# STC-6004 USER 15" Stainless Multi-Touch Computer, Intel Core i7-6600U Processor, IP66 Protection, Fanless, DC 9V to 36V



1.3.0 Edition 20220704

# **Record of Revision**

Version	Date	Page	Description Ren	
1.00	2021/06/23	All	Official Release	
1.10	2021/06/28	iv, 6	Update	
1.20	2022/01/05	All	Update	
1.30	2022/07/04	All	Update	

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- FCC This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
- **CE** The products described in this manual comply with all applicable European Union (CE) directives if it has a CE marking. For computer systems to remain CE compliant, only CE-compliant parts may be used. Maintaining CE compliance also requires proper cable and cabling techniques.

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# **Order Information**

Part Number	Description
STC-6015-6600U-A1	15" Stainless Multi-Touch panel PC, Intel <sup>®</sup> Core i7-6600U, COM x 3, IP66 Protection, DC 9V to 36V
STC-6015-6600U-A2	15" Stainless Multi-Touch panel PC, Intel <sup>®</sup> Core i7-6600U, CANbus x 2, COM x 2, IP66 Protection, DC 9V to 36V

# **Order Accessories**

Part Number	Description
DDR4 4G	Certified DDR4 4GB 2666 MHz RAM
DDR4 8G	Certified DDR4 8GB 2666 MHz RAM
DDR4 16G	Certified DDR4 16GB 2666 MHz RAM
DDR4 32G	Certified DDR4 32GB 2666 MHz RAM
PWA-120W1	120W, 24V, 90VAC to 264VAC Power Adapter with 3-pin Terminal Block
PWA-160W-WT	160W, 24V, 85V AC to 264V AC Power Adaptor with 3-pin Terminal Block, Wide Temperature -30°C to +70°C
VESA Mount	VESA Mounting Kit

Notice :

Must pre-install RAM and Storage device by Vecow when place order because we seal chassis for fully IP66 design.

We won't guarantee IP66 water-proof if customer open chassis by themselves and this will destroy water-proof design and it need replace internal water-proof rubber inside

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# 1

# **GENERAL INTRODUCTION**

## **1.1 Overview**

Vecow's STC-6015 is 15" fully IP66 stainless multi-touch panel pc for using in food and beverage manufacturing, pharmaceuticals and high hygienic requirements environment to provide water-resistant system that can be withstand daily wash downs to keep a clean food, medicine or production facility.

STC-6015 adopts 304 stainless steel features with anti-Oxidation, anti-Corrosion that demonstrates an ability to clean the product using water, harsh detergents and acidic/alkaline disinfectants. With M12 I/O connectors design provide locked and waterproofed. Combined with a fully IP66 water/dust-proof enclosure and M12-type connectors, the industrial panel system can resist ingress of high-temperature steam and pressure washing.

STC-6015 adopts Intel Core i7-6600U processor (SkyLake), single DDR4 SO-DIMM supports up to 32GB memory; Advanced Intel<sup>®</sup> HD graphics 520 supports DirectX 12, OpenGL 4.4 and OpenCL 2.0 API. With 10-point multitouch projected capacitive touch screen features bring more sensitive operate experience than traditional single-point resistive touch and features with hardness of 7H Anti- scratch surface when operate by sharp objects, 9V to 36V wide range power input, all-in-one fanless design, -10°C to 55°C wide operating temperature, STC-6015 brings your more reliable using experience in your applications.

# **1.2 Features**

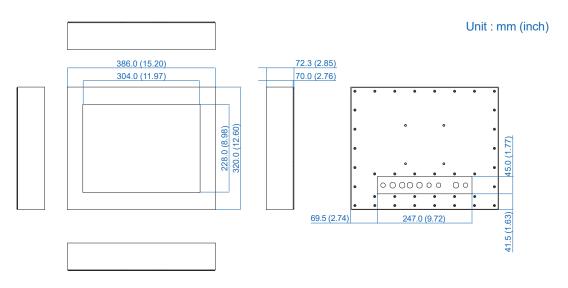
- 15" (1024 x 768) XGA TFT LED LCD
- Grade 304 stainless steel chassis, IP66 compliant
- Intel<sup>®</sup> Core™ i7-6600U Processor
- 10-point Projected Capacitive Multi-touch Screen
- M12 I/O Connectors
- Supports VESA 100
- Fanless design supports -5°C to 55°C operating temperature
- DC 9V to 36V

# 1.3 Specifications of STC-6015

Panel			
Panel Type	XGA TFT LED LCD		
Size	15"		
Max Resolution	1024 x 768		
Display Color	262k		
Brightness (cd/m2)	250		
Viewing Angle	160°/140° (H/V)		
Contrast Ratio	700 : 1		
Touch Screen			
Touch Screen Type	10-point Projected Capacitive		
Transparency	≥ 91%		
Surface Hardness	7H Surface Hardness		
Control Interface	USB Interface		
System			
Processor	Intel <sup>®</sup> Core™ i7-6600U Processor		
Chipset	Intel <sup>®</sup> SkyLake PCH-LP		
Memory	1 DDR4 2400MHz SO-DIMM, up to 32GB		
Graphics	Intel <sup>®</sup> UHD Graphics 520		
I/O Interface			
LAN	<ul> <li>LAN 1 : Intel<sup>®</sup> I219LM GigE LAN supports iAMT 12.0, X-coded M12 Connector</li> <li>LAN 2 : Intel<sup>®</sup> I210 GigE LAN, X-coded M12 Connector</li> </ul>		
Serial	<ul> <li>3 COM RS-232/422/485, A-coded M12 Connector (A1 Version)</li> <li>2 COM RS-232/422/485, A-coded M12 Connector (A2 Version)</li> </ul>		
USB	1 2-port USB 2.0, A-coded M12 Connector		
CAN Bus	1 2-port CAN bus I/O, A-coded M12 Connector (A2 Version)		
Storage			
SATA	1 2.5" SATA III (6Gbps)		
mSATA	1 SATA III (Mini PCIe Type, 6Gbps) (A1 Version)		
Expansion			
Mini PCle	<ul> <li>2 Full Size Mini PCIe Socket (A1 Version) :</li> <li>1 Full-size for PCIe/USB/Internal SIM Card</li> <li>1 Full-size for PCIe/USB/mSATA</li> <li>1 Full Size Mini PCIe Socket (A2 Version) :</li> <li>1 Full-size for PCIe/USB/Internal SIM Card</li> </ul>		

Power				
Power Input	9V to 36V, DC-in			
Power Interface	M12 Type Power Input, A-Coded			
Power Adapter	<ul> <li>AC to DC 120W Power Adapter (Optional Accessory)</li> <li>AC to DC 160W Wide Temperature Power Adapter (Optional Accessory)</li> </ul>			
Others				
ТРМ	Optional Infineon SLB9665 supports TPM 2.0, LPC Interface			
Watchdog Timer	Reset : 1 to 255 sec./min. per step			
Smart Management	Wake on LAN, PXE supported			
HW Monitor	Monitoring temperature, voltages. Auto throttling control when CPU overheats.			
Software Support				
Microsoft	Window 10, Window 7			
Linux	Fedora 19, Ubuntu 10.04 LTS, or Linux Kernel 3.0 above			
Mechanical				
Dimension	386.0mm x 320.0mm x 72.3mm (15.20" x 12.60" x 2.85")			
Weight	9kg			
Front Panel Protection	IP65 Compliant			
Mounting	VESA 100			
Environment				
Operating Temperature	-5°C to 55°C (23°F to 131°F)			
Storage Temperature	-20°C to 60°C (-4°F to 140°F)			
Humidity	10% to 95% Humidity, non-condensing			
Relative Humidity	95% at 55°C			
Shock	<ul><li>IEC 60068-2-27</li><li>20G, Half-sine, 11ms</li></ul>			
Vibration	<ul> <li>IEC 60068-2-64</li> <li>Non-operation : 10Hz to 200Hz, 1Grms, X, Y, Z, 30 mins each Axis</li> </ul>			
EMC	CE, FCC			

1.4 STC-6015 Mechanical Drawing



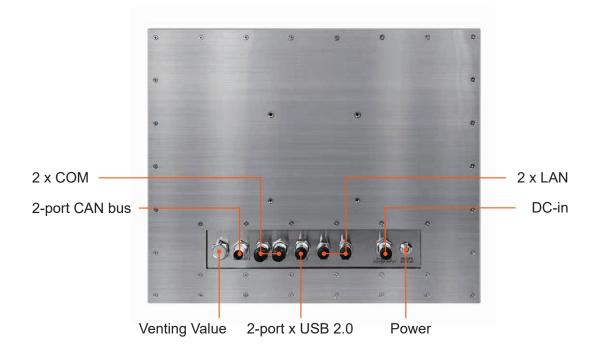


# **GETTING TO KNOW YOUR STC-6015**

# 2.1 Packing List

Item	Description	Qty
1	STC-6015 15" Stainless Multi-touch Panel PC	1
2	Driver/User Manual DVD	1
3	M12 to USB cable (2M Length)	1
4	M12 to DC terminal block cable (2M Length)	1
5	M4x10 stainless screw for VESA mount kit	4

# 2.2 I/O Functions



#### 2.2.1 Power Button

The power button is a non-latched switch. In case of system halts, you can press and hold the power button for 4 seconds to compulsorily shut down the system. Please note that a 4 seconds interval is kept by the system between two on/off operations (i.e. once turning off the system, you shall wait for 4 seconds to initiate another power-on operation).

#### 2.2.2 Power Input



This system supports 9V to 36V DC power input by M12 DC Cable in the rear side.

Pin No.	DC-IN	Pin No.	USB 2.0
1	VIN	4	GND
2	VIN	5	DC
3	GND		

#### 2.3.3 LAN Connector



There are 2 M12 jacks supporting 10/100/1000 Mbps Ethernet connections in the rear side. LAN 1 is powered by Intel I219 Ethernet engine; LAN 2 is powered by Intel i210 Ethernet Phy. When both LAN 1 and LAN 2 work in normal status, iAMT 11.0 function is enabled. Using suitable M12 LAN cable, you can connect the system to a computer, or to any other devices with Ethernet connection, for example, a hub or a switch. Moreover, both of LAN 1 and LAN 2 supports Wake on LAN and Pre-boot functions. The pin-outs of LAN 1 and LAN 2 are listed as follows :

	Pin No.	LAN 1	LAN 2
	1	LAN0_MDI_1P	LAN1_MDI_1P
	2	LAN0_MDI_1P	LAN1_MDI_1P
	3	LAN0_MDI_2N	LAN1_MDI_2N
	4	LAN0_MDI_2P	LAN1_MDI_2P
	5	LAN0_MDI_4P	LAN1_MDI_4P
	6	LAN0_MDI_4N	LAN1_MDI_4N
	7	LAN0_MDI_3N	LAN1_MDI_3N
	8	LAN0_MDI_3P	LAN1_MDI_3P

#### 2.2.4 USB 2.0



There are 2 USB 2.0 connections available supporting up to 480MB per second data rate. The pin-outs of USB 2.0 are listed as follows :

	Pin No.	USB 2.0	Pin No.	USB 2.0
	1	USB_1D-	5	USB_2D-
	2	USB_1D+	6	USB_2D+
	3	USB_VCC	7	USB_VCC
	4	USB_GND	8	USB_GND

#### 2.5.5 Serial Port COM 2 and COM 3



Serial port COM2and COM3 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.



The pin-outs of COM2 and COM3 are listed as follows :

Serial Port	Pin No.	RS-232	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-	
COM2	6	DSR		RTS-	
		RTS		RTS+	
COM3	7	CTS		CTS+	
	8	GND	GND	GND	GND

#### 2.2.6 CANbus (A2 Version)



	Pin No.	LAN 1	Pin No.	LAN 1
	1	D-	5	D+
	2	D+	6	GND
	3	GND	7	N/A
	4	D-	8	N/A

Support Protocol	CANbus 2.0B
Supported baudrate (Kbps)	100K, 125K, 250K, 500K, 800K, 1000K
Performance	6000 frames/sec
Socket CAN	Yes
Acceptance filter	Yes
Save config	Yes
CAN inactive mode	Yes
Listen mode	Yes
Error status	Yes

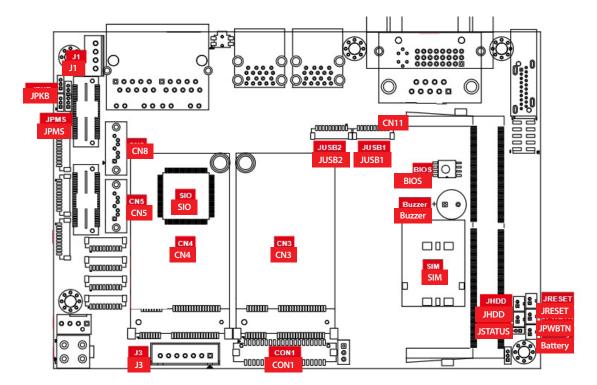
### 2.2.7 Venting Valve



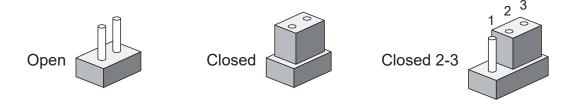
This air vent hole use for adjust pressure without the user to avoid air related problems.

# 2.3 STC-6015 Mainboard I/O Information

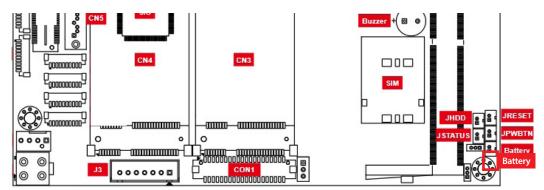
The figure below is the top view of the STC-6015 motherboard.



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 1 and 2, or 2 and 3.

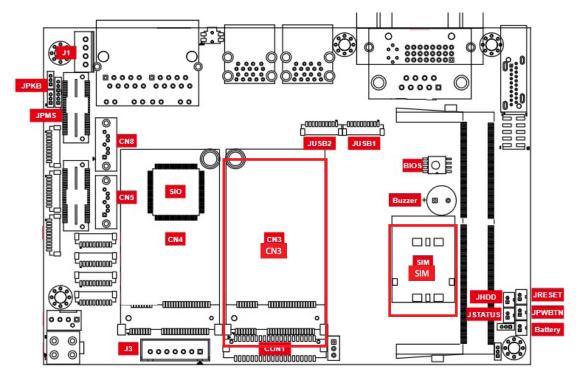


#### 2.3.1 Serial Port COM 2 and COM 3



The STC-6015's real-time clock is powered by a lithium battery. It is equipped with Panasonic BR2032 190mAh lithium battery. It is recommended that you not replace the lithium battery on your own, but if the battery needs to be changed, please contact the Vecow RMA service team.

#### 2.3.2 CN3, SIM : Mini PCle

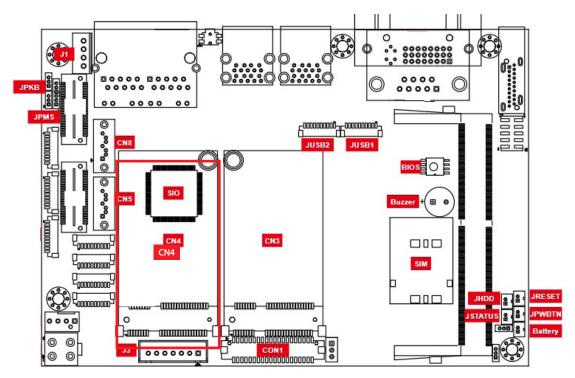


Note :

The SIM card sockets do not support hot-plug. Please make sure to unplug the system power before inserting the SIM card(s).

The pin assignments of CN3 are listed in the following table :

Pin No.	Definition	Pin No.	Definition
51	Reserved	52	+3.3Vaux
49	Reserved	50	GND
47	Reserved	48	+1.5V
45	Reserved	46	Reserved
43	GND	44	Reserved
41	+3.3Vaux	42	Reserved
39	+3.3Vaux	40	GND
37	GND	38	USB_D+
35	GND	36	USB_D-
33	PETp0	34	GND
31	PETn0	32	SMB_DATA
29	GND	30	SMB_CLK
27	GND	28	+1.5V
25	PERp0	26	GND
23	PERn0	24	+3.3Vaux
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	3.3Vaux



Both mSATA and Mini PCIe share the same form factor and similar electrical pinout assignments on their connectors. There was no clear mechanism to distinguish if a mSATA drive or a Mini PCIe device is plugged into the socket until recently that SATA I/O issued an ECN change (ECN #045) to redefine pin-43 on mSATA connector as "no connect" instead of "return current path" (or GND).

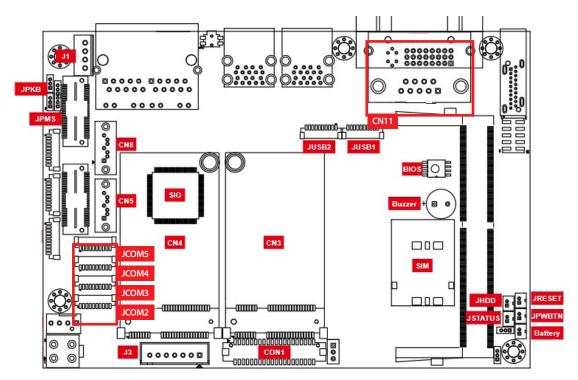
When an mSATA drive is inserted, its pin-43 is "no connect", and the respective pin on the socket is being pulled-up to logic 1. When a Mini PCIe device is inserted, its pin-43 forces the respective pin on the socket to ground, or logic 0.

Pin No.	Definition	Pin No.	Definition
51	Reserved	52	+3.3Vaux
49	Reserved	50	GND
47	Reserved	48	+1.5V
45	Reserved	46	Reserved
43	Status	44	Reserved
41	+3.3Vaux	42	Reserved
39	+3.3Vaux	40	GND
37	GND	38	USB_D+
35	GND	36	USB_D-

The pin assignments of CN4 are listed in the following table :

Pin No.	Definition	Pin No.	Definition
33	PETp0	34	GND
31	PETn0	32	SMB_DATA
29	GND	30	SMB_CLK
27	GND	28	+1.5V
25	PERp0	26	GND
23	PERn0	24	+3.3Vaux
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	3.3Vaux

#### 2.3.4 COM2~COM5 (JCOM2~JCOM5) : Serial Port



COM ports can be configured for RS-232, RS-422, or RS-485 with auto flow control communication.

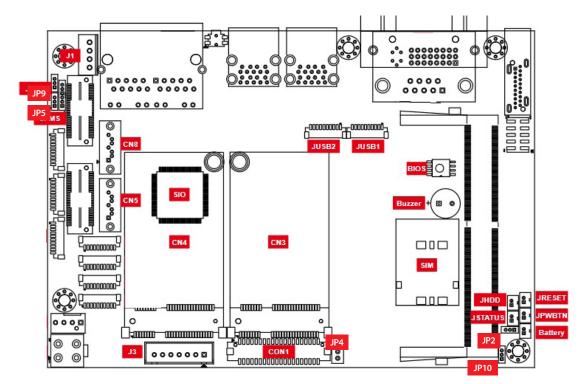
Series Port	Description
	RS-232
COM2 (JCOM2)/	RS-422 (5 wire)
COM3 (JCOM3)/ COM4 (JCOM4)/	RS-422 (9 wire)
COM5 (JCOM5)	RS-485
, , , , , , , , , , , , , , , , , , ,	RS-485 w/z auto-flow control

COM2~COM5 pin assignments are listed in the following table :

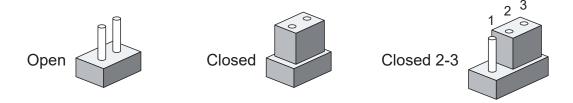
Serial Port	Pin No.	RS-232	RS-422 (5-wire)	RS-422 (5-wire)	RS-485
	1	GND_EARTH	GND_EARTH	GND_EARTH	GND_EARTH
	2	GND	GND	GND	GND
	3	RI		CTS-	RI
2	4	DTR	RXD-	RXD-	
3 4	5	CTS		CTS+	
5	6	TXD	RXD+	RXD+	
	7	RTS		RTS+	
	8	RXD	TXD+	TXD+	DATA+
	9	DSR		RTS-	
	10	DCD	TXD-	TXD-	DATA-

## 2.4 STC-6015 Main Board Jumper Settings

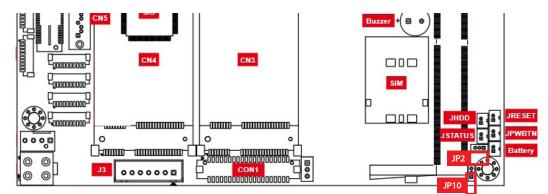




You may configure your card to match the needs of your application by setting jumpers. A jumper is a metal bridge used to close an electric circuit. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To "close" a jumper, 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 1 and 2, or 2 and 3.

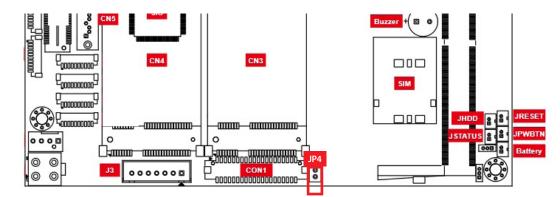


#### 2.4.2 JP2 (CMOS), JP10 (ME)



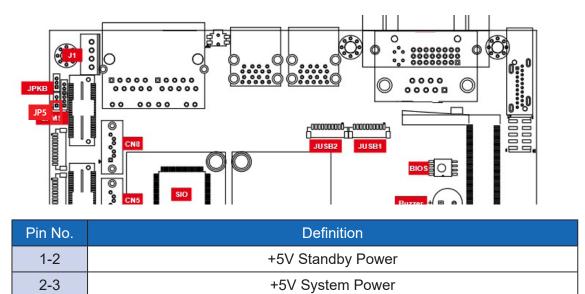
JP2 (CMOS)		JP10 (ME)	
Pin No.	Definition	Pin No.	Definition
1-2	Normal	1-2	Normal
2-3	Clean CMOS	2-3	Clean ME

#### 2.4.3 JP4: LVDS Module, Power Selection



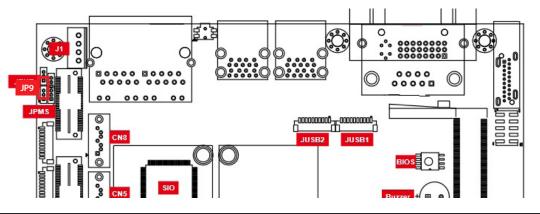
JP4 provides LVDS voltage selection function, Closing Pin 1 and Pin 2 is for 3.3V LVDS power input; closing Pin 2 and Pin 3 is for 5V LVDS power input.

Pin No.	Definition
1-2	+3.3V (Default)
2-3	+5V



#### 2.4.4 JP5 : External USB 3.0/2.0 Power Select

#### 2.4.5 JP9 : Backlight Control Level Select



Pin No.	Definition
1-2	3.3V
2-3	5V



# **BIOS SETUP**

# 3.1 Entering Setup

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.

BIOS Information		▲ Set the Date. Use Tab to
BIOS Vendor	American Megatrends	switch between Date elements.
Core Version	5.11	
Compliancy	UEFI 2.4; PI 1.3	
Project Version	Vecow 09U-001 T009 T1	
Build Date and Time	03/28/2016 16:48:14	
Access Level	Administrator	
Processor Information		
Name	SkyLake	
Brand String	<pre>Intel(R) Core(TM)</pre>	
	i5-6300U CPU @ 2.40GHz	
Frequency	2300 MHz	
Processor ID	406E3	→ +: Select Screen
Stepping	D0/K0	↑↓: Select Item
Number of Processors	2Core(s) / 4Thread(s)	Enter: Select
Microcode Revision	7C	+/-: Change Opt.
GT Info	GT2	F1: General Help
		F2: Previous Values
IGFX VBIOS Version	1032	F3: Optimized Defaults
Memory RC Version	1.9.0.0	F4: Save & Exit
Total Memory	8192 MB	ESC: Exit
Memory Frequency	2133 MHz	
PCH Information		•

Figure 4-1 : Entering Setup Screen

## 3.2 Main Menu

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

SteppingDØ/KØNumber of Processors2Core(s) / 4Thread(s)Microcode Revision7CGT InfoGT2IGFX VBIOS Version1032Memory RC Version1.9.0.0Total Memory8192 MBMemory Frequency2133 MHzPCH Information++: Select ScreenNameSKL PCH-LPPCH SKUPCH-LP Mobile (U)Pt Stepping21/C1LAN PHY Revision1.0.0.1205ME FW Version11.0.0.1205ME Firmware SKUCorporate SKUFirmware SKUCorporate SKUF4: Save & ExitESC: Exit	Frequency	2300 MHz	▲ Set the Time. Use Tab to
Number of Processors2Core(s) / 4Thread(s)Microcode Revision7CGT InfoGT2IGFX VBIOS Version1032Memory RC Version1.9.0.0Total Memory8192 MBMemory Frequency2133 MHzPCH Information++: Select ScreenNameSKL PCH-LPPCH SKUPCH-LP Mobile (U)Premium SKUPremium SKUStepping21/C1LAN PHY Revision11.0.0.1205ME FW Version11.0.0.1205ME Firmware SKUCorporate SKUFirmware SKUF4: Save & ExitESC: Exit		406E3	switch between Time elements.
Number of Processors2Core(s) / 4Thread(s)Microcode Revision7CGT InfoGT2IGFX VBIOS Version1032memory RC Version1.9.0.0Total Memory8192 MBMemory Frequency2133 MHzPCH Information++: Select ScreenNameSKL PCH-LPPCH SKUPCH-LP Mobile (U)Premium SKUPt+: Select ItemStepping21/C1LAN PHY RevisionB2ME FW Version11.0.0.1205ME Firmware SKUCorporate SKUFi: Save & ExitESC: Exit	Stepping	D0/K0	
Microcode Revision GT Info GT Info GT2 IGFX VBIOS Version Memory RC Version Total Memory Memory Frequency PCH Information Name PCH Information Name PCH SKU PCH-LP Mobile (U) Premium SKU Stepping LAN PHY Revision ME FW Version ME FW Version ME Firmware SKU ME Firmware SKU M		2Core(s) / 4Thread(s)	
IGFX VBIOS Version     1032       Memory RC Version     1.9.0.0       Total Memory     8192 MB       Memory Frequency     2133 MHz       PCH Information	Microcode Revision	70	
Memory RC Version1.9.0.0Total Memory8192 MBMemory Frequency2133 MHzPCH Information→+: Select ScreenNameSKL PCH-LPPCH SKUPCH-LP Mobile (U)Premium SKUStepping21/C1LAN PHY RevisionB2ME FW Version11.0.0.1205ME Firmware SKUCorporate SKUFirmware SKUF1: General HelpFirmware SKUF2: Previous Values	GT Info	GT2	
Total Memory8192 MBMemory Frequency2133 MHzPCH InformationNameSKL PCH-LPPCH SKUPCH-LP Mobile (U)PCH SKUPCH-LP Mobile (U)ft: Select ItemStepping21/C1LAN PHY RevisionB2ME FW Version11.0.0.1205ME Firmware SKUCorporate SKUF1: Save & ExitESC: Exit	IGFX VBIOS Version	1032	
Memory Frequency       2133 MHz         PCH Information       →+: Select Screen         Name       SKL PCH-LP       →+: Select Item         PCH SKU       PCH-LP Mobile (U)       1↓: Select Item         Stepping       21/C1       +/-: Change Opt.         LAN PHY Revision       B2       F1: General Help         ME FW Version       11.0.0.1205       F3: Optimized Defaults         ME Firmware SKU       Corporate SKU       F4: Save & Exit	Memory RC Version	1.9.0.0	
PCH Information       →←: Select Screen         Name       SKL PCH-LP       →←: Select Screen         PCH SKU       PCH-LP Mobile (U)       ↑↓: Select Item         Stepping       21/C1       +/-: Change Opt.         LAN PHY Revision       B2       F1: General Help         ME FW Version       11.0.0.1205       F3: Optimized Defaults         ME Firmware SKU       Corporate SKU       F4: Save & Exit	Total Memory	8192 MB	
NameSKL PCH-LP→←: Select ScreenPCH SKUPCH-LP Mobile (U)↑↓: Select ItemPremium SKUEnter: SelectStepping21/C1+/-: Change Opt.LAN PHY RevisionB2F1: General HelpME FW Version11.0.0.1205F3: Optimized DefaultsME Firmware SKUCorporate SKUF4: Save & ExitESC: ExitESC: Exit	Memory Frequency	2133 MHz	
PCH SKUPCH-LP Mobile (U)11: Select ItemPremium SKUEnter: SelectStepping21/C1LAN PHY RevisionB2ME FW Version11.0.0.1205ME Firmware SKUCorporate SKUF1: Save & ExitESC: Exit	PCH Information		
Premium SKUEnter: SelectStepping21/C1+/-: Change Opt.LAN PHY RevisionB2F1: General HelpME FW Version11.0.0.1205F3: Optimized DefaultsME Firmware SKUCorporate SKUF4: Save & ExitESC: ExitESC: Exit	Name	SKL PCH-LP	→+: Select Screen
Stepping21/C1+/-: Change Opt.LAN PHY RevisionB2F1: General HelpME FW Version11.0.0.1205F3: Optimized DefaultsME Firmware SKUCorporate SKUF4: Save & ExitESC: ExitESC: Exit	PCH SKU	PCH-LP Mobile (U)	↑↓: Select Item
LAN PHY RevisionB2F1: General HelpME FW Version11.0.0.1205F3: Optimized DefaultsME Firmware SKUCorporate SKUF4: Save & ExitESC: ExitESC: Exit		Premium SKU	Enter: Select
ME FW Version 11.0.0.1205 F2: Previous Values ME Firmware SKU Corporate SKU F4: Save & Exit ESC: Exit		21/C1	+/-: Change Opt.
ME FW Version     11.0.0.1205     F3: Optimized Defaults       ME Firmware SKU     Corporate SKU     F4: Save & Exit       ESC: Exit     ESC: Exit	LAN PHY Revision	B2	
ME Firmware SKU Corporate SKU F4: Save & Exit ESC: Exit	ME FW Version	11.0.0.1205	
	ME Firmware SKU	Corporate SKU	F4: Save & Exit
System Date [Mon 03/28/2016]	System Date	[Mon 03/28/2016]	ESC: EXIT
System Time [17:57:08]	System Time	[17:57:08]	

Figure 4-2 : BIOS 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.

## 3.3 Advanced Function

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

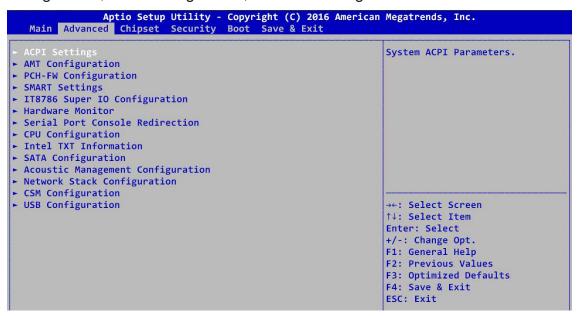


Figure 4-3 : BIOS Advanced Menu

#### 3.3.1 ACPI Setting

ACPI Settings		Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may
Enable Hibernation	[Enabled]	be not effective with some OS
ACPI Sleep State	[S3 (Suspend to RAM)]	
S3 Video Repost	[Disabled]	
ACPI Low Power S0 Idle	[Disabled]	

Figure 4-3-1 : ACPI Settings

#### **Enable Hibernation**

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

#### **ACPI Sleep State**

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

#### S3 Video Repost

Enable or disable S3 Video Repost.

#### **ACPI Low Power S0 Idle**

Enable or disable ACPI Low Power S0 Idle Support.

#### 3.3.2 AMT Configuration

Intel AMT	[Enabled]	Enable/Disable Intel (R)
BIOS Hotkey Pressed	[Disabled]	Active Management Technology
MEBx Selection Screen	[Disabled]	BIOS Extension.
Hide Un-Configure ME Confirmation Prompt	[Disabled]	Note : iAMT H/W is always enabled.
MEBx Debug Message Output	[Disabled]	This option just controls the
Un-Configure ME	[Disabled]	BIOS extension execution.
Amt Wait Timer	0	If enabled, this requires
ASF	[Enabled]	additional firmware in the SPI
Activate Remote Assistance Process	[Disabled]	device
USB Provisioning of AMT	[Enabled]	
PET Progress	[Enabled]	
AMT CIRA Timeout	0	
WatchDog	[Disabled]	→+: Select Screen
OS Timer	0	↑↓: Select Item
BIOS Timer	0	Enter: Select
		+/-: Change Opt.
		F1: General Help
		F2: Previous Values
		F3: Optimized Defaults
		F4: Save & Exit
		ESC: Exit

Figure 4-3-2 : Intel AMT Settings

#### **Intel AMT**

Enable/disable Intel Active Management Technology BIOS Extension. Note : iAMT H/W is always enabled. This option just controls the BIOS extension execution. If enabled, this requires additional firmware in the SPI device.

#### 3.3.3 PCH-FW Configuration

ME FW Version	11.0.0.1205	Disabling this option will
ME Firmware Mode	Normal Mode	cause ME not to unconfigure or
ME Firmware Type	Full Sku Firmware	RTC clear
ME Firmware SKU	Corporate SKU	
ME Unconfig on RTC Clear State	[Enabled]	
ME State	[Enabled]	

Figure 4-3-3 : PCH-FW Settings

#### ME Unconfig on RTC Clear State

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

**ME State** 

Set ME to soft temporarily disabled.

#### 3.3.4 SMART Settings

Aptio Setup Advanced	Utility - Copyright (C) 2016 /	American Megatrends, Inc.
SMART Settings		Run SMART Self Test on all HDDs during POST.
SMART Self Test	[Disabled]	

Figure 4-3-4 : SMART Settings

#### **SMART Self Test**

Run SMART Self Test on all HDDs during POST.

#### 3.3.5 IT8786 Super IO Configuration

		Set Parameters of Serial Port 1 (COM1)
r IO Chip	IT8786	
al Port 1 Configuration		
al Port 2 Configuration		
al Port 3 Configuration		
al Port 4 Configuration		
al Port 5 Configuration		
al Port 4 Configuration		

Figure 4-3-5 : Super IO Settings

Serial Port 1 Configuration Set parameters of serial port 1 (COM 1).

**Serial Port 2 Configuration** Set parameters of serial port 2 (COM 2).

#### Serial Port 3 Configuration

Set parameters of serial port 3 (COM 3).

#### **Serial Port 4 Configuration**

Set parameters of serial port 4 (COM 4).

#### **Serial Port 5 Configuration**

Set parameters of serial port 5 (COM 5).

#### 3.3.6 Hardware Monitor

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

Pc Health Status		
System temperature 1	: +48 °C	
System temperature 2	: +48 °C	
Fan Speed	: N/A	
VCORE	: +0.852 V	
DDR	: +1.200 V	
+12V	: +11.952 V	
+5V	: +4.980 V	
+3.3V	: +2.750 V	

Figure 4-3-6 : Hardware Monitor Settings

#### 3.3.7 Serial Port Console Redirection

COMO	Console Redirection Enable or Disable.
Console Redirection [Enabled]	DISOULC.
Console Redirection Settings	
Serial Port for Out-of-Band Management/	
Windows Emergency Management Services (EMS)	
Console Redirection [Disabled]	

Figure 4-3-7 : Serial Port Console Redirection Settings

#### **Console Redirection**

Console redirection enable or disable.

#### **Console Redirection Settings**

The 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.

#### 3.3.8 CPU Configuration

Dis	play	<b>CPU-related</b>	related	information	and f	eatures	supported.
-----	------	--------------------	---------	-------------	-------	---------	------------

Advanced	- Copyright (C) 2016 Amer	rican Megatrends, Inc.
CPU C7 state CPU C8 state	Supported Supported	Enables or Disables Intel(R) TXT(LT) support.
CPU C9 state	Supported	TAT(LT) Support.
CPU C10 state	Supported	
L1 Data Cache	32 kB x 2	
L1 Code Cache	32 kB x 2	
L2 Cache	256 kB x 2	
L3 Cache	3 MB	
L4 Cache	Not Present	
Hyper-threading	[Enabled]	
Active Processor Cores	[A11]	
Intel Virtualization Technology	[Enabled]	→←: Select Screen
Hardware Prefetcher	[Enabled]	↑↓: Select Item
Adjacent Cache Line Prefetch	[Enabled]	Enter: Select
CPU AES	[Enabled]	+/-: Change Opt.
Boot performance mode	[Max Non-Turbo	F1: General Help
	Performance]	F2: Previous Values
<pre>Intel(R) SpeedStep(tm)</pre>	[Enabled]	F3: Optimized Defaults
Turbo Mode	[Enabled]	F4: Save & Exit
CPU C states	[Enabled]	ESC: Exit
Enhanced C-states	[Enabled]	
Package C State limit	[AUTO]	
Intel TXT(LT) Support	[Disabled]	

Figure 4-3-8 : CPU Function Settings

#### Hyper-threading

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

#### **Active Processor Cores**

Number of cores to enable in each processor package.

#### Intel Virtualization Technology

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

#### **Hardware Prefetcher**

To turn on/off the MLC streamer prefetcher.

#### Adjacent Cache Line Prefetch

To turn on/off prefetching of adjacent cache lines.

#### **CPU AES**

Enable/disabled CPU Advanced Encryption Standard instructions.

#### **Boot performance mode**

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

**Intel SpeedStep** Allows more than two frequency ranges to be supported.

Turbo Mode.

**CPU C state** Enable or disable CPU C states.

Enhanced C-states

Enable/disabled C1E. When enabled, CPU will switch to minimum speed when all cores enter C-State.

Package C State limit Package C State limit.

Intel TXT(LT) Suppor Enables or disabled Intel TXT(LT) support.

#### 3.3.9 Intel TXT Information

Display Intel TXT information.

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 4-3-9 : Intel TXT Information

#### 3.3.10 SATA Configuration

SATA Controller(s)	[Enabled]	Enable or disable SATA Device
SATA Mode Selection	[AHCI]	
<ul> <li>Software Feature Mask Configur</li> </ul>	ation	
Aggressive LPM Support	[Enabled]	
Serial ATA Port 0	Empty	
Software Preserve	Unknown	
Port 0	[Enabled]	
Spin Up Device	[Disabled]	
SATA Device Type	[Hard Disk Drive]	
Serial ATA Port 1	OCZ-TRION100 (120.0GB)	
Software Preserve	SUPPORTED	
Port 1	[Enabled]	
Spin Up Device	[Disabled]	→←: Select Screen
SATA Device Type	[Hard Disk Drive]	↑↓: Select Item
Serial ATA Port 2	Empty	Enter: Select
Software Preserve	Unknown	+/-: Change Opt.
Port 2	[Enabled]	F1: General Help
Spin Up Device	[Disabled]	F2: Previous Values
SATA Device Type	[Hard Disk Drive]	F3: Optimized Defaults
		F4: Save & Exit
		ESC: Exit

Figure 4-3-10 : SATA Devices Settings

#### Hyper-threading

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

#### 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 0

Enable or disabled SATA Port.

#### **Spin Up Device**

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

#### SATA Device Type

Identify the SATA port is connected to Solid State Drive or Hard Disk Drive.

#### 3.3.11 Acoustic Management Configuration



Figure 4-3-11 : Acoustic Management Settings

**Acoustic Management Configuration** Option to enable or disable Automatic Acoustic Management.

#### 3.3.12 Network Stack Configuration

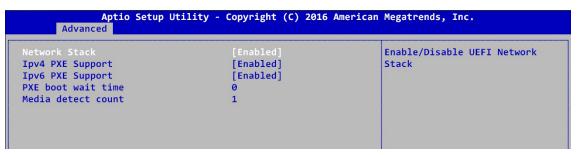


Figure 4-3-12 : Network Stack Settings

#### Network Stack

Enable/disable UEFI Network Stack.

#### **Ipv4 PXE Support**

Enable Ipv4 PXE Boot Support. If disabled IPV4 PXE boot option will not be created.

#### **Ipv6 PXE Support**

Enable Ipv6 PXE Boot Support. If disabled IPV6 PXE boot option will not be created.

**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.

#### 3.3.13 CSM Configuration

Compatibility Support Module Configuration		Enable/Disable CSM Support.
SM Support	[Enabled]	
SM16 Module Version	07.79	
ateA20 Active	[Upon Request]	
ption ROM Messages	[Force BIOS]	
NT19 Trap Response	[Immediate]	
oot option filter	[UEFI and Legacy]	
ption ROM execution		
		→←: Select Screen
etwork	[Do not launch]	↑↓: Select Item
torage	[Legacy]	Enter: Select
ideo	[Legacy]	+/-: Change Opt.
ther PCI devices	[Legacy]	F1: General Help
		F2: Previous Values
		F3: Optimized Defaults
		F4: Save & Exit
		ESC: Exit

Figure 4-3-13 : CSM Settings

#### **Network Stack**

Enable/disable UEFI Network Stack.

#### **CSM Support**

Enable/disable CSM Support.

#### **GateA20 Active**

UPON REQUEST - GA20 can be disabled using BIOS services. ALWAYS - do not allow disabling GA20; 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.

#### **Boot option filter**

This option controls Legacy/UEFI ROMs priority.

#### **Network**

Controls the execution of UEFI and Legacy PXE OpROM.

#### Storage

Controls the execution of UEFI and Legacy Storage OpROM.

#### Video

Controls the execution of UEFI and Legacy Video OpROM.

#### **Other PCI devices**

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

#### 3.3.14 USB Configuration

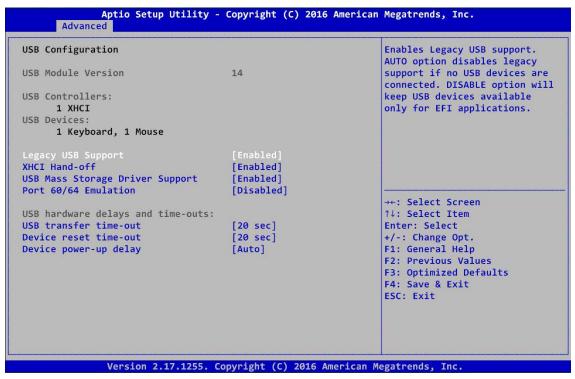


Figure 4-3-14 : USB Settings

#### **Network Stack**

Enable/disable UEFI Network Stack.

#### 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 hub descriptor.

## 3.4 Chipset

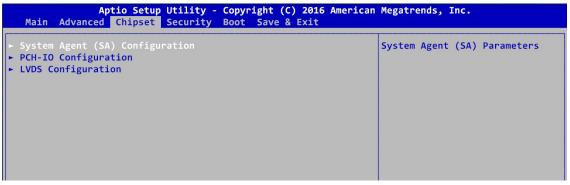


Figure 4-4 : BIOS Chipset Menu

System Agent (SA) Configuration System Agent (SA) Parameters.

PCH-IO Configuration PCH Parameters.

LVDS Configuration LVDS Configuration.

#### 3.4.1 System Agent (SA) Configuration

stem Agent Bridge Name	Skylake	VT-d capability
PCIe Code Version	1.9.0.0	
- d	Supported	
	[Enabled]	
1 Device (B0:D8:F0)	[Enabled]	
ove 4GB MMIO BIOS assignment	[Disabled]	

Figure 4-4-1 : USB Settings

**VT-d** VT-d capability.

#### GMM Device (B0:D8:F0)

Enable/disable SA GMM Device.

#### Above 4GB MMIO BIOS assignment

Enable/disable above 4GB Memory MappedIO BIOS assignment. This is disabled automatically when Aperture Size is set to 2048MB.

#### 3.4.2 Graphics Configuration of System Agent (SA)

Graphics Configuration		Graphics turbo IMON current values supported (14-31)
IGFX VBIOS Version	1032	Values supported (14-51)
Graphics Turbo IMON Current	31	
Skip Scaning of External Gfx Card	[Disabled]	
Primary Display	[Auto]	
GTT Size	[8MB]	
Aperture Size	[256MB]	
DVMT Pre-Allocated	[32M]	
DVMT Total Gfx Mem	[256M]	
Cd Clock Frequency	[675 Mhz]	

Figure 4-4-1 : USB Settings

#### **Graphics Turbo IMON Current**

Graphics turbo IMON current values supported (14-31).

#### 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.

#### 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.

#### Cd Clock Frequency

Select the highest Cd Clock frequency supported by the platform.

#### 3.4.3 Memory Information of System Agent (SA)

lemory Information		
lemory RC Version lemory Frequency Total Memory /DD JIMM#0 lemory Timings (tCL-tRCD-tRP-tRAS)	1.9.0.0 2133 MHz 8192 MB 1200 8192 MB 15-36	
		<pre>→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>

Figure 4-4-3 : Memory Information

Display memory information.

#### 3.4.4 PCH-IO Configuration

Intel PCH RC Version	1.9.0.0	PCI Express Configuration
Intel PCH SKU Name	PCH-LP Mobile (U) Premium SKU	settings
Intel PCH Rev ID	21/C1	
PCI Express Configuration		
BIOS Security Configuration		
<ul> <li>SB Porting Configuration</li> </ul>		
PCH LAN Controller	[Enabled]	
Wake on LAN	[Enabled]	
Serial IRQ Mode	[Continuous]	
State After G3	[S5 State]	
		→←: Select Screen

Figure 4-4-4 : USB 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).

S0 State : Always turn-on the system when power source plugged-in.

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

#### 3.4.5 PCI Express Configuration of PCH-IO

Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc. Chipset		
	Enable/Disable the control of Active State Power Management	
[Enabled]	on SA side of the DMI Link.	

Figure 4-4-5 : PCH-IO Settings

#### **DMI Link ASPM Control**

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

Intel Ethernet Controller I210 Intel Ethernet Controller I210 Settings.

#### **Mini PCIe Slot with SIM**

Mini PCIe Slot with SIM Settings.

#### Mini PCIe\ mSATA Slot

Mini PCIe\ mSATA Slot Settings.

#### 3.4.6 BIOS Security Configuration of PCH-IO

Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc. Chipset		
BIOS Security Conf	iguration	Enable/Disable the PCH BIOS
BIOS Lock	[Enabled]	Lock Enable(BLE bit) feature.

Figure 4-4-6 : BIOS Security Settings

#### **BIOS Lock**

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

#### 3.4.7 SB Porting Configuration of PCH-IO

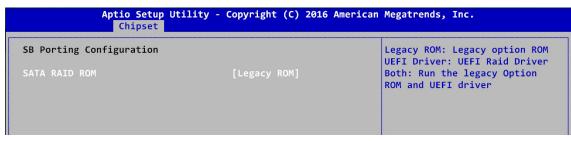


Figure 4-4-7 : RAID ROM Settings

#### SATA RAID ROM

Legacy ROM : Legacy option ROM UEFI Driver : UEFI Raid Driver Both : Run the legacy Option ROM and UEFI driver.

#### 3.4.8 LVDS Configuration

LCD Resolution Control LCD Panel Type	[1024x768 LVDS]	Select LCD Panel Resolution
	LCD Panel Type 800x600 LVDS 1024x600 LVDS	
	1024x768 LVDS 1024x768 LVDS 1280x800 LVDS 1280x1024 LVDS 1366x768 LVDS	→+: Select Screen
	1600x1200 LVDS 1920x1080 LVDS	<pre>↑↓: Select Item Enter: Select +/-: Change Opt.</pre>
		F1: General Help F2: Previous Values F3: Optimized Defaults

Figure 4-4-8 : LVDS Panel Settings

#### LCD Panel Type

Select LCD Panel Resolution.

## 3.5 Security

Password Description		HDD Security Configuration for selected drive
If ONLY the Administrator	's password is set,	
then this only limits acco		
only asked for when enter:	<b>.</b> .	
If ONLY the User's passwor	-	
is a power on password and		
boot or enter Setup. In So have Administrator rights		
The password length must I		
in the following range:		
Minimum length	3	
Maximum length	20	
<u> </u>		→←: Select Screen
Administrator Password		↑↓: Select Item
User Password		Enter: Select
		+/-: Change Opt.
		F1: General Help
HDD Security Configuration	1:	F2: Previous Values
P1:OCZ-TRION100		F3: Optimized Defaults
		F4: Save & Exit
		ESC: Exit

Figure 4-5 : BIOS Security Menu

#### **Administrator Password**

Set Administrator Password.

#### **User Password**

Set User Password.

#### 3.5.1 HDD Security Configuration

	Securi	ty	
HDD Password Description	n :		Set HDD User Password.
A11	M- 43 C.		*** Advisable to Power Cycle
Allows Access to Set, Modify and Clear		System after Setting Hard Disk Passwords ***.	
HardDisk User and Master Passwords. User Password need to be installed for Enabling Security. Master Password can			Discard or Save changes option
			in setup does not have any
be Modified only when s			impact on HDD when password is
with Master Password in		iy uniocked	set or removed. If the 'Set
If the 'Set HDD Password		is graved out	HDD User Password' option is
do power cycle to enable			grayed out, do power cycle to
do power cycle to enabl	e che opc	ion again.	enable the option again
HDD PASSWORD CONFIGURAT	ION:		chubic the option uguin
		Yes	→←: Select Screen
Security Supported			
Security Supported Security Enabled	:	No	<b>↑↓: Select Item</b>
Security Enabled	:		<pre>↑↓: Select Item Enter: Select</pre>
	:	No	
Security Enabled Security Locked	:	No	Enter: Select
Security Enabled Security Locked Security Frozen	:	No No No	Enter: Select +/-: Change Opt.
Security Enabled Security Locked Security Frozen HDD User Pwd Status	: : : : : : : : : : : : : : : : : : : :	No No No NOT INSTALLED	Enter: Select +/-: Change Opt. F1: General Help
Security Enabled Security Locked Security Frozen HDD User Pwd Status	: : : : : : : : : : : : : : : : : : : :	No No No NOT INSTALLED	Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values

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 grayed out, do power cycle to enable the option again.

## 3.6 Boot

Boot Configuration		Number of seconds to wait for
Setup Prompt Timeout	1	setup activation key.
Bootup NumLock State	[0n]	65535(0xFFFF) means indefinite
Quiet Boot	[Enabled]	waiting.
Boot Option Priorities		
Boot Option #1	[P1: OCZ-TRION100 ]	
Boot Option #2	[UEFI: Built-in EFI Shell]	
New Boot Option Policy	[Default]	
Hard Drive BBS Priorities		→←: Select Screen
		↑↓: Select Item
		Enter: Select
		+/-: Change Opt.

Figure 4-6 : BIOS Boot Menu

#### **Setup Prompt Timeout**

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

Bootup NumLock State Select the keyboard NumLock state.

**Quiet Boot** Enables or disables Quiet Boot option.

Boot Option #x 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.

## 3.7 Save & Exit

Aptio Setup Utility - Copyright (C) 2016 Ameri Main Advanced Chipset Security Boot Save & Exit	ican Megatrends, Inc.
Save Options Save Changes and Exit Discard Changes and Exit Save Changes and Reset Discard Changes and Reset Save Changes	Exit system setup after saving the changes.
Discard Changes Default Options Restore Defaults Save as User Defaults Restore User Defaults	→←: Select Screen
Boot Override P1: OCZ-TRION100 UEFI: Built-in EFI Shell Launch EFI Shell from filesystem device	<pre>↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
Version 2.17.1255. Copyright (C) 2016 America	an Megatrends, Inc.

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.



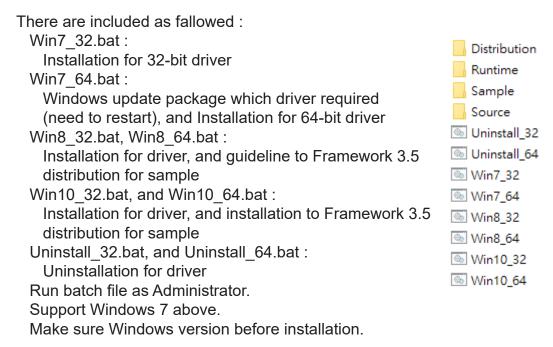
## **APPENDIX A: Watchdog Function**

## **A.1 Function Description**

The STC-6015 offers a watchdog timer.

## A.2 Software Package Contain

Distribution folder include x32 and x64 versions, use batch file for installation.



Runtime folder include head file for software developer or System Integration.

Sample folder include sample program, driver library, and API library.

Source folder include sample program source code that compile on Visual Studio 2008.

## A.3 Sample

Sample folder include x32 and x64 versions, as shown below :

intervention drv.dll
Arcology MTC7K.dll
MTC7K

Sample MTC-7000.exe, as shown below :

🚔 MTC-7000	×
Write	0     0     0       0     0     0
MTC7K V1.07	

#### WDT group :

Write button :

Set WDT when WDT setup text is valid. Stop button : Cancel WDT and counting. Use after Write button action. WDT setup text :

User setting, WDT value, unit : second.

Use for Write button activate.

WDT counting text (read only) :

WDT counting by program timer after set WDT.

Shown after Write button action.

WDT setup day format texts (user setting) :

User setting, WDT value, format : day'hour'minute'second.

WDT counting day format text (read only) :

WDT counting, format : day'hour'minute'second.



# **APPENDIX B:** Software Functions

## **B.1 Driver API Guide**

In Runtime folder, on MTC7K.h :

\_DLL\_IMPORT\_ definition is used on LoadLibrary API for MTC7K.dll. MTC7K \_EXPORTS definition is used on MTC7K.dll building.

#### BOOL Initial (BYTE Isolate\_Type, BYTE DIO\_NPN)

Initial machine for DIO, watchdog timer, and POE

Isolate\_Type : DIO type

1 : Isolated DIO;

0 : Non-Isolated DIO

DIO\_NPN : DI/DO type

1 : PNP (Source) mode for European rule;

0 : NPN (Sink) mode for Japanese rule

Return :

TRUE (1) : Success;

FALSE (0) : Fail (Driver not exists, or initial error (version is too old, or machine not match))

#### BOOL GetWDT (DWORD \*WDT)

Get watchdog timer setup

WDT : watchdog timer setup Unit : second. (Range : 0 ~ 65535 sec, 1093 ~ 65535 min (=65580 ~ 3932100 sec))

#### Return :

TRUE (1) : Success; FALSE (0) : Fail (Initial error, or call by pointer error, or hardware problem)

#### BOOL SetWDT (DWORD WDT)

Set watchdog timer setup

WDT : watchdog timer setup

Unit : second. (Range : 1 ~ 65535 sec, 1093 ~ 65535 min (=65580 ~ 3932100 sec))

Return :

TRUE (1) : Success;

FALSE (0) : Fail (Initial error, or setup 0 error, or hardware problem)

#### BOOL CancelWDT ()

Cancel watchdog timer Return : TRUE (1) : Success; FALSE (0) : Fail (Initial error, or hardware problem)



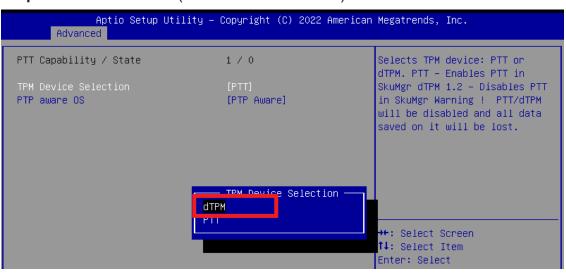
# APPENDIX C: Install Win11 (BIOS TPM Setting)

Step 1 Click on "Advanced", then click on "PCH-FW Configuration"

Aptio Setup Utility – Copyright (C) 2022 American Megatrends, Inc. Main Advanced Chipset Security Boot Save & Exit		
<ul> <li>CPU Configuration</li> <li>Power &amp; Performance</li> <li>PCH-FW Configuration</li> <li>master comparing</li> <li>ACPI Settings</li> <li>SMART Settings</li> <li>IT8786 Super IO Configuration</li> <li>Hardware Monitor</li> <li>Serial Port Console Redirection</li> <li>Intel TXT Information</li> <li>Acoustic Management Configuration</li> <li>PCI Subsystem Settings</li> <li>Network Stack Configuration</li> </ul>	Configure Management Engine Technology Parameters	
<ul> <li>CSM Configuration</li> <li>USB Configuration</li> </ul>	↔+: Select Screen ↑↓: Select Item Enter: Select	

#### Step 2 Click on "PTT Configuration"

Aptio Setup Utility – Copyright (C) 2022 American Megatrends, Inc. Advanced		
ME Firmware Version ME Firmware Mode ME Firmware SKU ME File System Integrity Value ME Firmware Status 1 ME Firmware Status 2 NFC Support	11.8.77.3664 Normal Mode Corporate SKU 2 0x90000255 0x80108306 Disabled	Configure PTT
ME State AMT BIOS Features MAT Configuration	[Enabled] [Enabled]	
▶ PTT Configuration	[Enabled]	→+: Select Screen ↑↓: Select Item Enter: Select ↓ ( : Shargo Spt.)



**Step 3** Click on "dTPM" (TPM Device Selection)



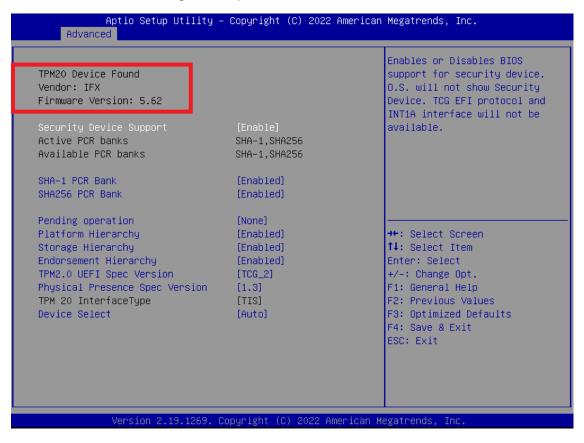
**Step 4** Please save the BIOS settings by pressing F4. Please press Enter when the pop-up window which asks "Save configuration and exit?" appears. The computer will then restart.

Aptio Setup Ut Advanced	ility – Copyright (C) 2022 America	n Megatrends, Inc.
PTT Capability / State TPM Device Selection PTP aware OS	1 / O [dTPM] [PTP Aware]	Selects TPM device: PTT or dTPM. PTT – Enables PTT in SkuMgr dTPM 1.2 – Disables PTT in SkuMgr Warning ! PTT/dTPM will be disabled and all data saved on it will be lost.
	Save & Exit Setup — Save configuration and exit? Yes No	<ul> <li>←: Select Screen</li> <li>↓: Select Item nter: Select</li> <li>/-: Change Opt.</li> <li>F1: General Help</li> <li>F2: Previous Values</li> <li>F3: Optimized Defaults</li> </ul>

Step 5 Click on "Trusted Computing"

Aptio Setup Utility – Copyright (C) Main Advanced Chipset Security Boot Save &	
<ul> <li>CPU Configuration</li> <li>Power &amp; Performance</li> <li>PCH-EW Configuration</li> <li>Trusted Computing</li> <li>ACTI Settings</li> <li>SMART Settings</li> <li>IT8786 Super IO Configuration</li> <li>Hardware Monitor</li> <li>Serial Port Console Redirection</li> <li>Intel TXT Information</li> <li>Acoustic Management Configuration</li> <li>AMI Graphic Output Protocol Policy</li> </ul>	Trusted Computing Settings
<ul> <li>PCI Subsystem Settings</li> <li>Network Stack Configuration</li> <li>CSM Configuration</li> <li>USB Configuration</li> </ul>	→+: Select Screen ↑↓: Select Item Enter: Select

**Step 6** If the window shows "TPM2.0 Device Found Firmware Version:5.62", then the setting is completed.



\*\* If more help is needed, please contact Vecow technical support \*\*



For further support information, please visit www.vecow.com

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