# WEBS-85H1

# Fan-less Embedded System

AS5-3625



# **User's Manual**

Version 1.3

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## How to Use This Manual

The manual describes how to configure your WEBS-85H1 system to meet various operating requirements. It is divided into four chapters, with each chapter addressing a basic concept and operation of Fan-less Embedded System.

**Chapter 1: System Overview.** Present what you have in the box and give you an overview of the product specifications and basic system architecture for this fan-less embedded system.

**Chapter 2: System Installation.** Show the definitions and locations of all the interfaces and describe a proper installation guide so that you can easily configure your system.

**Chapter 3: BIOS Setup Information.** Specify the meaning of each setup parameters, how to get advanced BIOS performance and update new BIOS. In addition, POST checkpoint list will give users some guidelines of troubleshooting.

**Chapter 4: Important Instructions.** Indicate some instructions which must be carefully followed when the fan-less embedded system is used.

The content of this manual is subject to change without prior notice. These changes will be incorporated in new editions of the document. The vendor may make supplement or change in the products described in this document at any time.

Revision	Date	Details of Change(s)	
V1.0	2022/06/14	Initial Release	
V1.1	2022/10/13	Updated Operation temperature condition in product	
		specification	
V1.2	2022/10/13	Change system photo	
V1.3	2022/10/26	1. Added warning for installation/uninstallation and	
		maintenance process	
		2. Added Desk mount screw size	

# **Revision History**

# **Chapter 1 System Overview**

## **1.1 Introduction**

The WEBS-85H1 builds on Intel® desktop W480E chipset and takes advantages of 10th Generation Intel® Core<sup>™</sup> i3/i5/i7/i9 processors technologies that can support dual DDR4 memory, Type II CFast and 2x 2.5″ SSD slot for storage. Support three Gigabit Ethernet ports, One M.2 E Key, One M.2 M Key and one Mini PCIe socket. The WEBS-85H1 is an ideal platform with rich I/O and high resolution for POS, kiosk, digital signage, and factory automation applications.

The system further takes advantage of the 10th generation Intel Core processor technologies supporting dual-channel DDR4 memory up to 64GB.

Furthermore, the WEBS-85H1 Box PC includes rich I/O interfaces and fast connectivity with three independent display (DisplayPort/HDMI 2.0/HDMI 1.4) interfaces with resolution up to 4K, three Gigabit Ethernet ports, four COM ports, Two USB 3.2 Gen2, four USB 3.2 Gen1 ports, one 8 bits DIO port, and Mic-in/Line-out. Optional wireless via M.2 socket and 4G or LTE modules can be added via a Mini PCIe socket.

The rugged, fan-less design makes the WEBS-85H1 durable in harsh environment applications, such as factory automation and industrial automation. Portwell's WEBS-85H1 has already passed a vibration test of 1Grms/ 58.1~500Hz and a shock test of 50G, 11 msec assuring its solidity and reliability.

In addition, the system accepts a wide input voltage range from 9V to 36V. This power-source flexibility enables product usage in a variety of situations. Moreover, the WEBS-85H1 is more than a robust and dependable embedded system with high performance and graphics efficacy, its stylish mechanical design enhances the system's artistry. Potential applications include kiosk, intelligent digital security, IVI, factory automation and surveillance applications, and many more.

Check List

The WEBS-85H1 package should cover the following basic items:

- ✓ One WEBS-85H1 Fan-less Embedded System
- ✓ One Desk Mount Kit
- ✓ Other Accessories

If any of these items is damaged or missing, please contact your vendor and keep all packing materials for future replacement and maintenance.

System		
M/B	Proprietary	
System Chipset	Intel® W480E chipset	
CPU	10th Generation Intel <sup>®</sup> Core <sup>™</sup> i3/i5/i7/i9 Processors (35W TDP)	
BIOS	AMI uEFI BIOS (SPI ROM)	
System Memory	2x SO-DIMM sockets support DDR4 2400/2666 Non-ECC Up to 64 GB	
Storage	- 1x Type II CFast slot	
	- 2x 2.5" SSD slots	
Watchdog Timer	Programmable by embedded controller	
H/W Status Monitor	HW WDT Enable (WDT_EN)	
Expansion	- 1x Mini PCIe socket (supports mSATA or cellular module)	
	- 1x M.2 2242/60/80 M key socket (PCIe x4 & SATA mode)	
	- 1x M.2 2230 E key socket (supports CNVi, Wi-Fi/BT module)	
External I/O		
Series Ports	4x COM port (1x RS-232/422/485, CANbus (2.0 A/B)	
	selected by on board jumper)	
Display	- 1x HDMI 2.0, supports up to 4096 x 2160 @ 60 Hz	
	- 1x HDMI 1.4, supports up to 4096 x 2160 @ 30 Hz	
	- 1x DP 1.2, supports up to 4096 x 2304 @ 60 Hz	
USB	- 2x USB 3.2 Gen 2	
	- 4x USB 3.2 Gen 1	
Audio	Mic-in / Line-Out	
LAN	3x Gigabit Ethernet (Intel® I210-IT)	
GPIO	4x DI, 4x DO	
Other	2x nano SIM card slot	
Power Supply Unit		
Power Supply	9 to 36 VDC, 2-pin terminal block connector	
Environment		
Operating Temperature	$-20^{\circ}\text{C} \sim 40^{\circ}\text{C}$ with Adapter	
	$-20^{\circ}\text{C} \sim 60^{\circ}\text{C}$ with DC source	
Storage Temperature	-40°C ~ 80°C	
Relative Humidity	60°C, 95%RH non-condensing	
Operating Vibration	Desk mount: 0.5 Grms (10 Hz to 500Hz)	
	System: 1Grms (10 Hz to 500Hz)	
Operating Shock	Desk mount: 15G, 11 msec	
	System: 50G, 11 msec	
Mechanical		
Dimension (W $x$ D $x$ H)	210(W) x 250(D) x 119.7 (H) mm	
Weight	4.5 Kg	
Mounting	Desk mounting	

# **1.2 Product Specification**

## 1.3 Mechanical Dimension



# **Chapter 2 System Installation**

This chapter provides you with instructions to set up your system. Definitions and locations of all the interfaces are described so that you can easily configure your system.

#### **Important:**

- Turn off the power of your IPC BOX PC and allow it to cool for at least 10 minutes before performing any installation/uninstallation and maintenance process.
- Professionals (Skilled person) are required for maintenance, assembly or disassembly, and the pluggable 2.5" SSD can be replaced by end user.

## 2.1 Embedded Board H/W Jumper Setting Introduction

### 2.1.1 M/B overview



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## 2.1.2 M/B Jumper setting

NO	Part	Description	Detail information
1	M.2 M-key slot	M.2 module (M-key, type 2242/2260/2280) or M.2 B+M key TPU module	
2	SPI TPM header	The SPI TPM header supports a TPM system.	SPI_TPM Pindefine           T_SPI_MOSI         T_SPI_HOLD#           T_SPI_CLK         S_SPI_CSO#           GND         +3VSB_SPI           T_SPI_BIOS_WP#         NC           S_SPI_TPM_CS2#         S_PITRs#           S_SPI_TPM_IRQ#         +VCCC_SPI_TPM           Pin 1         Pin 1
3	Chassis Intrude header	The Chassis Intrusion header allows you to connect an intrusion sensor or microswitch for the chassis intrusion detection feature. The default setting is close with a jumper cap.	Close (Default) Open
4	AT / ATX power selection	The AT_ATX_SEL jumper allows you to configure between AT or ATX power mode. If the jumper is attached, ATX power mode is set, if the jumper is removed, AT power mode will be set. The default setting is ATX mode.	ATX MODE ATX MODE AT MODE
5	HW WDT Enable jumper	A watchdog timer is an electronic timer that is used to detect and recover from computer malfunctions. If the jumper is attached, HW WDT_EN is enable, if the jumper is removed, HW WDT_EN is disable.	Enable (Default)
6	ME Lock jumper	This jumper is used to lock the Intel® Management Engine (IME). When the Intel® ME is locked, no changes can be made to the Intel® ME. This jumper should only be set to ME Unlock when there is an important update available from Intel®.	ME Luck (Default)

7	Mini PCIe / mSATA switch jumper	The Mini PCIe / mSATA switch jumper allows you to set the Mini PCIe /mSATA slot to either support a Mini PCIe card or mSATA card. Default is SATA mode.	SATA mode PCIE mode
8	CAN/COM switch jumpers	The CAN / COM switch jumpers allows you to set COM4 to CAN bus or COM port. Both jumpers need to be set to the setting for the configuration to take effect.	COM Port (Default)
9	I2C header	The I2C (Inter-Integrated Circuit) header allows you to connect an I2C compatible IoT security module.	I2C       PIN 1       I2C_SCL     +V3       I2C_SDA     NC       GND
10	M.2 E-key slot	The M.2 E-key slot allows you to install an M.2 Wi-Fi module (E-key, type 2230), or M.2 A+E key TPU module.	
11	Mini PCIe / mSATA slot	This slot can only support either Mini PCIe or mSATA, this can be adjusted with the Mini PCIe / mSATA switch jumper.	SATA mode PCIE mode (Default)
12	External Power Button connector	The External Power Button connector allows you to attach the External power button terminal block to connect to an external power button.	
13	SATA conn	SATA conn	

## 2.2 CPU and Memory module Installation

Equipped with CPU and Memory module by yourself if you purchase CPU or Memory module locally.



Step 5. Install CPU. Please locate notches on both side and pin one of	Step 6. Install CPU successfully
CPU first	
Step 7. Make sure the thermal paste can be applied uniformly on the heat spreader.	Step 8. Fixed the screws of top heatsink (there are 6 screws)
Install memory	1
Step 1. Loosen the 4 screws on the system	Step 2. Loosen the 8 screws on the system



## 2.3 HDD/SSD Installation

Unique design of the HDD tray allows easy installation and maintenance of 2.5" HDD/SSD. RAID function is supported with dual HDD/SSD design. (The height must be less than 10mm)



Step 7. Install the two HDD/SSD and fix	Step 8. Fix the screw (M3*4L:4pcs) on
the screws (M3*4L:8 pcs) from	the case
	2.5 "SATA SSD 3ME 4 see
Step 9. Plug SATA power and SATA data cable into SATA conn board	Step 10. Close the cover of system
	A REAL PROVIDE A REAL PROVIDA REAL PROVIDA REAL PROVIDE A REAL PROVIDE A REAL PRO
Step 11. fix the 2 screws on the system	Step 12. fix the 8 screws on the system

Step13. Fix the 4 screws on the system	Step 14. Finish HDD assembly.

# 2.4 Desk Mount Installation Step 1. Prepare Desk mount kit and Step 2. System is ready for assembling. screws. 1. Screw size (M3x4L): for system side. 2. Screw size (Support M3x6L and M4 x 8L): for Desk mount side (M3 x 4 L) 1.M3 x 6 L 2.M4 x 8 L Step 4. Final picture. Step 3. Assemble the desk mount kit with system and fasten it using 4 screws (M3 x 4 L).

### **2.5 I/O Interfaces** Front View



SIM Card Holder CFast Slot USB 3.2 GEN 2

Function	Photo	Description
ANT1.ANT4	(ANT.1)	Antenna holes for LTE module
ANT2.ANT3	(ANT.2)	Antenna holes for WIFI module
Power button	(J)	Press the power button to turn ON/OFF the system
DI/DO	DI OH OL 1H 1L 2H 2L 3H 3L OH OL 1H 1L 2H 2L 3H 3L DO	The Isolation Digital Input / Output
LED indicator	WD CFast U2 U1 U4 U3 0 0 0 0	WD LED: Watchdog LED: LED color is Green. Status ON: Watch dog timeout event. Status OFF: Watch dog timeout event. CFast LED: CFast LED: LED color is Green. Status ON: CFast is reading/ Writing data Status OFF: CFast is not working U1~U4 LED: U1~U2 color is RED, U3~U4 color is Yellow. U1~ U4 LED: Programmable Status: ON/Blink/OFF/

Audio		Audio Jack for Mic-In, Line-In and Line-Out					
LAN	LAN.3 LAN.2	Two LAN ContN	Gigabit ports by NNroll	Ethernet v using li er	(10/100 ntel® I21	0/1000 1 0-IT Gbl	Mbits/sec) E Ethernet
USB	USB.6 USB.4	Suppo USB 3	ort six U 3.2 Gen1 a	SB (Unive and two U	ersal Ser JSB 3.2 C	ial Bus) Gen 2.	ports, four
СОМ		Suppo COM COM CANI	ort 4x CC 1~COM3 [4 default BUS (2.0	M ports, default is t is RS-232 A/B) sele	s RS-232, 2 (1x RS-2 cted by c	, 232/422, on board	/485, jumper)
		Pin	RS-232	RS-422	RS-485	CANBUS	
		1	DCD#	TX-	D-	-	
	COM.1	2	RXD TVD		D+		
				RX-		<u></u>	
		5	GND	GND	GND	-	-
		6	DSR	NA	NA	-	
		7	RTS	NA	NA	-	
		8	CTS	NA	NA	-	
		9	RI	NA	NA	-	-
EYT DWD		It is fo	r romoto	custom (	NI/OEE	control	
BTN	EXT PWRBTN		Ji Temote	system C	, , , , , , , , , , , , , , , , , , ,	control.	
DC In	• • V+ V- DC 9V-36V	Provid main power	de powe power so r adapter	er connec ource via l :	tion of DC pow	the syst er cable	em to the or AC/DC
SIM slot		Suppo	ort 2x Na	no SIM C	ard slots		

CFast		Support 1x CFast card slot
	CFast	
HDMI1		HDMI 1.4 display output
HDMI2		HDMI 2.0 display output
DP	DP	DP (Display Port) 1.2 display output
HDD		Two removable 2.5" SSD trays for storage installation

# 2.6 Getting Started

It is easy to get the system started.

Step 1. Make sure the power supply	Step 2. Press the power button to turn on
(9~36V) is connected properly	the system
• • V+ V- DC 9V~36V	ANT. ANT.

# **Chapter 3 BIOS Setup Information**

The following section describes the BIOS setup program. The BIOS setup program can be used to view and change the BIOS settings for the module. Only experienced users should change the default BIOS settings.

## 3.1 Entering Setup

Power on the computer and the system will start POST (Power on Self Test) process. When the message below appears on the screen, press <Delete> or <ESC> key will enter BIOS setup screen.

### Press<Delete> or <ESC> to enter SETUP

If the message disappears before responding and still wish to enter Setup, please restart the system by turning it OFF and On or pressing the RESET button. It can be also restarted by pressing <Ctrl>, <Alt>, and <Delete> keys on keyboard simultaneously.

### Press <F1> to Run General Help or Resume

The BIOS setup program provides a General Help screen. The menu can be easily called up from any menu by pressing <F1>. The Help screen lists all the possible keys to use and the selections for the highlighted item. Press <Esc> to exit the Help Screen.

General Help		
<b>1↓++</b> Enter +/- ESC F1 F2 F3 F4	: Move : Select : Value : Exit : General Help : Previous Values : Optimized Defaults : Save & Exit Setup	
OK		

# 3.2 Main 3.2.1 Main

Use this menu for basic system configurations, such as time, date etc.

BIOS Information		Set the Date. Use Tab to
BIOS Vendor	American Megatrends	switch between Date elements.
BIOS Version	1.08.00.FW01	Default Ranges:
Build Date	06/07/2022	Year: 1996-9999
MRC Version	0.0.82	Months: 1-12
GOP Version	9.0.1107	Days: Dependent on month
ME Firmware Version	14.0.48.1605	Range of Years may vary.
System Information		
Project Name	WEBS-85H×	
CPU Brand String	Intel(R) Core(TM)	
	i5-10500E CPU @ 3.10GHz	
CPU Frequency	3100 MHz	
Total Memory	8192 MB	++: Select Screen
Memory Frequency	2667 MHz	<b>1↓</b> : Select Item
PCH SKU	W480	Enter: Select
		+/-: Change Opt.
System Date	[Man 06/06/2022]	F1: General Help
System Time	[18:55:30]	F2: Previous Values
		F3: Optimized Defaults
Access Level	Administrator	F4: Save & Exit
		ESC: Exit

Feature	Description	Options
System Date	The date format is <day>, <month> <date> <year>. Use [+] or [-] to configure system Date.</year></date></month></day>	
System Time	The time format is $<$ Hour $> <$ Minute $> <$ Second $>$ . Use [+] or [-] to configure system Time.	

## 3.2.2 Advanced

Use this menu to set up the items of special enhanced features

Aptio Setup – AMI Main Advanced Hardware Monitor Security Boot Exit	
PCH-FN Configuration Trusted Computing CPU Configuration Graphics Configuration Aft Configuration CSM Configuration Super ID Configuration Serial Console Redirection Safia And RST Configuration Network Stack Configuration USB Configuration NVMe Configuration Doboard Devices Configuration EZ-Flash APM Configuration Hatchdog Timer Miscellaneous	Configure Management Engine Technology Parameters ++: Select Screen T1: Select Item Enter: Select +/-: Change Opt, F1: General Heip F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
<ul> <li>Onboard Devices Configuration</li> <li>E2-Flash</li> <li>APM Configuration</li> <li>Watchdog Timer</li> <li>Miscellaneous</li> </ul>	++: Select Screen T4: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save 8 Exit ESC: Exit

# 3.3 Configuration

## 3.3.1 PCH-FW Configuration

Configure Management Engine Technology Parameters

Advanced	Aptio Setup – AMI	
TPM Device Selection	[атрм]	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.
		<pre>++: Select Screen T1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>

Feature	Description	Options
TPM Device Selection	Selects TPM device: PTT or dTPM. PTT-Enable PTT in SkuMgr dTPM1.2 –Disables PTT in SkuMgr Warning! PTT/dTPM will be disabled and all data saved on it will be lost.	★dTPM , PTT

## **Trusted Computing**

## Trusted Computing Settings

Advanced	Aptio Setup	- AMI
Configuration Security Device NO Security Dev	Support [Enable] ice Found	Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INTIA interface will not be available. **: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
	Version 2.21.1278 Copyr	ight (C) 2021 AMI
Feature	Description	Options
Security Device Support	Enables or Disables BIOS sup will not show Security Device INT1A interface will not be av	port for security device. O.S. . TCG EFI protocol and vailable

## 3.3.2 CPU Configuration CPU Configuration Parameters

Advanced	Aptio Setup — AMI	
CPU Configuration		When enabled, a VMM can
Type ID Speed L1 Data Cache L1 Instruction Cache L2 Cache L3 Cache L4 Cache VMX	Intel(R) Core(TM) i5-10500E CPU @ 3.10GHz 0xA0654 3100 MHz 32 KB × 6 32 KB × 6 256 KB × 6 12 MB N/A Supported	hardware capabilities provided by Vanderpool Technology.
SMX/TXT Intel (VMX) Virtualization	Supported [Enabled]	→+: Select Screen ↑↓: Select Item
Technology Hyper-Threading Intel Trusted Execution Technology VT-d ▶ CPU – Power Management Control	[Enabled] [Disabled] [Enabled]	Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Feature	Description	Options
Intel (VMX) Virtualization Technology	When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.	★Enabled, Disabled
Hyper-Threading	Enable or Disable Hyper-Threading Technology.	★Enabled, Disabled
Intel Trusted Execution Technology	Enables utilization of additional hardware capabilities provided by Intel(R) Trusted Execution Technology. Changes require a full power cycle to take effect.	★Disabled, Enabled
VT-d	VT-d capability	★Enabled, Disabled

# **<u>CPU- Power Management Control</u>**

## CPU- Power Management Control Options

Advanced	Aptio Setup – AMI	
CPU – Power Management Control		Enable/Disable processor Turbo Mode (requires Intel Speed
Intel(R) Speedstep(tm) Intel(R) Speed Shift Technology Turbo Mode C states Enhanced C-states	[Enabled] [Enabled] [Disabled] [Enabled] [Enabled]	Step or Intel Speed Shift to be available and enabled).
		++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Feature	Description	Options
Intel(R) SpeedStep(tm)	Allows more than two frequency ranges to be supported.	★Enabled, Disabled
Intel(R) Speed Shift Technology	Enable/Disable Intel(R) Speed Shift Technology support. Enabling will expose the CPPC v2 interface to allow for hardware-controlled P-states.	★Enabled, Disabled
Turbo Mode	Enable/Disable processor Turbo Mode (requires Intel Speed Step or Intel Speed Shift to be available and enabled)	★Disabled, Enabled
C states	Enable/Disable CPU Power Management. Allows CPU to go to C states when it's not 100% utilized.	★Enabled, Disabled
Enhanced C-states	Enable/Disable C1E. When enabled, CPU will switch to minimum speed when all cores enter C-State.	★Enabled, Disabled

# **3.3.3 Graphics Configuration** System Agent (SA)Parameters

Advanced	Aptio Setup — AMI	
Graphics Configuration Primary Display Internal Graphics RC6(Render Standby)	[Auto] [Auto] [Enabled]	Select which of IGFX/PEG/PCIE Graphics device should be Primary Display.
		<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>

Feature	Description	Options
Primary Display	Select which of IGFX/PEG/PCIE Graphics device should be Primary Display.	★Auto, IGFX, PCIE, PEG
Internal Graphics	Keep IGFX enabled based on the setup options.	★Auto, Disabled, Enabled
RC6 (Render standby)	Check to enable render standby support.	★Enabled, Disabled

## 3.3.4AMT Configuration

Advanced Advanced USB Provisioning of AMT DIsabledI DERA Configuration DEM Flags Settings MEBx Resolution Settings IDIsabledI Frovisioning. Enable/Disable of AMT USB Provisioning. HEBX Resolution Settings IDIsabledI Frovisioning. IDIsabledI Frovisioning. IDIsabledI Frovisioning. IDIsabledI Frovisioning. IDIsabledI IDIsabledI Provisioning. IDIsable of AMT USB IDISA

# Configure Intel(R) Active Management Technology Parameters

Feature	Description	Options
USB Provisioning of AMT	Enable/Disable of AMT USB Provisioning.	★Disabled, Enable
CIRA Configuration	Configure Remote Assistance Process parameters.	
OEM Flags Settings	Configure OEM Flags	
MEBx Resolution Settings	Resolution settings for MEBx display modes.	

## 3.3.5 CIRA Configuration

Main	Aptio Setup - AMI	
Activate Remote Assistance Process CIRA Timeout	[Disabled] D	Trigger CIRA boot Note: Network Access must be activated first from MEBx Setup.
		<pre>++: Select Screen t1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>

Feature	Description	Options
Active Remote	Trigger CIRA boot. Note: Network Access must be	★Disabled,
Assistance Process	activated first from MEBx Setup.	Enable
CIRA Timeout	OEM defined timeout for MPS connection to be established. 0 – use the default timeout value of 60 seconds. 255 – MEBx waits until the connection succeeds.	<b>★</b> 0

## **OEM Flags Settings**



Feature	Description	Options
MEBx hotkey Pressed	OEMFLag Bit 1: Enable automatic MEBx hotkey press.	★Disabled, Enable
MEBx Selection Screen	OEMFLag Bit 2: Enable MEBx selection screen with 2 options: Press 1 to enter ME Configuration Screens Press 2 to initiate a remote connection Note: Network Access must be activated from MEBx Setup for this screen to be displayed.	★Disabled, Enable
Hide Unconfigure ME Confirmation Prompt	OEMFLag Bit 6: Hide Unconfigure ME confirmation prompt when attempting ME unconfiguration.	★Disabled, Enable
MEBx OEM Debug Menu Enable	OEMFLag Bit 14: Enable OEM debug menu in MEBx.	★Disabled, Enable
Unconfigure ME	OEMFLag Bit 15: Unconfigure ME with resetting MEBx password to default.	★Disabled, Enable

# MEBx Resolution Settings

Main	Aptio Setup – AMJ	I
Non-UI Mode Resolution UI Mode Resolution Graphics Mode Resolution	[Auto] [Auto] [Auto]	Resolution for non-UI text mode.
		<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>

Feature	Description	Options
Non-UI Mode Resolution	Resolution for non-UI text mode.	★Auto, 80x25, 100x31
UI Mode Resolution	Resolution for UI text mode.	★Auto, 80x25, 100x31
Graphics Mode Resolution	Resolution for graphics mode.	★Auto, 640x480, 800x600, 1024x768

## 3.3.6 CSM Configuration

CSM Configuration: Enable/Disable, Option ROM execution settings, etc.

Aptio Setup – AMI	
onfiguration [Enabled] 00.00	Controls the execution of UEFI and Legacy Network OpROM
[Do not launch] [UEF1] [UEF1] [UEF1]	
	++: Select Screen t1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
	Aptio Setup - AMI onfiguration [Enabled] 00.00 [Do not launch] [UEFI] [UEFI] [UEFI]

Feature	Description	Options
CSM Support	Enable/Disable CSM Support	$\star$ Disable, Enabled
CSM Support [Enable]		
Network	Controls the execution of UEFI and Legacy Network OpROM.	★Do not launch, UEFI, Legacy
Storage	Controls the execution of UEFI and Legacy Storage OpROM	★UEFI, Do not launch, Legacy
Video	Controls the execution of UEFI and Legacy Video OpROM	★UEFI, Do not launch, Legacy
Other PCI device	Determines OpROM execution policy for devices other than Network, Storage, or Video	★UEFI, Do not launch, Legacy

# 3.3.7 Super IO Configuration Super IO Configuration

Advanced	Aptio Setup – AMI	
Super IO Chip > Serial Port 1 Configuration > Serial Port 2 Configuration > Serial Port 3 Configuration > Serial Port 4 Configuration	NCT6116D	Set Parameters of Serial Port 1 (COMA)
		<ul> <li>↔: Select Screen</li> <li>11: Select Item</li> <li>Enter: Select</li> <li>+/-: Change Opt.</li> <li>F1: General Help</li> <li>F2: Previous Values</li> <li>F3: Optimized Defaults</li> <li>F4: Save &amp; Exit</li> <li>ESC: Exit</li> </ul>

Feature	Description	Options
Serial Port 1 Configuration	Set Parameters of Serial Port1(COMA)	
Serial Port 2 Configuration	Set Parameters of Serial Port2(COMB)	
Serial Port 3 Configuration	Set Parameters of Serial Port3(COMC)	
Serial Port 4 Configuration	Set Parameters of Serial Port4(COMD)	

# 3.3.8 Serial Port Configuration ■ Serial Port 1 Configuration

Advanced	Aptio Setup – AMI		
Serial Port 1 Configure Serial Port Device Settings COM1 Control	tion [Enabled] IO=9F8h; IRO=4; [RS232]	Enable or Disa (COM) ++: Select Sor 11: Select Itt Enter: Select +/-: Change Op F1: General HE F2: Previous ^ F3: Optimized F4: Save & Ex. ESC: Exit	able Serial Port Peen Sm ot. 31p Values Defaults it
	Version 2.21.1278 Copyright (C) 20	21 AMI	
Feature	Description		Options
Serial Port	Enable or Disable Serial Port (CON	[)	★Enabled, Disabled
COM1 Control	Select COM1 mode. RS232, RS422 o	or RS485	★RS232,RS422, RS485

#### Serial Port 2 Configuration

Advanced	Aptio Setup — AMI	
Serial Port 2 Configuration		Enable or Disable Serial Port
Serial Port Device Settings	[Enabled] IO=2F8h; IRQ=3;	(CON)
COM2 Control	[RS232]	
		++: Select Screen
		Enter: Select Item Enter: Select
		F1: General Help F2: Previous Values
		F3: Optimized Defaults F4: Save & Exit
Version :	2.21.1278 Copyright (C) 2021	LAMI

Feature	Description	Options
Serial Port	Enable or Disable Serial Port (COM)	★Enabled, Disabled
COM2 Control	Select COM2 mode. RS232, RS422 or RS485	★RS232, RS422, RS485

## **Serial Port 3 Configuration**

Main	Aptio Setup — AMI	
Serial Port 3 Configuration		Enable or Disable Serial Port
Serial Port Device Settings	[Enabled] IO=3E8h; IRQ=7;	
COM3 Control	[RS232]	
		→+: Select Screen
		T1: Select Item Enter: Select
		F1: General Help F2: Previous Values
		F3: Optimized Defaults F4: Save & Exit
		ESC: EXIL

Feature	Description	Options
Serial Port	Enable or Disable Serial Port (COM)	★Enabled, Disabled
COM3 Control	Select COM3 mode, RS232, RS422 or RS485	★RS232, RS422, RS485

## ■ Serial Port 4 Configuration

Main Main	Aptio Setup – AMI	
Serial Port 4 Configuration		Enable or Disable Serial Port
Serial Port Device Settings	[Enabled] IO=2E8h; IRQ=7;	(con)
COM4 Control	[RS232]	
		++: Select Screen
		Enter: Select +/-: Change Opt.
		F1: General Help F2: Previous Values
		F3: Uptimized Defaults F4: Save & Exit ESC: Exit

Feature	Description	Options
Serial Port	Enable or Disable Serial Port (COM)	★Enabled, Disabled
COM4 Control	Select COM4 mode, RS232, RS422 or RS485	★RS232, RS422, RS485

# <u>Serial Console Redirection</u> Serial Console Redirection

Advanced	Aptio Setup – AMI	
COM1 Console Redirection ▶ Console Redirection Settings	[Disabled]	Console Redirection Enable or Disable.
COM2 Console Redirection Console Redirection Settings	[Disabled]	
COM3 Console Redirection ► Console Redirection Settings	[Disabled]	
COM4 Console Redirection Console Redirection Settings	[Disabled]	++: Select Screen 11: Select Item Enter: Select +/-: Change Opt.
Legacy Console Redirection ▶ Legacy Console Redirection Settings		F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Feature	Description	Options
Console Redirection	Console Redirection Enable or Disable	$\star$ Disabled,
Console Redifection	Console Redirection Enable of Disable	Enabled
Console Redirection [Enabled]		
	The settings specify how the host computer	
Console Redirection Settings	and the remote computer (which the user is	
	using) will exchange data. Both computers	
	should have the same or compatible settings.	
Legacy Console Redirection Settings Legacy Console Redirection Settings		

## Console Redirection Settings

Advanced	Aptio Setup — AMI	
COM1 Console Redirection Settings Terminal Type Bits per second Data Bits Parity Stop Bits Flow Control VT-UTF8 Combo Key Support Recorder Mode Resolution 100x31 Putty KeyPad	[ANSI] [115200] [8] [None] [1] [None] [Enabled] [Disabled] [Disabled] [VT100]	Emulation: ANSI: Extended ASCII char set. VT100: ASCII char set. VT100+: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes. ##: Select screen 11: Select Item Enter: Select t/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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Feature	Description	Options
Terminal Type	Emulation: ANSI: Extended ASCII char set. VT100: ASCII char set. VT100+: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.	★ANSI, VT100, VT100+, VT-UTF8
Bits per second	Select Serial port transmission speed. The speed must be matched on other side. Long or noisy lines may require lower speeds.	★115200, 9600, 19200, 38400, 57600
Data bits	Data bits	★8,7
Parity	A parity bit can be sent with the data bits to detect some transmission errors. Even: parity bit is 0 if the num of 1's in the data bits is even. Odd: parity bit is 0 if num of 1's in the data bits is odd. Mark: parity bit is always 1. Space parity bit is always 0. Mark and Space Parity do not allow for error detection. They can be used as an additional data bit.	★None, Even, Odd, Mark, Space
Stop Bits	Stop bits indicate the end of a serial data packet. (A start bit indicates the beginning). The standard setting is 1 stop bit. Communication with slow devices may require more than 1 stop bit.	★1,2
Flow Control	Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a 'stop' signal can be sent to stop the data flow. Once the buffers are empty, a 'start' signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop signals.	★None, Hardware RTS/CTS
VT-UTFB Combo	Enable VT-UTF8 Combination Key Support for	★Enabled Disabled
Key Support	ANSI/VT100 terminals	A BRADIEU, DISADIEU
Recorder Mode	With this mode enabled only text will be sent. This is to capture Terminal data.	★Disabled, Enabled
Resolution 100x31	Enables or disables extended terminal resolution	★Disabled, Enabled
Putty KeyPad	Select FunctionKey and KeyPad on Putty	★VT100, LINUX, XTERMR6, SCO, ESCN, VT400

## Legacy Console Redirection Settings

Advanced	Aptio Setup — AMI	
Legacy Console Redirection Settings		Select a COM port to display redirection of Legacy OS and
Redirection COM Port Resolution Redirect After POST	[COM1] [O0x24] [Always Enable]	Legacy OPROM Messages
		<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>

Feature	Description	Options
Redirection COM Port	Select s COM port to display redirection of Legacy OS and Legacy OPROM Messages.	★COM1, COM2, COM3, COM4
Resolution	On Legacy OS, the number of Rows and Columns supported redirection.	★80X24,80X25
Redirect After POST	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.	★Always Enable, BootLoader

# 3.3.9 SATA And RST Configuration SATA Device Options Settings

Advanced	Aptio Setup – AMI	
SATA And RST Configuration		Enable/Disable SATA Device.
SATA Controller(s) SATA Mode Selection SATA Test Mode Serial ATA Port 1 Software Preserve Port 1 Hot Plug Serial ATA Port 2 Software Preserve Port 2 Hot Plug CFast Software Preserve Port 3 Hot Plug MSATA Software Preserve Port 4 M.2 SATA(M-Key) Software Preserve Port 5	[Enabled] [AHCI] [Disabled] Empty Unknown [Enabled] [Disabled] KINGSTON OCPOS (256.06B) SUPPORTED [Enabled] [Disabled] Empty Unknown [Enabled] [Disabled] Empty Unknown [Enabled] Empty Unknown [Enabled] Empty Unknown [Enabled]	<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>

Feature	Description	Options	
SATA Controller(s)	Enable/disable the SATA controllers.	$\star$ Enabled, Disabled	
SATA Mode Selection	Determines how SATA controller(s) operate.	★AHCI, Intel RST Premium (RAID)	
SATA Test Mode	Test Mode Enable/Disable (Loop Back)	★Disabled, Enabled	
Port1~Port5	Enable or Disable SATA Port	★Enabled, Disabled	
Hot Plug	Designates this port as Hot Pluggable.	★Disabled, Enabled	

# 3.3.10 Network Stack Configuration Network Stack Settings

Aptio Setup - AMI Advanced		
Network Stack IPv4 PXE Support IPv6 PXE Support PXE boot wait time Media detect count	[Enabled] [Disabled] [Disabled] 0 1	Enable/Disable UEFI Network Stack ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values
		F3: Optimized Defaults

Feature	Description	Options
Network Stack	Enable/ Disable UEFI Network Stack	$\star$ Disabled, Enabled
Network Stack [Enabled]		
Ipv4 PXE Support	Enable/Disable IPv4 PXE boot support. If disable, IPv4 PXE boot support will not be available.	★Disabled, Enabled
Ipv6 PXE Support	Enable/Disable IPv6 PXE boot support. If disable, IPv6 PXE boot support will not be available.	★Disabled, Enabled
PXE boot wait time	Wait time in seconds to press ESC key to abort the PXE boot. Use either +/- or numeric keys to set the value.	<b>★</b> 0
Media detect count	Number of times the presence of media will be checked. Use either +/- or numeric keys to set the value.	<b>*</b> 1

# 3.3.11 USB Configuration USB Configuration Parameters

Advanced	Aptio Setup – AMI	
USB Configuration		Enables Legacy USB support.
USB Module Version USB Controllers: 1 XHCI USB Devices: 1 Keyboard	24	support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
Legacy USB Support XHCI Hand-off USB Mass Storage Driver Support	[Enabled] [Enabled] [Enabled]	
U3262_1 U3262_2 U3261_3 U3261_4 U3261_5 U3261_6 US82_RE	[Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [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>

Feature	Description	Options
Legacy USB Support	Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.	★Enabled, Disabled, Auto
XHCI Hand-off	This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver	★Enabled, Disabled
USB Mass Storage Driver Support	Enable/Disable USB Mass Storage Driver Support	★Enabled, Disabled
U32G2_1~ U32G2_2	Enable/Disable this USB Physical Connector (Physical port). Once disabled, any USB devices plug into the connector will not be detected by BIOS or OS.	★Enabled, Disabled
U32G1_3~ U32G1_6	Enable/Disable this USB Physical Connector (Physical port). Once disabled, any USB devices plug into the connector will not be detected by BIOS or OS.	★Enabled, Disabled
USB2_RE	Enable/Disable this USB Physical Connector (Physical port). Once disabled, any USB devices plug into the connector will not be detected by BIOS or OS.	★Enabled, Disabled

# 3.3. 12 NVMe Configuration NVMe Device Option Settings

Aptio Setup – AMI Advanced	
NVMe controller and Drive information	
No NVME Device Found	
	++: Select Screen
	T∔: Select Item Enter: Select
	F1: General Help F2: Reeviews Values
	F2: Frevious values F3: Optimized Defaults F4: Save & Evit
	ESC: Exit
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# 3.3.13 Onboard Devices Configuration Onboard Devices Options Settings

HD Audio (Enabled) LANI 1210TT (Enabled) Intel LANI OPROM (Disabled) LANZ 1210TT (Enabled) Intel LANZ 0PROM (Disabled) LANS 1210TT (Enabled) Intel LANS 0PROM (Disabled) Intel LANS 0PROM (Disabled) MPCIE PCIE Port (Enabled) USB Port (Enabled) M.2 WiFi(E-Key) CNVi Mode [Auto Detection] PCIE Port (Enabled) USB Port (Enabled)	UD And to doubter
LANI 1210IT [Enabled] Intel LANI OPROM [Disabled] LAN2 1210IT [Enabled] Intel LAN2 OPROM [Disabled] Intel LAN3 OPROM [Disabled] Intel LAN3 OPROM [Disabled] mPCIE PCIE Port [Enabled] M.2 WiFi(E-Key) CNVI Mode [Auto Detection] PCIE Port [Enabled] USB Port [Enabled] USB Port [Enabled]	Disabled = HDA will be
Intel LAN1 OPROM [Disabled] LAN2 I210IT [Enabled] Intel LAN2 OPROM [Disabled] LAN3 I210IT [Enabled] Intel LAN3 OPROM [Disabled] mPCIE PCIE Port [Enabled] USB Port [Enabled] M.2 WiFi(E-Keg) CNVI Mode [Auto Detection] PCIE Port [Enabled] USB Port [Enabled]	unconditionally disabled
LAN2 1210IT [Enabled] Intel LAN2 OPROM [Disabled] LAN3 1210IT [Enabled] Intel LAN3 OPROM [Disabled] mPCIE PCIE Port [Enabled] USB Port [Enabled] M.2 WiFi(E-Keg) CNVi Mode [Auto Detection] PCIE Port [Enabled] USB Port [Enabled]	Enabled = HDA will be
Intel LAN2 OPROM [Disabled] LAN3 I210IT [Enabled] Intel LAN3 OPROM [Disabled] mPCIE PCIE Port [Enabled] USB Port [Enabled] CNVi Mode [Auto Detection] PCIE Port [Enabled] USB Port [Enabled]	unconditionally enabled.
LANS I210IT [Enabled] Intel LANS OPROM [Disabled] mPCIE PCIE Port [Enabled] USB Port [Enabled] M.2 WiFi(E-Key) CNVi Mode [Auto Detection] PCIE Port [Enabled] USB Port [Enabled]	
Intel LANS OPROM [Disabled] mPCIE PCIE Port [Enabled] USB Port [Enabled] M.2 WiFi(E-Key) CNVi Mode [Auto Detection] PCIE Port [Enabled] USB Port [Enabled]	
mPCIE PCIE Port [Enabled] USB Port [Enabled] M.2 WiFi(E-Key) CNVi Mode [Auto Detection] PCIE Port [Enabled] USB Port [Enabled]	
PCIE Port [Enabled] USB Port [Enabled] M.2 WiFi(E-Key) CNVi Mode [Auto Detection] PCIE Port [Enabled] USB Port [Enabled]	
USB Port [Enabled] M.2 WIFi(E-Key) CNVi Mode [Auto Detection] PCIE Port [Enabled] USB Port [Enabled]	
M.2 WiFi(E-Key) CNVi Mode [Auto Detection] PCIE Port [Enabled] USB Port [Enabled]	
M.2 WiFi(E-Key) CNVi Mode [Auto Detection] PCIE Port [Enabled] USB Port [Enabled]	++: Select Screen
CNVi Mode [Auto Detection] PCIE Port [Enabled] USB Port [Enabled]	11: Select Item
PCIE Port [Enabled] USB Port [Enabled]	Enter: Select
USB Port [Enabled]	+/-: Change Opt.
	F1: General Help
SIM Stot Selection [Nano SIM1]	F3: Ontimized Defaults
I2C Controller [Enabled]	F4: Save & Exit
SPIO Controller [Disabled]	ESC: Exit

Feature	Description	Options
HD Audio	Control Detection of the HD-Audio device. Disabled= HDA will be unconditionally disabled. Enabled= HDA will be unconditionally enabled.	★Enabled, Disabled
LAN1 I210IT	Enable/Disable LAN1 I210IT	★Enabled, Disabled
Intel LAN1 OPROM	Launch Intel PXE OPROM.	★Disabled, Enabled
LAN2 I210IT	Enable/Disable LAN2 I210IT	★Enabled, Disabled
Intel LAN2 OPROM	Launch Intel PXE OPROM.	★Disabled, Enabled
LAN3 I210IT	Enable/Disable LAN3 I210IT	★Enabled, Disabled
Intel LAN3 OPROM	Launch Intel PXE OPROM.	★Disabled, Enabled
mPCIE PCIE Port	Enable/Disable mPCIe1 Controller	★Enabled, Disabled
mPCIE USB Port	Enable/Disable mPCIe1 Controller	★Enabled, Disabled
M.2 WiFi(E-Key) CNVi Mode	This option configures Connectivity. [Auto Detection] means that if Discrete solution is discovered it will be enabled by default. Otherwise, Integrated solution (CNVi) will be enabled. [Disable Integrated] disables Integrated Solution.	★Auto Detection, Disable Integrated
M.2 WiFi(E-Key) PCIE Port	Enabled/disabled M.2 WIFI Controller	★Enabled, Disabled
M.2 WiFi(E-Key) USB Port	Enabled/disabled M2_WIFI Controller	★Enabled, Disabled
SIM Slot Selection	Select Nano SIM1 or Nano SIM2	★Nano SIM1, Nano SIM2
I2C Controller	Enables/Disables Serial Io Controller If given device is Function 0PSF disabling is skipped. PSF default will remain and device PCI CFG Space will still be visible. This is needed to allow	★Enabled, Disabled

	PCI enumerator access functions above 0 in a multifunction device.	
SPI0 Controller	Enables/Disables Serial Io Controller If given device is Function 0PSF disabling is skipped. PSF default will re-main and device PCI CFG Space will still be visible. This is needed to allow PCI enumerator access functions above 0 in a multifunction device.	★Disabled, Enabled

# 3.3.14 APM Configuration Advance Power Management

Aptio Setup - AMI Advanced		
Advanced APM Configuration ErP Ready Restore AC Power Loss Power On By PCIE Power On By RIng Power On By RTC RTC Alarm Date (Days) Wake up hour Wake up minute Wake up second	Aptio Setup - AMI [Disabled] [S5 State] [Disabled] [Disabled] [Enabled] 15 0 0 0	Power On By RTC ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Feature	Description	Options
ErP Ready	Allow BIOS to switch off some power at S4/S5 to get the system ready for ErP requirement. When set to Enabled, all other PME options will be switched off.	★Disabled, Enabled
Restore AC Power Loss	Select AC power state when power is re-applied after a power failure.	★S5 State, S0 State
Power On By PCIE	Enable or disable the Wake-on-LAN function of the onboard LAN controller or other installed PCIE LAN devices.	★Disabled, Enabled
Power On By Ring	Power On By Ring.	★Disabled, Enabled
Power On By RTC	Power On By RTC	$\star$ Disabled, Enabled
Power On By RTC[Enable]		
RTC Alarm Date (Days)	RTC Alarm Date (Days). 0: Every Day	<b>★</b> 15
Wake up hour	Select 0-23 For example enter 3 for 3am and 15 for 3 pm.	<b>★</b> 0
Wake up minute	Select 0-59 for Minute.	★0
Wake up second	Select 0-59 for Second.	★0

#### Watchdog Timer

Advanced	Aptio Setup – AMI	
Watchdog Timer		Enable/Disable Watchdog Support
Watchdog Support Watchdog Count mode Watchdog Timer	[Enabled] [Second Mode] 60	++: 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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Feature	Description	Options
Watchdog Support	Enable/Disable Watchdog Support.	★Enable, Disabled
Watchdog Count mode	Select Watchdog Timer I count mode.	★Second Mode, Minute Mode
Watchdog Timer	Watchdog Timer I Time-out value.	★60

#### **Miscellaneous**

Advanced	Aptio Setup — AMI	
Miscellaneous		Enable/Disable the control of Active State Power Management
DMI/OPI Configuration		on sh side of the DHI LINK.
DMI Link ASPM Control		
PCI Express Configuration		
DMI Link ASPM Control	[Disabled]	
		↔: Select Screen
		T↓: Select Item
		+/-: Change Opt.
		F1: General Help
		F2: Previous Values
		F3: Uptimized Defaults
		ESC: Exit

Feature	Description	Options
DMI/OPI Configuration		
DMI Link ASPM Control	Enable/Disable the control of Active State Power Management on SA side of the DMI Link.	★Disabled, L0s, L1, L0sL1
PCI Express Configuration		
DMI Link ASPM Control	The control of Active State Power Management of the DMI Link.	★Disabled, L0s, L1, L0sL1, Auto

## **H/W Monitor**

MotherBoard temperature CPU temperature System Fan Speed CPU Core Voltage +5VSB DC IN +3VSB	: +45 % : +51 % : N/A : +0.944 V : +5.100 V : +24.055 V : +23.328 V	Smart Fan function setting
OVT Mechanism for PCIE Smart Fan Node Smart Fan Function	[Disəbled] (Manual Mode]	++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Sove 8 Exit ESC: Exit

Feature	Description	Options
OVT Mechanism for PCIE	OVT Mechanism for PCIE	$\star$ Disabled, Enabled
Smart Fan Mode	Smart Fan Mode Select	★Normal, Manual Mode, Disabled,
Smart Fan Mode [Manual Mode]		
Smart Fan Function	Smart Fan Function setting	

# 3.4 Security

Password Description		Set Administrator Password
If ONLY the Administrator'	s password is set,	
then this only limits acce	ss to Setup and is	
only asked for when enteri	ng Setup. d is set then this	
is a nower on password and	must be entered to	
boot or enter Setup. In Se	tup the User will	
have Administrator rights.		
The password length must b	e	
in the following range:		
Minimum length	3	
Maximum length	20	
Administrator Passuord		TI: Select Item
User Passuard		Enter: Select
0301 1 033001 0		+/-: Change Opt.
Secure Boot		F1: General Help
		F2: Previous Values
HDD Security Configuration	•	F3: Optimized Defaults
		F4: Save & Exit
		ESU: EXIT

Feature	Description	Options
Administrator Password	Set Administrator password.	
User Password	Set User Password	

Secure Boot

	Aptio Setup – AMI Security	
Secure Boot		Secure Boot feature is Active if Secure Boot is Enabled, Platform Key(PK) is enrolled
System Mode	Setup Not Active	and the System is in User mode. The mode change requires
Vendor Keys	Valid	platform reset
Secure Boot Secure Boot Mode ▶ Key Management	[Disabled] [Custom]	
		<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>
	Vencion 2 21 1270 Conunight ()	C) 2021 AUT

## Secure Boot configuration

Feature	Description	Options
Secure Boot	Secure Boot feature is Active if Secure Boot is Enabled, Platform Key (PK) is enrolled and the System is in User mode. The mode change requires platform reset.	★Disabled, Enabled
Secure Boot Mode	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	★Custom, Standard

#### Key Management

Aptio Setup - AMI Security		
Key Management Secure Boot variable   Size  Keys  Key Source P Latform Key(PK)   0  0  No Keys Key Exchange Keys   0  0  No Keys Authorized Signatures  0  0  No Keys Forbidden Signatures  4040  83  Mixed	Enroll Factory Defaults or load certificates from a file: 1.Public Key Certificate: a)EFL_SIGNATURE_LIST b)EFL_CERT_XSO9 (DER) c)EFL_CERT_XSO9 (DER) d)EFL_CERT_SHAXXX 2.Authenticated UEFI Variable 3.EFI FE/COFF Image(SHA256) Key Source: Factory,External,Mixed ++: Select Screen f4: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	

Feature	Description	Options
Platform Key(PK)	Enroll Factory Defaults or load certificates from	
Key Exchange Keys	a file: 1 Publuc Key Certificate:	
Authorized Signatures	a)EFI_SIGNATURE_LIST	
	b) EFI_CERT_X509 (DER)	
	c) EFI_CERT_RSA2048 (bin)	
Forbiddon Signaturos	d)EFI_CERT_SHAXXX	
rorbidden Signatures	2.Authenticated UEFI Variable	
	3.EFI PE/COFF Image(SHA256)	
	Key Source: Factory, External, Mixed	

#### HDD Security Configuration

Apti Securit	Setup – AMI
HDD Password Description : Allows Access to Set, Modify and Clear Hard Disk User Password and Master Password. User Password is mandatory to Enable HDD S If Master password is installed (optional) it can also be used to unlock the HDD. If the 'Set User Password' option is hidde do power cycle to enable the option again. HDD PASSWORD CONFIGURATION: P1:KINGSTON OCPOS3256Q-A0 Security Supported : Yes Security Enabled : No Security Enabled : No Security Enabled : No Security Encent : No HDD User Fwd Status: NOT I Set User Password	Set HDD User Password. *** Advisable to Power Cycle System after Setting Hard Disk Passwords ***. Discard or Save changes option in setup does not have any impact on HDD when password is set or removed. If the 'Set HDD User Password' option is hidden, do power cycle to enable the option again **: Select Screen 14: Select Trem Enter: Select */-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

## 3.5 Boot

Aptio Setup – AMI Main Advanced Hardware Monitor Security <mark>Boot</mark> Exit		
Boot Configuration CHASSIS INTRUDE Setup Promot Timeout Bootup NumLock State Quiet Boot Fast Boot Boot mode select FIXED BOOT ORDER Priorities Boot Option #1	[Disabled] 1 [On] [Disabled] [Disabled] [UEFI] [Hard Disk:Windows	Enable/Disable CHASSIS INTRUDE
Boot Option #2 Boot Option #3 Boot Option #4 ▶ UEFI Hard Disk Drive BBS Priorities	Boot Manager (P1: KINGSTON DCP033256Q-À0)] [NVME] [USB Device] [Network]	++: Select Screen f1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Feature	Description	Options
CHASSIS INTRUDE	Enable/Disable CHASSIS INTRUDE	★Disabled, Enabled
Setup Prompt Timeout	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.	★1
Bootup NumLock State	Select the keyboard NumLock state	★On, Off
Quiet Boot	Enables or disables Quiet Boot option	★Disabled, Enabled
Fast BootEnables or disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.		★Disabled, Enabled
Boot mode select	Select boot mode LEGACY/UEFI	★UEFI, LEGACY
Boot Option #1~#4	Sets the system boot order	★Hard Disk, NVME, USB device, Network, Disabled
UEFI Hard Disk Drive BBS Priorities	Specifies the Boot Device Priority sequence from available UEFI Hard Disk Drives.	

#### **UEFI Hard Disk Drive BBS Priorities**

Aptio Setup — AMI Boot		
Boot Option #1	[Windows Boot Manager (P1: KINGSTON DCPOS32560-A0)]	Sets the system boot order ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

## 3.6 Save & Exit

Aptio Setup – AMI Main Advanced Hardware Monitor Security Boot <mark>Exit</mark>	
Save Changes and Exit Discard Changes and Exit Save Changes and Reset Discard Changes and Reset	Exit system setup after saving the changes.
Save Options Save Changes Discard Changes	
Restore Defaults Save as User Defaults Restore User Defaults	
Boot Override UEFI: ADATA USB Flash Drive 1100, Partition 1	<pre>++: Select Screen f↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit</pre>

Feature	Description	Options
Save Changes and Exit	Exit system setup after saving the changes.	
Discard Changes and Exit	Exit system setup without saving any changes.	
Save Changes and Reset	Reset the system after saving the changes.	
Discard Changes and Reset	Rest system setup without saving any changes.	
Save Changes	Save Changes done so far to any of the setup options.	
Discard Changes	Discard Changes done so far to any of the setup options.	
Restore Defaults	store Defaults Restore/Load Default values for all the setup options.	
Save as Use Defaults	Save the changes done so far as User Defaults	
Restore User Defaults	Restore the User Defaults to all the setup options.	

# **Chapter 4 Important Instructions**

This chapter includes instructions which must be carefully followed when the fan-less embedded system is used.

## 4.1 Note on the Warranty

Due to their limited-service life, parts which, by their nature, are especially subject to wear are not included in the guarantee beyond the legal stipulations.

## 4.2 Exclusion of Accident Liability Obligation

Portwell, Inc. shall be exempt from the statutory accident liability obligation if users fail to abide by the safety instructions.

## 4.3 Liability Limitations / Exemption from the Warranty Obligation

In the event of damage to the system unit caused by failure to abide by the hints in this manual and on the unit (especially the safety instructions), Portwell, Inc. shall not be required to respect the warranty even during the warranty period and shall be free from the statutory accident liability obligation.

## 4.4 Declaration of Conformity

CE/FCC Class A

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

1. This equipment may not cause harmful interference.

2. This equipment must accept any interference that may cause undesired operation.

Applicable Standards:

EN IEC 61000-6-2: 2019 EN IEC 61000-6-4: 2019 EN IEC 61000-3-2: 2019 EN 61000-3-3:2013+A1:2019 EN 55032: 2015 + A11: 2020 EN 55035: 2017 + A11: 2020 EN IEC 61000-3-2: 2019 EN IEC 62328-1:2020+A11:2020 EN 61000-3-3: 2013 + A1: 2019 BS EN 55032: 2015+A11:2020 BS EN 55035: 2017+A11:2020 BS EN IEC 61000-3-2:2019 BS EN 61000-3-3:2013+A1:2019 BS EN IEC 62328-1:2020+A11:2020 FCC 47 CFR PART 15 SUBPART B ANSI C63.4:2014 IECS-003: Issue 7 ANSI C63.4-2014 amended as per ANSI C63.4a-2017

# **Chapter 5 Frequent Asked Questions**

Question: How to update the BIOS file of WEBS-85Hx?

Answer: 1. Please visit web site of Portwell download center as below hyperlink https://www.portwell.com.tw/support-center/download-center/

- 2. Select "Search download" and type the keyword "WEBS-85H".
- 3. Find the "BIOS "page and download the ROM file and unzip file to USB flash drive (FAT 32 / 16 format).
- 4. Boot into BIOS and switch to "Advanced" page then select" EZ-Flash".

	Download Center
The v	Welcome to Portwell Download Center. web-based service/support site that could provide you technical demands and product knowledge. Enter product name or keyword to help you find the correct support topic and get more relevant results.
	If a download problem occurs, please contact the webmaster for assistance.
WEBS-85H	Active tags: Clear Search filter: :WEBS-85H Category Filter: :BIOS
Q Search	BIOS_WEBS-85Hx_10800PW01.CAP.zip   BIOS
BIOS	BIOS
Carrier design guide	
Catalog	August 26, 2022
Certificate	Package Size : 32 MB
Dimension	Version : 10800PW01
Drawing	BIOS update

Aptio Setup – AMI Main Advanced Hardware Monitor Security Boot Exit	
<ul> <li>PCH-FW Configuration</li> <li>Trusted Computing</li> <li>CPU Configuration</li> <li>Graphics Configuration</li> </ul>	EZ-Flash
<ul> <li>PCI Express Configuration</li> <li>AMT Configuration</li> <li>CSM Configuration</li> <li>Super IO Configuration</li> </ul>	
<ul> <li>Serial Console Redirection</li> <li>SATA And RST Configuration</li> <li>Network Stack Configuration</li> <li>USB Configuration</li> <li>USB Configuration</li> </ul>	
<ul> <li>None configuration</li> <li>Onboard Devices Configuration</li> <li>EZ-Flash</li> </ul>	++: Select Screen ↑↓: Select Item

Advanced	Aptio S	etup - AMI	
EZ-Flash • Enter Ez-Flash mode	E2 Do you want to e (Note: lf 'Yes', reb	-Flash Inter E2-Flash mode? The system will auto poot.) No	inter Ez-Flash mode ect Screen ect Item Select ange Opt. gral Help 2: Previous Values 3: Optimized Defaults 4: Save & Exit SC: Exit
	Version 2.21.1278	Copyright (C) 2021 A	MI

5. Enter EZ-Flash mode, Select the USB Drive and Click the BIOS file then start updating BIOS.

EZ-Flash	
Flash ME & BIOS data	
[Help] <b>†↓</b> : Move, Enter: Select, Esc: Exit/Back to the start page.	

6.When you see the "BIOS updated successfully" message, which means the BIOS update processes finished. Please cut the AC power of and **wait for 10 seconds** before powering on.



Question: What are the display options while using WEBS-85Hx?

**Answer: -** The WEBS-85Hx supports HDMIx2 \cdot DP display output.

#### Note:

Please visit our Download Center to get the Catalog, User manual, BIOS, and Driver files.

https://www.portwell.com.tw/support-center/download-center/

If you have other additional technical information or request which is not covered in this manual, please fill in the technical request form as below hyperlink.

https://www.portwell.com.tw/support-center/technical-request/

We will do our best to provide a suggestion or solution for you.

# **Portwell Software Service**

- 1. If you have customized requirements of BIOS, you can contact person of our company or branch.
- 2. If you have requirements of WDT 

  GPIO APP, you can contact our headquarter or branch, and we can render your assistance on developing.

Portwell Worldwide:	
Portwell, Inc.	E-mail: info@portwell.com.tw
Shanghai Portwell	E-mail: info@portwell.com.cn
Portwell Japan, Inc	E-mail: <u>info@portwell.co.jp</u>
American Portwell Technology	E-mail: <u>info@portwell.com</u>
European Portwell Technology	E-mail: info@portwell.eu
Portwell UK Ltd.	E-mail: info@portwell.co.uk
Portwell Deutschland GmbH	E-mail: <u>info@portwell.eu</u>
Portwell India Technology	E-mail: <u>info@portwell.in</u>
Portwell Korea, Inc.	E-mail: info@portwell.co.kr
Portwell Latin America	E-mail: <u>vendas@portwell.com.br</u>