# eIVP-CFS-IV-V0004

# **AI Mobile NVR**

# Intel<sup>®</sup> Core<sup>™</sup> i7/i5 with 4 PoE Ports

User's Manual





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# eIVP-CFS-IV-V0004 AI Mobile NVR Intel<sup>®</sup> Core<sup>™</sup> i7/i5 with 4 PoE Ports

User's Manual

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# **Safety Precautions**

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

- > All cautions and warnings on the device should be noted.
- All cables and adapters supplied by EverFocus are certified and in accordance with the material safety laws and regulations of the country of sale. Do not use any cables or adapters not supplied by EverFocus to prevent system malfunction or fires.
- > Make sure the power source matches the power rating of the device.
- Position the power cord so that people cannot step on it. Do not place anything over the power cord.
- > Always completely disconnect the power before working on the system's hardware.
- No connections should be made when the system is powered as a sudden rush of power may damage sensitive electronic components.
- If the device is not to be used for a long time, disconnect it from the power supply to avoid damage by transient over-voltage.
- > Always disconnect this device from any AC supply before cleaning.
- > While cleaning, use a damp cloth instead of liquid or spray detergents.
- Make sure the device is installed near a power outlet and is easily accessible.
- Keep this device away from humidity.
- Place the device on a solid surface during installation to prevent falls.
- > Do not cover the openings on the device to ensure optimal heat dissipation.
- Watch out for high temperatures when the system is running.
- > Do not touch the heat sink or heat spreader when the system is running.
- > Never pour any liquid into the openings. This could cause fire or electric shock.
- As most electronic components are sensitive to static electrical charge, be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and contain all electronic components in any static-shielded containers.
- If any of the following situations arises, please contact our service personnel (ts@everfocus.com.tw):
  - Damaged power cord or plug
  - Liquid intrusion to the device
  - Exposure to moisture
  - Device is not working as expected or in a manner as described in this manual
  - The device is dropped or damaged
  - Any obvious signs of damage displayed on the device
- DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WITH TEMPERATURES BEYOND THE DEVICE'S PERMITTED STORAGE TEMPERATURES (SEE SPECIFICATION) TO PREVENT DAMAGE.

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# **FCC Statement**

#### Warning!

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

#### Caution:

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

#### Attention:

Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte.

Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur. Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.

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# Chapter

## 1. Introduction

The eIVP-CFS-IV-V0004 is one of EverFocus' IPC products with rugged design that uses Intel<sup>®</sup> Core<sup>™</sup> i7/i5. By installing with EverFocus' AiO NVR software, this model can be used as an AI NVR for transportation market or general and commercial markets.

The model supports up to 4 PoE ports, wide operating temperature ranging from -40°C to 75°C, wide DC power range between 6V and 36V, and 80V surge protection with ignition pin. It also features comprehensive storage and interface options including up to two 2.5 SSD trays, two SIM sockets, one CFast socket, one M.2 key E socket, six USB 3.1, four COM RS-232/422/485, sixteen isolated DIO for connecting to other devices.

The vibration of eIVP-CFS-IV-V0004's SSD is certificated with IEC 60068-2-64 while the shock is certificated with IEC 60068-2-27. It supports onboard GPS and GLONASS. Besides, the model is also CE, FCC, EN50155, EN50121-3-2 and RoHS certified. The eIVP-CFS-IV-V0004 AI NVR carries everything you need for computing in your application.

#### **1.1 Features**

- In-vehicle network video recorder platform
- 8 Cores 9th Generation Intel<sup>®</sup> Core<sup>™</sup> i7/i5 Processor
- (Coffee Lake Refresh) with Intel<sup>®</sup> C246 Chipset
- Fanless, -40°C to 75°C Operating Temperature
- 6 Independent GigE LAN with 4 IEEE 802.3at PoE+
- SIM Sockets for WiFi/4G/3G/LTE/GPRS/UMTS
- 2 2.5 SSD Tray, 2 SIM Socket, 1 CFast Socket, 2 M.2 Socket
- 6 USB 3.1, 4 COM RS-232/422/485, 16 Isolated DIO
- Expansion : SUMIT A, B, M.2, up to 5 Mini PCIe
- 6V to 36V DC Power Input with 80V Surge Protection
- Configurable Ignition Power Control
- CE, FCC, EN50155, EN50121-3-2, RoHS certified



#### **1.2** Dimensions



#### 1.3 Packing List

- NVR x 1
- Foot pad x 4
- Wall-mounting bracket x 2

- SSD/HDD tray key x 2
- Drivers & utilities DVD x 1

#### Note:

- 1. Equipment configurations and supplied accessories vary by country. Please consult your local EverFocus office or agents for more information. Please also keep the shipping carton for possible future use.
- 2. Contact the shipper if any items appear to have been damaged in the shipping process.
- The DVD contains the User Manual and some Drivers for the system. If you can't find the required drivers from the DVD, please go to our website for related drivers. <u>www.everfocus.com.tw</u>

ltem	Description	Outlook	Usage	Qty
1	PHILLPIS M4x16L with washer, Ni	13	Mount	4
2	PHILLPIS M2.5x6L, Ni	8	Mini PCle slot	4
3	PHILLPIS M3x6L, Ni+Ny	3	M.2	2
4	PHILLPIS #10-32x6L, Ni	1	Wall mount bracket	6
5	Terminal block 3-pin (5.0mm)		DC-IN/Switch	2
6	Terminal block 20-pin (2.54mm)		Isolated DIO/ GPIO	1

## **1.4 Front Panel**



No.	Name	Description
1.	Reset Tact Switch	It is a hardware reset switch. Use this switch to reset the system without powering off the system. Press the Reset Switch for a few seconds, and then reset will be enabled.
2. Power Button Press the button to turn on or turn off the sysplease refer to <i>1.4.1 Power Button</i> .		Press the button to turn on or turn off the system. For more details, please refer to 1.4.1 Power Button.
3.	CFast Card	The eIVP-CFS-IV-V0004 does not support the CFast hot swap. Be sure to disconnect the power source and unscrew the CFast socket cover before installing a CFast card. For more details, please refer to 1.4.2 CFast Card.
4.	WLAN LED, Mini PCIe, SIM Card Comparison	The SIM card sockets do not support hot-plug. Please make sure to unplug the system power before inserting the SIM card(s). For more details, please refer to 1.4.3 WLAN LED, Mini PCIe, SIM Card Comparison.
5. PWR & HDD LED Indicator		HDD LED/Yellow : A Hard Disk/CFast LED. If the LED is on, it indicates that the system's storage is functional. If it is off, it indicates that the system's storage is not functional. If it is flashing, it indicates that data access activities. For more details, please refer to 1.4.4 PWR & HDD LED Indicator.
6.	DisplayPort	Onboard Display Port supports up to 4096x2304 resolution at 60Hz.
<b>DVI-D</b> ConnectorYou can use the DVI-D connector on the front panel to connect display device. The DVI-D supports 1920 x 1200 resolution ou will need a DVI-D cable when connecting to a display device.		You can use the DVI-D connector on the front panel to connect to a display device. The DVI-D supports 1920 x 1200 resolution output. You will need a DVI-D cable when connecting to a display device.
8.	DVI-I Connector	You can use the DVI-I connector to connect to a display device. The DVI-I supports 1920 x 1200 resolution output. You will need a DVI-I cable when connecting to a display device. You can optionally use a DVI-I to VGA cable/connector if you want to connect to a VGA display device.



9.	USB3.1 Ports	There are 4 USB 3.1 connections available supporting up to 5Gb per second data rate in the front side. It is also compliant with the requirements of Super Speed (SS), high speed (HS), full speed (FS) and low speed (LS).
10.	Ethernet Port	There are 2 8-pin RJ-45 jacks supporting 10/100/1000 Mbps Ethernet connections in the front side. When both LAN 1 and LAN 2 work in normal status, iAMT 12.0 function is enabled. Both of LAN 1 and LAN 2 support Wake on LAN and Pre-boot functions. For more details, please refer to <i>1.4.5 Ethernet Port</i> .
11.	Audio Connector	There are 2 audio connectors, Mic-in and Line-out. Onboard Realtek ALC892 audio codec supports 5.1 channel HD audio and fully complies with Intel <sup>®</sup> High Definition Audio (Azalia) specifications. To utilize the audio function in Windows platform, you need to install corresponding drivers for both Intel Sunrise Point chipset and Realtek ALC892 codec.
12.	SSD/HDD Tray	There are 2 front-access 2.5" SSD/HDD trays in the front side. Just pull the trigger to open the SSD/HDD tray. Make sure the system is powered-off. Unlock the SSD Tray using the supplied SSD Lock Key.

#### 1.4.1 Power Button

The Power Button is a non-latched switch with dual color LED indication. It indicates power status: S0, S3 and S5. More details of LED indications are listed as follows:

LED Color	Power Status	System Status
Solid Blue	SO	System working
Solid Orange	S3, S5	Suspend to RAM, System off with standby power

To power on the system, press the power button and then the blue LED is lightened. To power off the system, you can either command shutdown by OS operation, or just simply press the power button.

#### 1.4.2 CFast Card

If a system error occurs, you can just press the power button for 4 seconds to shut down the machine directly. Please do note that a 4-second interval between each 2 power-on/power-off operation is necessary in normal working status. (For example, once you turn off the system, you have to wait for 4 seconds to initiate another power-on operation).

There is a CFast socket on the front panel supporting Type-I/II Compact Flash card. It is implemented by a SATA III Port from C246 PCH. Be sure to disconnect the power source and unscrew the CFast socket cover before installing a CFast card. The eIVP-CFS-IV-V0004 does not support the CFast hot



swap and PnP (Plug and Play) functions. It is necessary to remove power source first before inserting or removing the CFast card.

The pinouts of CFast port are listed as follows:

Pin No.	Description	Pin No.	Description
S1	GND	PC6	NC
S2	SATA_TXP5	PC7	GND
S3	SATA_TXN5	PC8	CFAST_LED
S4	GND	PC9	NC
S5	SATA_RXN5	PC10	NC
S6	SATA_RXP5	PC11	NC
S7	GND	PC12	NC
PC1	GND	PC13	+3.3V
PC2	GND	PC14	+3.3V
PC3	NC	PC15	GND
PC4	NC	PC16	GND
PC5	NC	PC17	NC

#### 1.4.3 WLAN LED, Mini PCIe, SIM Card Comparison

Mini PCIe Slot/SIM Slot/WLAN LED Mapping Table:







#### 1.4.4 PWR & HDD LED Indicator

Power LED/Green: If the LED is solid green, it indicates that the system is powered on.

LED Color	Indication	System Status
Yellow	HDD/CFast	<ul><li>On/Off: Storage status, function or not.</li><li>Twinkling: Data transferring.</li></ul>
Green	Power	System power status (on/off)

#### **1.4.5 Ethernet Port**

There are 2 8-pin RJ-45 jacks supporting 10/100/1000 Mbps Ethernet connections in the front side. LAN 1 is powered by Intel<sup>®</sup> i219 Ethernet Phy; LAN 2 is powered by Intel<sup>®</sup> I210 Ethernet engine. When both LAN 1 and LAN 2 work in normal status, iAMT 12.0 function is enabled.

Using suitable RJ-45 cable, you can connect the system to a computer, or to any other devices with Ethernet connection, such as hubs and switches. Moreover, both of LAN 1 and LAN 2 support Wake on LAN and Pre-boot functions. The pin-outs of LAN 1 and LAN 2 are listed as follows:

Pin No.	10/100Mbps	1000Mbps
1	E_TX+	MDI0_P
2	E_TX-	MDI0_N
3	E_RX+	MDI1_P
4		MDI2_P
5		MDI2_N
6	E_RX-	MDI1_N
7		MDI3_P
8		MDI3_N

Each LAN port is supported by standard RJ-45 connector with LED indicators to present Active/Link/Speed status of the connection.

The LED indicator on the right bottom corner lightens in solid green when the cable is properly connected to a 100Mbps Ethernet network; The LED indicator on the right bottom corner lightens in solid orange when the cable is properly connected to a 1000Mbps Ethernet network; The left LED will keep twinkling/off when Ethernet data packets are being transmitted/received.

## 1.5 Rear Panel



No.	Name	Description		
1	PoE Ports	The LED indicator lightens in solid green when the cable is properly connected to a 100 Mbps Ethernet network; The LED indicator lightens in solid orange when the cable is properly connected to a 1000 Mbps Ethernet network; The left LED will keep twinkling/off when Ethernet data packets are being transmitted/received. For more details, please refer to 1.5.1 PoE Ports.		
2	Serial Port	Serial port 1 to 4 (COM 1 to 4) can be configured for RS-232, RS-422, or RS-485 with auto flow control communication. The default definition of COM 1 and COM 2 is RS-232. If you want to change to RS-422 or RS-485, you can find the setting in BIOS. For more details, please refer to <i>1.5.2 Serial Port</i> .		
3	USB Port	There are 2 USB 3.1 connections available supporting up to 5Gb per second data rate. It is also compliant with the requirements of Super Speed (SS), high speed (HS), full speed (FS) and low speed (LS).		
4	Isolated DIO	There is a 16-bit (8-bit DI, 8-bit DO) connectors in the rear side. DI/DIO support NPN (sink) and PNP (Source) mode. Each DI pin is equipped with a photocoupler for isolated protection. For more details, please refer to <i>1.5.3 Isolated DIO</i> .		
5	Remote Power On/Off Switch & LED Terminal Block	It is a 2-pin power-on or power-off switch through Phoenix Contact terminal block. You could turn on or off the system power by using this contact. This terminal block supports dual function of soft power- on/power-off (instant off or delay 4 second), and suspend mode. Pin 1: Ignition Pin2 : SW+ Pin3 : SW-		
6	Power Terminal Block	eIVP-CFS-IV-V0004 supports 6V to 36V DC power input by terminal block in the rear side. In normal power operation, power LED lightens in solid green. eIVP-CFS-IV-V0004 supports up to 80V surge protection. Pin 1: V+ Pin2 : V- Pin3 : Chassis Ground		



#### 1.5.1 PoE Ports

There are 4 RJ45 connectors in the rear side. It supports IEEE 802.3 at (PoE+) Power over Ethernet (PoE) connection delivering up to 37W/54V per port and 1000 BASE-T gigabit data signals over standard Ethernet Cat 5/Cat 6 cable.

Each PoE connection is powered by Intel<sup>®</sup> I210 Gigabit Ethernet controller and independent PCI express interface to connect with multi-core processor for network and data transmit optimization. Only when PoE port starts to supply power to power devices, the dedicated LED will be lightened.

PS. Suggest to use PoE function when power input is over 12V.

Pin No.	10/100Mbps	1000Mbps	РоЕ
1	E_TX+	MDI0_P	PoE+
2	E_TX-	MDI0_N	PoE+
3	E_RX+	MDI1_P	PoE-
4		MDI2_P	
5		MDI2_N	
6	E_RX-	MDI1_N	PoE-
7		MDI3_P	
8		MDI3_N	

The pin-outs of LAN 3 and LAN 6 are listed as follows:

Each LAN port is supported by standard RJ-45 connector with LED indicators to present Active/Link/Speed status of the connection.

The LED indicator on the right bottom corner lightens in solid green when the cable is properly connected to a 100 Mbps Ethernet network; The LED indicator on the right bottom corner lightens in solid orange when the cable is properly connected to a 1000 Mbps Ethernet network; The left LED will keep twinkling/off when Ethernet data packets are being transmitted/received.

LED Location	LED Color	10Mbps	100Mbps	1000Mbps	18
Right	Green/ Orange	Off	Solid Green	Solid Orange	
Left	Yellow	Twinkling Yellow	Twinkling Yellow	Twinkling Yellow	

POE LED	LED Color	POE Status
LED 3-6	Solid Green	POE ON

#### 1.5.2 Serial Port

Serial port 1 to 4 (COM 1 to 4) can be configured for RS-232, RS-422, or RS-485 with auto flow control communication. The default definition of COM 1 and COM 2 is RS-232. If you want to change to RS-422 or RS-485, you can find the setting in BIOS.

BIOS Setting	Function	
	RS-232	
COM 1	RS-422 (5-wire)	

COM 2	RS-422 (9-wire)
COM 3	RS-485
COM 4	RS-485 w/z auto-flow control

#### The pin assignments are listed in the following table:

Serial Port	Pin No.	RS-322	RS-422 (5-wire)	RS-422 (9-wire)	RS-485 (3-wire)
	1	DCD	TXD-	TXD-	DATA-
	2	RXD	TXD+	TXD+	DATA+
	3	TXD	RXD+	RXD+	
	4	DTR	RXD-	RXD-	
1 to 4	5	GND	GND	GND	GND
	6	DSR		RTS-	
	7	RTS		RTS+	
	8	CTS		CTS+	
	9	RI		CTS-	



#### 1.5.3 Isolated DIO

There is a 16-bit (8-bit DI, 8-bit DO) connectors in the rear side. DI/DIO support NPN (sink) and PNP (Source) mode, Each DI pin is equipped with a photocoupler for isolated protection. Each DO pin is equipped with isolator function, DO Safety-Related Certifications:

- 4242-VPK Basic Isolation per DIN V VDE V 0884-10 and DIN EN 61010-1
- 3-KVRMS Isolation for 1 minute per UL 1577

• CSA Component Acceptance Notice 5A, IEC 60950-1 and IEC 61010-1 End Equipment Standards

• GB4943.1-2011 CQC Certified

DIO Connectors pin out:

DIO	Pin No.	Definition	Function
	1	INPUT 0	SIO_GPI70
	2	INPUT 1	SIO_GPI71
	3	INPUT 2	SIO_GPI72
	4	INPUT 3	SIO_GPI73
	5	INPUT 4	SIO_GPI74
	6	INPUT 5	SIO_GPI75
	7	INPUT 6	SIO_GPI76
	8	INPUT 7	SIO_GPI77
	9	DI_COM	
	10	DIO GND	
	11	OUTPUT 0	SIO_GPO80
DIO	12	OUTPUT 1	SIO_GPO81
	13	OUTPUT 2	SIO_GPO82
	14	OUTPUT 3	SIO_GPO83
	15	OUTPUT 4	SIO_GPO84
	16	OUTPUT 5	SIO_GPO85
	17	OUTPUT 6	SIO_GPO86
	18	OUTPUT 7	SIO_GPO87
	19	DIO_GND	
	20	External 6-40VDC (NPN) External 6-	





#### DI reference circuit :

Sink Mode (NPN)	Power Supply 6-48V DC	DIO Connector DI_COM (Pin 9)
		0 DI (Pin1-8)
Source Mode (PNP)	Power Supply 6-48V DC	DIO Connector DI_COM (Pin 9)
		O DI (Pin1-8)

DO reference circuit :

Sink Mode (NPN, Default)



Source (PNP)





## Chapter



## 2. Connection and Installation

2.1 How to Open Your elVP-CFS-IV-V0004

Step 1 Turn eIVP-CFS-IV-V0004 bottom side up and remove 6pcs HEX#6-32 crews from the front panel.



Step 2 Remove front panel.



Step 3 Turn over eIVP-CFS-IV-V0004 to face the rear side.





Step 4 Remove 5pcs HEX#6-32 screws (circled in red) from the rear side and 4pcs PHILLIPS#6-32 screws (circled in yellow) from the bottom side.



Step 5 Remove rear panel.



Step 6 Remove the SATA cable and SATA power cables.







Step 7 Finished.



# 2.2 Installing DDR4 SO-DIMM Modules

Step 1 DDR4 SO-DIMM socket.





Step 2 Install DDR4 RAM module into SO-DIMM socket.



Step 3 Install DDR4 RAM module into SO-DIMM socket.





# 2.3 Installing Mini PCIe Card

#### Step 1 Mini PCIe socket.



Step 2 Install Mini PCIe card into socket.





Step 3 Install Mini PCIe card into socket.



# 2.4 Installing Antenna Cable

Step 1 Check antenna cable and washer.



Step 2 Rear panel antenna hole.





Step 3 Install antenna cable.



Step 4 Fasten washer 1 and 2.





Step 5 Finished.



## 2.5 Installing CFast Card

Step 1 Remove 2pcs PHILLIPS M3 screws on CFast & SIM cover at front panel.



Step 2 Before installing CFast, make sure the system power is not working.



Step 3 Insert CFast card and push to lock.



## 2.6 Installing SIM Card

Step 1 Remove 2pcs PHILLIPS M3 screws on CFast & SIM cover at front panel.



Step 2 Before install CFast, make sure the system power is not working.



Step 3 Insert SIM card and push to lock.



## 2.7 Installing SSD/HDD

Step 1 Unlock SSD/HDD tray.





Step 2 Pull the trigger and open SSD/HDD tray.



Step 3 Install 2.5" SSD/HDD into the tray and then push back to close the tray.





Step 4 Lock the SSD/HDD tray with the SSD/HDD tray key.



#### 2.8 Installing M.2

Step 1 M.2 socket.





Step 2 Install M.2 into socket and fasten 1pcs PHILLIPS M3 screw.



#### 2.9 Mounting Your eIVP-CFS-IV-V0004

EverFocus provides wall mount brackets in the package. If you need other brackets for VESA mount, Din Rail Kit and 2U rack mount kit as described in the content below, please consult with EverFocus local office.



#### 2.9.1 Wall mount

Fasten 6pcs PHILLIPS#10-32 screws.



2.9.2 VESA mount

Fasten 6pcs PHILLIPS#10-32 screws. VESA 75 x 75/100 x 100 mm





#### 2.9.3 Din Rail Kit

Fasten 6pcs PHILLIPS#10-32 screws.



2.9.4 2U rack mount kit





Chapter



# **3.** Jumpers and Connectors on the Motherboard

## **3.1** Main Board Expansion Connectors

3.1.1 Top View (Component Side) of eIVP-CFS-IV-V0004 Main Board With Connector Location





# 3.1.2 Bottom View (Solder Side) of eIVP-CFS-IV-V0004 Main Board With Connector Location



#### 3.1.3 Miscellaneous Pin Header

This pin header can be used as a backup for following functions, such as hard drive LED indicator, reset button, power LED indicator, and power-on/off button, which already can be accessed by front panel and top panel. The pin-outs of Miscellaneous port are listed in following table:



	Group	Pin No.	Description
		1	HDD_LED_P
		3	HDD_LED_N
	Reset Button	5	FR_RST_BTN_N



28		7	Ground
נייייין 10000 <mark>7</mark>	Power LED	2	PWR_LED_P
		4	PWR_LED_N
	Power Button	6	FP_PWR_BTN_IN
		8	Ground

#### 3.1.4 SATA1, SATA2 : SATA III Connector

There are 2 onboard high performance Serial ATA III (SATA III) on eIVP-CFS-IV-V0004. It supports higher storage capacity with less cabling effort and smaller required space. The pin assignments of SATA1 and SATA2 are listed in the following table:



	Pin No.	Definition	Pin No.	Definition
	1	GND	5	RXN
O o∞o∞₀ O	2	ТХР	6	RXP
7 1	3	TXN	7	GND
	4	GND		

#### 3.1.5 J2 : SATA Power Connector

The eIVP-CFS-IV-V0004 also equips with a SATA power connector. The one port supports 5V (Up to 2A) and 12V (Up to 2A) to the hard drive or SSD. The pin assignments of J2 are listed in the following table :




		Pin No.	Definition	Pin No.	Definition
	0000	1	+12V	5	GND
l	4 1	2	GND	6	+5V

# 3.1.6 CN13 : Internal USB

The USB 2.0 connections supports up to 480Mbps. It is also compliant with the requirements of high speed (HS), full speed (FS) and low speed (LS). The pin assignments of CN13 are listed in the following table:



		Pin No.	Definition	Pin No.	Definition
4	0000	1	+5V	5	D+
	4 1	2	D-	6	GND

3.1.7 SODIMM\_1, SODIMM\_1: DDR4 Slot

There are 2 DDR4 channel onboard, supporting DDR4 2666, max 64GB. Each channel supports up to 32GB.





Slot	Description
SODIMM_1	DDR4 Channel A
SODIMM_2	DDR4 Channel B

### 3.1.8 CN1: BIOS Socket

If the BIOS needs to be changed, please contact the EverFocus Technical Support team : ts@everfocus.com.tw





# 3.1.9 SUMIT A, SUMIT B

This system have standard SUMIT A and SUMIT B for SUMIT type add-on cards.



### SUMIT A Pin Out :

2 0 52 1 0 51				
Pin No.	Function	Pin No.	Function	
1	+5V_AUX	2	+12V	
3	+3.3V	4	SMB_DATA	
5	+3.3V	6	XMB_CLK	
7	Reserved	8	Reserved	
9	Reserved	10	SPI_MISO	
11	USB_OC#	12	SPI_MOSI	
13	Reserved	14	SPI_CLK	
15	+5V	16	SPI_CS10	
17	USB_3+	18	SPI_CS1#	
19	USB_3-	20	Reserved	
21	+5V	22	LPC_DRQ1#	
23	USB_2+	24	LPC_AD0	
25	USB_2-	26	LPC_AD1	
27	+5V	28	LPC_AD2	
29	USB_1+	30	LPC_AD3	



31	USB_1-	32	LPC_FRAME#
33	+5V	34	SERIRQ#
35	USB_0+	36	Reserved
37	USB_0-	38	CLK_33MHz
39	GND	40	GND
41	A_PET_P0	42	A_PER_PO
43	A_PET_NO	44	A_PER_NO
45	GND	46	APRSNT#/A_PE_C LKREQ#
47	PERST#	48	A_CLKP
49	WAKE#	50	A_CLKN
51	+5V	52	GND

### SUMIT B Pin Out :

2 0 52 1 0 51				
Pin No.	Function	Pin No.	Function	
1	GND	2	GND	
3	B_PET_PO	4	B_PER_PO	
5	B_PET_NO	6	B_PER_NO	
7	GND	8	GND	
9	C_CLKP	10	B_CLKP	
11	C_CLKN	12	B_CLKN	
13	CPRSNT#/C_PE_CLKPEQ#	14	GND	
15	C_PET_PO	16	C_PER_PO	
17	C_PET_NO	18	C_PER_NO	
19	GND	20	GND	

21	C_PET_P1	22	C_PER_P1
23	C_PET_N1	24	C_PER_N1
25	GND	26	GND
27	C_PET_P2	28	C_PER_P2
29	C_PET_N2	30	C_PER_N2
31	GND	32	GND
33	C_PET_P3	34	C_PER_P3
35	C_PET_N3	36	C_PER_N3
37	GND	38	GND
37 39	GND PERST#	38 40	GND WAKE#
37 39 41	GND PERST# Reserved	<ul><li>38</li><li>40</li><li>42</li></ul>	GND WAKE# Reserved
<ul> <li>37</li> <li>39</li> <li>41</li> <li>43</li> </ul>	GND PERST# Reserved +5V	<ul> <li>38</li> <li>40</li> <li>42</li> <li>44</li> </ul>	GND WAKE# Reserved Reserved
<ul> <li>37</li> <li>39</li> <li>41</li> <li>43</li> <li>45</li> </ul>	GND PERST# Reserved +5V +5V	<ul> <li>38</li> <li>40</li> <li>42</li> <li>44</li> <li>46</li> </ul>	GND WAKE# Reserved Reserved +3.3V
<ul> <li>37</li> <li>39</li> <li>41</li> <li>43</li> <li>45</li> <li>47</li> </ul>	GND PERST# Reserved +5V +5V	<ul> <li>38</li> <li>40</li> <li>42</li> <li>44</li> <li>46</li> <li>48</li> </ul>	GND WAKE# Reserved Reserved +3.3V +3.3V
<ul> <li>37</li> <li>39</li> <li>41</li> <li>43</li> <li>45</li> <li>47</li> <li>49</li> </ul>	GND PERST# Reserved +5V +5V +5V	<ul> <li>38</li> <li>40</li> <li>42</li> <li>44</li> <li>46</li> <li>48</li> <li>50</li> </ul>	GND WAKE# Reserved Reserved +3.3V +3.3V +3.3V

# 3.1.10 Mini PCle : MPCle\_1 , MPCle\_2

Standard full length mini PCIe slot



The pin assignments of MPCIe 1, MPCIe 2 ted in the following table:

Pin No.	Signal Name	Pin No.	Signal Name
---------	-------------	---------	-------------



51	Reserved	52	+3.3 Vaux
49	Reserved	50	GND
47	Reserved	48	+1.5V
45	Reserved	46	Reserved
43	GND	44	Reserved
41	+3.3 Vaux	42	Reserved
39	+3.3 Vaux	40	GND
37	GND	38	USB_D+
35	GND	36	USB_D-
33	РЕТр0	34	GND
31	PETn0	32	SMB_DATA
29	GND	30	SMB_CLK
27	GND	28	+1.5V
25	РЕТрО	26	GND
23	PETn0	24	+3.3 Vaux
21	GND	22	PERST#
19	Reserved	20	Reserved
17	Reserved	18	GND
	Mechan	ical Key	
15	GND	16	UIM_VPP
13	REFCLK+	14	UIM_RESET
11	REFCLK-	12	UIM_CLK
9	GND	10	UIM_DATA
7	CLKREQ#	8	UIM_PWR
5	Reserved	6	1.5V
3	Reserved	4	GND
1	WAKE#	2	+3.3 Vaux



# 3.1.11BAT1 : RTC Battery

The system's real-time clock is powered by a lithium battery. It is equipped with lithium battery. It is recommended that you shouldn't replace the lithium battery on your own. If the battery needs to be changed, please contact the EverFocus Technical Support team



## 3.1.12 FN1 : FAN Header

Fan power connector supports for additional thermal requirements. The pin assignments of FAN 1 are listed in the following table.



	Pin No.	Definition	Pin No.	Definition
4	1	GND	5	Fan speed sensor
	2	+12V (1.5A max)	6	Fan PWM



## 3.1.13 CN3 : LPC Port 80 Header

eIVP-CFS-IV-V0004 provides a LPC Port 80 Header for Debug Card.



	Pin No.	Definition	Pin No.	Definition
2 П П П П П П 12	1	SERIRQ	7	LFRAME#
┟┅┅┅┅┉	2	+3.3V	8	LAD0
	3	LA3	9	N/C
	4	RESET#	10	Ground
1000000	5	LAD1	11	CLOCK
	6	LAD2	12	Ground

# 3.1.14 J4, J5 : LAN3, LAN4, LAN5, LAN6 Speed LED Header



### J4 Pin Out :

4 Pin Out :		J5 Pin Out :		
	<sup>2</sup> [2-0-0-0] <sup>8</sup>	<sup>2</sup> []-[]-[]-[]-[]-[]-[]-[]-[]-[]-[]-[]-[]-[		
	¹ᡌᡗᢕᠿᠿ <mark>ᡟ</mark> ᠌᠌	╕ <sup>╏</sup> ╋╋╋╋		
Pin	LAN PORT/Function	Pin Number	LAN PORT/Function	
1	LAN3/LINK100#	1	LAN5/LINK100#	
2	LAN4/LINK100#	2	LAN6/LINK100#	
3	LAN3/LINK1000#	3	LAN5/LINK1000#	
4	LAN4/LINK1000#	4	LAN6/LINK1000#	
5	LAN3/ACT#	5	LAN5/ACT#	



6	LAN4/ACT#
7	+3V
8	+3V

6	LAN6/ACT#
7	+3V
8	+3V

# 3.1.15 M.2 KEY E : USB, PClex2 support

M.2 key E connector is suitable for applications that use wireless connectivity including Wi-Fi, Bluetooth, NFC of GNSS. Module card types include 1630, 2230.



Pin No.	Definition	Pin No.	Definition
74	3.3V	75	GND
72	3.3V	73	RESERVED/REFCLKn1
70	NC	71	RESERVED/REFCLKp1
68	NC	69	GND
66	NC	67	RESERVED/PETn1
64	NC	65	RESERVED/PETp1
62	ALERT# (O)(0/3.3V)	63	GND
60	12C_CLK (I)(0/3.3V)	61	RESERVED/PERn1
58	12C_DATA (I/O)(0/3.3V)	59	RESERVED/PERp1
56	NC	57	GND
54	NC	55	PEWAKE0# (I/O) (0/3.3V)
52	PERSTO# (I)(0/3.3V)	53	CLKREQ0# (I/O) (0/3.3V)
50	NC	51	GND
48	NC	49	REFCLKn0
46	NC	47	REFCLKp0
44	NC	45	GND
42	NC	43	PETn0
40	NC	41	РЕТрО
38	NC	39	GND
36	NC	37	PERnO
34	NC	35	PERpO

32	NC	33	GND
	Module Key		Module Key
	Module Key		Module Key
	Module Key		Module Key
	Module Key		Module Key
22	NC	23	NC
20	NC	21	NC
18	GND	19	NC
16	NC	17	NC
14	NC	15	NC
12	NC	13	NC
10	NC	11	NC
8	NC	9	NC
6	LED1# (O)(od)	7	GND
4	3.3V	5	USB_D-
2	3.3V	3	USB_D+
		1	GND

# 3.1.16 M.2 KEY M : PCIe x4/SATA Support

M.2 key M connector is suitable for applications that use Host I/Fs supported by either PCIe or SATA, or Solid State Storage Devices (SSD). Module card types is 2280.



Pin No.	Definition	Pin No.	Definition
74	3.3V	75	GND
72	3.3V	73	GND
70	3.3V	71	GND
68	SCUSCLK(3.2Hz)(O) (0/3.3V)	69	PEDET (NC-PCIe/GNDSATA)
	Connector Key	67	N/C



	Connector Key		Connector Key
	Connector Key		Connector Key
	Connector Key		Connector Key
58	N/C		Connector Key
56	NC	57	GND
54	PEWAKE# (I/O)(O) (0/3.3V) or N/C	55	REFCLKp
52	CLKREQ# (I/O)(O)(0/3.3V) or N/C	53	REFCLKn
50	PERST#(I/O)(O) (0/3.3V) or N/C	51	GND
48	NC	49	PETp0/SATA-A+
46	NC	47	PETn0/SATA-A-
44	NC	45	GND
42	NC	43	PERp0/SATA-B-
40	NC	41	PERp0/SATA-B+
38	DEVSLP (O)	39	GND
36	NC	37	PETp1
34	NC	35	PETn1
32	NC	33	GND
30	NC	31	PERp1
28	NC	29	PERn1
26	NC	27	GND
24	NC	25	РЕТр2
22	NC	23	PETn2
20	NC	21	GND
18	3.3V	19	PERp2
16	3.3V	17	PERn2
14	3.3V	15	GND
12	3.3V	13	РЕТр3
10	DAS/DDS# (I/O)/LED1# (I)	11	
8	N/C	9	GND
6	N/C	7	PERp3
4	3.3V	5	PERn3
2	3.3V	3	GND
		1	GND



# 3.2 Main Board Jumper Settings

3.2.1 Board top view of the system main board with jumper and deep switch



The figure above is the top view of the system main board. It shows the location of the jumpers and the switches.

You may configure your card to match the needs of your application by setting jumpers. A jumper is a metal bridge used to close an electric circuit. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To "close" a jumper, you connect the pins with the clip. To "open" a jumper, you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2 and 3. In this case you would connect either pins 1and 2, or 2 and 3.



You may configure your card to match the needs of your application by DIP switch. As below show the deep switch on and off.





# 3.2.2 JP6 : USB Wake Up



Jumper	Setting	Function
JP6	2:3	Non Wake Up support
JP6	1:2	Supported Wake Up (Default)

# 3.2.3 JP2, JP3, JP4, JP5 : COM Port RI pin Select



Pin Header	Pin No.	Description	
COM1 JP2	1 - 2	+5V (1A max.)	
	3 - 4	+12V (0.5A max.))	
	5 - 6	RI (Default)	

Pin Header	Pin No.	Description	
COM1 JP4	1 - 2	+5V (1A max.)	
	3 - 4	+12V (0.5A max.)	
	5 - 6	RI (Default)	

Pin Header	Pin No.	Description	
COM1 JP3	1 - 2	+5V (1A max.)	
	3 - 4	+12V (0.5A max.)	
	5 - 6	RI (Default)	

Pin Header	Pin No.	Description
COM1 JP5	1 - 2	+5V (1A max.)
	3 - 4	+12V (0.5A max.)
	5 - 6	RI (Default)



# 3.2.4 JP7 : PoE Power ON Select



Jumper	Setting	Function
JP7	1:2	PoE power on at standby power ready
JP7	2:3	PoE power on after system power on (Default)
JP7	No Jumper	Disable PoE power

# 3.2.5 JCMOS1, JP1 : CMOS & ME Flash



Jumper	Setting	Function
JCMOS1	1:2	*Normal (Default)
JCMOS1	2:3	Clear CMOS

Jumper	Setting	Function
JP1	1:2	Enable security measures defined in the Flash Descriptor. (Default)
JP1	2:3	Disable Flash Descriptor Security (Flash ME)



# 3.3 Ignition Control

eIVP-CFS-IV-V0004 provides ignition power control featuring for in-vehicle applications. The built-in MCU monitors the ignition signal and turns on/off the system according to pre-defined on/off delay periods.

# 3.3.1 Adjust Ignition Control Modes

eIVP-CFS-IV-V0004 provide 16 modes of different power on/off delay periods adjustable via SW5 switch. The default dip switch is set to 0 in ATX/AT power mode.



The modes are listed in below table :

Deep Switch Position	Power on delay	Power off delay	Switch Position
0	ATX/AT mode (Defaul	t)	ON 1 2 3 4
1	No delay	No delay	ON 1 2 3 4
2	No delay	5 seconds	ON 1 2 3 4
3	No delay	10 seconds	ON 1 2 3 4



4	No delay	20 seconds	ON 1 2 3 4
5	5 seconds	30 seconds	
6	5 seconds	0 seconds	ON 1 2 3 4
7	5 seconds	90 seconds	ON 1 2 3 4
8	5 seconds	30 minutes	ON 1 2 3 4
9	5 seconds	1 hour	ON 1 2 3 4
А	10 seconds	2 hours	ON 1 2 3 4
В	0 seconds	4 hours	ON 1 2 3 4
с	10 seconds	6 hours	
D	10 seconds	8 hours	ON 1 2 3 4
E	10 seconds	12 hours	ON 1 2 3 4
F	10 seconds	24 hours	ON 1 2 3 4

# 3.3.2 Ignition Control Wiring

To activate ignition control, you need to provide IGN signal via the 3-pin pluggable terminal block in the back panel. Please find below the general wiring configuration.

Pin No.	Definition
1	Ignition (IGN)
2	SW+
3	SW-



For testing purpose, you can refer to the picture below to simulate ignition signal input controlled by a latching switch.

Note :

1. DC power source and IGN share the same ground.



2. eIVP-CFS-IV-V0004 supports 6V to 36V wide range DC power input in ATX/AT mode. In Ignition mode, the input voltage is fixed to 12V/24V for car battery scenario.

3. For proper ignition control, the power button setting should be in "Power Down" mode.

# Chapter



# 4. BIOS Setup

# 4.1 Entering BIOS Setup

Aptio Setup Utility - Main Advanced Chipset Security	Copyright (C) 2018 American Boot Save & Exit	Megatrends, Inc.
BIOS Information BIOS Vendor Core Version Compliancy Project Version Build Date and Time Access Level	American Megatrends 5.13 UEFI 2.7; PI 1.6 E1000CXCOF00005 09/20/2018 13:33:56 Administrator	Choose the system default language
Processor Information Name Type Speed ID Stepping Package Number of Processors Microcode Revision GT Info IGFX VBIOS Version IGFX GOP Version Memory RC Version Total Memory Memory Frequency	CoffeeLake DT Intel(R) Core(TM) 15-8500T CPU @ 2.10GHz 2100 MHz 0x906EA U0 LGAl151 6Core(s) / 6Thread(s) 96 GT2 (0x3E92) 1015 N/A 0.7.1.80 8192 MB 2667 MHz	: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Figure 4-1: Entering Setup Screen

BIOS provides an interface for users to check and change system configuration.

The BIOS setup program is accessed by pressing the <Del> key when POST display output is shown.



# 4.2 Main

Aptio Setup Utility - Main Advanced Chipset Security	- Copyright (C) 2018 American Boot Save & Exit	Megatrends, Inc.
Microcode Revision	96	Choose the system default
GT Info	GT2 (0x3E92)	language
IGFX VBIOS Version	1015	
IGFX GOP Version	N/A	
Memory RC Version	0.7.1.80	
Total Memory	8192 MB	
Memory Frequency	2667 MHz	
	900 900	
PCH Information		
Name	CNL PCH-H	
PCH SKU	C246	
Stepping	BO	
ChipsetInit Base Revision	9	: Select Screen
ChipsetInit OEM Revision	E5	†↓: Select Item
TXT Capability of Platform/PCH	Supported	Enter: Select
Production Type	Production	+/-: Change Opt.
		Fl: General Help
ME FW Version	12.0.5.1117	F2: Previous Values
ME Firmware SKU	Corporate SKU	F3: Optimized Defaults
		F4: Save & Exit
System Language	[English]	ESC: Exit
System Date	[Wed 09/19/2018]	
System Time	[17:11:03]	

Figure 4-2: BIOS Main Menu

The main menu displays BIOS version and system information. There are two options on Main menu.

### System Date

Set the date. Use <Tab> to switch between date elements.

### **System Time**

Set the time. Use <Tab> to switch between time elements

# 4.3 Advanced



Figure 4-3: BIOS Advanced Menu

Select advanced tab to enter advanced BIOS setup options, such as CPU configuration, SATA configuration, and USB configuration.



# 4.3.1 CPU Configuration

Aptio Setup Utility - Advanced	Copyright (C) 2018 America	n Megatrends, Inc.
CPU Configuration		To turn on/off the MLC streamer prefetcher.
Type	Intel(R) Xeon(R)	
	E-2176G CPU @ 3.70GHz	
ID	0x906EA	
Speed	3700 MHz	
Ll Data Cache	32 KB x 6	
Ll Instruction Cache	32 KB x 6	
L2 Cache	256 KB x 6	
L3 Cache	12 MB	
L4 Cache	N/A	
VMX	Supported	
SMX/TXT	Supported	
		: Select Screen
		†↓: Select Item
Adjacent Cache Line Prefetch	[Enabled]	Enter: Select
Intel (VMX) Virtualization	[Enabled]	+/-: Change Opt.
Technology		Fl: General Help
Active Processor Cores	[A11]	F2: Previous Values
Hyper-Threading	[Enabled]	F3: Optimized Defaults
AES	[Enabled]	F4: Save & Exit
Intel Trusted Execution Technology	[Disabled]	ESC: Exit

Figure 4-3-1: CPU Configuration

### **Hardware Prefetcher**

To turn on/off the MLC streamer prefetcher.

**Adjacent Cache Line Prefetch** 

To turn on/off prefetching of adjacent cache lines.

Intel (VMX) Virtualization Technology

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

### **Active Processor Cores**

Number of cores to enable in each processor package.

### Hyper-threading

Enabled for Windows XP and Linux (OS optimized for Hyper-ThreadingTechnology) and disabled for other OS (OS not optimized for Hyper-Threading Technology). When disabled only one thread per core is enabled.

### AES

Enable/disable CPU Advanced Encryption Standard instructions.

### Intel Trusted Execution Technology

Enables utilization of additional hardware capabilities provided by Intel<sup>®</sup> Trusted Execution Technology.

Changes require a full power cycle to take effect.



### 4.3.2 Power & Performance



Figure 4-3-2: Power & Performance

4.3.2.1 CPU – Power Management Control



Figure 4-3-2-1: CPU – Power Management Control

### **Boot performance mode**

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

### Intel(R) SpeedStep(tm)

Allows more than two frequency ranges to be supported.

### Intel(R) Speed shift Technology

Enable/Disable Intel<sup>®</sup> Speed Shift Technology support. Enabling will expose the CPPCv2 interface to allow for hardware controlled P-states.

### Turbo Mode

Turbo Mode.

### C states

Enable or disable CPU C states.

### **Enhanced C-states**

Enable/disable C1E. When enabled, CPU will switch to minimum speed when all cores enter

C- State.



### 4.3.2.2 GT – Power Management Control



Figure 4-3-2-2: GT-Power Management Control

### **RC6 (Render Standby)**

Check to enable render standby support.

### **Maximum GT frequency**

Maximum GT frequency is limited by the user. Choose between 350MHz (RPN) and 1150MHz (RPO). Value beyond the range will be clopped to min/max supported by SKU

**Disable Turbo GT frequency** 

Check to enable render standby support.

### 4.3.3 PCH-FW Configuration



Figure 4-3-3: PCH-FW Settings

#### **ME State**

Set ME to Soft temporarily disabled.

### **AMT BIOS Features**

When disable AMT BIOS Features, they will be no longer supported and user is no longer able to access MEBx Setup.

#### **AMT Configuration**

Configure Intel<sup>®</sup> Active Management Technology Parameters.

#### **ME Unconfig on RTC Clear State**

Disabling this option will cause ME not to unconfigure on RTC clear.



# 4.3.4 Trusted Computing

Aptio Setup Utility - Advanced	Copyright	(C) 2017	American	Megatrends, Inc.
Configuration Security Device Support NO Security Device Found	[Enable]			Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and

Figure 4-3-4: Trusted Computing

Control the TPM device status and display related information if TPM chip is present.

# 4.3.5 ACPI Settings

Aptio Setup Ut Advanced	ility - Copyright (C) 2017 Americ	an Megatrends, Inc.
ACPI Settings		Enables or Disables System ability to Hibernate (OS/54 Sleep State). This option may
		not be effective with some
ACPI Sleep State	[S3 (Suspend to RAM)]	operating systems.
S3 Video Repost	[Disabled]	

Figure 4-3-5: ACPI Settings

### **Enable Hibernation**

Enables or disables system's ability to hibernate (OS/S4 sleep state). This option may not be effective with some OS.

### **ACPI Sleep State**

Selects the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.

### S3 Video Repost

Enables or disables S3 video repost.

# 4.3.6 SMART Settings



Figure 4-3-6 : SMART Settings

### **SMART Self Test**

Run SMART self test on all HDDs during POST.



# 4.3.7 IT8786 Super IO Configuration

Aptio Setup Utility Advanced	- Copyright (C) 2017 Americ	an Megatrends, Inc.
IT8786 Super IO Configuration		Set Parameters of Serial Port 1 (COM1)
Super IO Chip Serial Port 1 Configuration Serial Port 2 Configuration Serial Port 3 Configuration Serial Port 4 Configuration	IT8786	

Figure 4-3-7: IT8786 Super IO Settings

4.3.7.1 Serial Port X Configuration

Aptio Setup Utility Advanced	y - Copyright (C) 2017 America	n Megatrends, Inc.
Serial Port 1 Configuration		Enable or Disable Serial Port (COM)
Serial Port		
Device Settings	IO=3F8h; IRQ=4;	
Change Settings	[Auto]	
Interface Mode	[RS-232 Mode]	
High Speed Serial Port	[Disable]	

Figure 4-3-7-1: Serial Port X Configuration

### Serial Port 1 to port 4 Configuration

Options for Serial Port 1 to Serial Port 4.

Entering the corresponding Port option then end user can change the settings such as I/O resource and UART mode (High Speed Serial Port is Port 1 only).

### 4.3.8 Hardware Monitor

Aptio Setup Utilit Advanced	ty - Copyright (C) 2018 Ame	erican Megatrends, Inc.
Pc Health Status		Default: Using the default smart fan table.
System temperaturel	: +47 Ĉ	User: Setting parameters by
System temperature2	: +46 Ĉ	user.
System Fanl Speed	: N/A	
VCORE	: +1.092 V_	
DDR	: +1.200 V	
+12V	: +11.880 V	
+5V	: +5.010 V	
+3.3V	: +3.304 V	
Smart Fan Support	[Enable]	
Smart Fan Mode		
Start Temperature	45	: Select Screen
PWM Start Value(%)	15	†↓: Select Item
Full Speed Temperature	90	Enter: Select
		+/-: Change Opt.

Figure 4-3-8: Hardware Monitor Settings

The IT8786 SIO features an enhanced hardware monitor providing thermal, fan speed, and system voltages' status monitoring.

### **Smart Fan Support**

Smart Fan Support. Work with Full Speed if "Smart Fan Support" is disabled.



#### **Smart Fan Mode**

Default: Using the default smart fan table.

User: Setting parameters by user.

#### **Start Temperature**

Temperature Limit value of Fan Start (Degree C).

(Range: 10~80)

**PWM Start Value (%)** 

Default PWM Value of Fan.

(Range: 15%~100%)

**Full Speed Temperature** 

Temperature Limit value of Fan Full Speed (Degree C).

(Range: 50~90)

### 4.3.9 Serial Port Console Redirection



Figure 4-3-9 : Serial Port Console Redirection Settings

#### **Console Redirection**

Console redirection enable or disable.

### **Console Redirection Settings**

These settings specify how the host computer and the remote computer (which the user is using) will exchange data. Both computers should have the same or compatible settings.

#### **Legacy Console Redirection**

Legacy Console Redirection Settings

Serial Port for Out-of-Band Management/Windows Emergency Management Services (EMS)

Console redirection enable or disable



# 4.3.10 Intel TXT Information

Aptio Setup Advanced	Utility - Copyright (C) 2017 American	Megatrends, Inc.
Intel TXT Information		
Chipset	Production Fused	
BiosAcm	Production Fused	
Chipset Txt	Supported	
Cpu Txt	Supported	
Error Code	None	
Class Code	None	
Major Code	None	
Minor Code	None	

Figure 4-3-10: Intel TXT Information

**Display Intel TXT information** 

4.3.11 Acoustic Management Configuration



Figure 4-3-11: Acoustic Management Settings

### Acoustic Management Configuration

Option to enable or disable automatic acoustic management

### 4.3.12 PCI Subsystem Setting



Figure 4-3-12: PCI Subsystem Settings



### Above 4G Decoding

Globally Enables or Disables 64bit capable Devices to be Decoded in Above 4G Address Space (Only if System Supports bot PCI Decoding)

### **Hot-Plug Support**

Globally Enables or Disables Hot-Plug support for the entire System. If system has Hot-Plug Capable Slots and this option set to Enabled, it provides a Setup screen for selecting PCI resource padding for Hot-Plug.



Aptio Setup U Advanced	Jtility - Copyright (C) 2017 Amer	ican Megatrends, Inc.
Network Stack Ipv4 PXE Support Ipv4 HTTP Support Ipv6 PXE Support Ipv6 HTTP Support IP6 Configuration Policy PXE boot wait time Media detect count	[Enabled] [Disabled] [Disabled] [Disabled] [Automatic] 0 1	Enable/Disable UEFI Network Stack
		: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Figure 4-3-13: Network Stack Settings

**Network Stack** 

Enable/Disable UEFI Network Stack

**Ipv4 PXE Support** 

Enable/Disable IPv4 PXE boot support.

**Ipv4 HTTP Support** 

Enable/Disable IPv4 HTTP boot support.

**Ipv6 PXE Support** 

Enable/Disable IPv6 PXE boot support.

**Ipv6 HTTP Support** 

Enable/Disable IPv6 HTTP boot support.

**IP6 Configuration Policy** 

Set IP6 Configuration Policy.

**PXE boot wait time** 



Wait time to press ESC key to abort the PXE boot.

### **Media detect count**

Number of times presence of media will be checked.

### 4.3.14 CSM Configuration

Aptio Setup Utility - Copyright (C) 2018 American Megatrends, Inc. Advanced			
Compatibility Support Module C	onfiguration	Enable/Disable CSM Support.	
CSM Support			
CSM16 Module Version	07.82		
GateA20 Active	[Upon Request]		
Option ROM Messages	[Force BIOS]		
INT19 Trap Response	[Immediate]		
HDD Connection Order	[Adjust]		
Boot option filter	[UEFI and Legacy]		
Option ROM execution		: Select Screen	
		†↓: Select Item	
Network	[Do not launch]	Enter: Select	
Storage	[Legacy]	+/-: Change Opt.	
Video	[Legacy]	Fl: General Help	
Other PCI devices	[Legacy]	F2: Previous Values	
		F3: Optimized Defaults	

Figure 4-3-14: CSM Configuration

#### **CSM Support**

Enable/disable CSM support

#### **GateA20 Active**

UPON REQUEST - GA20 can be disabled using BIOS services.

ALWAYS - do not allow GA20 to be disabled; this option is useful when any RT code is executed above 1MB.

### **Option ROM Messages**

Set display mode for Option ROM.

#### **INT19 Trap Response**

BIOS reaction on INT19 trapping by Option ROM :

IMMEDIATE - execute the trap right away;

POSTPONED - execute the trap during legacy boot.

#### **HDD Connection Order**

Some OS require HDD handles to be adjusted, i.e. OS is installed on drive 80h.

### **Boot option filter**

This option controls Legacy/UEFI ROM's priority.

#### Network

Controls the execution of UEFI and Legacy PXE OpROM.

#### Storage



Controls the execution of UEFI and Legacy Storage OpROM.

Video

Allows more than two frequency ranges to be supported.

**Other PCI devices** 

Determines OpROM execution policy for devices other than network, storage, or video.

### 4.3.15 NVMe Configuration

Aptio Setup Advanced	Utility - Copyright	(C) 2017 American	Megatrends, Inc.
NVMe controller and Drive	information		
No NVME Device Found			

Figure 4-3-15: NVMe Settings

Display NVMe controller and Drive information.

### 4.3.16 USB Configuration

Aptio Setup Utility - Advanced	Copyright (C) 2017 American	Megatrends, Inc.
USB Configuration		Enables Legacy USB support. AUTO option disables legacy
USB Module Version	19	support if no USB devices are connected. DISABLE option will
USB Controllers:		keep USB devices available
1 XHCI		only for EFI applications.
USB Devices:		
1 Keyboard, 1 Mouse		
Legacy USB Support		
XHCI Hand-off	[Enabled]	
USB Mass Storage Driver Support	[Enabled]	
Port 60/64 Emulation	[Disabled]	
		: Select Screen
USB hardware delays and time-outs:		↑1: Select Item
USB transfer time-out	[20 sec]	Enter: Select
Device reset time-out	[20 sec]	+/-: Change Opt.
Device power-up delay	[Auto]	Fl: General Help
		F2: Previous Values

Figure 4-3-16: USB Settings

#### 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.

### **XHCI Hand-off**

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

**USB Mass Storage Driver Support** 

Enable/disable USB mass storage driver support.

Port 60/64 Emulation



Enables I/O port 60h/64h emulation support. This should be enabled for the complete USB keyboard legacy support for non-USB aware OSes.

### **USB transfer time-out**

The time-out value for control, bulk, and interrupt transfers.

### **Device reset time-out**

USB mass storage device start unit command time-out.

### **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 100 ms, for a hub port the delay is taken from the hub descriptor.

# 4.4 Chipset

Ap	tio Setup Utility - Copyright (C	) 2017 American Megatrends, :	Inc.
Main Advanced	Chipset Security Boot Save &	Exit	
<ul> <li>System Agent (SA</li> <li>PCH-IO Configura</li> <li>GPIOManager Conf</li> </ul>	) Configuration tion iguration	System Agent	(SA) Parameters

Figure 4-4: BIOS Chipset Menu

System Agent (SA) Configuration

System Agent (SA) parameters.

**PCH-IO Configuration** 

PCH parameters.

**GPIOManager Configuration** 

GPIOManager Configuration.

### 4.4.1 System Agent (SA) Configuration



Figure 4-4-1: System Agent Settings

VT-d

VT-d capability.

Above 4GB MMIO BIOS assignment



Enable/disable above 4GB MemoryMappedIO BIOS assignment. This is disabled automatically when aperture size is set to 2048MB.

#### 4.4.1.1 Memory Configuration

Aptio Setup Utility - Chipset	Copyright (C) 2017 American	Megatrends, Inc.
Memory Configuration		
Memory RC Version	2.0.0.6	
Memory Frequency	2133 MHz	
Memory Timings (tCL-tRCD-tRP-tRAS)	15-15-15-36	
Channel 0 Slot 0	Populated & Enabled	
Size	8192 MB (DDR4)	
Number of Ranks	2	
Manufacturer	Transcend	
Channel 0 Slot 1	Not Populated / Disabled	
Channel 1 Slot 0	Not Populated / Disabled	
Channel 1 Slot 1	Not Populated / Disabled	

Figure 4-4-1-1: Memory Information

Displays memory information.

#### **4.4.1.2 Graphics Configuration**

Aptio Setup Utility - Chipset	Copyright (C) 2017 American	Megatrends, Inc.
Graphics Configuration		If Enable, it will not scan for External Gfx Card on PEG
Skip Scaning of External Gfx Card		and PCH PCIE Ports
Primary Display  External Gfx Card Primary Display Co	[Auto] nfiguration	
Internal Graphics	[Auto]	
GTT Size	[8MB]	
Aperture Size	[256MB]	
DVMT Pre-Allocated	[32M]	
DVMT Total Gfx Mem	[MAX]	
		tu: Select Item
		Enter: Select
		+/-: Change Opt.
		Fl: General Help
		F2: Previous Values
		F3: Optimized Defaults
		F4: Save & Exit
		ESC: Exit

Figure 4-4-1-2: Graphics Settings

### **Skip Scaning of External Gfx Card**

If Enable, it will not scan for External Gfx Card on PEG and PCH PCIE Ports.

### **Primary Display**

Select which of IGFX/PEG/PCI Graphics device should be Primary Display Or select SG for Switchable Gfx.

### **Internal graphics**



Keep IGFX enabled based on the setup options.

### **GTT Size**

Select the GTT Size.

### **Aperture Size**

Select the Aperture Size.

Note: Above 4GB MMIO BIOS assignment is automatically enabled when selecting 2048MB aperture. To use this feature, please disable CSM Support.

### **DVMT Pre-Allocated**

Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device.

### **DVMT Total Gfx Mem**

Select DVMT5.0 Total Graphic Memory size used by the Internal Graphics Device.

### 4.4.1.3 PEG Port Configuration

Aptio Setup Util: Chipset	ity - Copyright (C) 2018 Amer	rican Megatrends, Inc.
PEG Port Configuration		Enable or Disable the Root Port
PEG 0:1:0 Enable Root Port Max Link Speed PEG 0:1:1 Enable Root Port Max Link Speed PEG 0:1:2 Enable Root Port Max Link Speed	Not Present [Auto] [Auto] Not Present [Auto] Not Present [Auto] [Auto]	
<ul> <li>PEG Port Feature Configuration</li> </ul>		: Select Screen

Figure 4-4-1-3: PEG Port Configuration

PEG port options for PCIe device.



Aptio Setup U Chipset	Utility - Copyright (C) 2018 Ame	rican Megatrends, Inc.
PCH-IO Configuration		PCI Express Configuration settings
PCI Express Configuration		
SATA And RST Configuration		
Security Configuration		
PCH LAN Controller	[Enabled]	
Wake on LAN Enable	[Enabled]	
Serial IRQ Mode	[Continuous]	
State After G3	[S5 State]	

Figure 4-4-2: PCH-IO Settings

### **PCH LAN Controller**

Enable or disable onboard NIC.



### Wake on LAN

Enable or disable integrated LAN to wake the system. (The wake On LAN cannot be disabled if ME is on at Sx state.)

### Serial IRQ Mode

Configure serial IRQ mode.

### State After G3

Specify what state to go to when power is re-applied after a power failure (G3 state).

SO State: Always turn-on the system when power source plugged-in.

S5 State: Always turn-off the system when power source plugged-in.

4.4.2.1 PCI Express Configuration of PCH-IO

Aptio Setup Uti Chipset	lity - Copyright (C) 2018 American	Megatrends, Inc.
PCI Express Configuration		The control of Active State Power Management of the DMI
DMI Link ASPM Control Native PCIE Enable PCIE Port assigned to LAN	[Auto] [Enabled] 5	Link.
<ul> <li>M.2 Key E(x2)</li> <li>Intel(R) Ethernet Controller</li> <li>Intel(R) Ethernet Controller Intel(R) Ethernet Controller</li> <li>LN 1</li> </ul>	I210 LAN 2 I210 LAN 3 I219 Reserved for ethernet	
<pre>inter(R) Ethernet Controller Intel(R) Ethernet Controller Intel(R) Ethernet Controller M.2 Key M(x4) minPCIe(SATA Slot 2)</pre>	I210 LAN 5 I210 LAN 6	→-: Select Screen †1: Select Item Enter: Select
miniPCIe/SATA Slot 1	USB/SATA Lane configured as USB/SATA	+/-: Change Opt. Fl: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Figure 4-4-2-1: PCH-IO Settings

**DMI Link ASPM Control** 

Enable/Disable the control of Active State Power Management on SA side of the DMI Link.

**Native PCIE Enable** 

PCIE Express Native Support Enable/Disable.

**PCI Express device settings** 

Bios options for PCI Express device setting.



### 4.4.2.2 SATA and RST Configuration

Aptio Setup Utility - Chipset	Copyright (C) 2018 Amer	ican Megatrends, Inc.
SATA And RST Configuration		▲ Enable/Disable SATA Device.
SATA Controller(s) SATA Mode Selection ▶ Software Feature Mask Configuration Aggressive LPM Support	[Enabled] [AHCI] [Enabled]	
Serial ATA Port 0 Software Preserve Port 0 Hot Plug Spin Up Device SATA Device Type	Empty Unknown [Enabled] [Disabled] [Enabled] [Hard Disk Drive]	
Serial ATA Port 1 Software Preserve Port 1 Hot Plug	Empty Unknown [Enabled] [Disabled]	: Select Screen †1: Select Item Enter: Select +/-: Change Opt.
Spin Up Device SATA Device Type Serial ATA Port 2 Software Preserve	[Enabled] [Hard Disk Drive] Empty Unknown	F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
Port 2 Hot Plug Spin Up Device SATA Device Type	[Enabled] [Disabled] [Enabled] [Hard Disk Drive]	ESC: Exit

### Figure 4-4-2-2: SATA and RST Settings

### SATA Controller(s)

Enable or disable SATA Device.

### **SATA Mode Selection**

Determines how SATA controller(s) operate.

### **Software Feature Mask Configuration**

RAID OROM/RST driver will refer to the SWFM configuration to enable or disable the storage features.

### **Aggressive LPM Support**

Enable PCH to aggressively enter link power state.

### **Options for each SATA port:**

Port n

Enable or disable SATA Port.

#### **Hot Plug**

Designated this port as Hot Pluggable.

### **Spin Up Device**

On an edge detect from 0 to 1, the PCH starts a COMRESET initialization sequence to the device.

### **SATA Device Type**

Identifies that the SATA port is connected to solid state drive or hard disk drive.



### 4.4.2.3 Security Configuration



Figure 4-4-2-3: Security Settings

#### **BIOS Lock**

Enable/disable the PCH BIOS Lock Enable (BLE bit) feature.

# 4.5 Security



Figure 4-5: BIOS Security Menu

### **Administrator Password**

Set administrator password.

### **User Password**

Set user password.

#### **Secure Boot**

Customizable Secure Boot Settings.



## 4.5.1 HDD Security Configuration

Aptio Set	up Utilit	v - Copyright (C) 2017 Ame	erican Megatrends, Inc.
Aporto 500	Securi	tv	Litom negaticnas, inc.
HDD Password Description :		Set HDD User Password.	
			*** Advisable to Power Cycle
Allows Access to Set, Modify and Clear			System after Setting Hard Disk
HardDisk User and Master Passwords.			Passwords ***.
User Password need to be installed for			Discard or Save changes option
Enabling Security. Master Password can			in setup does not have any
be Modified only when successfully unlocked			impact on HDD when password is
with Master Password in POST.			set or removed. If the 'Set
If the 'Set HDD Password' option is grayed out,			HDD User Password' option is
do power cycle to enable the option again.			grayed out, do power cycle to
			enable the option again
HDD PASSWORD CONFIGURAT	ION:		
Security Supported		Yes	: Select Screen
Security Enabled	:	No	11: Select Item
Security Locked	:	No	Enter: Select
Security Frozen	:	No	+/-: Change Opt.
HDD User Pwd Status	:	NOT INSTALLED	Fl: General Help
HDD Master Pwd Status	:	INSTALLED	F2: Previous Values
			F3: Optimized Defaults
			F4: Save & Exit
Set Master Password			ESC: Exit

Figure 4-5-1: HDD Security Settings

#### 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 gray, do power cycle to enable the option again.

### 4.5.2 Security Boot

Aptio Setup	Utility - Copyright (C) 2017 Security	American Megatrends, Inc.
System Mode Secure Boot Vendor Keys	Setup Not Active Active	Secure Boot activated when Platform Key(PK) is enrolled, System mode is User/Deployed, and CSM function is disabled
Attempt Secure Boot Secure Boot Mode ► Key Management	[Disabled] [Custom]	

Figure 4-5-2: Security Boot Settings

### **Attempt Secure Boot**

Secure Boot activated when Platform Key (PK) is enrolled, System mode is User/Deployed, and CSM function is disabled.

### **Secure Boot Mode**

Secure Boot mode selector Standard/Custom.

In custom mode Secure Boot Variables can be configured without authentication.


## **Key Management**

Enables expert users to modify Secure boot policy variables without full authentication.

## 4.6 Boot

Aptio Setup Utility - Main Advanced Chipset Security	Copyright (C) 2017 American <mark>Boot</mark> Save & Exit	Megatrends, Inc.
Boot Configuration Setup Prompt Timeout Bootup NumLock State Quiet Boot	1 [On] [Disabled]	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.
Boot Option Priorities		
Boot Option #1	[ubuntu (ADATA SP600)]	
Boot Option #2	[Windows Boot Manager (TS64GSSD370)]	
Boot Option #3	[UEFI: Built-in EFI Shell]	
New Boot Option Policy	[Default]	
		: Select Screen
		†j: Select Item
		Enter: Select
		F): Ceneral Help
		F2: Previous Values
		F3: Optimized Defaults
		F4: Save & Exit
		ESC: Exit

Figure 4-6: BIOS Boot Menu

## **Setup Prompt Timeout**

Number of seconds to wait for setup activation key. 65535 (0xFFF) means indefinite waiting.

## **Bootup NumLock State**

Select the keyboard NumLock state.

## **Quiet Boot**

Enables or disables Quiet Boot option.

## **Boot Option**

Sets the system boot order.

## **New Boot Option Policy**

Controls the placement of newly detected UEFI boot options.

**Hard Drive BBS Priorities** 

Set the order of the Legacy devices in this group.



## 4.7 Save & Exit

Aptio Setup Utility - Copyright (C) 2017 American Main Advanced Chipset Security Boot <mark>Save &amp; Exit</mark>	Megatrends, Inc.
Save Options Save Changes and Exit Discard Changes and Exit	Exit system setup after saving the changes.
Save Changes and Reset Discard Changes and Reset	
Save Changes Discard Changes	
Default Options Restore Defaults Same as User Defaults	
Restore User Defaults	: Select Screen †1: Select Item
Boot Override	Enter: Select
UEFI: Built-in EFI Shell	+/-: Change Opt.
ubuntu (ADAIA 52600) Windows Boot Manager (TS64GSSD370)	F1: General Help F2: Previous Values
Launch EFI Shell from filesystem device	F3: Optimized Defaults
	F4: Save & Exit FSC: Fxit
Save Changes and Reset Discard Changes and Reset Save Changes Default Options Restore Defaults Save as User Defaults Restore User Defaults Boot Override UEFI: Built-in EFI Shell ubuntu (ADATA SP600) Windows Boot Manager (TS64GSSD370) Launch EFI Shell from filesystem device	: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Figure 4-7: BIOS Save and Exit Menu

#### 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** 

Reset 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.

Default Options.

## **Restore Defaults**

Restore/Load Default values for all the setup options.

## Save as User Defaults

Save the changes done so far as User Defaults.

## **Restore User Defaults**

Restore the User Defaults to all the setup options.



# Chapter

# 5

# 5. Appendix

## **5.1 Function Description**

The eIVP-CFS-IV-V0004 offers a 16-bit DIO (Isolated/Non-Isolated) 20-pin terminal block connector, a watchdog timer, and a 4-port POE.

Isolated DIO pins are fixed by Hardware design that cannot change in/out direction in runtime process.

DIO definition is shown below:



Pin No.	DIO Definition	GPIO Definition	Pin No.	DIO Definition	GPIO Definition
1	DI 0	DIO 0	11	DO 0	DIO 8
2	DI 1	DIO 1	12	DO 1	DIO 9
3	DI 2	DIO 2	13	DO 2	DIO 10
4	DI 3	DIO 3	14	DO 3	DIO 11
5	DI 4	DIO 4	15	DO 4	DIO 12
6	DI 5	DIO 5	16	DO 5	DIO 13
7	DI 6	DIO 6	17	DO 6	DIO 14
8	DI 7	DIO 7	18	DO 7	DIO 15
9	DI COM	NC	19	DIO_GND	DIO_GND
10	DIO_GND	DIO_GND	20	External VDC	NC



POE definition is shown below :



Port No.	Definition	Port No.	Definition
1	POE 0	3	POE 2
2	POE 1	4	POE 3

Do NOT use these functions in below :

- 1. PE-2000 : DIO1 (ID = 0), POE
- 2. PE-3000 : POE (ID = 0)
- 3. UE-1000 : USB (ID = 0)

## 5.2 Isolated DIO Signal Circuit

## DI reference circuit:







## **5.3 RAID Functions**

5.3.1 SATA Mode for RAID

Please select SATA Device to RAID mode on BIOS menu.

Advanced  $\rightarrow$  SATA Configuration  $\rightarrow$  SATA Mode Selection  $\rightarrow$  RAID/Intel RST

Premium

	Main	Advanced	Chipset	Boot	Security	Save	& Exit
Г							
	SATA Controller(s)		[En	abled]	Iter	n Specific Help	
	SATA 1	Model Seled	ction	[AH	CI]		

## 5.3.2 UEFI Mode for RAID

1. Please select SATA device to RAID mode on BIOS menu.

Advanced  $\rightarrow$  SATA Configuration  $\rightarrow$  SATA Mode Selection  $\rightarrow$  RAID/Intel RST Premium

2. Please select Software Feature Mask Configuration on BIOS menu.





3. Use RST Legacy OROM  $\rightarrow$  Disabled  $\rightarrow$  Save Changes and Reset.

Aptio setup Utility Chipset	- Copyright (C) 2017 Americ
Software Feature Mask Configurat:	ion
HDD Unlock	[Enabled]
LED Locate	[Enabled]
Use RST Legacy OROM	[Disabled]
RAID0	[Enabled]
RAID1	[Enabled]
RAID10	[Enabled]
RAID5	[Enabled]
Intel Rapid Recovery Technology	[Enabled]
OROM UI and BANNER	Use RST Legacy OROM -
IRRT Only on eSATA	Disabled
Smart Response Technology	Enabled
OROM UI Normal Delay	

4. Into BIOS menu again, select Intel(R) Rapid Storage Technology on BIOS menu.

	Ar	otio setup	Utility -	Copyrie	ght (C)	2017	Ame
Main	Advanced	Chipset	Security	Boot	Save &	Exit	
<pre>&gt; CPU Com &gt; Power &gt; PCH-FW &gt; Intel()</pre>	nfiguratic & Performa Configura R) Rapid S	on Ince Ition Storage Te	chnology				

5. Select Create RAID Volume on BIOS menu.



6. Select disks to create RAID Volume then Save Changes and Reset to install OS with EFI mode.

Aptio setup Ut Advanced	ility - Copyright (C) 2017 American
Create RAID Volume	
Name: RAID Level:	Volume 1 [RAIDO(Stripe)]
Select Disks:	
SATA 0.1, TS128GSSD420K D418690034, 119.2GB	[X]
SATA 0.2, TS128GSSD420K D418690033, 119.2GB	[X]
Strip Size: SATA	0.1, TS128GSSD420K D418690034, 11
Capacity (MB) :	
Create Volume	

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