

# Hanasis Mother Board (TEB-N5105)

# **User Manual**



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# **Chapter1. Introduction**

Thank you for purchasing TEB-N5105 motherboard, a reliable motherboard produced under Hanasis's consistently stringent quality control. It delivers excellent performance with robust design conforming to Hanasis's commitment to quality and endurance.

In this manual, chapter 1 and 2 contain introduction of the motherboard and step- by-step guide to the hardware installation. Chapter 3 contains the configuration guide to BIOS setup.



Because the motherboard specifications and the BIOS software might be updated, the content of this manual will be subject to change without notice. In case any modifications of this manual occur, the updated version will be available on Hanasis website without further notice.

If you require technical support related to this motherboard, please contact a Hanasis R&D.



# Safety rules

- 1. Please read this manual before use the motherboard to avoid damage caused by illegal operation.
- 2. Do not use this product in humid environment or with strong mechanical movement.
- 3. Build good ESD protection before operating it.
- 4. You must remove power supply before install any external module.
- 5. Please make sure that the Power supply is 24V DC.
- 6. Prohibit unauthorized reworks, and we will not take any responsibility for any damage caused by unauthorized rework.





# 1.1 Specification

Item		Specification		
Form Factor	Dimension	Hanasis Own Form Factor 6-Layer		
	CDU	Intel <sup>®</sup> Celeron Quad-Core Processor N5095 (4M Cache Upto 2.90 GHz)		
	CPU	Intel <sup>®</sup> Celeron Quad-Core Processor N5105 (4M Cache Upto 2.90 GHz)		
Processor System	Socket	FCBGA1338		
	TDP	N5095 (15 W) / N5105 (10 W)		
	BIOS	AMI UEFI BIOS		
	Speed & Type	DDR4 3200 MT/s		
Memory	Memory Type	DDR4 SODIMM(260 Pin) x 1 Slot		
	Memory Capacity	Support up to 32 GB		
	Controller	Intel <sup>®</sup> UHD Graphics		
	VRAM	Shared Memory		
Graphics	HDMI	Support Max Resolution 4096 x 2160 @60Hz		
	LVDS	Dual Channel 18/24bits, Max Resolution 1920x1200		
	Multi Display	LVDS + HDMI		
	Speed	10/100/1000 Mbps		
Ethernet	Controller	Realtek RTL8111H PCIe GbE Controller		
	Connector	RJ-45 x 1		
SATA	Data Trans. Rate	1 x SATA-III 6.0Gb/S, 2 x mSATA (Support RAID0,1)		
Audio	Controller	Realtek ALC662 HD Codec, Amplifier 2W		
	HDMI	1 x Type-A		
	Ethernet	1 x RJ-45		
	USB	4 x USB 3.0		
Deer I/O	Audio	1 x Jack (Line-Out)		
Rear 1/0	Serial(COM)	2 x DSUB9 (COM#1/2) , 3 x RJ-45(COM#3/4/5)		
	Cash Drawer	1 x RJ-11		
	DC-IN	1 x DIN 3Pin (24V)		
	DC-OUT	1 x DCJack (12V)		
	Memory Socket	1 x DDR4 Slot (Horizontal)		
	LVDS / LED BL	1 x LVDS (40 Pin Box) / 1 x LEDBL (5 Pin Box)		
	USB	2 x USB 2.0(Straight Jack), 1 x USB 2.0 (2.54Pitch Pin-Header)		
	Power Button/LED	1 x Tact Switch , 1 x Power LED(Blue)		
	Power Button/LED	1 x 4 Pin Header		
On-Board Connector	SATA	1 x SATA-III (Combo-Type)		
connector	Touch Panel	2 x 51 Pin Header (Capacitive)		
	Battery	1 x Coin Cell (CR2032) / CMOS Jumper		
	Audio AMP	2 x 2Pin Box Header		
	AT / ATX Jumper	AT : Directly PWR on / ATX : Press Button to PWR on		
	ТРМ	1 x 10 Pin Header (Option Hanasis TPM Board)		
Devuer Deguinerrent	Input Power	DC 24V / 2.5A		
Power Requirement	DC-Out	DC 12V / 500mA		
Environment	Storage Temp.	-20~75 °C		
Environment	Operating Temp.	0~60 °C		



# 1.2 System Block Diagram



# BLOCK DIAGRAM



# 1.3 Mother Board Layout



No	Connector Name	No	Connector Name
1	P-CAP Touch Connector	14	Speaker Connector
2	J1 Connector	15	RESET Pin Header
3	DEBUG (ESPI)	16	CMOS CLEAR Jumper
4	USB Pin Header	17	SATA Combo Connector
5	TPM Pin Header	18	CMOS Battery Connector
6	HD I2C Pin Header	19	FAN (CPU) Connector
7	JME Pin Header	20	LCD PANEL PWR Jumper
8	DDR4 RAM SoDIMM Socket	21	LCD BACKLIGHT Connector
9	USB2.0 Connector	22	LVDS Connector
10	AT/ATX Jumper	23	CASH DRAWER Voltage Select Jumper
11	FPANLE Pin Header		
12	Power Button		
13	Power LED		



# 1.4 I/O Panel Connector



No	Connector Name	No	Connector Name
1	DC-OUT (12V)	8	USB 3.0
2	DC-IN (24V)	9	AUDIO JACK (Line-Out)
3	CASH DRAWER (RJ-11)	10	HDMI
4	COM#1 (DSUB9P)	11	COM#3 (RJ-45)
5	COM#2 (DSUB9P)	12	COM#4 (RJ-45)
6	USB 3.0	13	MSR (RJ-45) (COM#5 / USB2.0)
7	LAN (RJ-45)		



# **Chapter2. Installation**

This is a Hanasis own form factor motherboard for POS system. Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it.



Make sure to unplug the power cord before installing or removing the motherboard. Failure to do so may cause physical injuries to you and damages to motherboard components.

## 2.1 Screw Holes

Place screws into the holes to secure the motherboard to the chassis.



Do not over-tighten the screws! Doing so may damage the motherboard.

#### 2.2 Pre-Installation Precautions

Take note of the following precautions before you install motherboard components or change any motherboard settings.

- 1. Unplug the power cord from the wall socket before touching any component.
- 2. To avoid damaging the motherboard components due to static electricity, NEVER place your motherboard directly on the carpet or the like. Also remember to use a grounded wrist strap or touch a safety grounded object before you handle components.
- 3. Hold components by the edges and do not touch the ICs.
- 4. Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that comes with the component.

Before you install or remove any component, ensure that the power is switched off or the power cord is detached from the power supply.

Failure to do so may cause severe damage to the motherboard, peripherals, and/or components.

#### 2.3 Installation of Memory Modules (SO-DIMM)

SV-h6200U motherboard provides one 260-pin DDR4L (Double Data Rate 3) SO-DIMM slot.



1. It is not allowed to install a DDR / DDR2 /DDR3 memory module into a DDR4 slot; otherwise, this motherboard and SO-DIMM may be damaged.

#### 2.3.1 Installation a SO-DIMM

Please make sure to disconnect the power supply before adding or removing SO-DIMM or the system components.

Step#1] Unlock a SO-DIMM slot by pressing the retaining clips outward.

Step#2] Align a SO-DIMM on the slot such that the notch on the SO-DIMM matches the break on the slot.

The SO-DIMM only fits in one correct orientation. It will cause permanent damage to the motherboard and the SO-DIMM

 $\rightarrow$  if you force the SO- DIMM into the slot in the incorrect orientation.

Step#3] Firmly insert the SO-DIMM into the slot until the retaining clips at both ends fully snap back in place and the SO-DIMM is properly seated.



## 2.4 Jumper Setup

The illustration shows how jumpers are setup. When the jumper cap is placed on pins, the jumper is "Short". If no jumper cap is placed on pins, the jumper is "Open". The illustration shows a 3-pin jumper whose pin1 and pin2 are "Short" when jumper cap is placed on these 2 pins.



#### 2.4.1 Clear CMOS Jumper (JCMOS)

Connector SPEC	Shape	Jumper Description	Remark
3-Pin 2.54 Pitch		1 - 2 : Normal 2 - 3 : Clear CMOS	Default is Normal

NOTE] JCMOS allows you to clear the data in CMOS. To clear and reset the system parameters to default setup, please turn off the computer and unplug the power cord from the power supply. After waiting for 15 seconds, use a jumper cap to short pin2 and pin3 on JCMOS for 5 seconds. However, please do not clear the CMOS right after you update the BIOS. If you need to clear the CMOS when you just finish updating the BIOS, you must boot up the system first, and then shut it down before you do the clear-CMOS action. Please be noted that the password, date, time and user default profile will be cleared only if the CMOS battery is removed.

#### 2.4.2 Panel Power Jumper (JLV)

Connector SPEC	Shape	Jumper Description	Remark
3-Pin 2.54 Pitch		1 - 2 : +3.3V (LCD 15") 2 - 3 : +5.0V (LCD 17"/19")	Default is +3.3V

#### 2.4.3 Cash Drawer Voltage Select Jumper (DRAWER\_PWR)

Connector SPEC	Shape	Jumper Description	Remark
3-Pin 2.54 Pitch		1 - 2 : +24V 2 - 3 : +12V	Default is +24V

#### 2.4.4 AT/ATX Mode Jumper (AUTOPWR1)

Connector SPEC	Shape	Jumper Description	Remark
3-Pin 2.54 Pitch		1 - 2 : ATX Mode (Button On) 2 - 3 : AT	Default is ATX Mode

#### 2.4.5 JTXE (J2)

Connector SPEC	Shape	Jumper Description	Remark
3-Pin 2.54 Pitch		Short 1-2 can Disable TXE	



# 2.5 Onboard Header and Connectors

2.5.1 LVDS Connector (LVDS)

Connector SPEC	Shape	Signal Description	Remark
40-Pin 1.25 Pitch		Refer to below	

No	Signal Description	No	Signal Description
1	+12V	2	+12V
3	+12V	4	+12V
5	+12V	6	GND
7	VCC 3.3V	8	GND
9	LVDS Panel PWR	10	LVDS Panel PWR
11	DDC CLK	12	DDC DAT
13	Back Light Adjust	14	LVDS Power Enable
15	Back Light Enable	16	GND
17	LVDS#1 D0 (-)	18	LVDS#1 D0 (+)
19	LVDS#1 D1 (-)	20	LVDS#1 D1 (+)
21	LVDS#1 D2 (-)	22	LVDS#1 D2 (+)
23	LVDS#1 CLK (-)	24	LVDS#1 CLK (+)
25	LVDS#1 D3 (-)	26	LVDS#1 D3 (+)
27	GND	28	GND
29	LVDS#2 D0 (-)	30	LVDS#2 D0 (+)
31	LVDS#2 D1 (-)	32	LVDS#2 D1 (+)
33	LVDS#2 D2 (-)	34	LVDS#2 D2 (+)
35	LVDS#2 CLK (-)	36	LVDS#2 CLK (+)
37	LVDS#2 D3 (-)	38	LVDS#2 D3 (+)
39	GND (LVDS Detection)	40	GND

NOTE] Grounding of Pin#39 is required to ensure normal LVDS output.

# 2.5.2 Inverter / Back Light Connector (IVCN1)

Connector SPEC	Shape	Signal Description	Remark
5-Pin 2.0 Pitch		1 : +12V 2 : GND 3 : Back Light Enable 4 : Back Light Adjust 5 : +5V	

NOTE] The LVDS backlight is controlled by PWM method.

# 2.5.3 CPU FAN Connector (CPU\_FAN)

Connector SPEC	Shape	Signal Description	Remark
4-Pin 2.0 Pitch		1 : FAN Speed Control 2 : FAN Speed (Sense) 3 : +12V 4 : GND	



# 2.5.4 SATA-III Connector (SATA)

	Connector SPEC	Shape		Signal Description	Remark
22	-Pin Sata Combo			Refer to below	
No	No Signal Description		No	Signal Description	
S1	GND		P1	+3.3V	
S2	SATA#0 TX(+)		P2	+3.3V	
S3	SATA#0 TX(-)		P3	+3.3V	
S4	GND		P4	GND	
S5	SATA#0 RX (-)		P5	GND	

S5	SATA#0 RX (-)	P5	GND
S6	SATA#0 RX(+)	P6	GND
S7	GND	P7	+5V
-		P8	+5V
-		P9	+5V
-		P10	GND
-		P11	SATA#1 TX(+)
-		P12	GND
-		P13	SATA#1 TX(-)
-		P14	SATA#1 RX(-)
-		P15	SATA#1 RX(+)

# 2.5.5 CMOS Battery (BAT2)

Connector SPEC	Shape	Signal Description	Remark
2-Pin 1.25 Pitch		1 : BAT 2 : GND	

# 2.5.6 AMP Speaker Connector(SPK1)

Connector SPEC	Shape	Signal Description	Remark
2-Pin 1.25 Pitch		1 : AMP L (+) 2 : AMP L (-)	

# 2.5.7 USB2.0 Connector (JUSB1)

Connector SPEC	Shape	Signal Description	Remark
4-Pin 2.54 Pitch	$ \begin{array}{c c} \hline & \bigcirc & \bigcirc \\ \hline 1 & 4 \end{array} $	1 : VUSB 5V 2 : USB DM 3 : USB DP 4 : GND	



# 2.5.8 Front Panel (FPANEL)

Connector SPEC	Shape	Signal Description	Remark
4-Pin 2.54 Pitch	$\boxed{\begin{array}{c} \bigcirc \bigcirc \bigcirc \\ 1 \end{array}}$	1 : PWRLED(+) 2 : PWRLED(-) 3 : PWRBUT(+) 4 : PWRBUT(-)	

# 2.5.9 RESET (RESET)

Connector SPEC	Shape	Signal Description	Remark
2-Pin 2.54 Pitch		1 : RESET 2 : GND	

## 2.5.10 TPM MODULE

Connector SPEC	Shape	Signal Description	Remark
10-Pin 2.54 Pitch		Refer to below	

No	Signal Description	No	Signal Description
1	3.3V	2	GND
3	RESET	4	TPM PIRQ
5	TPM MOSI	6	TPM MISO
7	TPM CLOCK	8	TPM CS0
9	TPM CS2	10	GND



# 2.6 I/O Connectors

# 2.6.1 COM#1 / COM#2

Connector SPEC	Shape	Signal Description	Remark
DSUB 9Pin		Refer to below	

No	Signal Description	No	Signal Description
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	СТЅ
4	DTR	9	COM Power 0V / 5V / 12V (Select by BIOS)
5	GND	10	-

NOTE] Pin9 of COM1/2 (DB9 on Rear IO) is 0V by default, +5V or +12V is selectable by setting BIOS.

# 2.6.2 COM#3 / COM#4

Connector SPEC	Shape	e Signal Description	
RJ-45 8Pin		Refer to below	

No	Signal Description	No	Signal Description
1	COM Power 0V / 5V (Select by BIOS)	5	RTS
2	СТЅ	6	СТЅ
3	TXD	7	GND
4	RXD	8	RTS

NOTE] Pin9 of COM3/4 (RJ-45 on Rear IO) is 0V by default, +5V is selectable by setting BIOS.

# 2.6.3 COM#5 / USB (For MSR)

Connector SPEC	Shape	Signal Description	Remark
RJ-45 8Pin		Refer to below	

No	Signal Description	No	Signal Description
1	VUSB 5V	5	VUSB 5V
2	USB DM	6	TXD
3	USB DP	7	RXD
4	GND	8	GND







# 2.6.4 LAN

Connector SPEC	Shape	Signal Description	Remark
RJ-45 with LED		Refer to below	

No	Signal Description	No	Signal Description
1	MD0 (+)	5	MD2 (+)
2	MD0 (-)	6	MD2 (-)
3	MD1 (+)	7	MD3 (+)
4	MD1 (-)	8	MD3 (-)

	Link LED	Activity LED		Domark
Status	Description	Status	Description	Reindik
Off	No Link	Off	-	
Orrende		Red	100Mbps Connection	
Orange	LINK	Green	1Gbps Connection	

# 2.6.5 HDMI

Connector SPEC	Shape	Signal Description	Remark
HDMI 19 Pin		Refer to below	

No	Signal Description	No	Signal Description	No	Signal Description
1	TMDS CH2(+)	8	GND	15	DDC CLK
2	GND	9	TMDS CH0(-)	16	DDC DAT
3	TMDS CH2(-)	10	TMDS CLK(+)	17	GND
4	TMDS CH1(+)	11	GND	18	+5V
5	GND	12	TMDS CLK(-)	19	HPD(Hot Plug Detect)
6	TMDS CH1(-)	13	CEC	-	
7	TMDS CH0(+)	14	-	-	

# 2.6.6 DC-IN JACK

Connector SPEC	Shape	Signal Description	Remark
DIN 3 Pin		1 : +24V 2 : GND 3 : N.C	



# 2.6.7 DC-OUT JACK

Connector SPEC	Shape	Signal Description	Remark
DC-JACK	2	1 : +12V 2 : GND	

# 2.6.8 CASH DRAWER (RJ-11)

Connector SPEC	Shape	Signal Description	Remark
RJ-11	<u>6,,,,,,,</u> 2	1 : GND 2 : DRAWER#1 3 : DRAWER Switch 4 : DRAWER Voltage 5 : DRAWER#2 6 : GND	



# **Chapter3. BIOS SETUP**

#### 3.1 Access the BIOS Setup

After power on, press the <Delete> Button during the P.O.S.T.(Power-on Self-Test) process.

Once you enter the BIOS Setup, the Main Menu will show up on the screen, in which you can use the arrow keys to move or select the items, and press <Enter> to accept or enter the sub-menu.

NOTE] Press <Delete> to enter BIOS Setup program, <F11> to show BBS.

#### 3.1.1 Menu Bar

The top of the screen has a menu bar with the following selections :

Menu	Description		
Main	To set up the system time/date information		
Advanced	To set up the advanced UEFI features		
Chipset	To display Memory & Graphics features		
Security	Security To set up the security features		
Boot To set up the default system device to locate and load the Operating System			
Save & Exit	To exit the current screen or the UEFI SETUP UTILITY		

Use < > key or < > key to choose among the selections on the menu bar, and then press < Enter> to get into the sub screen. You can also use the mouse to click your required item.

#### 3.1.2 Navigation Keys

Please check the following table for the function description of each navigation key.

Navigation Key(s)	Function Description	
$\leftarrow$ / $\rightarrow$	Moves cursor left or right to select Screens	
↑ / ↓	Moves cursor up or down to select items	
+ / -	To change option for the selected items	
<enter></enter>	To bring up the selected screen	
<f1></f1>	To display the General Help Screen	
<f2></f2>	To load previous values for all the settings	
<f9></f9>	To load optimal default values for all the settings	
<f10></f10>	To save changes and exit the UEFI SETUP UTILITY	
<f12></f12>	To print screen and save it to USB memory.	
<esc></esc>	To jump to the Exit Screen or exit the current screen	



#### 3.2 Main Screen

This page contains the basic information about the BIOS version, and you can set the system date and time manually.



#### 3.2.1 System Date

Set the system date. The date format is [Week, Month/Day/Year]. Use <Tab> to switch the item between month, day and year. Ether you can use the <+>/<-> key to change the value, or use the number keys to enter a new value for the date setting.

#### 3.2.2 System Time

Set the system time. The time format is [Hour/Minute/Second]. Use <Tab> to switch the item between hour, minute, second. Ether you can use the <+>/<-> key to change the value, or use the number keys to enter a new value for the time setting.



# 3.3 Advanced Screen

In this section, you may set the configurations for the following items : CPU Configuration, Power & Performance, PCH-FW Configuration, Trusted Computing, ACPI Settings, Super IO Configuration, HW Monitor, USB Configuration Network Stack Configuration, Info Report Configuration and NVMe Configuration.

Aptio Set Main Advanced Chipset Security F	up – AMI Soot Save & Exit		
<ul> <li>CPU Configuration</li> <li>Power &amp; Performance</li> <li>PCH-FN Configuration</li> <li>Trusted Computing</li> <li>ACPI Settings</li> <li>TR3786 Super ID Configuration</li> <li>Hardware Monitor</li> <li>USB Configuration</li> <li>Network Stack Configuration</li> <li>Info Report Configuration</li> <li>NVMe Configuration</li> <li>Realtek PCIe GBE Family Controller (MAC:00:E0:4C:B1:F3:75)</li> </ul>	CPU Configuration Parameters ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit F12: Prevint Screen		
Version 2.21.1278 Copyright (C) 2021 AMI R4			

Setting wrong values in this section may cause the system to malfunction.

# 3.3.1 CPU Configuration

 $|\lambda$ 

Advanced	Aptio Setup – AMI	Esc 🚥		
Type ID Speed L1 Data Cache L1 Instruction Cache L2 Cache L3 Cache	Intel(R) Celeron(R) NSI05 @ 2.00GHz 0x906C0 2000 HHz 32 KB x 4 32 KB x 4 1536 KB x 4 1536 KB x 4	To turn on/off the MLC streamer prefetcher.		
VMX SMX/TXT	Supported Not Supported	↔: Select Screen †↓: Select Item Enter: Select		
CPU Flex Ratio Override CPU Flex Ratio	[Disabled] 20	+/–: Change Opt. F1: General Help F2: Previous Values		
Settings Hardware Prefetcher		F9: Optimized Defaults ▼ F10: Save & Exit F12:Print Screen		
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#### 3.3.1.1 Active Processor Cores

Select the number of cores to enable in each processor package.

#### 3.3.1.1 Intel Virtualization Technology

When this option is set to [Enabled], a VMM (Virtual Machine Architecture) can utilize the additional hardware capabilities provided by Vanderpool Technology. This option will be hidden if the installed CPU does not support Intel Virtualization Technology.



# 3.3.2 Power & Performance

Advanced	Aptio Setup – AMI	Esc .		
CPU – Power Management	Control	Select the performance state that the BIOS		
PO Fused Max Core Ratio	N/A	will set starting from reset vector.		
P1 Fused Max Core Ratio	NZA			
P2 Fused Max Core Ratio	NZA			
P3 Fused Max Core Ratio	NZA			
Boot performance mode Intel(R) SpeedStep(tm)	[Turbo Performance] [Enabled]	→+: Select Screen †↓: Select Item		
Race To Halt (RTH)	[Enabled]	Enter: Select		
Technology	(Eughten)	F1: General Help		
Per Core P State OS control mode	[Enabled]	F2: Previous Values F9: Optimized Defaults		
		▼ F10: Save & Exit		
		F12 - Frint-Sureen		
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#### 3.3.2.1 Boot Performance Mode

Select the performance state that the BIOS will set before OS handoff.

#### 3.3.2.2 Intel SpeedStep™

Intel SpeedStep technology is Intel's new power saving technology. Processors can switch between multiple frequencies and voltage points to enable power saving. The default value is [Enabled]. Configuration options: [Enabled] and [Disabled]. If you install Windows® OS and want to enable this function, please set this item to [Enabled]. This item will be hidden if the current CPU does not support Intel SpeedStep technology.

#### 3.3.2.3 Turbo Mode

Use this item to enable or disable Intel Turbo Boost Mode Technology. Turbo Boost Mode allows processor cores to run faster than marked frequency in specific conditions. The default value is [Enabled].



### 3.3.3 ACPI Settings

Use this feature to configure Advanced Configuration and Power Interface (ACPI) power management settings for your system.

Advanced	Aptio Setup – AMI	Esc		
ACPI Settings Enable ACPI Auto Configuration	(Disabled)	Enables or Disables BIOS ACPI Auto Configuration.		
Enable Hibernation ACPI Sleep State Wake up By PCIE LAN Resume On RTC Alarm Restore AC Power Loss Lani Control	[Enabled] [S3 (Suspend to RAM)] [Disabled] [Dower Off] [Enabled]	++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit F12: Print Screen		
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#### 3.3.3.1 ACPI Sleep State

This item is used to select the highest ACPI sleep state. The system will enter when the SUSPEND button is pressed.

#### 3.3.3.1 Restore AC Power Loss

This item is used to set the power state after an unexpected AC power loss. If [Power Off] is selected, the AC/power remains off when the power recovers. If [Power On] is selected, the AC power resumes and the system starts to boot up when the power recovers.

#### 3.3.3.2 Wake up By PCIE LAN

This item decides whether we can wake up the system from S5 by PCIe LAN.

#### 3.3.3.3 Resume On RTC Alarm

This item can be turned off with a software command. If you enable this item, the system can automatically resume at a fixed time based on the system's RTC (real time clock). You must use an ATX power supply in order to use this feature.



## 3.3.4 Super IO Configuration

Aptio Setup – AMI Advanced	Esc 📰	Advanced	Aptio Setup – AMI	Esc
IT8786 Super IO Configuration Super IO Chip IT8786 > Serial Port 1 Configuration > Serial Port 2 Configuration > Serial Port 3 Configuration > Serial Port 4 Configuration > Serial Port 5 Configuration WatchDog Timer Control [Disabled]	Set Parameters of Serial Port 1 (COMA) +: Select Screen 11: Select Item Enter: Select +/-: Chage Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit F12: Print Screen	Serial Port 2 Config Serial Port Device Settings Serial Port Voltage Change Settings	uration [Enabled] IO=2F8h; IRQ=5; [OV] Serial Port Voltage - OV SV 12V	Select Serial Port Voltage Select Screen Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit F12: Print Screen
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#### 3.3.4.1 Serial Port1/2 Configuration

This item is used to set parameters of COM1/2. COM1/2 support the serial port voltage to 5V or 12V by BIOS.

#### 3.3.4.2 Serial Port3/4 Configuration

This item is used to set parameters of COM3/4. COM3/4 support the serial port voltage to 5V by BIOS.

#### 3.3.4.3 Serial Port5 Configuration

This item is used to set parameters of COM5.

## 3.3.5 H/W Monitor

In this section, it allows you to monitor the status of the hardware on your system, including the parameters of the CPU temperature, motherboard temperature, CPU fan speed and the critical voltage.

Advanced	Aptio Setup – AMI		
PC Health Status CPU temperature System temperature CPU Fan Speed VCORE VCC_DDR 12V+ SV+ VCAT	: +39 C : +24 C : N/A : +1.760 V : +1.221 V : +12.144 V : +4.950 V : +2.904 V	CPU Fan Mode Select	
CPU Fan Mode Fan Off Temp Fan Start Temp Fan Start PWM PWM Slope	[Automatic Mode] 40 45 128 4	++: Select Screen ↑+: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit F12: Print Screen	
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#### 3.3.6 USB Configuration



#### 3.3.6.1 Legacy USB Support

Use this option to select legacy support for USB devices. There are four configuration options: [Enabled], [Auto] and [Disabled]. The default value is [Enabled]. Please refer to below descriptions for the details of these four options:

[Enabled]	- Enables support for legacy USB.
[Auto]	- Enables legacy support if USB devices are connected.
[Disabled]	- USB devices are not allowed to use under legacy OS and UEFI setup when [Disabled] is selected
	If you have USB compatibility issue, it is recommended to select [Disabled] to enter OS.

#### 3.3.6.2 XHCI Hand-Off

This is a workaround for OS without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.

#### 3.3.6.3 USB Mass Storage Driver Support

The optional settings are: [Disabled], [Enabled].

#### 3.3.6.4 USB Transfer Time-out

This is a time-out value for Control, Bulk, and interrupt transfers.

#### 3.3.6.5 Device Reset Time-out

This is a start unit command time-out of USB mass storage.

#### 3.3.6.6 Device Power-Up Delay

Maximum time the device will take before it properly reports itself to the host controller. [Auto] uses default value. For a root port, it is 100ms. For a hub port, the delay is taken from hub descriptor.



#### 3.4 Chipset Screen

Main	Advanced Chipset	Aptio Setup - Security Boot	AMI Save & Ex	kit	Esc	
System PCH-IO	Agent (SA) Configu Configuration	ration		System Agent Parameters ++: Select S F1: General F2: Previous F1: General F2: Previous F1: Gave & F10: Save & F12: Print S	Creen item item it Opt. Help it Values id Defau. Exit icreen	lts
Version 2.21.1278 Copyright (C) 2021 AMI						

#### 3.4.1 Graphics Configuration

Chipse	Aptio Setup – AMI t		Chip	Aptio Setup – AMI oset	E2C ====
Graphics Configuration	31	▲ Graphics turbo IMON current values supported (14–31)	LCD Control		Choose LVDS Display Resolution
Current Skip Scaning of External Gfx Card	[Enabled]	Supported (14-517	LVDS Resolution Setting LVDS BackLight	[1024*768 (24bit/1-ch)] [Level 10(100%)]	
Primary Display Select PCIE Card ▶ External Gfx Card Prima	(Auto) [Auto] ry Display Configuration				
Internal Graphics GTT Size Aperture Size	[Auto] [8MB] [256MB]	↔: Select Screen †↓: Select Item Enter: Select			↔: Select Screen †↓: Select Item Enter: Select
PSMI SUPPORT DVMT Pre-Allocated DVMT Total Gfx Mem ▶ LCD Control	[Disabled] [60M] [256M]	+/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults			+/−: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults
▶ Intel(R) Ultrabook Even	t Support	▼ F10: Save & Exit F12:Print Screen			F10: Save & Exit F12:Print Screen
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#### 3.4.1.1 Primary Display

This item is used to select which of IGFX/PCI Graphics device should be Primary Display Or select SG for Switchable Gfx.

#### 3.4.1.2 Internal Graphics

Keep IGFX enabled based on the setup options.

#### 3.4.1.3 DVMT Pre-Allocated

This item is used to select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device.

#### 3.4.1.4 DVMT Total Gfx Mem

This item shows the information of DVMT 5.0 and Graphic memory size used by the Internal Graphics Device.

#### 3.4.1.5 Primary IGFX Boot Display

This item allows you to select the Primary display device when the mother board start up. The default value is [VBIOS Default].

#### 3.4.1.6 LCD Panel Resolution Setting

This item allows you to choose the proper resolution for your display device. The default value is [1024x768 (24BIT/1-CH)].

#### 3.4.1.10 Backlight Control

This item is used to set the way of controlling backlight. The default value is [PWM Normal].

#### 3.4.1.12 Backlight Brightness

This item is used to set the panel brightness. The default value is [Level10].



#### 3.4.2 Memory Configuration

Chips	Aptio Setup – AMI et		Esc	
<ul> <li>Memory Thermal Configu</li> <li>Memory Training Algori</li> <li>Memory</li> <li>Memory Configuration</li> </ul>	ration thms	A Mi	emory Thermal onfiguration Options	
Memory RC Version Memory Speed Memory Timings (tCL-tRCD-tRP-tRAS)	0.0.4.104 2667 MT/s 19-19-19-43			
Channel O Slot O	Not Populated ∕ Disabled	++ 1	⊢: Select Screen ↓: Select Item	
Channel O Slot 1	Not Populated ∕ Disabled	EI +.	nter: Select ∕–: Change Opt.	
Channel 1 Slot 0 Size Number of Ranks Manufacturer	Populated & Enabled 4096 MB (DDR4) 1 Samsung	F F F F	1: General Help 2: Previous Values 9: Optimized Defaults 10: Save & Exit 12:Print Screen	
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### 3.4.2.1 Maximum Memory Frequency

This item is used to select the DDR4 Memory Frequency. The default value is [Auto].

#### 3.4.2.2 Max TOLUD

Maximum value of TOLUD. Dynamic assignment would adjust TOLUD automatically based on largest MMIO length of installed graphic controller.

#### 3.4.2.3 Memory Remap

This item is used to enable/disable the Memory Remap above 4GB.

### 3.4.3 SATA Configuration

Chipset	Aptio Setup – AMI	Esc
SATA And RST Configurati	on	Enable/Disable SATA Device.
SATA Controller(s) SATA Mode Selection SATA Test Mode ▶ Software Feature Mask Co Aggressive LPM Support	[Enabled] [AHCI] [Disabled] nfiguration [Enabled]	
Serial ATA Port 0 Software Preserve Port 0 Hot Plug Configured as eSATA External Spin Up Device SATA Device Type Topology SATA Port 0 DevSip	Empty Unknown [Enabled] [Disabled] Hot Plug supported [Disabled] [Hard Disk Drive] [Unknown] [Disabled]	++: Select Screen ↑1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F10: Save & Exit F12: Print Screen
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#### 3.4.3.1 SATA Controller(s)

Use this item to enable or disable the SATA Controller feature.

#### 3.4.3.2 SATA Mode Selection

Use this to select SATA mode. The default value is [AHCI Mode].

#### 3.4.3.3 SATA Controller Speed

Use this to set the maximum speed the SATA controller can support. The optional settings are: [Gen1], [Gen2], [Gen3].



#### 3.4.4 PCH-IO Configuration (Security Configuration / Audio Configuration)

Chipset	Aptio Setup – AMI	Esc
<ul> <li>PCH-IO Configuration</li> <li>PCI Express Configuration</li> <li>SATA And RST Configuration</li> <li>USB Configuration</li> <li>Security Configuration</li> <li>HO Audio Configuration</li> </ul>	Ŋ	PCI Express Configuration settings ++: Select Screen T1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F9: Optimized Defaults F10: Save & Exit F10: Save & Exit F10: Save & Exit
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# 3.4.4.1 BIOS Lock

This item is used to enables or disables BIOS SPI region read/write protection. For BIOS upgrade, It has to be disable.

#### 3.4.4.2 HD Audio

This item is used to enables or disables the audio output.

#### 3.4.4.3 Audio Amplifier Control

This item is used to enable or disable the Amplifier for internal speaker.



#### 3.5 Security Screen

In this section, you may set, change or clear the supervisor/user password for the system.



#### 3.6.1 Administrator Password

This item allows you to configurate an administrator Password. Press <Enter> to create a new password, type the password, then press <Enter> again, and then you will be require to type the password again for confirmation. The administrator password allows you to make changes to all BIOS settings.

#### 3.6.2 User Password

This item allows you to configurate an user Password. Press <Enter> to create a new password, type the password, then press <Enter> again, and then you will be require to type the password again for confirmation. The user password only allows you to make changes to certain BIOS settings.

NOTE] The length of the password must be between 3-20 characters.

NOTE] To cancel the password, you must press <Enter> on the item(Administrator Password / User Password) and type in the correct password first, then press <Enter> without entering any password, and press <Enter> again as promotion about password clean up conformation.



# 3.6 Boot Screen

In this section, it will display the available devices on your system for you to configure the boot settings and the boot priority.

Main Advanced Chipset	Aptio Setup - AMI Security Boot Save & E	xit ESC	Main Advanced Chip	Aptio Setup – AMI set Security Boot Save & E	tixi III III
Boot Configuration Setup Prompt Timeout Bootup NumLock State Quiet Boot Boot Option Priorities Boot Option #1 Fast Boot Screen Rotation Policy	1 [Dn] [Disabled] [Hindows Boot Manager (PO: DM63CM2-V2113H)] [Disabled] [Norma1]	Number of seconds to wait for setup activation key. 65535(0KFFF) means indefinite waiting. ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit F12: Print Screen	Boot Configuration Setup Prompt Timeout Bootup NumLock State Quiet Boot Boot Option Prioritie Boot Option #1 Fast Boot Screen Rotation Poli	1 [On] [Disabled] S Screen Rotation Policy - Normal Right Rotation Reversion	Control Screen display direction. Select Screen Select Item r: Select F/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit F12 = Print Screen
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#### 3.7.1 Setup Prompt Timeout

This item is used to set number of seconds to wait for setup activation key.

#### 3.7.2 Bootup NumLock State

This item decides the Keyboard NumLock state whether [On] or [Off].

#### 3.7.3 Boot Option Priorities

This item allows you to specify the overall boot order from the available devices. The list only display the device with the hightest priority for a specific type. For example, only hard drive defined as the first priority on the [Hard Drive BBS Priorities] will be presented here.

#### 3.7.4 Screen Rotation Policy

This item allows you to control Screen display direction.

## 3.7 Exit Screen

Aptio Setup – AMI Main Advanced Chipset Security Boot Save & E	xit ESC	
Save Options Save Changes and Exit Discard Changes and Exit Save Changes and Reset Discard Changes and Reset Save Changes Discard Changes	Exit system setup after saving the changes.	
Default Options Restore Defaults Save as User Defaults Restore User Defaults Boot Override Windows Boot Manager (PO: DM63CM2-V2113H)	<pre>++: Select Screen t1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save &amp; Exit F12: Print Screen</pre>	
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#### 3.8.1 Save Changes and Exit

This item enables you to exit system setup after saving the changes.

#### 3.8.2 Save Changes and Reset

This item enables you to reset system setup after saving the changes.

#### 3.8.3 Restore Defaults

Load the default settings of the BIOS. Always load the Optimized defaults after updating the BIOS or after clearing the CMOS values.

#### 3.8.4 Save as User Defaults

This item enables you to save the changes that you have made as user defaults.

#### 3.8.5 Restore User Defaults

This item enables you to restore the user defaults.

## 3.7.10 Boot Override

Use this item to select the boot device.



# Chapter4. BIOS Upgrade & Download

## 4.1 Prepare BIOS File and Utility



1) Prepare the USB memory. Store the BIOS and utility file((FPT.EFI) in USB memory.

2) Make the specific boot folder and store the file. (D:\EFI\BOOT\BOOTX64.EFI)

3) Turn off the POS and Insert the USB memory to POS system.

# 4.2 Changing BIOS Value and Reboot

🔺 American	Aptio Setup - AMI Main Advanced Chioset Security Boot Save & Exit	Chipset
View Jamison View Jamison Vi	E 105 Information E 105 Vendon dewnican Regatrends Project Name IT-K-R106 E 005 Vention IT-K-R106 E 005 Vention Iteration B 005 Vention Iteration Processor Information Name Intel(8) Colymon(8) Microsoft Registon I Notes 2 Vention Vention Notes 2 Vention Vention Microsoft Registon I Total Memory Seed 2006 MHZ Memory Seed 2006 MHZ Microsoft Registon I Notes 2 Vention Vention Microsoft Registon I Notes 2 Vention Vention Microsoft Registon I Notes 2 Vention Vention Microsoft Registon I Microsoft Registon I	Security Configuration RTC Memory Lock [Enabled] BIOS Lock [Disabled] Force Dhlock on all [Enabled] GPIO pads BIOS Lock Disabled Enabled Enabled
Actio Schup Utility - Copyright (C) 2019 Interican Regatereds, Inc. Noin Advance Chicase 0.6.4 Security Boot Blove 8/6414 Swe Options		
Some Changes and Built the changes. Seve Changes and Reset Genaut Continue Perform Endouries		
Since as User Defaults Restore User Defaults Sont Reventide Sont Reventide		
Libra haura and a mark in registration and and a mark in the carticipation and and a mark in the cart in the cart in the cart is the cart		

1) Turn on the POS and Press "DEL" key for entering BIOS.

2) Change the "BIOS Lock" to "Disable". (Chipset  $\rightarrow$  PCH-IO Configuration  $\rightarrow$  Security Configuration  $\rightarrow$  BIOS Lock)

3) Press "F10" key for save and exit.



## 4.3 BIOS Flash



- 1) Turn on the POS and Press "F11" key for entering UEFI Shell.
- 2) Change the value to "UEFI:USB MEMORY" and Press "Enter" key.
- 3) After rebooting via UEFI, It shows like above display.
- 4) Type "fs2:" and press "Enter" key.
- 5) Type "Is" or "dir". Then BIOS and utility files are shown.
- 6) Type "fpt.efi -f XXXXX.bin" to download.
- 7) It will take 2~3 minute.
- 8) If download is finished, turn off the POS using Power Button.

# 4.4 BIOS Default and Save



- 1) Turn on the POS and Press "DEL" key for entering BIOS.
- 2) Press "F9" for BIOS default.
- 3) Press "F10" for Save and exit.