

# NanoCOM-ADN

COM Express Module

User's Manual 2nd Ed

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# Packing List

COM Express Module Before setting up your product, please make sure the following items have been shipped:

ltom	Quantity

NanoCOM-ADN

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

1

This User's Manual contains all the essential information, such as detailed descriptions and explanations on the product's hardware and software features (if any), its specifications, dimensions, jumper/connector settings/definitions, and driver installation instructions (if any), to facilitate users in setting up their product.

Users may refer to the AAEON.com for the latest version of this document.

# Safety Precautions

Please read the following safety instructions carefully. It is advised that you keep this manual for future references

- 1. All cautions and warnings on the device should be noted.
- 2. Make sure the power source matches the power rating of the device.
- Position the power cord so that people cannot step on it. Do not place anything over the power cord.
- Always completely disconnect the power before working on the system's hardware.
- 5. No connections should be made when the system is powered as a sudden rush of power may damage sensitive electronic components.
- If the device is not to be used for a long time, disconnect it from the power supply to avoid damage by transient over-voltage.
- 7. Always disconnect this device from any AC supply before cleaning.
- 8. While cleaning, use a damp cloth instead of liquid or spray detergents.
- 9. Make sure the device is installed near a power outlet and is easily accessible.
- 10. Keep this device away from humidity.
- 11. Place the device on a solid surface during installation to prevent falls
- 12. Do not cover the openings on the device to ensure optimal heat dissipation.
- 13. Watch out for high temperatures when the system is running.
- 14. Do not touch the heat sink or heat spreader when the system is running
- 15. Never pour any liquid into the openings. This could cause fire or electric shock.
- 16. As most electronic components are sensitive to static electrical charge, be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and contain all electronic components in any static-shielded containers.

- 17. If any of the following situations arises, please the contact our service personnel:
  - i. Damaged power cord or plug
  - ii. Liquid intrusion to the device
  - iii. Exposure to moisture
  - iv. Device is not working as expected or in a manner as described in this manual
  - v. The device is dropped or damaged
  - vi. Any obvious signs of damage displayed on the device

# DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WITH TEMPERATURES BEYOND THE DEVICE'S PERMITTED STORAGE TEMPERATURES (SEE CHAPTER 1) TO PREVENT DAMAGE.



This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

#### Caution:

There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions and your local government's recycling or disposal directives.

#### Attention:

Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte. Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur. Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.

# China RoHS Requirements (CN)

#### 产品中有毒有害物质或元素名称及含量

AAEON 主板/子板/背板

QO4-381 Rev.A2

	有毒有害物质或元素						
部件名称	铅	汞	镉	六价铬	多溴联苯	多溴二苯醚	
	(Pb)	(Hg)	(Cd)	(Cr(VI))	(PBB)	(PBDE)	
印刷电路板		0					
及其电子组件	×	0	0	0	0	0	
外部信号		0				0	
连接器及线材	×	0	0	0	0	0	

本表格依据 SJ/T 11364 的规定编制。

○: 表示该有毒有害物质在该部件所有均质材料中的含量均在GB/T 26572标准规定的限量要求以下。

×: 表示该有害物质的某一均质材料超出了GB/T 26572的限量要求, 然而该部件仍符 合欧盟指令2011/65/EU 的规范。

环保使用期限(EFUP (Environmental Friendly Use Period)): 10年

备注:此产品所标示之环保使用期限,系指在一般正常使用状况下。

# China RoHS Requirement (EN)

Name and content of hazardous substances in product

AAEON Main Board/Daughter Board/Backplane

QO4-381 Rev.A2

	Hazardous Substances					
Part Name	铅	汞	镉	六价铬	多溴联苯	多溴二苯醚
	(Pb)	(Hg)	(Cd)	(Cr(VI))	(PBB)	(PBDE)
PCB Assemblies	×	0	0	0	0	0
Connector and		0	)	0	0	0
Cable	×	0	0	0	0	0

The table is prepared in accordance with the provisions of SJ/T 11364.

O: Indicates that said hazardous substance contained in all of the homogenous

materials for this product is below the limit requirement of GB/T 26572.

×: Indicates that said hazardous substance contained in at least one of the

homogenous materials used for this part is above the limit requirement of GB/T 26572.

But this product still be compliance with 2011/65/EU Directive (allowed with 2011/65/EU

Annex III of RoHS exemption with number 6(c),7(a),7(c)-1).

EFUP (Environment Friendly Use Period) value: 10 years

Notes: This product defined period of use is under normal condition.

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# Chapter 1

Product Specifications

# 1.1 Specifications

System	
Form Factor	COM Express Mini Size, Type 10
CPU	Intel Atom® x7000E Series:
	Intel Atom® x7425E (4C, 1.50 GHz, 12W)
	Intel® Processor N-series:
	Intel® Core™ i3-N305 (8C, up to 3.8 GHz, 15W)
	Intel® Processor N97 (4C, 2.00 GHz, 12W)
	Intel® Processor N50 (2C, 1.00 GHz, 6W)
Chipset	Integrated with Intel® SoC
Memory	Onboard LPDDR5x 4000MHz, 4-Channel, up to 16GB
Onboard Storage	eMMC, up to 64GB
BIOS	AMI UEFI
Wake on LAN	Yes
Watchdog Timer	255 Levels
Dimension	3.31" x 2.17" (84mm x 55mm)
Security	TPM 2.0

# Power

Power Requirement	+12V and +5VSB for ATX, +12V for AT
Power Type	AT/ATX, switch by BIOS
Power Consumption	Intel® Core™ i3-N305, 2.32A @+12V
(Typical)	

Display	
Graphics Controller	Intel® UHD Graphics
Video Output	Dual Display: DDI x 1, up to 3840 x 2160
	18/24-bit Single-Channel LVDS x 1, up to 1024 x 768

I/O	
Ethernet	Intel® Ethernet Controller I226-V, 2.5GbE x 1
Audio	High Definition Audio Interface
USB Port	USB 2.0 x 8
	USB 3.2 Gen 2 x 2
Serial Port	2-Wire UART x 2 (Tx/Rx)
HDD Interface	SATA 6Gb/s x 2
Expansion	PCle 3.0 [x1] x 4
	LPC x 1
GPIO	8-bit
SMBus/I2C	I2C x 1
	SMBus x 1

Environmental	
Operating Temperature	-4°F ~ 158°F (-20°C ~ 70°C)
Storage Temperature	-40°F ~ 185°F (-40°C ~ 85°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing
EMC	CE/FCC Class A
OS Support	Windows® 10/11 (64-bit)
	Linux Ubuntu 22.04.4/Kernel 6.5
Weight	0.15 lb. (0.07Kg)

# Chapter 2

Hardware Information

# 2.1 Dimensions, Jumpers and Connectors

Top Side

# NanoCOM-ADN



42.42



# Bottom Side

6.50

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74.20 80.00 84.00

## Thermal Solutions

# With Active Cooler (P/N: NANOCOM-ADN-FAN01)



## With Heat Spreader (P/N: NANOCOM-ADN-HSP01)



# 2.2 List of Jumpers and Connectors

Please refer to the table below for all of the board's jumpers that you can configure for your application

Label	Function
CN1	Row A/B

# 2.2.1 ROW A/B Connector (CN1)

Row A		Row B	
Pin	Name	Pin	Name
A1	GND_0	B1	GND_15
A2	GBE0_MDI3-	B2	GBE0_ACT#
A3	GBE0_MDI3+	B3	LPC_FRAME#/ESPI_CS0#
A4	GBE0_LINK100#	B4	LPC_AD0/ESPI_IO_0
A5	GBE0_LINK1000#	B5	LPC_AD1/ESPI_IO_1
A6	GBE0_MDI2-	B6	LPC_AD2/ESPI_IO_2
A7	GBE0_MDI2+	B7	LPC_AD3/ESPI_IO_3
A8	GBE0_LINK#	B8	LPC_DRQ0#/ESPI_ALERT0# (NC)
A9	GBE0_MDI1-	B9	LPC_DRQ1#/ESPI_ALERT1# (NC)
A10	GBE0_MDI1+	B10	LPC_CLK/ESPI_CK
A11	GND_1	B11	GND_16
A12	GBE0_MDI0-	B12	PWRBTN#
A13	GBE0_MDI0+	B13	SMB_CLK
A14	GBE0_CTREF (NC)	B14	SMB_DAT
A15	SUS_S3#	B15	SMB_ALERT#
A16	SATA0_TX+	B16	SATA1_TX+
A17	SATA0_TX-	B17	SATA1_TX-
A18	SUS_S4#	B18	SUS_STAT#/ESPI_RESET#
A19	SATA0_RX+	B19	SATA1_RX+
A20	SATAO_RX-	B20	SATA1_RX-

Row A		Row B	
Pin	Name	Pin	Name
A21	GND_2	B21	GND_17
A22	USB_SSRXO-	B22	USB_SSTX0-
A23	USB_SSRX0+	B23	USB_SSTX0+
A24	SUS_S5#	B24	PWR_OK
A25	USB_SSRX1-	B25	USB_SSTX1-
A26	USB_SSRX1+	B26	USB_SSTX1+
A27	BATLOW#	B27	WDT
A28	(S)ATA_ACT#	B28	HDA_SDIN2/SNDW0_CLK (NC)
A29	HDA_SYNC	B29	HDA_SDIN1/SNDW0_DAT
A30	HDA_RST#	B30	HDA_SDIN0
A31	GND_3	B31	GND_18
A32	HDA_BITCLK	B32	SPKR
A33	HDA_SDOUT	B33	I2C_CK
A34	BIOS_DISO#/ESPI_SAFS	B34	I2C_DAT
A35	THRMTRIP#	B35	THRM#
A36	USB6-	B36	USB7-
A37	USB6+	B37	USB7+
A38	USB_6_7_OC#	B38	USB_4_5_OC#
A39	USB4-	B39	USB5-
A40	USB4+	B40	USB5+
A41	GND_4	B41	GND_19
A42	USB2-	B42	USB3-
A43	USB2+	B43	USB3+
A44	USB_2_3_OC#	B44	USB_0_1_OC#
A45	USBO-	B45	USB1-
A46	USB0+	B46	USB1+
A47	VCC_RTC	B47	ESPI_EN#
A48	RSMRST_OUT#	B48	USB0_HOST_PRSNT (NC)
A49	GBE0_SDP	B49	SYS_RESET#
A50	LPC_SERIRQ/ESPI_CS1#	B50	CB_RESET#
A51	GND_5	B51	GND_20

Chapter 2 – Hardware Information

Row A		Row B	
Pin	Name	Pin	Name
A52	RSVD_13 (NC)	B52	RSVD_11 (NC)
A53	RSVD_14 (NC)	B53	RSVD_12 (NC)
A54	GPIO	B54	GPO1
A55	GP_SPI_CS#	B55	GP_SPI_MISO
A56	GP_SPI_CK	B56	GP_SPI_MOSI
A57	GND_6	B57	GPO2
A58	PCIE_TX3+	B58	PCIE_RX3+
A59	PCIE_TX3-	B59	PCIE_RX3-
A60	GND_7	B60	GND_21
A61	PCIE_TX2+	B61	PCIE_RX2+
A62	PCIE_TX2-	B62	PCIE_RX2-
A63	GPI1	B63	GPO3
A64	PCIE_TX1+	B64	PCIE_RX1+
A65	PCIE_TX1-	B65	PCIE_RX1-
A66	GND_8	B66	WAKE0#
A67	GPI2	B67	WAKE1#
A68	PCIE_TX0+	B68	PCIE_RX0+
A69	PCIE_TX0-	B69	PCIE_RX0-
A70	GND_9	B70	GND_22
A71	LVDS_A0+	B71	DDI0_PAIR0+
A72	LVDS_A0-	B72	DDI0_PAIR0-
A73	LVDS_A1+	B73	DDI0_PAIR1+
A74	LVDS_A1-	B74	DDI0_PAIR1-
A75	LVDS_A2+	B75	DDI0_PAIR2+
A76	LVDS_A2-	B76	DDI0_PAIR2-
A77	LVDS_VDD_EN	B77	DDI0_PAIR4+ (NC)
A78	LVDS_A3+	B78	DDI0_PAIR4- (NC)
A79	LVDS_A3-	B79	LVDS_BKLD_EN
A80	GND_10	B80	GND_23
A81	LVDS_A_CK+	B81	DDI0_PAIR3+
A82	LVDS_A_CK-	B82	DDI0_PAIR3-

Chapter 2 – Hardware Information

Row A		Row B	
Pin	Name	Pin	Name
A83	LVDS_I2C_CK	B83	LVDS_BKLT_CTLR
A84	LVDS_I2C_DAT	B84	VCC_5V_SBY_0
A85	GPI3	B85	VCC_5V_SBY_1
A86	RSVD_0	B86	VCC_5V_SBY_2
A87	eDP_HPD	B87	VCC_5V_SBY_3
A88	PCIE0_CK_REF+	B88	BIOS_DIS1#
A89	PCIEO_CK_REF-	B89	DDI0_HPD
A90	GND_12	B90	GND_24
A91	SPI_POWER	B91	DDI0_PAIR5+ (NC)
A92	spi_miso	B92	DDI0_PAIR5- (NC)
A93	GPO0	B93	DDI0_PAIR6+ (NC)
A94	SPI_CLK	B94	DDI0_PAIR6- (NC)
A95	spi_mosi	B95	DDI0_DDC_AUX_SEL
A96	TPM_PP	B96	USB7_HOST_PRSNT (NC)
A97	TYPE10#	B97	SPI_CS#
A98	RS1_TX	B98	DDI0_CTRLCLK_AUX+
A99	RS1_RX	B99	DDI0_CTRLDATA_AUX-
A100	GND_13	B100	GND_25
A101	RS2_TX	B101	FAN_PWMOUT
A102	RS2_RX	B102	FAN_TACHIN
A103	LID#	B103	SLEEP#
A104	VCC_12V_0	B104	VCC_12V_6
A105	VCC_12V_1	B105	VCC_12V_7
A106	VCC_12V_2	B106	VCC_12V_8
A107	VCC_12V_3	B107	VCC_12V_9
A108	VCC_12V_4	B108	VCC_12V_10
A109	VCC_12V_5	B109	VCC_12V_11
A110	GND_14	B110	GND_26

# 2.3 Thermal Solution Installation

# 2.3.1 Fan Assembly

Tighten all four screws following the alignment shown below in order to affix the fan to the NanoCOM-ADN.



Tighten all four screws following the alignment shown below in order to affix the heat spreader to the NanoCOM-ADN.



# Chapter 3

AMI BIOS Setup

# 3.1 System Test and Initialization

The board uses certain routines to perform testing and initialization. If an error, fatal or non-fatal, is encountered, a few short beeps or an error message will be outputted. The board can usually continue the boot up sequence with non-fatal errors.

The system configuration verification routines check the current system configuration against the values stored in the CMOS memory. If they do not match, an error message will be outputted, in which case you will need to run the BIOS setup program to set the configuration information in memory.

There are three situations in which you will need to change the CMOS settings:

- You are starting your system for the first time
- You have changed your system's hardware
- The CMOS memory has lost power and the configuration information is erased

The system's CMOS memory uses a backup battery for data retention, which is to be replaced once emptied

# 3.2 AMI BIOS Setup

The AMI BIOS ROM has a pre-installed Setup program that allows users to modify basic system configurations, which is stored in the battery-backed CMOS RAM and BIOS NVRAM so that the information is retained when the power is turned off.

To enter BIOS Setup, press <Del> or <F2> immediately while your computer is powering up.

The function for each interface can be found below.

Main – Date and time can be set here. Press <Tab> to switch between date elements

Advanced – For BIOS standard features

System I/O – For hosting bridge parameters

Security - The setup administrator password can be set here

Boot - Enable/ Disable Boot Option

Save & Exit – Save your changes and exit the program

# 3.3 Setup Submenu: Main

Aptio Setup – AMI Main Advanced System I/O Security Boot Save & Exit				
<pre>== BIOS Information == NANOCOM-ASL R1.2 (NASLAM12 == EC Information == (ECOM_119)(3/29/2024) == CPU Information == Intel(R) Atom(TM) x7835RE</pre>	) (10/15/2024)	Set the Date. Use Tab to switch between Date elements. Default Ranges: Year: 1998–2199 Months: 1–12 Days: dependent on month		
== MEM Information == Total Memory	16384 MB			
== SATA Information == Serial ATA Port 0 Serial ATA Port 1	Empty Empty	++: Select Screen 11: Select Item Enter: Select		
System Date System Time	[Fri 01/01/2021] [00:16:48]	+/−: Change Opt. F1: General Help F2: Previous Values		
Access Level	Administrator	F3: Optimized Defaults F4: Save & Exit ESC: Exit		

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# 3.4 Setup Submenu: Advanced

Main Advanced System I/O Security	:io Setup – AMI Dot Save & Exit
Display Information ▶ Graphics Configuration	Graphics Configuration
System Information > CPU Configuration > Memory Configuration > On-Module H/W Monitor > PCH-FW Configuration	
AAEON Features ▶ On-Module Configuration ▶ Power Management ▶ AAEON BIOS Robot	the Soloot Server
	↑↑. Select Scheen ↑↓: Select Item Enter: Select +/-: Change Opt. Fi: General Help
	F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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# 3.4.1 Graphics Configuration

Aptio Setup – AMI Advanced	
Advanced > Boot Display Priority > Display Configuration	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
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# 3.4.1.1 Boot Display Priority Override

# Mode 1: GOP Default

Aptio Setup - AMI		
Boot Display Priority	Boot Display Priority Override	
The system will check each set in order of priority and then use the first set where all configured displays are detected.		
Boot Display Priority Override [GOP Default]		
	++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	
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Options Summary			
Boot Display Priority	Enabled		
Override	GOP Default	Optimal Default, Failsafe Default	
Boot Display Priority Override			

# Mode 2: Enabled

Advanced	Aptio Setup – AMI	
Boot Display Priority The system will check each set in then use the first set where all o detected.	order of priority and configured displays are	Boot Display Priority Override
Boot Display Priority Override Priority 1 Primary Secondary Priority 2 Primary Secondary Priority 3 Primary Secondary	(Enabled) [DDI0] [None] [None] [DDI0] [None]	<pre>#: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
Versio	a 2 22 1293 Conveight (C) 2	024 AMT

Options Summary			
Primary	None		
	LVDS_A		
	DDI0	Optimal Default, Failsafe Default	
Secondary	None	Optimal Default, Failsafe Default	
	LVDS_A		
	DDI0		
Boot Display Priority Override.			

# 3.4.1.2 Display Configuration



Options Summary				
LVDS_A Configuration	No Device (Disable)			
	Default (DP)	Optimal Default, Failsafe Default		
Select output type for this device				
DDI0 Configuration	DP			
	HDMI/DVI			
	Default (DP/HDMI/DVI	Optimal Default, Failsafe Default		
	Compatible)			
Select output type for this device				

# 3.4.1.2.1 LVDS Configuration

Advanced	Aptio Setup - AMI	
Advanced Panel Type Color depth and data format LVDS Mode PTN3460 Slave Addr Backlight Mode Backlight Type Backlight Level Backlight PWM Freq Detail timing Setting PTN3460 Advance Setting	[1024x768060H2] [VESA/JEIDA 18bit] [Single Mode] [0x20] [External] [Normal] [ 80%] [ 200H2]	Select panel type +: Select Screen 1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
		ESC: Exit

Options Summary		
Panel Type	640x480@60Hz	
	800x480@60Hz	
	800x600@60Hz	
	1024x600@60Hz	
	1024x768@60Hz	Optimal Default, Failsafe Default
	1280x768@60Hz	
	1280x800@60Hz	
	1280x1024@60Hz	
	1366x768@60Hz	
	1440x900@60Hz	
	1600x1200@60Hz	
	1920x1080@60Hz	
	1920x1200@60Hz	
Select panel type.		

Options Summary				
Color Depth	VESA 24bit			
	JEIDA 24bit			
	VESA/JEDIA 18bit	Optimal Default, Failsafe Default		
Color depth and data packir	ng format. If need to set it	to 36/48 bit mode, please also		
set "LVDS Mode" to "Dual Mode"				
LVDS Mode	Single Mode	Optimal Default, Failsafe Default		
Single / Dual Mode.				
Backlight Type	Normal	Optimal Default, Failsafe Default		
	Inverted			
Select backlight control sign	al type.			
Backlight Level	0%			
	10%			
	20%			
	30%			
	40%			
	50%			
	60%			
	70%			
	80%	Optimal Default, Failsafe Default		
	90%			
	100%			
Select backlight control leve	10011	1		
Backlight PWM Freq		Optimal Default Failcafa Default		
	200HZ	Optimai Delauit, Falisale Delauit		
	500HZ			
	1KH7			
	אוואוו ארטאר <del>-</del>			
Coloct DW/M froquency of ba				
Select PWINI frequency of ba	icklight control signal			

#### 3.4.1.2.2 EDID Advance Setting

# Mode 1: Disabled

Aptio Setup – AMI				
EDID Advance Setting		After enabling "Advance setting", you can refer to the		
================ Advance setting		currently set EDID value to		
Pixel clock(MHz)	65	make detailed adjustments.		
Horizontal Active	1024			
Horizontal Blanking	320			
Vertical Active	768			
Vertical Blanking	38			
Horizontal Sync Offset	24			
Horizontal Sync Pulse Width	136			
Vertical Sync Offset	3			
Vertical Sync Pulse Width	6			
Horizontal Image Size(mm)	518			
Vertical Image Size(mm)	333	++: Select Screen		
Digital Sync Signal Definitions	[ Digital Separate	↑↓: Select Item		
	Sync]	Enter: Select		
H–Sync Polarity	[Active low]	+/-: Change Opt.		
V–Sync Polarity	[Active low]	F1: General Help		
Horizontal Screen Size(cm)	60	F2: Previous Values		
Vertical Screen Size(cm)	40	F3: Optimized Defaults		
Color Encoding Format	[RGB 4:4:4]	F4: Save & Exit		
		ESC: Exit		

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Options Summary				
EDID Advance Setting	Disabled	Optimal Default, Failsafe Default		
	Enabled			
After enabling "Advance setting", you can refer to the currently set EDID value to make				
#### Mode 2: Enabled

MO	Advanced
Expre	EDID Advance Setting
ss Module	ACC Pixel clock(MHz) Current setting Horizontal Active Current setting Horizontal Blanking Current setting Ventical Active
Na	Vertical Hottle Current setting Vertical Blanking Current setting Horizontal Sync Offse Current setting Horizontal Sync Pulse

Ven С Ven Hor Ven

Aptio Setup - AMI

	[Enabled]	After enabling "Advance setting", you can refer to the
======================================		currently set EDID value to
el clock(MHz)	65	make detailed adjustments.
rrent setting	65	
izontal Active	1024	
rrent setting	1024	
izontal Blanking	320	
rrent setting	320	
ical Active	768	
rrent setting	768	
ical Blanking	38	
rrent setting	38	
izontal Sync Offset	24	++: Select Screen
urrent setting	24	↑↓: Select Item
izontal Sync Pulse Width	136	Enter: Select
rrent setting	136	+/−: Change Opt.
ical Sync Offset	3	F1: General Help
urrent setting	3	F2: Previous Values
ical Sync Pulse Width	6	F3: Optimized Defaults
urrent setting	6	F4: Save & Exit
izontal Image Size(mm)	518	ESC: Exit
rrent setting	518	
ical Image Size(mm)	333	
urrent setting	333 🔍	

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Digital Sync Signal Definitions Current setting	[ Digital Separate Sync] Digital Separate Sync	++: Select Screen
H-Sync Polarity	[Active low]	I↓: Select item
Current setting	Active low	Enter: Select
V–Sync Polarity	[Active low]	+/-: Change Opt.
Current setting	Active low	F1: General Help
Horizontal Screen Size(cm)	60	F2: Previous Values
Current setting	60	F3: Optimized Defaults
Vertical Screen Size(cm)	40	F4: Save & Exit
Current setting	40	ESC: Exit
Current setting	RGB 4:4:4	
		•
Version	2.22.1293 Copyright (C) 202	4 AMI

Options Summary		
Pixel clock (MHz)	65	Optimal Default, Failsafe Default
Pixel clock setting in MHz		
Horizontal Active	1024	Optimal Default, Failsafe Default

Options Summary		
Horizontal Addressable Vide	o in pixels	
Horizontal Blanking	320	Optimal Default, Failsafe Default
Horizontal Blanking in pixels		
Vertical Active	768	Optimal Default, Failsafe Default
Vertical Addressable Video in	n lines	
Vertical Blanking	38	Optimal Default, Failsafe Default
Vertical Blanking in lines		
Horizontal Sync Offset	24	Optimal Default, Failsafe Default
Horizontal Front Porch in pix	els	
Horizontal Sync Pulse Width	136	Optimal Default, Failsafe Default
Horizontal Sync Pulse Width	in pixels	
Vertical Sync Offset	3	Optimal Default, Failsafe Default
Vertical Front Porch in Lines		
Vertical Sync Pulse Width	6	Optimal Default, Failsafe Default
Vertical Sync Pulse Width in	Lines	
Horizontal Image Size (mm)	518	Optimal Default, Failsafe Default
The horizontal and vertical a	ddressable video image s	size, define the addressable video
size of the displayed image (	derived from the incomin	ng video signal).
Vertical Image Size (mm)	333	Optimal Default, Failsafe Default
The horizontal and vertical a	ddressable video image s	size, define the addressable video
size of the displayed image (	derived from the incomir	ng video signal).
Digital Sync Signal	Digital Separate Sync	Optimal Default, Failsafe Default
Definitions		
Digital Sync Signal Definition	S	
H-Sync Polarity	Active low	Optimal Default, Failsafe Default
H-Sync Polarity	Γ	
V-Sync Polarity	Active low	Optimal Default, Failsafe Default
V-Sync Polarity	Γ	
Horizontal Screen Size (cm)	60	Optimal Default, Failsafe Default
The active physical screen size	ze of the display device	
Vertical Screen Size (cm)	40	Optimal Default, Failsafe Default
The active physical screen size	ze of the display device	
Color Encoding Format	RGB 4:4:4	Optimal Default, Failsafe Default
Color Encoding Format		

## 3.4.1.2.3 PTN3460 Advance Setting

	Aptio Setup – AMI	
Advanced		
Swap - Main (P/N) Swap - AUX (P/N) DP lane DP link rate ASSR Support Enhanced Framing support Clock output for dual LVDS mode Data Enable polarity LVDS differential output swaping level LVDS clock SSC Swap - Bus Swap - Channel Swap - Differential pair (P/N) Minimum T3 Minimum T4 T2 delay T5 delay	<pre>[Non-Swapping] [Non-Swapping] [2 Lane] [HBR and PBR link rate] [Disabled] [Disabled] [Valid clock output on both buses] [Active high] [250 mv] [Non-Swapping] [Non-Swapping] [Non-Swapping] 10 20 0 [Enabled] [Enabled]</pre>	Main link P/N swapping ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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Options Summary		
Swap – Main (P/N)	Non-Swapping	Optimal Default, Failsafe Default
	Swapped	
Main link P/N swapping		
Swap – AUX (P/N)	Non-Swapping	Optimal Default, Failsafe Default
	Swapped	
AUX P/N swapping		
DP lane	2 Lane	Optimal Default, Failsafe Default
	1 Lane	
DP lan configuration		
DP link rate	HBR and PBR link rate	Optimal Default, Failsafe Default
	RBR link rate only DP	
	lane	
DP link configuration		
ASSR Support	Disabled	Optimal Default, Failsafe Default
	Enabled	
Alternative Scrambler Seed F	Reset	

Options Summary			
Enhanced Framing support	Disabled	Optimal Default, Failsafe Default	
	Enabled		
Enhanced Framing support			
Clock output for dual LVDS	Valid clock output on	Optimal Default, Failsafe Default	
mode	both buses		
	Valid clock output on		
	even bus only		
	Valid clock output on		
	odd bus only		
Clock output for dual LVDS r	node		
Data Enable polarity	Active high	Optimal Default, Failsafe Default	
	Active low		
Data enable polarity			
LVDS differential output	250 mv	Optimal Default, Failsafe Default	
swapping level	150 mv		
	200 mv		
	300 mv		
	350 mv		
	400 mv		
	450 mv		
LVDS differential output swa	pping level		
LVDS clock SSC	No Spreading	Optimal Default, Failsafe Default	
	0.5% Spreading		
	1.0% Spreading		
	1.5% Spreading		
	2.0% Spreading		
	2.5% Spreading		
LVDS clock frequency center	spreading depth		
Swap -Bus	Non-Swapping	Optimal Default, Failsafe Default	
	Swapped		
Odd bus <-> Even bus	• • • •		
Swap - Channel	Non-Swapping	Optimal Default, Failsafe Default	
	Swapped		
(A <-> D, B<-> CLK, C <->	C)		
Swap – Differential pair	Non-Swapping	Optimal Default, Failsafe Default	
(P/N)	Swapped		
Differential pair (P/N) swapping			
Minimum T3	10	Optimal Default, Failsafe Default	
Minimum T3 timing of panel	power sequence to enfo	prce (expressed in units of 50ms)	

Options Summary		
Minimum T2	20	Optimal Default, Failsafe Default
Minimum T2 timing of panel	power sequence to enfor	rce (expressed in units of 50ms)
Minimum T4	0	Optimal Default, Failsafe Default
Minimum T4 timing of panel	power sequence to enfor	rce (expressed in units of 50ms)
T2 delay	Disabled	
	Enabled	Optimal Default, Failsafe Default
T2 is delayed by 20ms		
T5 delay	Disabled	
	Enabled	Optimal Default, Failsafe Default
T5 is delayed by 20ms		

# 3.4.2 CPU Configuration

	A 11 A 1 AUT	
Advanced	Aptio Setup – AMI	
CPU Configuration		When enabled, a VMM can
Туре	Intel(R) Atom(TM)	hardware capabilities provided
	×7835RE	by Vanderpool Technology.
ID	0×B06E0	
Microcode Revision	18	
Speed	1300 MHZ	
	Not Supported	
I Data Cache	32 KB x 8	
L1 Instruction Cache	64 KB x 8	
L2 Cache	2048 KB × 2	
L3 Cache	6 MB	
		++: Select Screen
		T↓: Select Item
Technology	te	Enter: Select
Intel(R) SpeedStep(tm)	[Enabled]	+/-: Unange Upt.
C states	[Enabled]	F1. General netp
6 States	[Endbied]	F3: Optimized Defaults
		F4: Save & Exit
		ESC: Exit
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Options Summary		
Intel (VMX) Virtualization	Disabled	
Technology	Enabled	Optimal Default, Failsafe Default

Options Summary		
When enabled, a VMM can utilize the additional hardware capabilities provided by		
Vanderpool Technology.		
Intel(R) SpeedStep(tm)	Disabled	
	Enabled	Optimal Default, Failsafe Default
Allows more than two frequency ranges to be supported.		
Turbo Mode	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable/Disable processor Turbo Mode (requires EMTTM enabled too). AUTO means		
enabled.		
C states	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable/Disable CPU Power Management. Allows CPU to go to C states when it's not		
10.00/ 111 - 1		

# 3.4.3 Memory Configuration

Advanced	Aptio Setup – AMI	
Memory Configuration		Enable/Disable In-Band ECC.
Memory RC Version Memory Frequency Total Memory	0.0.4.74 4000 MHz 16384 MB	symmetric configuration
In-Band ECC Support		
		++: Select Screen
		Enter: Select +/-: Change Opt.
		F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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Options Summary		
In-Band ECC Support	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enable/Disable In-Band ECC	. Will be enabled if memo	ry has symmetric configuration

#### 3.4.4 On-Module Hardware Monitor



Options Summary		
FAN 1	Full Mode	
	Manual Mode	
	Auto – Slope Linear	Optimal Default, Failsafe Default
Smart Fan Mode Select.		

### 3.4.4.1 Smart Fan Mode Configuration

#### FAN 1: Full Mode

	Antio Setup - AMT	
Advanced	Aptio Setup - AMI	
CPU Temperature (PECI)	: +34 °c	
Thermal Source 1(T1)	: +32 °c	
Thermal Source 2(T2)	: +32 °c	
5VSB	: +5.067 V	
+12V	: +12.090 V	
VMEM	: +1.101 V	
Smart Fan Configuration		
FAN 1	: 4347 RPM	
FAN 1		
		↔: Select Screen
		î↓: Select Item
		Enter: Select
		+/−: Change Opt.
		F1: General Help
		F2: Previous Values
		F3: Optimized Defaults
		F4: Save & Exit
		ESC: Exit

#### FAN 1: Manual Mode



Options Summary		
PWM Setting	70	Optimal Default, Failsafe Default
The PWM value of manual mode. Range: 0 – 100.		

### FAN 1: Auto – Slope Linear

Advanced	Aptio Setup – AMI	
CPU Temperature (PECI) Thermal Source 1(T1) Thermal Source 2(T2) SVSB +12V VMEM Smart Fan Configuration FAN 1	: +39 % : +33 % : +34 % : +5.072 V : +12.072 V : +1.104 V : 4391 RPM	
FAN 1 PWM signal Thermal Monitoring	[Auto - Slope Linear] [Non-inverting] [CPU Temperature (PECI)]	++: Select Screen
Start-Up temperature Shut-Off temperature START PWM	10 0 30	14: Select Item Enter: Select +/-: Change Opt.
Slope (РЖМ)	[1 (PWM)]	F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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Options Summary		
PWM signal	Non-inverting	Optimal Default, Failsafe Default
	Inverting	
Select output PWM of inverti	ng or non-inverting signa	al.
Thermal Monitoring	CPU Temperature (PECI)	Optimal Default, Failsafe Default
	Thermal Source 1 (T1)	
	Thermal Source 2 (T2)	
Monitoring thermal sensor select.		
Start – Up temperature	10	Optimal Default, Failsafe Default
PWM output when monitorin	g thermal sensor is exceed	ded. Range: 0 – 100.
Shut – Off temperature	0	Optimal Default, Failsafe Default
PWM turns off when monitored thermal sensor is less or equal to. Range: 0 – 100.		
START PWM	30	Optimal Default, Failsafe Default
The beginning PWM output value when Start-Up temperature is triggered.		
Slope (PWM)	0 (PWM)	
	1 (PWM)	Optimal Default, Failsafe Default

Options Summary		
Slope (PWM) Cont.	2 (PWM)	
	4 (PWM)	
	8 (PWM)	
	16 (PWM)	
	32 (PWM)	
	64 (PWM)	
When the monitored temperature is higher than the Start-Up temperature, the PWM		

output increases per degree.

## 3.4.5 PCH-FW Configuration

Advanced	Aptio Setup – AMI	
ME Firmware Version ME Firmware Mode ME Firmware SKU ME Firmware Status 1 ME Firmware Status 2	16.50.12.1453 Normal Mode Consumer SKU 0x90000255 0x89100106	Configure Management Engine Technology Parameters
<ul> <li>Firmware Update Configuration</li> <li>PTT Configuration</li> </ul>		
		<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit</pre>
Version	1 2.22.1293 Copyright (C) 2024	ESC: Exit

### 3.4.5.1 Firmware Update Configuration



Options Summary		
ME FW Image Re-Flash	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enable/Disable Me FW Image Re-Flash function.		
FW Update	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable/Disable ME FW Update function.		

# 3.4.5.2 PTT Configuration

Advanced	Aptio Setup – AM	I
PTT Capability ∕ State	1 / 0	Selects TPM device: PTT or
	[dTPM]	SkuMgr dTPM 1.2 – Disables PTT in SkuMgr Warning ! PTT/dTPM will be disabled and all data saved on it will be lost.
		<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
	Version 2.22.1293 Copyright	: (C) 2024 AMI

Options Summary		
TPM Device Selection	dTPM	Optimal Default, Failsafe Default
	PTT	
Selects TPM device: PTT or dTPM. PTT – Enables PTT in SkuMgr dTPM 1.2 – Disables		
PTT in SkuMgr Warning! PTT/dTPM will be disabled and all data saved on it will be lost.		

## 3.4.6 On-Module Configuration

Advanced	Aptio Setup – AMI	
Battery Management	[Disabled]	Enable to support battery in ACPI OS by I2C_CK,I2C_DAT(B33,B34)
		++: 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	2.22.1293 Copyright (C) 2024	AMI

Options Summary			
Battery Management	Disabled	Optimal Default, Failsafe Default	
	One Battery		
Enable to support battery in ACPI OS by I2C_CK, I2C_DAT (B33, B34)			

### 3.4.7 Power Management

Advanced	Aptio Setup – AMI	
Power Management		Select system power mode.
Power Mode Restore AC Power Loss Soft-Off (S5) Wake On RTC	(ATX Type) [Always Off] [Disabled]	++: Select Screen 14: Select Item Enter: Select
Vassi	2 22 1292 Copyright (C) 2	+/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Versio	on 2.22.1293 Cópyright (C) 20	D24 AMI

Options Summary			
Power Mode	АТХ Туре	Optimal Default, Failsafe Default	
	АТ Туре		
Select system power mode.			
Restore AC Power Loss	Last State		
	Always On		
	Always Off	Optimal Default, Failsafe Default	
SIO Restore AC Power Loss: To decide the behavior after system power cut then			
resupply. Note: The CMOS b	attery must be present.		
Soft-Off (S5) Wake On RTC	Disabled	Optimal Default, Failsafe Default	
	By Date		
	By Weekday		
	Bypass		
By Date: System will wake on the day with hr::min::sec Specified.			
By Weekday: System will wake on the enabled weekday with hr::min::sec Specified.			
Dynamic Time: System will wake on the current time + Increase minute(s)			
Bypass: BIOS will not control RTC wake function.			

# 3.4.8 AAEON BIOS Robot

AAEON BIDS Robot Sends watch dog before BIOS POST POST Timer (second) Sends watch dog before booting OS OS Timer (minute) Delayed POST (PEI phase) Delayed Time (second) Delayed TOST (DXE phase) Delayed time (second) Reset system once	[Disabled] 30 [Disabled] 3 [Disabled] 10 [Disabled] 10 [Disabled]	Enabled - Robot set Watch Dog Timer(WDT) right after power on, before BIOS start POST process. And then Robot will clear WDT on compeletion of POST. WDT will reset system automatically if it is not cleared before its timer counts down to zero.
Soft or hard reset ▶ Device detecting configuration	[Soft reset]	++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Options Summary			
Sends watch dog before	Disabled	Optimal Default, Failsafe Default	
BIOS POST	Enabled		
Enabled - Robot set Watch [	Dog Timer (WDT) right aft	ter power on, before BIOS start	
POST process. And then Rob	ot will clear WDT on com	pletion of POST. WDT will reset	
system automatically if it is n	ot cleared before its time	r counts down to zero.	
Sends watch dog before	Disabled	Optimal Default, Failsafe Default	
booting OS	Enabled		
Enabled - Robot set Watch Dog Timer (WDT) after POST completion before BIOS			
transfer control to OS.			
Warning: Before enabling this function, a program in OS must be in responsible for			
clearing WDT. Also, this function should be disabled if OS is going to update itself.			
Delayed POST (PEI phase)	Disabled	Optimal Default, Failsafe Default	
	Enabled		
Enabled - Robot holds BIOS from starting POST, right after power on. This allows BIOS			
POST to start with stable power or start after system is physically warmed-up.			

Options Summary				
Note: Robot does this before	Note: Robot does this before 'Sends watch dog'.			
Delayed POST	Disabled	Optimal Default, Failsafe Default		
(DXE phase)	Enabled			
Enabled - Robot holds BIOS before POST completion. This allows BIOS POST to start				
with stable power or start after system is physically warmed-up.				
Note: Robot does this after 'Sends watch dog before BIOS POST'.				
Reset system once Disabled Optimal Default, Failsafe Defaul				
Enabled				
Enabled - Robot resets system for one time on each boot. This will send a soft or hand				
reset to onboard devices, thus puts devices to more stable state.				

#### 3.4.8.1 Device Detecting Configuration



Options Summary			
Action	Reset System	Optimal Default, Failsafe Default	
	Hold System		
Select action that robot shou	ıld do.		
Soft or hard reset	Soft	Optimal Default, Failsafe Default	
	Hard		
Select reset type robot should send on each boot.			
Retry - Count	3	Optimal Default, Failsafe Default	
At time	After show logo	Optimal Default, Failsafe Default	
Before show logo			
Select robot action time: After show logo – Robot will do action after logo is			
displayed. System devices are almost ready. Before show logo – Robot will do action			
earlier before logo, but some devices may not be ready.			

### 3.4.8.1.1 Device Detecting Configuration

Advanced	Aptio Setup — AMI	
Device #1 detecting configuration Robot detects device with Interface	[Disabled]	Select interface robot should use to communicate with device
		<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
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Options Summary		
Interface	Disabled	Optimal Default, Failsafe Default
	PCI	
	DIO	
	SMBUS	
	Legacy I/O	
	Super I/O	
	MMIO	
Select interface robot should use to communicate with device		

## 3.5 Setup Submenu: System I/O

Aptio Setup - AMI Main Advanced <mark>System I∕O</mark> Security Boot Save & Exit	
Main Advanced System I/O Security Boot Save & Exit System I/O PCI Express Configuration HD Audio Configuration GPIO Port Configuration Legacy Devices Configuration Serial Port Console Redirection	PCI Express Configuration settings ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
	224.497
Version 2.22.1293 Copyright (C) 20	D24 AMI

## 3.5.1 PCI Express Configuration

System I/O	Aptio Setup – AMI	
PCH PCIe Configuration		Pcie Ref Pll SSC Percentatge.
Pcie Ref Pll SSC		BIOS override. Range is
PCIE 0_1 Select	[×1 ×1]	0.00 0.30
PCI Express 0 PCIe Speed Hot Plug	[Enabled] [Auto] [Disabled]	
PCI Express 1 PCIe Speed Hot Plug	[Enabled] [Auto] [Disabled]	
PCIE 2_3 Select	[x1 x1]	↔: Select Screen ↑↓: Select Item Enter: Select
PCI Express 2	[Enabled]	+/−: Change Opt.
PCIe Speed	[Auto]	F1: General Help
Hot Plug	[Disabled]	F2: Previous Values F3: Optimized Defaults
PCI Express 3	[Enabled]	F4: Save & Exit
PCIe Speed	[Auto]	ESC: Exit
Hot Plug	[Disabled]	

Options Summary			
Pcie Ref Pll SSC	Disabled	Optimal Default, Failsafe Default	
	Auto		
	0.0%		
	0.1%		
	0.2%		
	0.3%		
	0.4%		
	0.5%		
Pcie Ref PII SSC Percentage.			
AUTO – Keep hw default, no BIOS override.			
Range is 0.0% - 0.5%.			
PCIE 0_1 Select	×1 x1	Optimal Default, Failsafe Default	
	×2		
PCIE Controller Setting.			

Options Summary						
PCI Express 0	Disabled					
	Enabled	Optimal Default, Failsafe Default				
Control the PCI Express Root	Control the PCI Express Root Port.					
PCIe Speed	Auto	Optimal Default, Failsafe Default				
	Gen1					
	Gen2					
	Gen3					
Configure PCIe Speed.						
Hot Plug	Disabled	Optimal Default, Failsafe Default				
	Enabled					
PCI Express Hot Plug Enable,	/Disable.					
PCI Express 1	Disabled					
	Enabled	Optimal Default, Failsafe Default				
Control the PCI Express Root	t Port.					
PCIe Speed	Auto	Optimal Default, Failsafe Default				
	Gen1					
	Gen2					
	Gen3					
Configure PCIe Speed.						
Hot Plug	Disabled	Optimal Default, Failsafe Default				
	Enabled					
PCI Express Hot Plug Enable/	/Disable.					
PCIE 2_3 Select	×1 x1	Optimal Default, Failsafe Default				
	×2					
PCIE Controller Setting.						
PCI Express 2	Disabled					
	Enabled	Optimal Default, Failsafe Default				
Control the PCI Express Root	t Port.					
PCIe Speed	Auto	Optimal Default, Failsafe Default				
	Gen1					
	Gen2					
	Gen3					
Configure PCIe Speed.						
Hot Plug	Disabled	Optimal Default, Failsafe Default				
	Enabled					
PCI Express Hot Plug Enable/Disable.						
PCI Express 3	Disabled					
	Enabled	Optimal Default, Failsafe Default				
Control the PCI Express Root	t Port.					

Options Summary				
PCIe Speed	Auto	Optimal Default, Failsafe Default		
	Gen1			
	Gen2			
	Gen3			
Configure PCIe Speed.				
Hot Plug	Disabled	Optimal Default, Failsafe Default		
	Enabled			
PCI Express Hot Plug Enable/Disable.				

## 3.5.2 Storage Configuration

<ul> <li>NVMe Configuration</li> <li>MVMe Configuration</li> <li>eMMC 5.1 Controller</li> <li>SATA Controller(S)</li> <li>Serial ATA Port 0</li> <li>Software Preserve</li> <li>SUPPORTED</li> <li>Port 0</li> <li>Hot Plug</li> <li>Configured as eSATA</li> <li>Hot Plug</li> <li>Software Preserve</li> <li>Serial ATA Port 1</li> <li>Software Preserve</li> <li>Software Preserve</li> <li>Unknown</li> <li>Port 1</li> <li>Hot Plug</li> <li>Configured as eSATA</li> <li>Hot Plug</li> <li>Configured as eSATA</li> <li>Hot Plug</li> <li>Software Preserve</li> <li>Unknown</li> <li>Select Item</li> <li>Enabled]</li> <li>Hot Plug</li> <li>Configured as eSATA</li> <li>Hot Plug supported</li> <li>SATA Device Type</li> <li>SATA Device</li></ul>	System I/	Aptio Setup – AMI ⁄O	
	NVMe Configuration eMMC 5.1 Controller SATA Controller(S) SATA Speed Serial ATA Port 0 Software Preserve Port 0 Hot Plug Configured as eSATA SATA Device Type Serial ATA Port 1 Software Preserve Port 1 Hot Plug Configured as eSATA SATA Device Type	[Enabled] [Auto] TOPMORE TP100 (240.0GB) SUPPORTED [Enabled] [Disabled] Hot Plug supported [Hard Disk Drive] Empty Unknown [Enabled] [Disabled] Hot Plug supported [Hard Disk Drive]	<pre>NVMe Device Options Settings ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>

Options Summary				
eMMC 5.1 Controller	Disabled			
	Enabled	Optimal Default, Failsafe Default		
Enable or Disable SCS eMM	C 5.1 Controller			
SATA Controller (s)	Enabled	Optimal Default, Failsafe Default		
	Disabled			
Enable/Disable SATA Device.				
SATA Speed	Auto	Optimal Default, Failsafe Default		
	Gen1			
	Gen2			
	Gen3			
Configure for the max speed support Gen1:1.5Gb/s,				
Gen2:3.0Gb/s and Gen3:6.0Gb/s.				
Port 0	Disabled			
	Enabled	Optimal Default, Failsafe Default		
Enable or Disable SATA Port.				

Options Summary			
Hot Plug	Disabled	Optimal Default, Failsafe Default	
	Enabled		
Designates this port as Hot I	Pluggable.		
SATA Device Type	Hard Disk Drive	Optimal Default, Failsafe Default	
	Solid State Drive		
Identify the SATA port is conr	nected to Solid State Driv	ve or Hard Disk Drive.	
Port 1	Disabled		
	Enabled	Optimal Default, Failsafe Default	
Enable or Disable SATA Port.			
Hot Plug	Disabled	Optimal Default, Failsafe Default	
	Enabled		
Designates this port as Hot Pluggable.			
SATA Device Type	Hard Disk Drive	Optimal Default, Failsafe Default	
	Solid State Drive		
Identify the SATA port is connected to Solid State Drive or Hard Disk Drive.			

# 3.5.2.1 NVMe Configuration

Aptio Setup - AMI System I/O	
NVMe Configuration	
No NVME Device Found	
	<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
Version 2.22.1293 Copyright (C) 2024	AMI

## 3.5.3 HD Audio Configuration

System I/	Aptio Setup – AMI O	
HD Audio	[Enabled]	Control Detection of the HD-Audio device. Disabled = HDA will be unconditionally disabled Enabled = HDA will be unconditionally enabled.
		<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
	Version 2.22.1293 Copyright (C)	) 2024 AMI

Options Summary		
HD Audio	Disabled	
	Enabled	Optimal Default, Failsafe Default
Control Detection of the HD-Audio device.		
Disabled = HDA will be unconditionally disabled.		
Enabled = HDA will be unconditionally enabled.		

### 3.5.4 GPIO Port Configuration



Options Summary			
GPI 0 ~ 3	Input	Optimal Default, Failsafe Default	
	Output		
Set DIO as Input or Output.			
GPO 0 ~ 3	Input		
	Output	Optimal Default, Failsafe Default	
Set DIO as Input or Output.			
Output Level Low			
	High	Optimal Default, Failsafe Default	
Set output level when DIO pin is output.			

## 3.5.5 Legacy Devices Configuration

Aptio Setup – AMI System I/O	
AMI SIO Driver Version : A5.19.00 Super IO Chip Logical Device(s) Configuration ▷ [*Active*] Serial Port 1 ▷ [*Active*] Serial Port 2 WARNING: Logical Devices state on the left side of the	View and Set Basic properties of the SIO Logical device. Like IO Base, IRQ Range, DMA Channel and Device Mode.
control, reflects the current Logical Device state. Changes made during Setup Session will be shown after you restart the system.	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt, F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
Version 2.22.1293 Copyright (C) 2024	AMI

### 3.5.5.1 Serial Port 1 Configuration

System I/O	Aptio Setup – AMI	
Serial Port 1 Configuration		Enable or Disable this Logical
Use This Device		DEVICE.
Logical Device Settings: Current : IO=3F8h; IRQ=4;		
Possible:	[Use Automatic Settings]	
WARNING: Disabling SIO Logical Devic side effects. PROCEED WITH CAUTION.	es may have unwanted	++: 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	22 1293 Conuright (C) 2024	AMT

Options Summary			
Use This Device	Disabled		
	Enabled	Optimal Default, Failsafe Default	
Enable or Disable this Logical Device.			
Possible	Use Automatic Settings	Optimal Default, Failsafe Default	
	IO=3F8h; IRQ=4; DMA;		
	IO=2C8h; IRQ=11; DMA;		
Allows the user to change the device resource settings. New settings will be reflected			
on this setup page after system restarts.			

### 3.5.5.2 Serial Port 2 Configuration

System I/O	Aptio Setup – AMI	
Serial Port 2 Configuration		Enable or Disable this Logical
Use This Device		
Logical Device Settings: Current : IO=2F8h; IRQ=3;		
Possible:	[Use Automatic Settings]	
WARNING: Disabling SIO Logical Devic side effects. PROCEED WITH CAUTION.	es may have unwanted	++: 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	.22.1293 Converight (C) 2024	AMT

Options Summary			
Use This Device	Disabled		
	Enabled	Optimal Default, Failsafe Default	
Enable or Disable this Logical Device.			
Possible	Use Automatic Settings	Optimal Default, Failsafe Default	
	IO=2F8h; IRQ=3 DMA;		
	IO=2D8h; IRQ=10; DMA;		
Allows the user to change the device resource settings. New settings will be reflected			
on this setup page after system restarts.			

## 3.5.6 Serial Port Console Redirection

System I/O	Aptio Setup – AMI	
COM1 Console Redirection ▶ Console Redirection Settings	[Disabled]	Console Redirection Enable or Disable.
COM2 Console Redirection Console Redirection Settings Legacy Console Redirection Legacy Console Redirection Settings	[Disabled]	
Serial Port for Out-of-Band Managemen Windows Emergency Management Services Console Redirection EMS ▶ Console Redirection Settings	nt/ s (EMS) [Disabled]	++: Select Screen 1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2	.22.1293 Copyright (C) 2024	AMI

Options Summary			
Console Redirection	Disabled	Optimal Default, Failsafe Default	
	Enabled		
Console Redirection Enable or Disable.			
Console Redirection	Disabled	Optimal Default, Failsafe Default	
EMS	Enabled		
Console Redirection Enable or Disable.			

## 3.5.6.1 Legacy Console Redirection Settings

System I/O	Aptio Setup – AMI	
Legacy Console Redirection Settings		Select a COM port to display
Redirection COM Port Resolution Redirect After POST	[COM1] [80x24] [Always Enable]	++: Select Screen
		<pre>11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
Version 2	.22.1293 Copyright (C) 2024	AMI

Options Summary			
Redirection COM Port	COM1	Optimal Default, Failsafe Default	
	COM2		
Select a COM port to display	redirection of Legacy OS	5 and Legacy OPROM Messages	
Resolution	80x24	Optimal Default, Failsafe Default	
	80x25		
On Legacy OS, the Number of Rows and Columns supported redirection			
Redirect After POST	Always Enable	Optimal Default, Failsafe 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 Setup Submenu: Security

Aptio Setup – AMI Main Advanced System I/O <mark>Security</mark> Boot Save & Exit			
Password Description If ONLY the Administrator's password then this only limits access to Setu	is set, p and is	Set Administrator Password	
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.	then this ntered to er will		
in the following range: Minimum length Maximum length	3 20	++: Select Screen	
Administrator Password User Password ▶ Trusted Computing ▶ Secure Boot		I+: SELECT ITEM Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values	
BIOS Lock	[Disabled]	F3: Optimized Defaults F4: Save & Exit ESC: Exit	
Version 2	.22.1293 Copyright (C) 2024	AMI	

#### Change User/Administrator Password

You can set an Administrator password. If you set an Administrator password, you can then set a User password. User passwords do not have access to many of the features in the Setup utility.

Select the password you want to set and press <Enter>. A dialog box will appear which lets you set the password. Passwords must be between 3 and 20 letters or numbers. Press <Enter> and re-enter the password into the next dialog box that appears. Press <Enter> after you have retyped it correctly. The password is required at boot time, or when the user enters the Setup utility.

#### Removing the Password

Highlight this item and type in the current password. At the next dialog box press <Enter> to disable password protection.

# 3.6.1 Trusted Computing

Aptio Setup - AMI Security			
TPM 2.0 Device Found Firmware Version: Vendor: Security Device Support Active PCR banks Available PCR banks	7.2 NTC [Enable] SHA256 SHA256,SHA384	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.	
SHA256 PCR Bank SHA384 PCR Bank Pending operation Platform Hierarchy Storage Hierarchy Endorsement Hierarchy Physical Presence Spec Version TPM 2.0 InterfaceType Device Select	[Enabled] [Disabled] [Enabled] [Enabled] [Enabled] [1.3] [TIS] [TPM 2.0]	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>	

Options Summary			
Security Device	Disable		
Support	Enable	Optimal Default, Failsafe Default	
Enables or Disables BIOS sup	oport for security device. (	D.S. will not show Security Device.	
TGU EFI protocol and INT1A	interface will not be avai	lable.	
SHA 256 PCR Bank	Disabled		
	Enabled	Optimal Default, Failsafe Default	
Enable or Disable SHA256 PCR Bank.			
SHA 384 PCR Bank	Disabled	Optimal Default, Failsafe Default	
	Enabled		
Enable or Disable SHA384 PCR Bank.			
Pending operation	None	Optimal Default, Failsafe Default	
	TPM Clear		
Schedule an Operation for the Security Device. Note: Your Computer will reboot during			
restart in order to change St	ate of Security Device.		
Options Summary			
---	------------	-----------------------------------	--
Platform Hierarchy	Disabled		
	Enabled	Optimal Default, Failsafe Default	
Enable or Disable Platform H	lierarchy.		
Storage Hierarchy	Disabled		
	Enabled	Optimal Default, Failsafe Default	
Enable or Disable Storage H	ierarchy.		
Endorsement	Disabled		
Hierarchy	Enabled	Optimal Default, Failsafe Default	
Enable or Disable Endorsement Hierarchy.			
Physical Presence Spec	1.2		
Version	1.3	Optimal Default, Failsafe Default	
Select to Tell O.S. to support PPI Spec Version 1.2 or 1.3. Note some HCK tests might not			
support 1.3.			
Device Select	TPM 1.2		
	TPM 2.0	Optimal Default, Failsafe Default	
	Auto		
TPM 1.2 will restrict support to TPM 1.2 devices.			
TPM 2.0 will restrict support to TPM 2.0. devices.			
Auto will support both with the default set to TPM 2.0 devices if not found.			
TPM 1.2 devices will be enumerated.			

#### 3.6.2 Secure Boot



Options Summary			
Secure Boot	Disabled	Optimal Default, Failsafe Default	
	Enabled		
Secure Boot feature is Active	if Secure Boot is Enabled	1	
Platform Key (PK) is enrolled and the System is in User mode.			
The mode change requires platform reset.			
Secure Boot Mode	Standard		
	Custom	Optimal Default, Failsafe Default	
Secure Boot mode options: Standard or Custom.			
In Custom mode, Secure Boot Policy variables can be configured by a physically			
present user without full authentication.			

#### 3.6.2.1 Key Management



Options Summary		
Factory Key Provision	Disabled	Optimal Default, Failsafe Default
	Enabled	
Install factory default Secure Boot keys after the platform reset and while the System is		
lin Setup mode.		

# 3.7 Setup Submenu: Boot

Main Advanced System I/O Security	Aptio Setup - AMI J Boot Save & Exit	
Boot Configuration		Enables or disables Quiet Boot
Quiet Boot PXE Boot	[Enabled] [Disabled]	
Boot Option Priorities Boot Option #1 Boot Option #2 Boot Option #3	[Hard Disk:ubuntu] [NVME] [CD/DVD]	
Boot Uption #4 Boot Option #5	[USB Device] [Network]	
▶ UEFI Hand Disk Drive BBS Priorities		++: 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.	.22.1293 Copyright (C) 2024	AMI

Options Summary			
Quiet Boot	Disabled		
	Enabled	Optimal Default, Failsafe Default	
Enables or disables Quiet Boot option.			
PXE Boot	Disabled	Optimal Default, Failsafe Default	
UEFI			
Controls the execution of UEFI and Legacy Network OpROM			

## 3.8 Setup Submenu: Save & Exit

Aptio Setup – AMI Main Advanced System I/O Security Boot <mark>Save &amp; Exit</mark>	
Save Options Save Changes and Reset Discard Changes and Exit Default Options	Reset the system after saving the changes.
Restore Defaults	
	<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults</pre>
Vancion 2, 22, 1292, Convicted (C), 2024	F4: Save & Exit ESC: Exit

# Chapter 4

Drivers Installation

#### 4.1 Driver Download and Installation

Drivers for the NanoCOM-ADN can be downloaded from the product page on the AAEON website by following this link:

https://www.aaeon.com/en/p/com-express-cpu-modules-nanocom-adn

Download the driver(s) you need and follow the steps below to install them.

#### Chipset Driver

- 1. Open the folder where you unzipped the Chipset Drivers
- 2. Run the SetupChipset.exe file in the folder
- 3. Follow the instructions
- 4. Drivers will be installed automatically

#### Graphics Driver

- 1. Open the folder where you unzipped the Graphics Drivers
- 2. Run the Installer.exe file in the folder
- 3. Follow the instructions
- 4. Drivers will be installed automatically

#### LAN Drivers

- 1. Open the folder where you unzipped the LAN Drivers
- 2. Follow the instructions contained in the Setup Information file to manually install drivers.

#### Install Audio Drivers

Note: Ensure Intel Smart Sound Driver (Intel\_SST\_ADL\_v10.29.00.8467) is installed before the Realtek Audio driver (Realtek Audio 6.0.9034.2)

#### Install Intel Smart Sound Driver

- 1. Open the Audio folder
- 2. Open the Intel(R)\_SST\_ADL\_v10.29.00.8467 subfolder
- 3. Follow the setup information within the file to manually install driver. Install Realtek Audio Driver
- 1. Open the Audio folder
- 2. Open the Realtek Audio 6.0.9034.2 folder
- 3. Run the Setup.exe file in the folder
- 4. Follow the instructions
- 5. Driver will be installed automatically

#### Install Serial IO Driver

- 1. Open the Peripheral Driver folder
- 2. Run the SetupSerialIO.exe file in the folder
- 3. Follow the instructions
- 4. Drivers will be installed automatically

#### Install ME & TXE Driver

- 1. Open the ME & TXE folder
- 2. Run the SetupME.exe file in the folder
- 3. Follow the instructions
- 4. Drivers will be installed automatically

# Appendix A

I/O Information

# DESKTOP-56GRU4I Input/output (IO)

Inp	out/output (IO)		
	[000000000000000 - 0	00000000000CF7]	PCI Express Root Complex
	[00000000000000000000000000000000000000	000000000000021]	Programmable interrupt controller
	[00000000000024 - 0	00000000000025]	Programmable interrupt controller
	[00000000000028 - 0	000000000000029]	Programmable interrupt controller
	[0000000000002C - 0	00000000000002D]	Programmable interrupt controller
	[0000000000002E - 0	00000000000002F]	Motherboard resources
	[00000000000030 - 0	00000000000031]	Programmable interrupt controller
	[0000000000034 - 0	00000000000035]	Programmable interrupt controller
	[0000000000038 - 0	00000000000039]	Programmable interrupt controller
	[000000000003C - 0	00000000000003D]	Programmable interrupt controller
	[00000000000040 - 0	00000000000043]	System timer
	[0000000000004E - 0	00000000000004F]	Motherboard resources
	[000000000000050 - 0	00000000000053]	System timer
	[000000000000061 - 0	000000000000061]	Motherboard resources
	[00000000000063 - 0	000000000000063]	Motherboard resources
	[00000000000065 - 0	00000000000065]	Motherboard resources
	[00000000000067 - 0	000000000000067]	Motherboard resources
	[00000000000068 - 0	00000000000068]	Microsoft ACPI-Compliant Embedded Controller
	[0000000000006C - 0	00000000000006C]	Microsoft ACPI-Compliant Embedded Controller
	[000000000000070 - 0	0000000000000070]	Motherboard resources
	[000000000000080 - 0	[0800000000000000	Motherboard resources
	[00000000000092 - 0	000000000000092]	Motherboard resources
	[0000000000000 - 0	00000000000000A1]	Programmable interrupt controller
	[00000000000A4 - 0	0000000000000A5]	Programmable interrupt controller
	[000000000000A8 - 0	0000000000000A9]	Programmable interrupt controller
	[00000000000AC - (	000000000000AD	Programmable interrupt controller
	[000000000000B0 - 0	0000000000000B1]	Programmable interrupt controller
	[00000000000B2 - 0	000000000000B3]	Motherboard resources
	[00000000000B4 - 0	0000000000000B5]	Programmable interrupt controller
	[00000000000B8 - 0	0000000000000B9]	Programmable interrupt controller
	[00000000000BC - (	0000000000000BD]	Programmable interrupt controller
Ŵ	[000000000002F8 - 0	0000000000002FF]	Communications Port (COM2)
Ŵ	[00000000003F8 - 0	000000000003FF]	Communications Port (COM1)
	[000000000004D0 - 0	00000000000004D1]	Programmable interrupt controller
	[00000000000680 - 0	00000000000069F]	Motherboard resources
	[00000000000D00 - 0	00000000000FFFF]	PCI Express Root Complex
	[00000000000164E - 0	00000000000164F]	Motherboard resources
	[00000000001854 - 0	00000000001857]	Motherboard resources
	[00000000002000 - 0	0000000000020FE]	Motherboard resources
181	[00000000003000 - 0	00000000000303F]	Intel(R) UHD Graphics
	[00000000003060 - 0	00000000000307F]	Standard SATA AHCI Controller
	[00000000003080 - 0	00000000003083]	Standard SATA AHCI Controller
	[00000000003090 - 0	00000000003097]	Standard SATA AHCI Controller
	[0000000000EFA0 - 0	00000000000EFBF]	SMBus - 54A3

# A.2 Memory Address Map

~	$\square$	Memory
~	$\square$	Memory

🏣 [0000000000000000 - 0000000000BFFFF] PCI Express Root Complex
🚽 [000000080400000 - 0000000804FFFFF] Intel(R) Ethernet Controller I226-IT
🏣 [000000080400000 - 0000000805FFFFF] PCI Express Root Port #7 - 54BE
🏣 [000000080400000 - 00000000BFFFFFF] PCI Express Root Complex
🚽 [000000080500000 - 000000080503FFF] Intel(R) Ethernet Controller I226-IT
📷 [000000080600000 - 000000080601FFF] Standard SATA AHCI Controller
📷 [000000080602000 - 0000000806027FF] Standard SATA AHCI Controller
📷 [000000080603000 - 0000000806030FF] Standard SATA AHCI Controller
to 00000000000000 - 00000000CFFFFFF] Motherboard resources
🏣 [0000000FD690000 - 0000000FD69FFFF] Intel(R) Serial IO GPIO Host Controller - INTC1057
🏣 [0000000FD6A0000 - 0000000FD6AFFFF] Intel(R) Serial IO GPIO Host Controller - INTC1057
🏣 [0000000FD6D0000 - 0000000FD6DFFFF] Intel(R) Serial IO GPIO Host Controller - INTC1057
🏣 [0000000FD6E0000 - 0000000FD6EFFFF] Intel(R) Serial IO GPIO Host Controller - INTC1057
🏣 [0000000FE010000 - 00000000FE010FFF] SPI (flash) Controller - 54A4
🏣 [00000000FED00000 - 00000000FED003FF] High precision event timer
time [00000000FED20000 - 00000000FED7FFF] Motherboard resources
[00000000FED40000 - 00000000FED44FFF] Trusted Platform Module 2.0
[00000000FED45000 - 00000000FED8FFF] Motherboard resources
🏣 [00000000FED90000 - 00000000FED93FFF] Motherboard resources
🏣 [00000000FEDA0000 - 00000000FEDA0FFF] Motherboard resources
🏣 [00000000FEDA1000 - 00000000FEDA1FFF] Motherboard resources
time [00000000FEDC0000 - 00000000FEDC7FFF] Motherboard resources
🏣 [00000000FEE00000 - 00000000FEEFFFF] Motherboard resources
🏣 [000000400000000 - 000000400FFFFFF] Intel(R) UHD Graphics
[000000600000000 - 0000006000FFFFF] Intel(R) UHD Graphics
[0000006001100000 - 000000600110FFFF] Intel(R) USB 3.10 eXtensible Host Controller - 1.20 (Microsoft)
to 0000006001110000 - 0000006001117FFF] Performance Monitor
Tee [0000006001128000 - 00000060011280FF] SMBus - 54A3
[000000600112B000 - 000000600112BFFF] Intel SD Host Controller
🏣 [0000007FFFEF8000 - 0000007FFFEF8FFF] Intel(R) Serial IO UART Host Controller - 54A8
🏣 [0000007FFFEF9000 - 0000007FFFEF9FFF] Intel(R) Management Engine Interface #1
🏣 [0000007FFFEFA000 - 0000007FFFEFAFFF] Intel(R) Serial IO I2C Host Controller - 54E8
🏣 [0000007FFFEFB000 - 0000007FFFEFBFFF] Intel(R) Serial IO SPI Host Controller - 54AB
🏣 [0000007FFFEFC000 - 0000007FFFEFFFF] High Definition Audio Controller
🏣 [0000007FFFF00000 - 0000007FFFFFFFF] High Definition Audio Controller

### A.3 Large Memory Address Map

✓ ▲ Large Memory

to [000000400000000 - 0000007FFFFFFFF] PCI Express Root Complex

# A.4 IRQ Mapping Chart

Interrupt request (IRO)

mu	enupriequest (incg)	
	(ISA) 0x00000000 (00)	System timer
P	(ISA) 0x0000003 (03)	Communications Port (COM2)
<b>P</b>	(ISA) 0x00000004 (04)	Communications Port (COM1)
	(ISA) 0x000000E (14)	Intel(R) Serial IO GPIO Host Controller - INTC1057
	(ISA) 0x00000037 (55)	Microsoft ACPI-Compliant System
	(ISA) 0x0000038 (56)	Microsoft ACPI-Compliant System
	(ISA) 0x0000039 (57)	Microsoft ACPI-Compliant System
	(ISA) 0x000003A (58)	Microsoft ACPI-Compliant System
	(ISA) 0x000003B (59)	Microsoft ACPI-Compliant System
	(ISA) 0x000003C (60)	Microsoft ACPI-Compliant System
	(ISA) 0x000003D (61)	Microsoft ACPI-Compliant System
	(ISA) 0x000003E (62)	Microsoft ACPI-Compliant System
	(ISA) 0x000003F (63)	Microsoft ACPI-Compliant System
	(ISA) 0x00000040 (64)	Microsoft ACPI-Compliant System
	(ISA) 0x00000041 (65)	Microsoft ACPI-Compliant System
	(ISA) 0x00000042 (66)	Microsoft ACPI-Compliant System
	(ISA) 0x00000043 (67)	Microsoft ACPI-Compliant System
	(ISA) 0x00000044 (68)	Microsoft ACPI-Compliant System
	(ISA) 0x00000045 (69)	Microsoft ACPI-Compliant System
	(ISA) 0x00000046 (70)	Microsoft ACPI-Compliant System
	(ISA) 0x00000047 (71)	Microsoft ACPI-Compliant System
	(ISA) 0x00000048 (72)	Microsoft ACPI-Compliant System
	(ISA) 0x00000049 (73)	Microsoft ACPI-Compliant System
	(ISA) 0x0000004A (74)	Microsoft ACPI-Compliant System
	(ISA) 0x0000004B (75)	Microsoft ACPI-Compliant System
	(ISA) 0x0000004C (76)	Microsoft ACPI-Compliant System
	(ISA) 0x0000004D (77)	Microsoft ACPI-Compliant System
	(ISA) 0x000004E (78)	Microsoft ACPI-Compliant System
	(ISA) 0x0000004F (79)	Microsoft ACPI-Compliant System
	(ISA) 0x00000050 (80)	Microsoft ACPI-Compliant System
	(ISA) 0x00000051 (81)	Microsoft ACPI-Compliant System
	(ISA) 0x00000052 (82)	Microsoft ACPI-Compliant System
	(ISA) 0x00000053 (83)	Microsoft ACPI-Compliant System
	(ISA) 0x00000054 (84)	Microsoft ACPI-Compliant System
	(ISA) 0x00000055 (85)	Microsoft ACPI-Compliant System
	(ISA) 0x00000056 (86)	Microsoft ACPI-Compliant System
	(ISA) 0x00000057 (87)	Microsoft ACPI-Compliant System
	(ISA) 0x00000058 (88)	Microsoft ACPI-Compliant System
	(ISA) 0x00000059 (89)	Microsoft ACPI-Compliant System
	(ISA) 0x0000005A (90)	Microsoft ACPI-Compliant System
	(ISA) 0x0000005B (91)	Microsoft ACPI-Compliant System
	(ISA) 0x0000005C (92)	Microsoft ACPI-Compliant System
	(ISA) 0x0000005D (93)	Microsoft ACPI-Compliant System
	(ISA) 0x0000005E (94)	Microsoft ACPI-Compliant System
Ē	(ISA) 0x0000005F (95)	Microsoft ACPI-Compliant System
Ē	(ISA) 0x00000060 (96)	Microsoft ACPI-Compliant System
6	(ISA) 0x00000061 (97)	Microsoft ACPI-Compliant System
6	(ISA) 0x00000062 (98)	Microsoft ACPI-Compliant System
6	(ISA) 0x00000063 (99)	Microsoft ACPI-Compliant System
6	(ISA) 0x00000064 (100)	Microsoft ACPI-Compliant System
-		

<b>1</b>	(ISA) 0x00000068 (104)	Microso
<b>1</b>	(ISA) 0x00000069 (105)	Microso
L	(ISA) 0x000006A (106)	Micros
L	(ISA) 0x000006B (107)	Micros
t,	(ISA) 0x0000006C (108)	Micros
<b>i</b>	(ISA) 0x000006D (109)	Micros
<b>i</b>	(ISA) 0x0000006E (110)	Microso
L	(ISA) 0x0000006F (111)	Microso
t,	(ISA) 0x00000070 (112)	Microso
<b>i</b>	(ISA) 0x00000071 (113)	Microso
<b>i</b>	(ISA) 0x00000072 (114)	Microso
<b>i</b>	(ISA) 0x00000073 (115)	Microso
<b>1</b>	(ISA) 0x00000074 (116)	Microso
<b>1</b>	(ISA) 0x00000075 (117)	Microso
<b>1</b>	(ISA) 0x00000076 (118)	Microso
<b>i</b>	(ISA) 0x00000077 (119)	Microso
<b>i</b>	(ISA) 0x00000078 (120)	Microso
i i	(ISA) 0x00000079 (121)	Microso
<b>i</b>	(ISA) 0x0000007A (122)	Micros
L	(ISA) 0x0000007B (123)	Micros
- E	(ISA) 0x0000007C (124)	Micros
<b>1</b>	(ISA) 0x0000007D (125)	Micros
<b>1</b>	(ISA) 0x0000007E (126)	Microso
L	(ISA) 0x0000007F (127)	Microso
- E	(ISA) 0x0000080 (128)	Microso
i i	(ISA) 0x00000081 (129)	Microso
<b>i</b>	(ISA) 0x0000082 (130)	Microso
L	(ISA) 0x0000083 (131)	Microso
<b>1</b>	(ISA) 0x0000084 (132)	Microso
<b>1</b>	(ISA) 0x0000085 (133)	Microso
<b>i</b>	(ISA) 0x0000086 (134)	Microso
	(ISA) 0x0000087 (135)	Microso
- E	(ISA) 0x0000088 (136)	Microso
<b>1</b>	(ISA) 0x0000089 (137)	Microso
<b>1</b>	(ISA) 0x000008A (138)	Micros
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Ĩ.	(ISA) 0x000008C (140)	Micros
<b>1</b>	(ISA) 0x000008D (141)	Micros
<b>1</b>	(ISA) 0x000008E (142)	Microso
	(ISA) 0x000008F (143)	Microso
<b>1</b>	(ISA) 0x00000090 (144)	Microso
<b>1</b>	(ISA) 0x00000091 (145)	Microso
<b>1</b>	(ISA) 0x00000092 (146)	Microso
<b>i</b>	(ISA) 0x00000093 (147)	Microso

(ISA) 0x00000065 (101)	Microsoft ACPI-Compliant System
(ISA) 0x00000066 (102)	Microsoft ACPI-Compliant System
(ISA) 0x00000067 (103)	Microsoft ACPI-Compliant System
(ISA) 0x00000068 (104)	Microsoft ACPI-Compliant System
(ISA) 0x00000069 (105)	Microsoft ACPI-Compliant System
(ISA) 0x0000006A (106)	Microsoft ACPI-Compliant System
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(ISA) 0x0000006E (110)	Microsoft ACPI-Compliant System
(ISA) 0x0000006F (111)	Microsoft ACPI-Compliant System
(ISA) 0x00000070 (112)	Microsoft ACPI-Compliant System
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Ē	(ISA) 0x0000009E (158)	Microsoft ACPI-Compliant System
6	(ISA) 0x0000009F (159)	Microsoft ACPI-Compliant System
Ē	(ISA) 0x000000A0 (160)	Microsoft ACPI-Compliant System
Ē	(ISA) 0x000000A1 (161)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A2 (162)	Microsoft ACPI-Compliant System
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Ē	(ISA) 0x000000A8 (168)	Microsoft ACPI-Compliant System
Ē	(ISA) 0x000000A9 (169)	Microsoft ACPI-Compliant System
Ē	(ISA) 0x000000AA (170)	Microsoft ACPI-Compliant System
5	(ISA) 0x000000AB (171)	Microsoft ACPI-Compliant System
6	(ISA) 0x000000AC (172)	Microsoft ACPI-Compliant System
Ē	(ISA) 0x000000AD (173)	Microsoft ACPI-Compliant System
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	(ISA) 0x000000CA (202)	Microsoft ACPI-Compliant System

	(ISA) 0x000000CB (203)	Microsoft ACPI-Compliant System
	(ISA) 0x000000CC (204)	Microsoft ACPI-Compliant System
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Ē	(ISA) 0x0000011C (284)	Microsoft ACPI-Compliant System
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Ē	(ISA) 0x00000120 (288)	Microsoft ACPI-Compliant System
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Ē	(ISA) 0x00000124 (292)	Microsoft ACPI-Compliant System
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to (ISA) 0x0000014A (330)	Microsoft ACPI-Compliant System
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Ta (ISA) 0x0000014D (333)	Microsoft ACPI-Compliant System
Tage (ISA) 0x0000014E (334)	Microsoft ACPI-Compliant System
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The (ISA) 0x00000150 (336)	Microsoft ACPI-Compliant System
La (ISA) 0x00000151 (337)	Microsoft ACPI-Compliant System
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tial (ISA) 0x0000015F (351)	Microsoft ACPI-Compliant System
tin (ISA) 0x00000160 (352)	Microsoft ACPI-Compliant System
🏣 (ISA) 0x00000161 (353)	Microsoft ACPI-Compliant System
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	(ISA) 0x0000016D (365)	Microsoft ACPI-Compliant System
	(ISA) 0x0000016E (366)	Microsoft ACPI-Compliant System
	(ISA) 0x0000016F (367)	Microsoft ACPI-Compliant System
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	(ISA) 0x00000171 (369)	Microsoft ACPI-Compliant System
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Ē.	(ISA) 0x0000017A (378)	Microsoft ACPI-Compliant System
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2	(ISA) 0x0000017D (381)	Microsoft ACPI-Compliant System
2	(ISA) 0x0000017E (382)	Microsoft ACPI-Compliant System
2	(ISA) 0x0000017E (383)	Microsoft ACPI-Compliant System
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	(ISA) 0x00000181 (383)	Microsoft ACPI-Compliant System
	(ISA) 0x00000182 (380)	Microsoft ACPI-Compliant System
	(ISA) 0x00000103 (307)	Microsoft ACPI Compliant System
	(ISA) 0x00000104 (S66)	Microsoft ACPI-Compliant System
	(ISA) 0x00000105 (309)	Microsoft ACPI-Compliant System
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	(ISA) 0x00000107 (S91)	Microsoft ACPI-Compliant System
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<b>1</b>	(ICA) 0-0000010D (20E)	Microsoft ACPI-Compliant System
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	(ISA) 0x00000197 (407)	Microsoft ACPI-Compliant System
	(ISA) 0x00000198 (408)	Microsoft ACPI-Compliant System
	(ISA) 0x00000199 (409)	Microsoft ACPI-Compliant System
	(ISA) 0x0000019A (410)	Microsoft ACPI-Compliant System
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6	(ISA) 0x0000019E (414)	Microsoft ACPI-Compliant System
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	(ISA) 0x000001A0 (416)	Microsoft ACPI-Compliant System
	(ISA) 0x000001A1 (417)	Microsoft ACPI-Compliant System
	(ISA) 0x000001A2 (418)	Microsoft ACPI-Compliant System
	(ISA) 0x000001A3 (419)	Microsoft ACPI-Compliant System
	(ISA) 0x000001A4 (420)	Microsoft ACPI-Compliant System
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	(ISA) 0x000001A6 (422)	Microsoft ACPI-Compliant System
6	(ISA) 0x000001A7 (423)	Microsoft ACPI-Compliant System
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	(ISA) 0x000001B0 (432)	Microsoft ACPI-Compliant System
	(ISA) 0x000001B1 (433)	Microsoft ACPI-Compliant System
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	(ISA) 0x000001C0 (448)	Microsoft ACPI-Compliant System
	(ISA) 0x000001C1 (449)	Microsoft ACPI-Compliant System
	(ISA) 0x000001C2 (450)	Microsoft ACPI-Compliant System
	(ISA) 0x00001C3 (451)	Microsoft ACPI-Compliant System
	(ISA) 0x000001C4 (452)	Microsoft ACPI-Compliant System
	(ISA) 0x000001C5 (453)	Microsoft ACPI-Compliant System
	(ISA) 0x000001C6 (454)	Microsoft ACPI-Compliant System
	(ISA) 0x000001C7 (455)	Microsoft ACPI-Compliant System
-	(ISA) 0x000001C8 (456)	Microsoft ACPI-Compliant System
	(ISA) 0x000001C9 (457)	Microsoft ACPI-Compliant System

tai (ISA) 0x000001CA (45	B) Microsoft ACPI-
to (ISA) 0x000001CB (459	) Microsoft ACPI-
text (ISA) 0x000001CC (460	) Microsoft ACPI-
to (ISA) 0x000001CD (46	1) Microsoft ACPI-
te (ISA) 0x000001CE (462	) Microsoft ACPI-
to (ISA) 0x000001CF (463	) Microsoft ACPI-
🏣 (ISA) 0x000001D0 (464	) Microsoft ACPI-
🏣 (ISA) 0x000001D1 (465	) Microsoft ACPI-
🏣 (ISA) 0x000001D2 (466	) Microsoft ACPI-
🏣 (ISA) 0x000001D3 (467	) Microsoft ACPI-
🏣 (ISA) 0x000001D4 (468	) Microsoft ACPI-
🏣 (ISA) 0x000001D5 (469	) Microsoft ACPI-
🏣 (ISA) 0x000001D6 (470	) Microsoft ACPI-
🏣 (ISA) 0x000001D7 (471	) Microsoft ACPI-
tox (ISA) 0x000001D8 (472	) Microsoft ACPI-
tox (ISA) 0x000001D9 (473 🚛	) Microsoft ACPI-
🏣 (ISA) 0x000001DA (474	<ol> <li>Microsoft ACPI-</li> </ol>
🏣 (ISA) 0x000001DB (475	<ol> <li>Microsoft ACPI-</li> </ol>
to (ISA) 0x000001DC (47	<ol><li>Microsoft ACPI-</li></ol>
🏣 (ISA) 0x000001DD (47)	7) Microsoft ACPI-
to (ISA) 0x000001DE (478 🚛	<ol> <li>Microsoft ACPI-</li> </ol>
to (ISA) 0x000001DF (479 (479	) Microsoft ACPI-
🏣 (ISA) 0x000001E0 (480	) Microsoft ACPI-0
tal (ISA) 0x000001E1 (481)	) Microsoft ACPI-0
ta (ISA) 0x000001E2 (482	) Microsoft ACPI-0
ta (ISA) 0x000001E3 (483	) Microsoft ACPI-0
ta (ISA) 0x000001E4 (484	) Microsoft ACPI-0
ta (ISA) 0x000001E5 (485	) Microsoft ACPI-0
E (ISA) 0x000001E6 (486	) Microsoft ACPI-0
E (ISA) 0x000001E7 (487	) Microsoft ACPI-0
[ISA] 0x000001E8 (488)	) Microsoft ACPI-0
E (ISA) 0x000001E9 (489	) Microsoft ACPI-0
(ISA) 0x000001EA (490	) Microsoft ACPI-
E (ISA) 0x000001EB (491	) Microsoft ACPI-
(ISA) 0x000001EC (492	!) Microsoft ACPI-
(ISA) 0x000001ED (493	Microsoft ACPI-
(ISA) 0x000001EE (494	) Microsoft ACPI-0
(ISA) 0x000001EF (495)	) Microsoft ACPI-0
(ISA) 0x000001F0 (496	) Microsoft ACPI-0
(ISA) 0x000001F1 (497	) Microsoft ACPI-0
(ISA) 0x000001F2 (498	) Microsoft ACPI-0
(ISA) 0x000001F3 (499)	) Microsoft ACPI-0
(ISA) 0x000001F4 (500	) Microsoft ACPI-0
(ISA) 0X000001F5 (501)	) Microsoft ACPI-0
(ISA) 0x000001F6 (502	) Microsoft ACPI-0
(ISA) 0x000001F7 (503)	) Microsoft ACPI-(
(ISA) 0x000001F8 (504)	) Microsoft ACPI-(
(ISA) 0X000001F9 (305)	Microsoft ACPI-0
(ISA) 0X000001EB (503 (ISA) 0x000001EB (503	Microsoft ACPI-
(ISA) 0x000001FB (307 (ISA) 0x000001EC (509)	Microsoft ACPI-
(ISA) 0X00000 IFC (508	j microsoft ACPI-

Compliant System -Compliant System Compliant System -Compliant System Compliant System

to (ISA) 0x000001FD (50	9) Microsoft ACPI-Compliant System
Text (ISA) 0x000001FE (51)	)) Microsoft ACPI-Compliant System
to (ISA) 0x000001FF (51	) Microsoft ACPI-Compliant System
(PCI) 0x00000010 (16)	Intel SD Host Controller
Text (PCI) 0x00000010 (16)	Intel(R) Serial IO UART Host Controller - 54A8
Text (PCI) 0x00000013 (19)	High Definition Audio Controller
Text (PCI) 0x0000001B (27	) Intel(R) Serial IO I2C Host Controller - 54E8
Text (PCI) 0x00000025 (37)	Intel(R) Serial IO SPI Host Controller - 54AB
Terror (PCI) 0xFFFFFFF2 (-14	<ol> <li>Intel(R) Management Engine Interface #1</li> </ol>
PCI) 0xFFFFFFF3 (-1	3) Intel(R) Ethernet Controller I226-IT
PCI) 0xFFFFFFF4 (-12	<ol> <li>Intel(R) Ethernet Controller I226-IT</li> </ol>
PCI) 0xFFFFFFF5 (-1	) Intel(R) Ethernet Controller I226-IT
PCI) 0xFFFFFF6 (-10	)) Intel(R) Ethernet Controller I226-IT
PCI) 0xFFFFFFF7 (-9)	Intel(R) Ethernet Controller I226-IT
PCI) 0xFFFFFFF8 (-8)	Intel(R) Ethernet Controller I226-IT
PCI) 0xFFFFFFF9 (-7)	Intel(R) Ethernet Controller I226-IT
PCI) 0xFFFFFFFA (-6	Intel(R) Ethernet Controller I226-IT
PCI) 0xFFFFFFB (-5	Intel(R) Ethernet Controller I226-IT
(PCI) 0xFFFFFFFC (-4	) Intel(R) UHD Graphics
(PCI) 0xFFFFFFFD (-3)	Intel(R) USB 3.10 eXtensible Host Controller - 1.20 (Microsoft)
ma (PCI) 0xFFFFFFFF (-2)	Standard SATA AHCI Controller