# **IEC-3702**

# Digital Signage Player with Intel<sup>®</sup> 11<sup>th</sup> Core i5-1135G7 Processor

# **User's Manual**

# Version 1.1



P/N: 4010370200100P

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# **Revision History**

Version	Date	Description
1.0	2024.07	Initial release
1.1	2024.10	Add Jumper list and settings

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# **Copyright Notice**

All Rights Reserved.

The information in this document is subject to change without prior notice in order to improve the reliability, design and function. It does not represent a commitment on the part of the manufacturer.

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

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

# Declaration of Conformity CE

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

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

### Warning

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

# FCC Class A

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

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

# NOTE:

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

# RoHS

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

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

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

# SVHC / REACH

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

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

### Important Safety Instructions

Read these safety instructions carefully

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

### **Product Heat**

The computer generates heat during operation. Contact the computer's chassis with your body could cause discomfort or even a skin burn.



# Warning

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

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

# **Replacing Lithium Battery**

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

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

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

# **Technical Support**

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

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

E-mail:info@arbor.com.tw

# Warranty

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

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

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

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

# Chapter 1 Introduction

# **1.1. Product Highlights**

- Intel® 11th Core i5-1135G7 Processor with Iris® Xe Graphics
- Dual DDR4 SO-DIMM up to 64GB
- 2 x HDMI 2.0b, 1 x DP1.4 from USB Type-C
- 1 x M.2 M-key (SATA / PCIe 4.0 x4) supports NVMe
- 1 x 2.5 GbE RJ45, 1 x GbE RJ45
- 4 x USB3.2 type A, 1 x USB Type-C
- 1 x RS-232, 1 x Audio Line out and MIC 2 in 1 jack
- 12V~24V DC-in lockable jack
- Operating temperature: 0~50°C

# 1.2. About this Manual



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

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

# 1.3. Specifications

System		
CPU	Soldered onboard Intel <sup>®</sup> 11 <sup>th</sup> Generation Core i5-1135G7 processor (Tiger Lake-UP3)	
Memory	2 x 260-pin DDR4 SO-DIMM socket, supporting 3200MHz SDRAM up to 64GB	
Graphics	Integrated Intel® Iris® Xe / UHD Graphic (depends on CPU SKU)	
LAN Chipset	1 x Intel GbE controller, 1 x Intel 2.5GbE controller	
Watchdog Timer	1~255 levels reset	
Storage		
Storage	1 x M.2 2280 M-Key slot for SATA / PCIex4 NVMe	
I/O		
Serial Port	1 x DB-9 male connector for RS-232	
USB Port	4 x USB 3.2 ports type-A, 1 USB 3.2 type-C	
LAN	1 x RJ-45 ports for GbE, 1 x RJ-45 ports for 2.5GbE	

Video Port	2 x HDMI max resolution up to 4096*2160@60Hz		
	1 x DisplayPort over USB-C port max resolution up to 4096*2160@60Hz		
Audio	1 x Phone jack connector for Line-Out + MIC		
Environmental	Environmental		
Operating Temp.	0 ~ 50°C ( 32 ~ 122°F), ambient w/ air flow		
Storage Temp.	-40 ~ 85°C (-40 ~ 185°F)		
Operating Humidity	10 ~ 95% @ 60°C (non-condensing)		
Vibration	1.0 Grms, IEC 60068-2-64, random, 5 ~500 Hz, 1 Oct./min, 1 hr/axis, operatio		
Shock	Non-operating 20G		
Qualification			
Certification	CE, FCC		
Power Requirement			
Power Input	DC 12-24V input		
Power Consumption	TBD		
Mechanical			
Construction	Aluminum alloy		
Weight	400g		
Dimensions (W x D x H)	115.4 x 107.6 x 37 mm (4.55" x 4.24" x 1.46")		
OS Support			
Windows 10 Linux Ubuntu			

# 1.4. Inside the Package

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



# 1.5. Ordering Information

IEC-3702-1135G7	Intel <sup>®</sup> Core i5-1135G7 Processor, 8GB SDRAM, 128GB M.2 SSD, 60W adapter
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# Chapter 2 Getting Started

# 2.1. Dimensions





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# 2.2. Take A Tour

#### **Front View**



**Rear View** 



# **Connectors Quick Reference**

Label	Description
①LAN1	RJ-45 Connector
②USB ports	Stacked USB 3.0/2.0 Connector
③LAN2	RJ-45 Connector
(4) HDMI2, 1	HDMI Vertical Connector
⑤Power Button	Power Button
©DCIN1	DC jack
⑦USB-C port	USB-C port
⑧Audio jack	Line-Out + MIC 2in1 3.5mm Jack
OUSB ports	Stacked USB 3.0/2.0 Connector
10COM port	RS-232 Serial Port

# 2.3. Driver Installation Notes

To install the drivers, please visit our website at http://www.arbor-technology.com and download the drivers from the **Download Center**.

# Chapter 3 Engine of the Computer

# 3.1. Connectors







Connector	Description	
13 RJ-45 LAN Port	This connector is standard RJ-45 LAN jack for Network connection.	
29 USB 3.2 Port	To connect USB keyboard, mouse or other devices compatible with USB specification. USB 3.2 ports supports up to 5Gbps data transfer rate	
④ HDMI Ports	To the system to corresponding display device with compatible HDMI cable.	
5 Power Button	Power On/Off Button	
6 DC IN	12-24V DC–in system power connector For user to connect compatible power adapter to provide power supply for the system.	
⑦ USB-C Port	USB 3.2 type-C port	
⑧ Line-Out/MIC Combo Connector	This connector can function as audio Line-Out jack and MIC jack with compatible cables & devices.	
1 COM Port	This connector is a COM port for console function.	

# 3.2 List of Jumpers

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

Location	Description
JBAT	Clear CMOS Settings
JCAS_BUZ	Case Open & Buzzer Header
J80PORT1	set GPIO CON1 function GPIO /80 Port Select
JPAT1	ATX Mode/AT Mode Select
JME	ME Override set
JW_FP1	Front Panel Header
GPIO_CON1	GPIO/80 Port Header
SMBUS1	SMBUS Header
CPUFANB1	CPU FAN Wafer

# 3.3 Jumper Settings

1. JBAT : Clear CMOS /Clear ME Register Settings



JBAT Pin (1-2) : Clear CMOS Settings

Pin 1&2 of JBAT→Clear CMOS



1-2 Open: Normal(Default);



1-2 Closed: Clear CMOS(One Touch).

JBAT Pin (3-4): Clear ME Register

Pin 3&4 of JBAT $\rightarrow$ Clear ME Register



3-4 Open: Normal(Default);



3-4 Closed: Clear ME Register.



# 2.JCAS\_BUZ : Case Open & Buzzer Header



JCAS\_BUZ Pin (1-2) Short: When Case open function pin short to GND, the Case open function was detected. When used, needs to enter BIOS and enable 'Case Open Detect' function. In this case if your case is removed, next time when you restart your computer, a message will be displayed on screen to inform you of this.



3. J80PORT1 (2-pin): set GPIO CON1 function GPIO /80 Port Select



 $Pin1 \rightarrow 2$ 

1-2 Open: GPIO\_CON1=GPIO Port(default);



- 1-2 Closed: GPIO\_CON1=80 Port.
- 4. JPAT1 : ATX Mode/AT Mode Select



\*ATX Mode Selected: Press power button to power on after power input ready; AT Mode Selected: Directly power on as power input ready.

### 5. JME: ME Override set



6. JW\_FP1: Front Panel Header





7. GPIO\_CON1 : GPIO/80 Port Header



J80PORT1 Open: For Normal 8-bit GPIO Function;

J80PORT1 Closed: For 80Port Function.

\*Note: refer J80PORT1 jumper setting for GPIO\_CON1 header GPIO Port or 80 Port function select.

# 8. SMBUS1: SMBUS Header



# 9. CPUFANB1 : CPU FAN Wafer



Pin No.	Definition
1	VCC
2	GND
3	Fan Detect

# Chapter 4

# Installation and Maintenance

# 4.1. Disassemble the Computer

1. Place the computer upside down on a flat surface. Loosen and remove the 4 screws from the computer's left and right side.



2. Loosen 2 screws from the computer's COM port on rear side, then the remove bottom cover completely from the computer.

# 4.2. Install Memory Module

The main board has one dual inline memory module (DIMM) socket. Load the computer with a memory module to make the computer run programs. The memory module for the computer's SO-DIMM socket should be a 260-pin DDR4 with a "key notch" off the centre among the pins, which enables the memory module for particular applications. There are another two notches at each left and right side of the memory module to help fix the module in the socket.



### To install a memory module:



To install the Memory module, locate the Memory SO-DIMM slot on the board and perform as below:

Adjust the socket polarizing key and the board key to the same direction.

- Insert the board obliquely. Moreover, lay the board in parallel to the opening at angle of 20° to 30°, and softly insert the board so as to hit the socket bottom. Stopping insertion halfway will result in improper insertion.
- Applying the board side notch in parallel to the socket bottom so that the board position cannot be displaced, press the board side notch up, and fix it to the latch portion at both socket edges. Press the board side notch, and release the notch with a snap "click" tone, if the printed board exceeds the latch claw head.



Procedures for board extraction

Apply the thumb nail to the latch knob at both socket edges. Forcibly widen the latch knobs to right and left ways, and release the latch. Then draw the board out along an angle where the board is raised.



# 4.3. Install M.2 Module

1. Plug the M.2 module to the socket's connector by a slanted angle. Fully plug the module, and note the notch on the module should meet the break of the connector.



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





The BIOS is a program located on a Flash Memory on the motherboard. This program is a bridge between motherboard and operating system. When you start the computer, the BIOS program will gain control. The BIOS first operates an autodiagnostic test called POST (power on self test) for all the necessary hardware, it detects the entire hardware device and configures the parameters of the hardware synchronization. Only when these tasks are completed done it gives up control of the computer to operating system (OS). Since the BIOS is the only channel for hardware and software to communicate, it is the key factor for system stability, and in ensuring that your system performance as its best.

# 5.1. Entering Setup

The AMI BIOS provides a Setup utility program for specifying the system configurations and settings. The BIOS RAM of the system stores the Setup utility and configurations. When you turn on the computer, the AMI BIOS is immediately activated. To enter the BIOS SETUP UTILITY, press "**Delete**" once the power is turned on.

The Main Setup screen lists the following information:

Main Advanced Chipset S	Aptio Setup – AMI Security Boot Save & Exit	
BIOS Information BIOS Vendor Filename Build Date and Time System Date System Time	American Megatrends MU1AVAR2 03/29/2024 14:04:44 [Mon 06/24/2024] [01:35:35]	Set the Date. Use Tab to switch between Date elements.
		++: Select Screen
		<pre>fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
	Version 2.21.1278 Copyright (C) 202	4 AMI

# 5.1.1. Function Keys

In the above BIOS Setup main menu of, you can see several options. We will explain these options step by step in the following pages of this chapter, but let us first see a short description of the function keys you may use here:

Keystroke	Function
	Move to highlight a particular configuration screen
< ►	from the top menu bar / Move to highlight items on the
	screen
	Move to highlight previous/next item
Enter	Select and access a setup item/field
	On the Main Menu – Quit the setup and not save
	changes into CMOS (a message screen will display
Esc	and ask you to select "OK" or "Cancel" for exiting and
	discarding changes. Use " $\leftarrow$ " and " $\rightarrow$ " to select and
	press "Enter" to confirm)
	On the Sub Menu – Exit current page and return to main
	menu
Page I In / +	Increase the numeric value on a selected setup item /
Fage Op / +	make change
Page Down / -	Decrease the numeric value on a selected setup item /
	make change
F1	Activate "General Help" screen
F2	Previous Values
F3	Optimized Defaults
F4	Save & Exit

### 5.1.2. Menu Bars

There are six menu bars on top of BIOS screen:

Main	To change system basic configuration
Advanced	To change system advanced configuration
Chipset	To change chipset configuration
Security	Password settings
Boot	To change boot settings
Save & Exit	Save setting, loading and exit options.

User can press the right or left arrow key on the keyboard to switch from menu bar. The selected one is highlighted.

# 5.2. Main Menu

Main menu screen includes some basic system information. Highlight the item and then use the <+> or <-> and numerical keyboard keys to select the value you want in each item.

Main Advanced Chipset Security	Aptio Setup - AMI Boot Save & Exit	
BIOS Information BIOS Vendor Filename Build Date and Time System Date System Time	American Megatrends MU1AVAR2 03/29/2024 14:04:44 [Mon 06/24/2024] [01:35:35]	Set the Date. Use Tab to switch between Date elements.
		<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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# System Date

Set the date. Please use [Tab] to switch between date elements.

# System Time

Set the time. Please use [Tab] to switch between time elements.

# 5.3. Advanced Menu

Aptio Setup – AMI Main Advanced Chipset Security Boot Save & Exit	
<ul> <li>CFU Configuration</li> <li>SATA Configuration</li> <li>PCH-FW Configuration</li> <li>Trusted Computing</li> <li>ACPI Settings</li> <li>Wake-up Function Settings</li> <li>Super IO Configuration</li> <li>Serial Port Console Redirection</li> <li>PC Health Status</li> <li>USB Configuration</li> <li>Network Stack Configuration</li> <li>NVME Configuration</li> </ul>	CPU Configuration Parameters
<ul> <li>Intel(R) Ethernet Controller I226-V - 00:30:18:00:00:18</li> <li>Intel(R) Ethernet Connection (13) I219-LM - 00:30:18:00:00:38</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 ESC: Exit</pre>
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Setting	Description
CPU Configuration	See 5.3.1 CPU Configuration on page 27
SATA Configuration	See 5.3.2 SATA Configuration on page 29
PCH-FW Configuration	See 5.3.3 PCH-FW Configuration on page 30
Trusted Computing	See 5.3.4 Trusted Computing on page 31
ACPI Settings	See 5.3.5 ACPI Settings on page 32
Wake-up Function Settings	See 5.3.6 Wake-up Function Settings on page 33
Super IO Configuration	See 5.3.7 Super IO Configuration on page 34
Serial Port Console	See 5.3.8 Serial Port Console on page 35
PC Health Status	See 5.3.9 Hardware Monitor on page 36
USB Configuration	See 5.3.10 USB Configuration on page 37
Network Stack Configuration	See 5.3.11 Network Stack Configuration on page 38
NVMe Configuration	See 5.3.12 NVME Configuration on page 39

# 5.3.1 CPU Configuration

CPU Configuration		
0.0 00.11280.0020.1		Enable or Disable Huper-Threading Technology
Type ID Microcode Revision L1 Data Cache L1 Instruction Cache L2 Cache L3 Cache VMY	11th Gen Intel(R) Core(TM) i5-1135G7 @ 2.40GHz 0x806C1 AC 48 KB × 4 32 KB × 4 1280 KB × 4 8 MB Supported	ngper - nin eduling feelinelogg.
SMX/TXT	Not Supported	
Hyper-Threading Intel (VMX) Virtualization Technology Intel(R) SpeedStep(tm) Turbo Mode C states Hardware Prefetcher Adjacent Cache Line Prefetch	[Enabled] [Enabled] [Disabled] [Enabled] [Enabled] [Enabled]	<pre>++: Select Screen tl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>

Setting	Description
Hyper-threading	<b>Enabled</b> (default) for Windows and Linux (OS optimized for Hyper-Threading Technology) and <b>Disabled</b> for other OS (OS not optimized or Hyper-Threading Technology). When disabled only one thread per enabled core is enabled.
Intel (VMX) Virtualization Technology	<ul> <li>Enable or disable Intel virtualization technology. When enabled, a VMM can utilize the additional hardware capabilities provide by Vanderpool Technology.</li> <li>Options: Enabled (default) or Disabled</li> </ul>
Intel(R) SpeedStep(tm)	<ul> <li>Allow more than two frequency ranges to be supported.</li> <li>Options: Enabled (default) or Disabled</li> </ul>
Turbo Mode	<b>Enable</b> / <b>Disable</b> processor Turbo Mode (requires EMTTM enabled too). AUTO means enabled.
C States	<b>Enable/Disable</b> CPU Power Management. Allows CPU to go to C state when it's not 100% utilized.

Hardware Prefetcher	To Turn on/off the MLC streamer prefetcher. ▶ Options: <b>Enabled</b> (default) or <b>Disabled</b>
Adjacent Cache Line Prefetch	<ul> <li>To Turn on/off prefetching of adjacent cashe lines.</li> <li>Options: Enabled (default) or Disabled</li> </ul>

# 5.3.2 SATA Configuration



Setting	Description
SATA Configuration	Enable/Disable SATA Device.  Options: Enabled (default) or Disabled
M.2 Port	Enable/Disable M.2 Port. <ul> <li>Options: Enabled (default) or Disabled</li> </ul>

# 5.3.3 PCH-FW Configuration

Advanced	Aptio Setup – AMI	
ME Firmware Version ME Firmware Mode	15.0.10.1469 Normal Mode	Selects TPM device: PTT or dTPM. PTT - Enables PTT in SkyWare dTPM - Disables PTT in
PTT Capability ∕ State	1 / 1	SkuMgr Warning ! PTT/dTPM will be disabled and all data
TPM Device Selection ▶ Firmware Update Configuration		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>
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Setting	Description
TPM Device Selection	Selects TPM device PTT or dTPM. PTT - Enable in SkuMgr dTPM - Disables PTT in SkuMgr warning! PTT/
	dTPM will be disabled and all data saved on it will be lost.
Firmware Update Configuration	<ul> <li>Enable or Disable Firmware Image Re-flash function.</li> <li>Options for ME FW Image Re-Flash function: Enabled/ Disabled(default)</li> </ul>

# 5.3.4 Trusted Computing

Advanced	Aptio Setup – AMI	
TPM 2.0 Device Found		Enables or Disables BIOS support for security device
Security Device Support		0.S. will not show Security Device. TCG EFI protocol and INTIA interface will not be
Pending operation TPM 2.0 UEFI Spec Version Disable Block Sid	[None] [TCG_2] [Disabled]	available.
		++: Select Screen
		Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values
		F3: Optimized Defaults F4: Save & Exit ESC: Exit

Setting	Description
Security Device Support	<b>Enable</b> (default) or <b>Disable</b> BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.
Pending operation	Select None(default) or TPM Clear for Security Device
TPM 2.0 UEFI Spec Version	Select TCG_1_2 or TCG_2(default) Spec Version support Options: TCG_1_2 or TCG_2(default)
Disable Block Sid	<ul> <li>Override to allow SID authentication in TCG Storage device.</li> <li>Options: Enabled or Disabled(default)</li> </ul>

# 5.3.5 ACPI Settings

Advanced	Aptio Setup — AMI	
ACPI Settings		Select the highest ACPI sleep
ACPI Sleep State		<pre>state the system will enter when the SUSPEND button is pressed.  ++: Select Screen 1+: 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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Setting	Description
ACPI Sleep State	<ul> <li>Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.</li> <li>Options: Suspend Disabled and S3 (Suspend to RAM) (default).</li> </ul>

# 5.3.6 Wake-up Function Settings

Advanced	Aptio Setup – AMI	
Wake-up System With Fixed Time	[Disabled]	Enable or disable System wake
Wake-up System With Dynamic Time	[Disabled]	System will wake on the hr:min:sec specified
PCIE Wake-up from S3-S5 USB S3/S4 Wake-up USB S5 Power	[Disabled] [Disabled] [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>

Setting	Description
Wake-up System with Fixed Time	Enable or disable system wake on alarm event. When disabled, system will wake on the hr:min:sec specified Options: <b>Enabled</b> or <b>Disabled</b> (default)
Wake-up System with Dynamic Time	<ul> <li>Enable or disable system wake on alarm event. When disabled, system will wake on the current time + Increase minute(s).</li> <li>Options: Enabled or Disabled(default)</li> </ul>
PCIE Wake-up from S3-S5	Note: This function is supported when "ERP Support" is set as <b>Disabled</b> (default)
USB S3/S4 Wake-up	<ul> <li>Enable or disable USB S3/S4 Wake-up Support only</li> <li>Disable ERP Function.</li> <li>Options: Enabled or Disabled(default)</li> </ul>
USB S5 Power	USB Power after system shutdown Support only Disable ERP Function. <ul> <li>Options: Enabled or Disabled(default)</li> </ul>

# 5.3.7 Super IO Configuration

Advanced	Aptio Setup — AMI	
Super IO Configuration ERP Support ▶ Serial Port 1 Configuration	[Disabled]	Energy-Related Products function. Disable ERP to active all wake-up functions.
WatchDog Reset Timer WatchDog Wake-up Timer ATX Power Emulate AT Power Case Open Detect	[Disabled] [Disabled] -Disabled- [Disabled]	
		++: 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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Setting	Description
ERP Support	Energy-Related Products function. Disable ERP to active all wake- up function. Options: <b>Enabled</b> or <b>Disabled</b> (default)
Serial Port 1 Configuration	<ul> <li>Serial Port 1 Configurations</li> <li>Enabled or Disabled(default) Serial Port(COM)</li> <li>Change optimal settings for Super IO device.</li> <li>Options:</li> <li>IO=3F8h; IRQ=4</li> <li>IO=3F8h; IRQ=3, 4, 5, 7, 10, 11;</li> <li>IO=2F8h; IRQ=3, 4, 5, 7, 10, 11;</li> <li>IO=3E8h; IRQ=3, 4, 5, 7, 10, 11;</li> <li>IO=2E8h; IRQ=3, 4, 5, 7, 10, 11;</li> </ul>
Watchdog Reset Timer	Support WDT reset function <ul> <li>Options: Enabled or Disabled(default)</li> </ul>
Watchdog Wake-up Timer	Support WDT wake-up <ul> <li>Options: Enabled or Disabled(default)</li> </ul>
Case Open Detect	Detect if case have ever been opened. Show message in POST.

# 5.3.8 Serial Port Console

Advanced Advanced	
COM1 Console Redirection [Disabled] Console Redirection Settings Serial Port for Out-of-Band Management/ Windows Emergency Management Services (EMS) Console Redirection EMS [Disabled] Console Redirection Settings	Console Redirection Enable or Disable.
	<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>

Setting	Description
Console Redirection	Console Redirection Enable or Disable. Options: Enabled or Disabled(default)
Console Redirection EMS	Console Redirection Enable or Disable. Doptions: <b>Enabled</b> or <b>Disabled</b> (default)

# 5.3.9 Hardware Monitor

Advanced	Aptio Setup – AMI	
PC Health Status ▶ SmartFAN Configuration CPU Temperature	: +48 C	
VCC3V VCC3V VCC3V VSB3V VSB3V	: 5535 RPM : +1.264 V : +1.223 V : +3.248 V : +3.232 V : +3.072 V : +4.656 V	
		<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Sawe &amp; Evit</pre>
Ve	rsion 2.21.1278 Copyright (C)	ESC: Exit

Access this submenu to monitor the hardware status.

# 5.3.10 USB Configuration



Setting	Description
XHCI Hand-off	Select to Enable or Disable(default) for XHCI Hand-off function
USB Mass Storage Driver Support	Select to Enable(default) or Disable for USB Mass storage driver support
USB transfer time-out	Select USB transfer time-out value from 1, 5, 10 to 20 sec
Device reset time-out	Select device reset time-out value from 10, 20, 30 to 40 sec
Device power-up delay	Select to Auto(default) or Manual for the device power up delay
Mass Storage Devices	<ul> <li>Mass storage device emulation type.</li> <li>Options Auto(default), Floppy, Forced FDD, Hard Disk or CD-ROM</li> </ul>

# 5.3.11 Network Stack Configuration

Advanced	Aptio Setup — AMI	
Network Stack	[Disabled] Network Stack - Disabled Enabled	Enable/Disable UEFI Network Stack ++: 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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Setting	Description
Network Stack	Enables/disables UEFI network stack. <ul> <li>Disabled is the default.</li> </ul>

# 5.3.12 NVME Configuration

Aptio Setup – AMI Advanced	
NVMe Configuration	
▶ Neo Forza NSP045P3428-H06S200	<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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Access this submenu to view the NVMe controller and driver information.

# 5.4 System Agent(SA) Configuration

Aptio Setup – AMI Main Advanced <mark>Chipset</mark> Security Boot Save & Exit	
▶ System Agent (SA) Configuration ▶ PCH-IO Configuration	System Agent (SA) Parameters
	<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>
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Setting	Description
System Agent(SA) Configuration	See 5.4.1.1 System Agent (SA) Configuration on page 41
PCH-IO Configuration	See 5.4.2.1 PCH-IO Configuration on page 43

# 5.4.1.1 System Agent (SA) Configuration

Chipset	Aptio Setup — AMI	
System Agent (SA) Configuration		Memory Configuration Parameters
VT-d	Supported	
<ul> <li>Memory Configuration</li> <li>Graphics Configuration</li> <li>VMD setup menu</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 ESC: Exit</pre>
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Setting	Description
Memory Configuration	Monitor Memory Frequency Configuration.
Graphic Configuration	See 5.4.1.2 Graphic Configuration on page 42
VMD Setup menu	Enable/Disable to VMD controller

# 5.4.1.2 Graphic Configuration

Chipset	Aptio Setup – AMI	
Graphics Configuration		Select the Aperture Size
Aperture Size DVMT Pre-Allocated DVMT Total Gfx Mem	[256MB] [32M] [MAX]	<ul> <li>Select the Aperture Size</li> <li>Note : Above 468 MMIO BIOS         <ul> <li>assignment is automatically             enabled when selecting 2048MB             aperture. To use this feature,             please disable CSM Support.</li> </ul> </li> <li>*+: Select Screen         <ul> <li>14: Select Item             Enter: Select             +/-: Change Opt.             Fi: General Help             F2: Previous Values             F2: Previous Values</li>             E2: Optimized Defendito</ul></li> </ul>
		F4: Save & Exit ESC: Exit
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### The features settings are:

Setting	Description
Apeture Size	<ul> <li>Select the Apeture Size. Note that above 4GB MMIO BIOS assignment is automatically enabled when selecting 2048MB aperture. To use this feature, please disable CSM support.</li> <li>Options: 128MB, 256MB (default), 512MB, 1024MB and 2048MB</li> </ul>
DVMT Pre-Allocated	Select the DVMT 5.0 Pre-allocated (Fixed) Graphic Memory size used by the Internal Graphic Device. 32M is the default.
DVMT Total Gfx Mem	<ul> <li>Select the DVMT 5.0 Total Graphic Memory size used by the Internal Graphic Device.</li> <li>Options: 128M, 256M (default) and Max.</li> </ul>

# 5.4.2.1 PCH-IO Configuration

Chipset	Aptio Setup – AMI	
PCH-IO Configuration USB Controller HD Audio System State After Power Failure	[Enabled] [Enabled] [Always Off]	Enable/Disable USB Physical Connector (physical port). Once disabled, any USB devices plug into the connector will not be detected by BIOS or OS.
Onboard Lani Controller Wake on LAN Enable Onboard Lan2 Controller	[Enabled] [Disabled] [Enabled]	
		++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values
		F3: Optimized Defaults F4: Save & Exit ESC: Exit

Setting	Description
USB Controller	Enable/Disable USB Physical connector (Physical port). Once disabled, any USB devices plug into the connector will not be detected by BIOS or OS. Options: <b>Enabled</b> (default) or <b>Disabled</b>
HD Audio	Select Enabled(default) or Disabled for HD Audio device
System State After Power Failure	Specify what state to go to when power is re-applied after a power failure (G3 state) Options: <b>Always On</b> (default), <b>Always Off, Former State</b>
Onboard Lan1 Controller	Enable/Disable onboard NIC. Options: <b>Enabled</b> (default) or <b>Disabled</b>
Wake on LAN Enable	Enable/Disable integrated LAN to wake the system. Options: <b>Enabled</b> or <b>Disabled</b> (default)
Onboard LAN2 Controller	Controller the PCI Express Root Part. Options: <b>Enabled</b> (default) or <b>Disabled</b>

# 5.5 Security

Aptio Setup – AMI Main Advanced Chipset <mark>Security</mark> Boot Save & Exit		
Password Description If ONLY the Administrator's pass then this only limits access to only asked for when entering Set If ONLY the User's password is s is a power on password and must boot or enter Setup. In Setup th have Administrator rights. The password length must be in the following range: Minimum length	word is set, Setup and is up. wet, then this be entered to we User will	TCG Storage device Security Configuration
Maximum length Administrator Password User Password > Secure Boot TCG Storage Security Configurati > Neo Forza NSP045P3428-H06S200	20 .on:	++: 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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Setting	Description
Administrator Password	<ul> <li>To set up an administrator password:</li> <li>Select Administrator Password. The screen then pops up an Create New Password dialog.</li> <li>Enter your desired password that is no less than 3 characters and no more than 20 characters.</li> <li>Hit [Enter] key to submit.</li> </ul>
User Password	<ol> <li>To set up an User password:</li> <li>Select User Password. The screen then pops up an Create New Password dialog.</li> <li>Enter your desired password that is no less than 3 characters and no more than 20 characters.</li> <li>Hit [Enter] key to submit.</li> </ol>
Secure Boot	Secure Boot Configuration

# 5.6 Boot

Aptio Setup – AMI Main Advanced Chipset Security <mark>Boot</mark> Save & Exit		
Boot Configuration Setup Prompt Timeout Bootup NumLock State Quiet Boot	2 [Off] [Disabled]	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.
Boot Option Priorities Boot Option #1	[Windows Boot Manager (Neo Forza NSP045P3428-H06S200)]	
Boot Option #2	[UEF1: VendorCoProductCode 2.00, Partition 1 (VendorCoProductCode 2.00)]	<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>
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Setting	Description	
Setup Prompt Timeout	Select the keyboard NumLock state.	
	Options: On (default) and Off.	
Bootup Numlock State	On or Off (default) boot with initialization of a minimal set of	
	devices required to launch active boot option. Has no effect for.	
	BBS boot options.	
Quiet Boot	Enables or disables Quiet Boot option	
	Options: Enabled or Disabled(default)	
Boot Option Priories	Set the system boot priorities.	
•		

# 5.7 Save & Exit

Aptio Setup – AMI Main Advanced Chipset Security Boot Save & Exit	
Save Options Save Changes and Reset Discard Changes and Reset Default Options Restore Defaults Save as User Defaults Restore User Defaults Boot Override Windows Boot Manager (Neo Forza NSP045P3428-H06S200) UEFI: VendorCoProductCode 2.00, Partition 1 (VendorCoProductCode 2.00)	Reset the system after saving the changes. +: Select Screen tl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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Setting	Description	
Save Changes and Exit	<ul> <li>Exit system setup after saving the changes.</li> <li>Enter the item and then a dialog box pops up: Save configuration and exit? (Yes/ No)</li> </ul>	
Discard Changes and Exit	<ul> <li>Exit system setup without saving the changes.</li> <li>Enter the item and then a dialog box pops up: Quit without saving? (Yes/ No)</li> </ul>	
Restore Defaults	<ul> <li>Restore/Load Default values for all the setup options.</li> <li>Enter the item and then a dialog box pops up: Load Optimized Defaults? (Yes/ No)</li> </ul>	
Save as User Defaults	Save changes done so far to any of the setup options.	
Restore User Defaults	Restore the user defaults to all the setup options.	
Launch UEFI Shell from filesystem device	Attempts to launch UEFI shell application (Shell.efi) from one of the available filesystem devices.	