

AIV-TGH7Bx

In-Vehicle Computer

Intel[®] Core™ Xeon, i7, i5, i3 Processor (Tiger Lake Platform)



User Manual

Acrosser Technology Co., Ltd. www.acrosser.com



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Purpose

This document is intended to provide the information about the features and use of the product.

Audience

The intended audiences are technical personnel, not for general audiences.

WARNING

Danger of explosion if batteries are incorrectly replaced. Always replace the battery with the same specifications. Dispose of used batteries according to the manufacturer's instructions.

Before running the system, make sure the power cord is firmly plugged into the socket.

CAUTION



IEC 60417-6172 (2012-09)

All power cords must be disconnected during product repair.

Ver: 102 Date: Feb. 5, 2024

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1. Introduction

AIV-TGH7Bx Series adopt the newest Intel[®] 11th Gen. Tiger Lake H highperformance platform for wide operation temperature in-vehicle computers.

Powered by the latest 11th Gen Intel[®] Core™ i7/i5 Processor, HYPERLINK "https:// www.acrosser.com/en/Products/In-Vehicle-Computer/In-Vehicle-PCs/AIV-TGH7BX" AIV-TGH7Bx Series delivers high-performance data computing, and the newest Intel[®] Iris[®] Xe Graphics and TSN technology provide graphics real-time operation and a wide range of 9V to 24V power input.

AIV-TGH7Bx is a powerful solution for in-vehicle computers, passenger information computers, charging equipment controllers, Autonomous Mobile Robot controller and any AloT/Industry 4.0 applications.

CPU	•	11th Generation Intel [®] Core [™] Processor Family (Tiger Lake H)
Chipset	•	i7-11850HE 8 core, base frequency 2.6GHz, max single core turbo frequency 4.7Ghz, TDP is 35W/45W
	•	i5-11500HE 6 core, base frequency 2.6GHz, max single core turbo frequency 4.5Ghz, TDP is 35W/45W
	•	i3-11100HE 4 core, base frequency 2.4GHz, max single core turbo frequency 4.4Ghz, TDP is 35W/45W
Memory	•	1x DDR4-3200 Memory supports up to 32 GB
Graphic Controller	•	Intel [®] Iris [®] X Graphics
Video Interface	•	1x HDMI: Up to 4096 x 2304
	•	2x DP: Up to 4096 x 2304
Ethernet	•	LAN 1: RJ45 Type Intel [®] I225GigE LAN
	•	LAN 2: RJ45 Type Intel [®] I219 GigE LAN
USB	•	4x Type A USB 3.2 Gen2
Serial Port	•	2x RS-232/RS422/485
Display	•	1x HDMI
	•	2x DP
Audio	•	Realtek [®] HD Codec
	•	1x Mic-in, 1x Line-out, 1x Line-in
Disk Bay	•	2x 2.5" SSD Bay
		DIO v 40 DD25 turns compactor

1.1. Specifications



Serial Port	•	2x RS-232
DC-in	•	9~24V DC-in power input with power ignition, w/ 3pin terminal block
Antenna type	•	2x Wifi U.FL Antenna (When install half size mPCIe wifi+BT module
	•	4x 3G/4G/5G/GNSS U.FL Antenna (Diversity, MIMO) (When install M.2 3042 type 4G/5G/GNSS module)
SATA	•	2x 2.5" Easy Access drive trays w/ SATA III (6Gbps), support S/W RAID 0, 1
	•	Max. Current: 2A
Mini PCle	•	1x Half Size Mini PCIe slot
M.2	•	1x M.2 B key(3052)
	•	1x M.2 M key(2280) (PCIe 4.0[x4])
SIM	•	1x Nano SIM slot
Hardware Monitoring	•	CPU Voltage
	•	CPU & System Temperature
Watchdog Timer	•	Software Programmable 0~255 seconds, 0=Disable
OS support	•	Ubuntu 20.04.2/Kernel 5.8 or Linux 4.18 kernel
	•	Window 10, 64 bit
Chassis	•	Aluminum heatsink + metal chassis
Dimension	•	276.00mm x 175.00mm x 91mm (Include Wall mount)
Operating Temperature	•	Fanless Design
	•	45W TDP CPU: -40°C to 70°C (-40°F to 158°F)
Storage Temperature	•	-40°C to 80°C (-40°F to 176°F)
Humidity	•	5% to 95% Humidity, non-condensing
Vibration	•	IEC 60068-2-64
	•	SSD: 5Grms, 5Hz to 500Hz, 3 Axis
Shock	•	IEC 60068-2-27
	•	SSD: 50G @ wallmount, Half-sine, 11ms
Certification	•	CE / FCC class A



1.2. Packing List

Check if the following items are included in the package.

Item	Q'ty
AIV-TGH7Bx	1
3-Pin Terminal block	1
Wall mount bracket and screws kits	1
M3x4L m.2 module screws set	1
M.2 module bracket	1
HDMI Locking Bracket	1

(Unit: mm)



1.3. System Dissection

1.3.1. Dimensions





(The peripherals shown in this layout dimensions are used for illustration only, may not come with the package.)



1.3.2. Front I/O Panel



Line In, Line Out, MIC

	Audio input jack. T: Audio output jack. rophone input jack.
--	---

DP1, DP2

|--|

HDMI

	Pin #	Signal	Pin #	Signal
·	1	DATA2+	2	GND
	3	DATA2-	4	DATA1+
	5	GND	6	DATA1-
	7	DATA0+	8	GND
	9	DATA0-	10	CAN_L
	11	GND	12	
	13	NC	14	NC
	15	DDCCL	16	DDCDA
	17	GND	18	+5V
	19	HPD		



LAN1(1G), LAN2(2.5G)

	LAN Speed		Link/Seppd LED	Active LED
		1G	Orange	Yellow
PMI I P LAN2 LANI g	1G	100M	Green	Yellow
		10M	Off	Yellow
ی ل <u>کے علی میں</u> ا		2.5G	Green	Yellow
L	2.5G	1G	Orange	Yellow
		100/10M	Off	Yellow

USB1 ~ USB4

	Standard Type				
		Pin #	Signal	Pin #	Signal
। । ୪୬୯ ¹⁰ ୪୬୯ ¹⁰ ।		1	VCC5	5	SS_RX -
		2	DATA-	6	SS_RX +
		3	DATA+	7	GND
·		1 4	4	GND	8
				9	SS_TX +

Status/HDD/Power LED Indicator

	Light	Display
* e © © © ◯	Yellow	Power
COM3	Green	SATA Device Activity
	Green	Status

COM3, COM4

	Pin #	RS-232 Signal
	1	DCD
	2	RX
	3	TX
	4	DTR
COM4	5	GND
	6	DSR
	7	RTS
	8	CTS
	9	RI



Power Button

You may use a thin and long object to reach into the hole and push the button in.

HDD-1 \sim HDD-2

HDD bays reserved for installation of your 2.5" hard disks (H: 7mm).

1.3.3. Rear I/O Panel



POWER

9-24 Vdc	DC power	input connector	
Ĩ. International and the second	Pin #	Signal	
	V+	9V ~ 24V	
	IGN	NC	
	V-	GND	

ANT1 ~ ANT6

Reserved for installation of 6x optional SMA-type antennas.



COM1, COM2

	Pin #	RS-232 Signal	RS-422 Signal	RS-485 Signal
	1	DCD	RS-422_TX-	RS-485_D-
	2	RX	RS-422_TX+	RS-485_D+
	3	ТХ	RS-422_RX+	
() [™] GPS () [™] 2 () [™] 1 COM2 COM1	4	DTR	RS-422_RX-	
oo oo	5	GND	GNA	GND
©()©	6	DSR		
	7	RTS		
	8	CTS	+5V/+12V (0.5A)	+5V/+12V (0.5A)
	9	RI		

DIO

	Pin #	Pin Name	Signal Type	Signal Level		
	1	+5V	PWR	+5V		
	2	GND	GND			
	3	DIO_1	I/O	+5V		
	4	DIO_2	I/O	+5V		
	5	DIO_3	I/O	+5V		
	6	DIO_4	I/O	+5V		
	7	DIO_5	I/O	+5V		
	8	DIO_6	I/O	+5V		
	9	DIO_7	I/O	+5V		
	10	DIO_8	I/O	+5V		
	11	DIO_9	I/O	+5V		
	12	DIO_10	I/O	+5V		
	13	DIO_11	I/O	+5V		
0()0	14	DIO_12	I/O	+5V		
	15	DIO_13	I/O	+5V		
	16	DIO_14	I/O	+5V		
	17	DIO_15	I/O	+5V		
	18	DIO_16	I/O	+5V		
	19		NA			
	20		NA			
	21		NA			
	22	NA				
	23		NA			
	24		NA			
	25		NA			



2. Components Assembly

The products shown in this procedule are used for illustration only, may not reflect the exact outlooks.

2.1. SSD Installation

Step 1: As shown in the red circle, slide the door buckle to the right to take out the SSD tray.



Step 2: Follow the deployment direction to insert the SSD. Please pay attention to the insertion direction. The red circle chown is a hollow hole.





Step 3: Place the SSD firmly into position. The 2 screws provided in the accessories package is used for spare only.



Step 4: Insert the SSD tray into the system and press the part shown with red circle to attach with the system.





2.2. Antenna Connection

Connect your antennas needed according to your system configuration.



You will have to match the gender in connecting antenna plug with socket.

Connect a male type antenna to the female type socket (GPS):





Connect a female type antenna to the male type socket (WiFi/BT):







2.3. PCB Parts Description

Connect your antennas needed according to your system configuration.



CN39: NANO SIM Card Socket

Install NANO SIM card here.

CN40: DDR4 SO-DIMM Slot

When installing memory module, please note that both ends of the memory and solt are firmly attached.

CN41: Mini-Card Slot (Half-Size)

Before installation, take the screw from the accessories package. Screw tight the module to the standoff as shown in the red circle.

• CN42: M.2 B Key Slot 3042

For model 3052: Take out the screws from the accessories package before installation. Insert the module, and then lock it with the screws into the screw holes marked with blue circle as shown in the photo.

For model 3042: Take out the bracket and screws from the accessories package before installation. As shown in the photo, lock the bracket with the two screws into the screw holes marked with blue circle first, and then insert the module, lock screws into the holes marked with red circle.

Note: CN42 3042 cannot support CN43 2280 at the same time.



CN43: M.2 M Key Slot 2242

For model 2280: Take out the screws from the accessories package before installation. Insert the module, and then lock it with the screws into the screw holes marked with blue circle as shown in the photo.

Note: CN43 2280 cannot support CN43 3052 at the same time.

For model 2242: Take out the bracket and screws from the accessories package before installation. As shown in the photo, lock the bracket with the two screws into the screw holes marked with blue circle first, and then insert the module, lock screws into the holes marked with red circle.

2.4. Foot-bracket Assembly

Step 1: Attach two brackets with screws to each side of the body.



Step 2: Attach four rubber pads to the bracket holes.





2.5. HDMI Cable Connection

You can find in the package an HDMI locking-bracket set. This gaget is designed to secure your HDMI cable connection.

Step 1: Lock the HDMI locking-bracket with the two black screws that came with the package.





Step 2: Plug your HDMI cable head into the HDMI socket. Firmly push the HDMI cable all the way into the socket.





Step 3: Fasten the HDMI cable-end with a cable-holder. Lock the cable-end to the bracket with this cable-holder by two screws that came with the package. (There are two types of cable-holder provided: 4mm and 7mm. Use the type 4mm for HDMI cable of thinner than 6mm in diameter. Use the type 7mm for HDMI cable of thicker than 6mm in diameter.) Choose the holes that allows the screw to lock the cable-end with cableholder.





3. **BIOS Settings**

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

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

The function for each interface can be found below.

- Main Date and time can be set here. Press <Tab> to switch between date elements
- · Advanced Enable/ Disable boot option for legacy network devices
- System I/O For configuring PCI Express settings
- · Security The setup administrator password can be set here
- Boot Enable/ Disable Quiet Boot option
- Save & Exit Save your changes and exit the program

3.1. Main Setup

	Aptio Setup - AMI	
Main Advanced System I/O	Security Boot Save & Exi	lt
== BIOS Information == AIM-TGH7Ex V1.0 (04/28/2022)		Set the Date. Use Tab to switch between Date elements.
== CPU Information ==		Default Ranges:
11th Gen Intel(R) Core(TM) i7-	11850HE @ 2.60GHz	Year: 1998-2199 Months: 1-12
== MEM Information ==		Days: Dependent on month
Total Memory	32768 MB	
Memory Spees	3200 MT/s	
== SATA Information ==		
Serial ATA Port 0	Empty	
Serial ATA Port 1	Empty	
Statem Date	[Eri 01/01/2021]	: Select Screen
Ststem Time	[11.22.33]	↑↓: Select Item
	[11112100]	Enter: Select
Access Level	Administrator	F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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System Date/System Time

Use this option to change the system date and time. Highlight System Date or System Time using the arrow keys. Enter new values using the keyboard. Press the key or the arrow keys to move between fields. The date must be entered in MM/DD/ YYYY format. The time is entered in HH:MM:SS format.



3.2. Advanced Setup

		Aptio Set	up - Al	II		
Main Advanced	System I/O	Security	Boot	Save	& Exi	t
Display Informati Graphics Configur System Informatic C CPU Configuration Memory Configurat Hardware Monitor P CH-FW Configurat NVMe Configuratio P Power Management BIOS Robot	ion mation h tion tion					Graphics Configuration
						Select Screen †1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
	Version 2.3	21.1278 Cor	yright	(C) 2	022 A	мі

3.2.1. Advanced Setup: Graphics Configuration



LVDS Panel Configuration

Configure LVDS panel parameters.



3.2.2. Advanced Setup: CPU Configuration

Advanced	Aptio Setup - AMI	
CPU Configuration		When enabled, a VMM can utilize the additional
> Туре	11th Gen Intel(R) Core(TM) i7-11850HE @ 2.60GHz	hardware capabilities provided by Vanderpool Technology.
ID Speed	0x806D1 2600 MHz	
L1 Data Cache L1 Instruction Cache	48 KB x 8 32 KB x 8	
L2 Cache L3 Cache	1280 KB x 8 24 MB	
L4 Cache VMX	N/A Supported	
SMX/TXT	Supported	: Select Screen
Intel(VMX) Virtualization Technology		Enter: Select +/-: Change Opt.
Intel(R) SpeedStep(tm) Turbo Mode	[Enabled] [Enabled]	F1: General Help F2: Previous Values
		F3: Optimized Defaults F4: Save & Exit ESC: Exit
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• Intel(VMX) Virtualization Technology

When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.

• Intel(R) SpeedStep(tm)

Allows more than two frequency ranges to be supported.

Turbo Mode

Enable/Disable processor Turbo Mode (requires EMTTM enabled too). Auto means enabled.



3.2.3. Advanced Setup: Memory Configuration



Memory Configuration
 Memory Configuration Parameters.

3.2.4. Advanced Setup: Hardware Monitor

	Aptio Setup - AMI	
Advanced		
System Temperature System Temperature 2 CPU(PECI) Temperature System FAN System FAN 2 VCORE +12V	: +37 °C : +35 °C : +34 °C N/A : N/A : +1.624 V : +12.056 V	Enable or Disable Smart Fan
+5V VMEM +3.3V 3VSB 5VSB VBAT	: +5.129 V : +1.200 V : +3.360 V : +3.344 V : +5.136 V : +3.136 V	
Smart Fan Mode Configuration		<pre>: Select Screen +1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
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- Smart Fan Enable or Disable Smart Fan.
- Smart Fan Mode Configuration Smart Fan Mode Select.

3.2.5. Advanced Setup: PCH-FW Configuration

Advanced	Aptio Setup - AMI	
ME Firmware Version	15.0.35.1951	Configure Management Engine Technology Parameters
		-+-: Select Screen †1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

• Firmware Update Configuration

Configure Management Engine Technology Parameters.



3.2.6. Advanced Setup: NVMe Configuration



NVMe Configuration
 NVMe Device Options Settings.

3.2.7. Advanced Setup: Power Management

Advanced	Aptio Setup - AMI	
Power Management		Select system power mode.
Power Mode	[ATX Type]	
Restore AC Power Loss	[Last State]	
Wake Events RTC wake system from S5	[Disabled]	
		-*-: Select Screen †↓: Select Item
		Enter: Select +/-: Change Opt.
		F1: General Help F2: Previous Values
		F3: Optimized Defaults
		ESC: Exit
Version	2.21.1278 Copyright (C) 20	022 AMI

<u>a</u>crosser

- Power Mode Select system power mode.
- Restore AC Power Loss
 Restore AC Power Loss: To decide the behavior after system power cut then
 resupply.

Note: The CMOS battery must present.

RTC wake system from S5
 Fixed Time: System will wake on the hr:min:sec specified.
 Dynamic Time: System will wake on the current time + Increase minute(s).
 Bypass: BIOS will not control RTC wake function during system shutdown.

3.2.8. Advanced Setup: BIOS Robot



Sends watch dog before BIOS POST

Enabled - Robot set Watch Dog Timer(WDT) right after power on, before BIOS start POST process. And then Robot will clear WDT on completion of POST. WDT will reset system automatically if it is not cleared before its timer counts down to zero.

 Sends watch dog before booting OS Enabled - Robot set Watch Dog Timer(WDT) POST completion, before BIOS transfer control to OS.

WARNING: Before enabling this function, a program in OS must be in responsible for clearing WDT. Also, this function should be disabled if OS is going to update itself.

Delayed POST (PEI phase)

Enabled - ROBOT holds BIOS from starting POST right after power on. This allows BIOS POST to start with stable power or start after system is physically warmed-up.



Note: ROBOT does this before 'Sends watch dog'.

Delayed POST (DXE phase)

Enabled - ROBOT holds BIOS before POST completion. This allows BIOS POST to start with stable power or start after system is physically warmed-up.

Note: ROBOT does this after 'Sends watch dog before BIOS POST'.

Reset system once

Enabled - ROBOT resets system for one time on each boot. This will send a soft or hard reset to onboard devices, thus puts devices to more stable state.

3.3. System I/O Setup

Aptio Setup - AMI			
Main Advanced System I/O Security Boo	ot Save & Exit		
System I/O > FCI Express Configuration > Storage Configuration > HD Audio Configuration > Digital IO Port Configuration > Legacy Logical Devices Configuration > Serial Port Consol Redirection > VMD setup menu > Intel(R) Ethernet Controller (3) I225-IM - 00:0 > PCH-IO Configuration	PCI Express Configuration settings		
	: Select Screen +: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit		



3.3.1. System I/O Setup: PCI Express Configuration

Quelos Z/Q	Aptio Setup - AMI	
System 170		
PCI Express Root Port 16 (CN41)	[Enable]	Control the PCI Express Root Port.
Version 2	21 1278 Copyright (C) 2022	: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
version 2.	21.1278 Copyright (C) 2022 /	

• PCI Express Root Port 16 (CN41) Control the PCI Express Root Port.

3.3.2. System I/O Setup: Storage Configuration

	Aptio Setup - AMI	
System I/O		
SATA Controller(s)	[Enabled]	Enable/Disable SATA Device.
Serial ATA Port 0 Software preserve Port 0 Hot Plug	Empty Unknown [Enabled] [Disabled]	
Sefial ATA Port 1 Software preserve Port 1 Hot Plug	Empty Unknown [Enabled] [Disabled]	
		: Select Screen †1: Select Item Enter: Select +/-: Change Opt. F1: General Help
		F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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- SATA Controller(s)
 Enable/Disable SATA Device.
- Port 0 Enable/Disable SATA Port.
- Hot Plug Designates this port as Hot Pluggable.

3.3.3. System I/O Setup: HD Audio Configuration



HD Audio

Control Detection of the HD-Audio device. Disabled: HDA will be unconditionally disabled. Enabled: HDA will be unconditionally enabled.



3.3.4. System I/O Setup: Digital IO Port Configuration

	Aptio Setup - AM	1I
	System I/O	
Digital IO Port Co	onfiguration	Set DIO as Input or
Diol Output Level DiO2 Output Level DiO3 Output Level DiO4 Output Level DIO5 DIO6	[Output] [High] [Output] [High] [Output] [High] [Output] [High] [Input] [Input]	
D107 D108 D109 D1010 D1011 D1012 D1013 D1014 D1015 D1016	[Input] [Input] [Input] [Input] [Input] [Input] [Input] [Input] [Input]	: Select Screen ti: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
	Version 2.21.1278 Copyright	(C) 2022 AMI

• DIO1 ~ DIO16

Set DIO as Input or Output.

Output Level

Set output level when DIO pin is output.



3.3.5. System I/O Setup: Legacy Logical Devices Configuration

Aptio Setup - AMI System I/O		
AMI SIO Driver Version : A5.16.00 Super IO Chip Logical Devices Configuration > [*Active*] Serial Port 1 > [*Active*] Serial Port 2 > [*Active*] Serial Port 3 > [*Active*] Serial Port 4 > [*Active*] Serial Port 5 > [*Active*] Serial Port 6	View and Set Basic properties of the SIO Logical device. Like IO Base, IRQ Range, DMA Channel and Device Mode.	
WARNING: Logical devices state on the left side of the control, reflects the current Logical Device state. Changes made during Setup Session will be shown after you restart the system.	Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	
Version 2.21.1278 Copyright (C) 2022 AMI		

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[*Active*] Serial Port 1 ~ 6 View and Set Basic properties of the SIO Logical device. Like IO Base, IRQ Range, DMA Channel and Device Mode.



3.3.6. System I/O Setup: Serial Port Consol Redirection

	Aptio Setup - AMI	
System I/O		
COM0 Console Redirection Console Redirection Settings		Console Redirection Enable or Disable.
COM1(Pci Bus0,Dev0,Func0)(Disa Console Redirection	abled) Port Is Disabled	
Serial Port for Out-of-Band Mu Windows Emergency Management & Console Redirection EMS Console Redirection Settings	anagement/ Services (EMS) [Disabled]	
		: Select Screen †↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Energians Values
		F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.2	1.1278 Copyright (C) 2022 i	AMI

- Console Redirection Console Redirection Enable or Disable.
- Console Redirection EMS
 Console Redirection Enable or Disable.



3.3.7. System I/O Setup: VMD setup menu

System I/O	Aptio Setup - AMI	
VMD Configuration		Enable/Disable to VMD controller
ENADIE VMU CONTROLLET		
		-+-: Select Screen ↑↓: Select Item Enter: Select
		<pre>+/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
		ESC: Exit
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Enable VMD controller
 Enable/Disable to VMD controller.



3.3.8. System I/O Setup: Intel(R) Ethernet Controller

	Aptio Setup - AMI	
System I/C		
UEFI Driver Device Name PCI Device ID	Intel(R) Gigabit 0.9.03 Intel(R) Ethernet Controller (3) I225-IM 15F2	
Link Status	[Disconnected]	
MAC Address	00:07:32:4C:84:88	
		→-: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help
		F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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Configure Gigabit Ethernet device parameters.

3.3.9. System I/O Setup: PCH-IO Configuration

System I/O	Aptio Setup - AMI	
MiniCard Slot Function	[PCIe]	Select function enabled for Full Size Minicard Slot(CN4)
		<pre>: Select Screen +1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
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MiniCard Slot Function

Select function enabled for Full Size Minicard Slot(CN4).

3.4. Security Setup

	Aptio Setup - A	мі	
Main Advanced System I/O	Security Boot	Save & Exi	it
Password Description			Set Administrator Password
If ONLY the Administrator's p then this only limits access only asked for when entering If ONLY the User's password in boot or enter Setup. In Setup have Administrator rights. The password length must be in the following range: Minimum length	<pre>assword is set, to Setup and is Setup. s set, then this ste be entered to the User will 3 20</pre>	0	
Administrator Password User Password > Trusted Computing > Secure Boot			: Select Screen †4: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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- Administrator Password Set Administrator Password.
- User Password Set User Password.



3.4.1. Trusted Computing

	Aptio Setup - AMI	
	Security	
TPM 2.0 Device Found Firmware Version: Vendor: Security Davice Support Active PCR banks Available PCR banks	7.2 NTC [Enable] SHA256 SHA-1,SHA256,SHA384	Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and TNTIA interface will not be available.
SHA-1 PCR Bank SHA256 PCR Bank SHA384 PCR Bank	[Disabled] [Enabled] [Disabled]	
Pending operation Platform Hierarchy Storage Hierarchy Endorsement Hierarchy TFM 2.0 UEFT Spec Version Physical Presence Spec Version TFM 2.0 Interface Type Device Select	<pre>[None] [Enabled] [Enabled] [Enabled] [TCG_2] [1.3] [TTS] [Auto]</pre>	<pre>-+: Select Screen †4: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
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Security Device Support

Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and TNT1A interface will not be available.

- SHA-1 PCR Bank
 Enable or Disable SHA-1 PCR Bank.
- SHA256 PCR Bank Enable or Disable SHA256 PCR Bank.
- SHA384 PCR Bank
 Enable or Disable SHA384 PCR Bank.
- Pending operation

Schedule an Operation for the Security Device.

NOTE: Your computer will reboot during restart in order to change the State of Security Device.

- Platform Hierarchy
 Enable or Disable Platform Hierarchy.
- Storage Hierarchy
 Enable or Disable Storage Hierarchy.
- Endorsement Hierarchy
 Enable or Disable Endorsement Hierarchy.
- TPM 2.0 UEFI Spec Version Select the TCG2 Spec Version Support.



TCG_1_2: The Compatible mode for Win8/Win10.

TCG_2: Support new TCG2 protocol and event format for Win10 or later.

Physical Presence Spec Version

Select to tell O.S. to support PPI Spec Version 1.2 or 1.3. Note some HCK tests might not support 1.3.

Device Select

TPM 1.2 will restrict support to TPM 1.2 devices. TPM 2.0 will restrict support to TPM 2.0 devices. Auto will support both the default set to TPM 2.0 devices, if not found. TPM 1.2 devices will be enumerated.

3.4.2. Secure Boot

	Aptio Setup - AMI	
	Security	
System Mode	Setup	Secure Boot feature is Active if Secure Boot is
Secure Boot	[Disabled]	Enabled, Platform Key(PK)
Secure Boot Mode	Not Active	is enrolled and the system is in User mode.
 Restore Factory Keys Reset To setup Mode 	[Custom]	The mode change requires platform reset.
▶ Key Management		
		: Select Screen ↑↓: Select Item
		Enter: Select +/-: Change Opt.
		F2: Previous Values F3: Optimized Defaults
		F4: Save & Exit ESC: Exit
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Security 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.

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.

Restore Factory Keys Force System to User Mode. Install factory default Secure Boot databases.

Key Management

Enables expert users to modify Secure Boot Policy variables wihout full authentication.



3.5. Boot Setup

Main Advanced System I/O	Aptio Setup - AMI Security <mark>Boot</mark> Save & Ex	it
Boot Configuration		Enables or disables Quiet Boot option
Quiet Boot		
Network Stack	[Disabled]	
FIXED BOOT ORDER Priorities		
Boot Option #1	[Hard Disk]	
Boot Option #2	[CD/DVD]	
Boot Option #3	[USB Device]	
Boot Option #4	[Network]	
		 →: Select Screen ↑i: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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- Quiet Boot Enabled or disables Quiet Boot option.
- Network Stack
 Enable/Disable UEFI Network Stack.
- Boot Option #1 Set the system boot order.



3.6. Save & Exit Setup



- Save Changes and Reset Reset the system after saving the changes.
- Discard Changes and Exit Exit system setup without saving any changes.
- Restore Defaults
 Restore/Load Default values for all the setup options.



4. FAQ

Q 1. Where can I find the serial number of this product?

• The serial number (S/N) is a label printed with alpha-numeric character. You can find the S/N label on the bottom of this product or on its packing box.



Technical Support Form

We deeply appreciate your purchase of Acrosser products. Please find the "**tech_form. doc**" file in our utility CD. If you have any questions or problems about Acrosser products, please fill in the following information. We will answer your questions in the shortest time possible.

Describe Your Info and Acrosser System Info

Your Company Name:	
Your Contact Info:	Phone Number:
Your E-Mail Address:	
Your Company Address:	
Acrosser Model Name:	
Acrosser Serial Number:	
Describe System Configuration	
CPU Type:	
Memory Size:	
 Storage Device (e.g. HDD, CF, or SSE):
Additional Peripherals (e.g. Graphic Caller Ca	ard):
Operating System & Version (e.g. Win	dows 7 Embedded):
Special API or Driver:	
	(If yes, please provide it for debug.)
Running Applications:	
Others:	
Send the above information to one • Acrosser Local Sales Representative • Acrosser Authorized Sales Channels • Acrosser Inquiny	of the following Acrosser contacts:





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