· Copyright (C) 2020 America	n Megatrends, Inc.
PCI Express Configuration		PCI Express Clock Gating
PCI Express Clock Gating DMI Link ASPM Control PCIE Port assigned to LAN	[Enabled] [Enabled] 4	port.
 PCI Express Root Port 5(i210/i211) PCI Express Root Port 8(B2B mPCIe) PCI Express Root Port 12(mPCIe) 		
		<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 2.20.1274. C	opyright (C) 2020 American I	legatrends, Inc.

ltem	Option	Description	
BCI Express Clock Cating	Disabled	PCI Express Clock Gating Enable/Disable for	
PCI Express Clock Gating	Enabled[Default]	each root port.	
	Dischlad	The control of Active State Power	
DMI Link ASPM Control	Enabled[Default]	Management of the DMI Link. Auto is equal	
		to POR setting.	

3.6.3.2.1.1 PCI Express Root Port5 (i210/211)

Aptio Setup Utility Chipset	– Copyright (C) 2020 America	an Megatrends, Inc.
PCI Express Root Port 5 Topology ASPM L1 Substates PCIe Speed	[Enabled] [x1] [Auto] [Disabled] [Auto]	Control the PCI Express Root 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>

Item	Option	Description
PCI Express Root Port 5	Enabled [Default] , Disabled	Control the PCI Express Root Port.
Topology	Unknown x1 [Default] , x4 Sata Express M2	Identify the SATA Topology if it is Default or ISATA or Flex or DirectConnect or M2.
ASPM	Auto [Default] L0sL1 L0s L0s Disabled	Set the ASPM Level: Force L0s – Force all links to L0s State AUTO – BIOS auto configure DISABLE – Disables ASPM.
L1 Substates	Disabled L1.1 L1.2 L1.1 & L1.2 [Default] ,	PCI Express L1 Substates settings.
PCIe Speed	Auto [Default] Gen1 Gen2 Gen3	Configure PCIe speed.

3.6.3.2.1.2 PCI Express Root Port8 (B2B mPCle)

Aptio Setup Chipset) Utility – Copyright (C) 2020 (American Megatrends, Inc.
PCI Express Root Port 8 Topology ASPM L1 Substates PCIe Speed	[Enabled] [X1] [Disabled] [Disabled] [Auto]	Control the PCI Express 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
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ltem	Option	Description
PCI Express Root Port 8	Enabled [Default] , Disabled	Control the PCI Express Root Port.
Topology	Unknown x1 [Default] ,	Identify the SATA Topology if it is Default or ISATA or Flex or DirectConnect or M2.

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	x4	
	Sata Express	
	M2	
	Auto	
	L0sL1	Set the ASPM Level: Force L0s – Force all
ASPM	L1	links to L0s State AUTO – BIOS auto
	LOs	configure DISABLE – Disables ASPM.
	Disabled[Default]	
	Disabled[Default],	
L 1 Substatas	L1.1	PCI Express I 1 Substates actings
LI Substates	L1.2	POI Express LT Substates settings.
	L1.1 & L1.2	
	Auto[Default]	
PCIe Speed	Gen1	Configure BCIe anad
	Gen2	Configure PCre speed.
	Gen3	

3.6.3.2.1.3 PCI Express Root Port12 (mPCle)

Aptio Setup Chipset	Utility – Copyright (C) 2020 American	Megatrends, Inc.
PCI Express Root Port 12 Topology ASPM L1 Substates PCIe Speed	[Enabled] [x1] [Auto] [L1.1 & L1.2] [Auto]	Control the PCI Express Root Port. ++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.	20.1274. Copyright (C) 2020 American M	egatrends, Inc.

Item	Option	Description
DOI Frances Deat Deat 40	Enabled [Default] ,	Control the BCI Everage Post Port
PCI Express Root Port 12	Disabled	Control the PCI Express Root Port.
Topology	Unknown	
	x1 [Default] ,	Identify the SATA Tendlogy if it is Default or
	x4	Identify the SATA Topology in it is Default of
	Sata Express	ISATA OF Flex of DirectConnect of Mz.
	M2	
ACDM	Auto[Default]	Set the ASPM Level: Force L0s – Force all
ASPM	L0sL1	links to L0s State AUTO – BIOS auto

	L1	configure DISABLE – Disables ASPM.
	L0s	
	Disabled	
	Disabled	
1.1 Substates	L1.1	DCI Express 1.1 Substates pattings
LI Substates	L1.2	PCI Express LT Substates settings.
	L1.1 & L1.2[Default]	
	Auto[Default]	
PCIe Speed	Gen1	Configure DOIs speed
	Gen2	Conligure PCIe speed.
	Gen3	

3.6.3.2.2 SATA And RST Configuration

Aptio Setup Uti Chipset	lity – Copyright (C) 2020 Amer:	ican Megatrends, Inc.
SATA Controller(s) SATA Mode Selection SATA Test Mode SATA Controller Speed Serial ATA Port O(connect) Software Preserve Port 0 SATA Device Type Topology Serial ATA Port 2(mSATA) Software Preserve Port 2 SATA Device Type Topology	[Enabled] [AHCI] [Disabled] [Default] Empty Unknown [Enabled] [Hard Disk Drive] [ISATA] Empty Unknown [Enabled] [Hard Disk Drive] [ISATA]	Enable/Disable SATA Device. ++: 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 1	274 Conuright (C) 2020 Americs	an Megatrends Inc

ltem	Option	Description
SATA Controller(s)	Enabled [Default] Disabled,	Enable/Disable SATA Device.
SATA Mode Selection	AHCI [Default] RAID	Determines how SATA controller(s) operate.
SATA Test Mode	Enabled Disabled [Default]	Test Mode Enable/Disable (Loop Back).
SATA Controller Speed	Default [Default] Gen1 Gen2 Gen3	Indicates the maximum speed the SATA controller can support.
Port 0	Enabled [Default] Disabled,	Enable or Disable SATA Port.
SATA Device Type	Hard Disk Drive [Default] Solid State Drive	Identify the SATA port is connected to Solid State Drive or Hard Disk Drive.
Topology	Unknown ISATA [Default]	Identify the SATA Topology if it is Default or ISATA or Flex or DirectConnect or M2.

	Direct Connect	
	Flex	
	M2	
Port 1	Enabled [Default] Disabled,	Enable or Disable SATA Port.
SATA Davias Tura	Hard Disk Drive[Default]	Identify the SATA port is connected to Solid
SATA Device Type	Solid State Drive	State Drive or Hard Disk Drive.
Topology	Unknown ISATA [Default] Direct Connect	Identify the SATA Topology if it is Default or
	Flex M2	ISATA of Flex of DirectConnect of M2.

3.6.3.2.3 USB Configuration

Aptio Setup Utility - Chipset	Copyright (C) 2020 American	Megatrends, Inc.
USB Configuration		Options to disable Compliance Mode. Default is FALSE to not disable Compliance Mode. Set
XHCI Disable Compliance Mode	[FALSE]	TRUE to disable Compliance Mode.
		++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.1274. Co	pyright (C) 2020 American Mu	egatrends, Inc.

Item	Option	Description
XHCI Disable Compliance Mode	FALSE [Default] , TRUE	Option to disable Compliance Mode. Default is FALSE to not disable Compliance Mode. Set TRUE to disable Compliance Mode.

3.6.3.2.4 HD Audio Configuration

Aptio Setup <mark>Chipset</mark>	Utility — Copyright (C) 2020	American Megatrends, Inc.
HD Audio Subsystem Configu	ration Settings	Control Detection of the
HD Audio Amplifier Gain	[Auto] [20db]	HD-Audio device. Disabled = HDA will be unconditionally disabled Enabled = HDA will be unconditionally enabled Auto = HDA will be enabled if present, disabled otherwise. ++: 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
Version 2.2	0.1274. Copyright (C) 2020 A	merican Megatrends, Inc.

ltem	Option	Description
		Control Detection of the HD-Audio device.
	Disabled	Disable = HDA will be unconditionally
HD Audio	Enabled	disabled Enabled = HDA will be
	Auto [Default] ,	unconditionally enabled Auto = HDA will be
		enabled if present, disabled otherwise.
	20db [Default] ,	
Amplifier Gain	26db	Amplifier Coin
	32db	Ampliner Gain.
	36db	

3.6.4 Security

Password Description		Set Administrator Password
If ONLY the Administrator then this only limits acce only asked for when enter: If ONLY the User's passwor is a power on password and boot or enter Setup. In Se have Administrator rights. The password length must b in the following range:	s password is set, ess to Setup and is ng Setup. d is set, then this i must be entered to etup the User will me	
Minimum length	3	
Administrator Password User Password		++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. E1: General Helm
Secure Boot		F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

• Administrator Password

Set setup Administrator Password

• User Password

Set User Password

3.6.4.1 Secure Boot menu

Aptio Setup	Utility – Copyright (C) 2020 Ameri Security	can Megatrends, Inc.
System Mode Vendor Keys Secure Boot	Setup Not Modified [Disabled]	Secure Boot activated when: Secure Boot is enabled Platform Key(PK) is enrolled, System mode is User/Deployed,
Secure Boot Customization > Restore Factory Keys > Reset To Setup Mode > Key Management	Not Active [Custom]	and CSM is 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 2.2	20.1274. Copyright (C) 2020 America	n Megatrends, Inc.

Antio Cotur	Utility Conunight (C) 20	220 Amonicon I	Wagataanda Taa
нрії0 зетир	Security	uzu Himerican r	Megatrenus, Inc.
System Mode Vendor Keys Secure Boot	Setup Not Modified [Disabled] Not Active	F C C S	Force System to User Mode. Configure NVRAM to contain DEM-defined factory default Secure Boot keys
Secure Boot Customization ▶ Restore Factory Keys ▶ Reset To Setup Mode	[Custom]		
▶ Key Management	Install factory of Press 'Yes' to proceed	defaults ——— 'No' to cance.	1
	Yes	No	elect Screen elect Item : Select
		F	Change Opt. F1: General Help F2: Previous Values
		F	F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.2	20.1274. Copyright (C) 2020	O American Me	gatrends, Inc.

ltem	Option	Description
Secure Boot	Disabled [Default] Enabled	Secure Boot can be enabled if 1.System running in User mode with enrolled Platform Key(PK) 2.CSM function is disabled.

Secure Boot	Standard	Customizable Secure Boot mode: In Custom mode Secure Boot Policy variables can be configured by a
Customization	Custom[Default]	physically present user without full authentication.

3.6.4.1.1 Key Management

Factory Key Provision [Disabled] Restore Factory Keys Reset To Setup Mode Export Secure Boot variables Enroll Efi Image Device Guard Ready Remove 'UEFI CA' from DB Restore DB defaults	Provision factory default keys on next re-boot only when System in Setup Mode
Secure Boot variable Size Keys Key Source Platform Key(PK) 0 0 No Keys Key Exchange Keys 0 0 No Keys Authorized Signatures 0 0 No Keys Forbidden Signatures 0 0 No Keys Authorized TimeStamps 0 0 No Keys OSRecovery Signatures 0 0 No Keys	<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
Footomy Koy Provision	Disabled[Default]	Provision factory default keys on next re-boot
Factory Key Provision	Enabled,	only when System in Setup Mode.

3.6.5 Boot

Aptio Setup Ut Main Advanced Chipset Se	t <mark>ility – Copyright (C) 2020 America</mark> ecurity <mark>Boot </mark> Save & Exit	n Megatrends, Inc.
Boot Configuration Setup Prompt Timeout Bootup NumLock State Quiet Boot	<mark>1</mark> [On] [Disabled]	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.
Boot Option Priorities Boot Option #1 Fast Boot	[UEFI: JetFlashTranscend 8GB 1100, Partition 1] [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.	.1274. Copyright (C) 2020 American M	Megatrends, Inc.

Item	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
Fast Boot	Disabled [Default] Enabled	Enables or disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.
Boot Option #1	Set the system boot order.	

3.6.6 Save and exit

Aptio Setup Utili Main Advanced Chipset Secur	ty – Copyright (C) 2020 American ity Boot Save & Exit	Megatrends, Inc.
Save Options Save Changes and Reset Discard Changes and Reset		Reset the system after saving the changes.
Default Options Restore Defaults		
Expert mode	[DQV mode]	
Boot Override UEFI: JetFlashTranscend 8GB 110 Launch EFI Shell from filesyste	0, Partition 1 m 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 2.20.127	4. Copyright (C) 2020 American M	egatrends, Inc.
Antio Setup Utili	ty – Conyright (C) 2020 American	Megatrends. Inc.
Aptio Setup Utili Main Advanced Chipset Secur	ty – Copyright (C) 2020 American ity Boot Save & Exit	Megatrends, Inc.
Aptio Setup Utili Main Advanced Chipset Secur Save Options Save Changes and Reset Discard Changes and Reset	ty – Copyright (C) 2020 American ity Boot Save & Exit	Megatrends, Inc. Reset the system after saving the changes.
Aptio Setup Utili Main Advanced Chipset Secur Save Options Save Changes and Reset Discard Changes and Reset Default Options Restore Defaults	ty – Copyright (C) 2020 American ity Boot Save & Exit	Megatrends, Inc. Reset the system after saving the changes.
Aptio Setup Utili Main Advanced Chipset Secur Save Options Save Changes and Reset Discard Changes and Reset Default Options Restore Defaults Expert mode	ty – Copyright (C) 2020 American ity Boot Save & Exit [DQV mode]	Megatrends, Inc. Reset the system after saving the changes.
Aptio Setup Utili Main Advanced Chipset Secur Save Options Save Changes and Reset Discard Changes and Reset Default Options Restore Defaults Expert mode Boot Override UEFI: JetFlashTranscend 8GB 11 Launch EFI Shell from filesyst	ty – Copyright (C) 2020 American ity Boot Save & Exit [DQV mode] Save & reset Save configuration and reset?	Megatrends, Inc. Reset the system after saving the changes.
Aptio Setup Utili Main Advanced Chipset Secur Save Options Save Changes and Reset Discard Changes and Reset Default Options Restore Defaults Expert mode Boot Override UEFI: JetFlashTranscend 8GB 11 Launch EFI Shell from filesyst	ty - Copyright (C) 2020 American ity Boot Save & Exit [DQV mode] Save configuration and reset? Yes No	Megatrends, Inc. Reset the system after saving the changes. +: Select Screen 4: Select Item nter: Select
Aptio Setup Utili Main Advanced Chipset Secur Save Options Save Changes and Reset Discard Changes and Reset Default Options Restore Defaults Expert mode Boot Override UEFI: JetFlashTranscend 8GB 11 Launch EFI Shell from filesyst	ty - Copyright (C) 2020 American ity Boot Save & Exit [DQV mode] Save & reset Save configuration and reset? Ves No	<pre>Megatrends, Inc. Reset the system after saving the changes. +: Select Screen 1: Select Item nter: Select /-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Aptio Setup Utili Main Advanced Chipset Secur Save Options Save Changes and Reset Discard Changes and Reset Default Options Restore Defaults Expert mode Boot Override UEFI: JetFlashTranscend 8GB 11 Launch EFI Shell from filesyst	ty - Copyright (C) 2020 American ity Boot Save & Exit [DQV mode] Save configuration and reset? Yes No	<pre>Megatrends, Inc. Reset the system after saving the changes. +: Select Screen 1: Select Item nter: Select /-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>

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 Expert mode

Switch Expert mode or DQV mode. Option: DQV mode [Default]/Expert mode

3.6.6.5 Launch EFI Shell from filesystem device

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

