STC-6015 USER Manual

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

Vecow

1.3.0 Edition 20220704

Record of Revision

Version	Date	Page	Description	Remark
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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Declaration of Conformity

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® Core i7-6600U, COM x 3, IP66 Protection, DC 9V to 36V
STC-6015-6600U-A2	15" Stainless Multi-Touch panel PC, Intel® 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

Table of Contents

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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® HD graphics 520 supports DirectX 12, OpenGL 4.4 and OpenCL 2.0 API. With 10-point multi-touch 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® 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

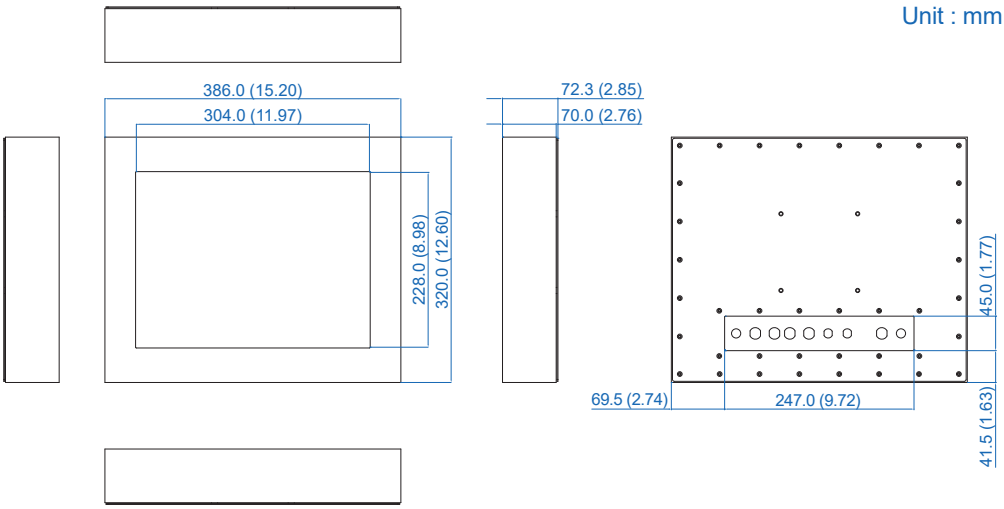
1.3 Specifications of STC-6015

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® Core™ i7-6600U Processor
Chipset	Intel® SkyLake PCH-LP
Memory	1 DDR4 2400MHz SO-DIMM, up to 32GB
Graphics	Intel® UHD Graphics 520
I/O Interface	
LAN	• LAN 1 : Intel® I219LM GigE LAN supports iAMT 12.0, X-coded M12 Connector • LAN 2 : Intel® I210 GigE LAN, X-coded M12 Connector
Serial	• 3 COM RS-232/422/485, A-coded M12 Connector (A1 Version) • 2 COM RS-232/422/485, A-coded M12 Connector (A2 Version)
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 PCIe	2 Full Size Mini PCIe Socket (A1 Version) : • 1 Full-size for PCIe/USB/Internal SIM Card • 1 Full-size for PCIe/USB/mSATA 1 Full Size Mini PCIe Socket (A2 Version) : • 1 Full-size for PCIe/USB/Internal SIM Card

Power	
Power Input	9V to 36V, DC-in
Power Interface	M12 Type Power Input, A-Coded
Power Adapter	• AC to DC 120W Power Adapter (Optional Accessory) • AC to DC 160W Wide Temperature Power Adapter (Optional Accessory)
Others	
TPM	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	• IEC 60068-2-27 • 20G, Half-sine, 11ms
Vibration	• IEC 60068-2-64 • Non-operation : 10Hz to 200Hz, 1Grms, X, Y, Z, 30 mins each Axis
EMC	CE, FCC

1.4 STC-6015 Mechanical Drawing

Unit : mm (inch)



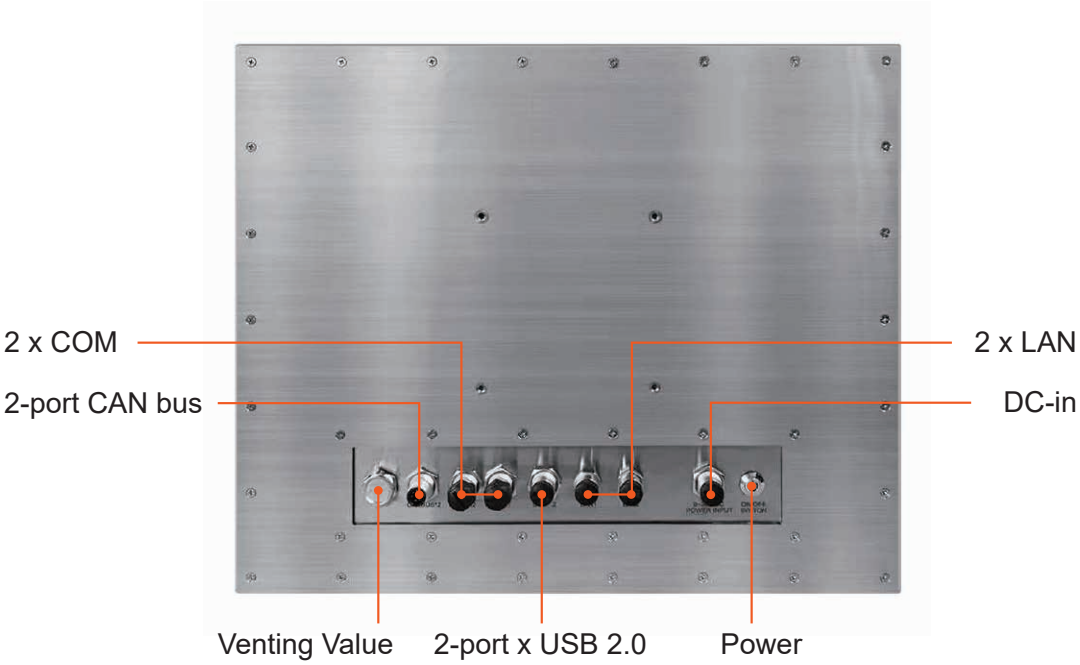
2

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

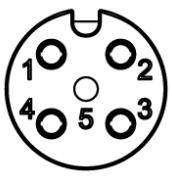


2.2.1 Power Button

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		

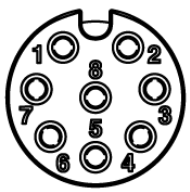
2.3.3 LAN Connector

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

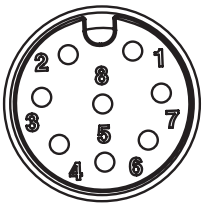
There are 2 USB 2.0 connections available supporting up to 480MB per second data rate. The pin-outs of USB 2.0 are listed as follows :



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

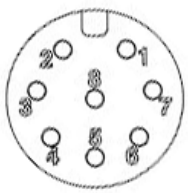
Serial port COM2and COM3 can be configured for RS-232, RS-422, or RS-485 with auto flow control communication. The default definition of COM 1 and COM 2 is RS-232, if you want to change to RS-422 or RS-485, you can find the setting in BIOS.



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)
COM2 COM3	1	DCD	TXD-	TXD-	DATA-
	2	RXD	TXD+	TXD+	DATA+
	3	TXD	RXD+	RXD+	----------
	4	DTR	RXD-	RXD-	----------
	5	DSR	----------	RTS-	----------
	6	RTS	----------	RTS+	----------
	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

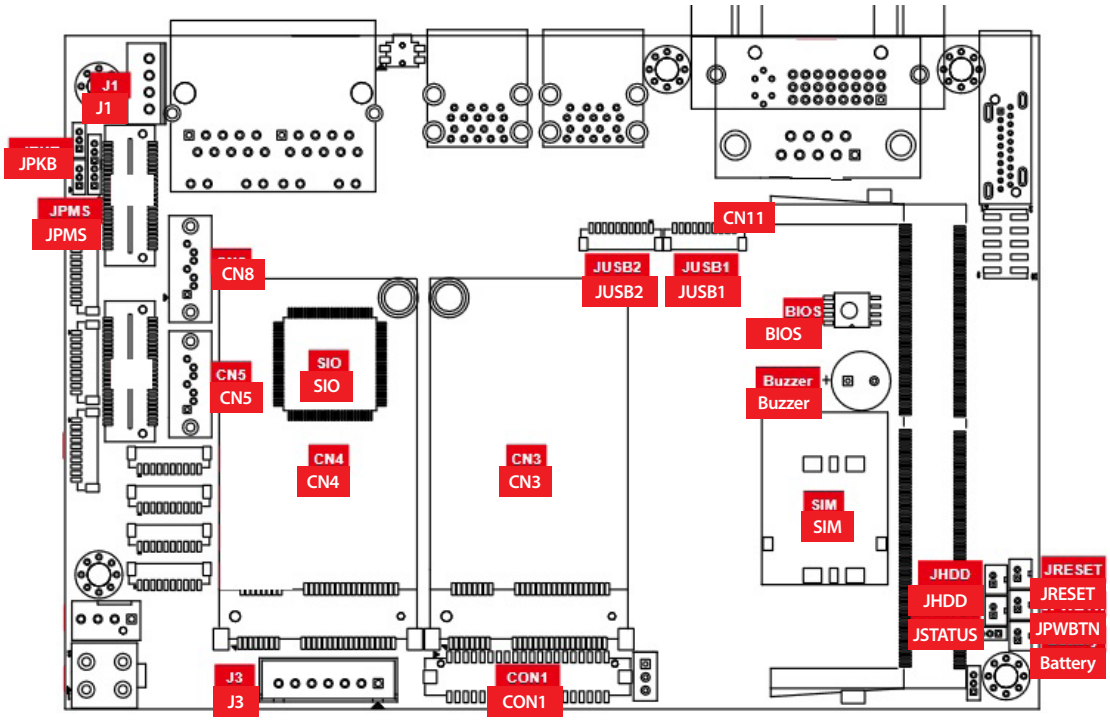
Support Protocol	CANbus 2.0B
Supported baudrate (Kbps)	100K, 125K, 250K, 500K, 800K, 1000K
Performance	6000 frames/sec
Socket CAN	Yes
Acceptance filter	Yes
Save config	Yes
CAN inactive mode	Yes
Listen mode	Yes
Error status	Yes

2.2.7 Venting Valve

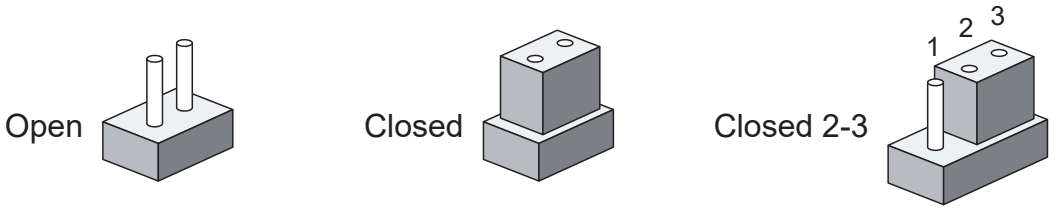
This air vent hole use for adjust pressure without the user to avoid air related problems.

2.3 STC-6015 Mainboard I/O Information

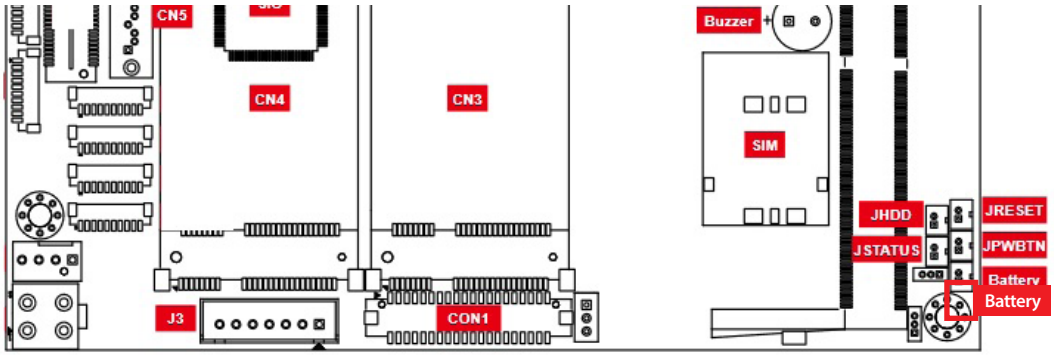
The figure below is the top view of the STC-6015 motherboard.



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.

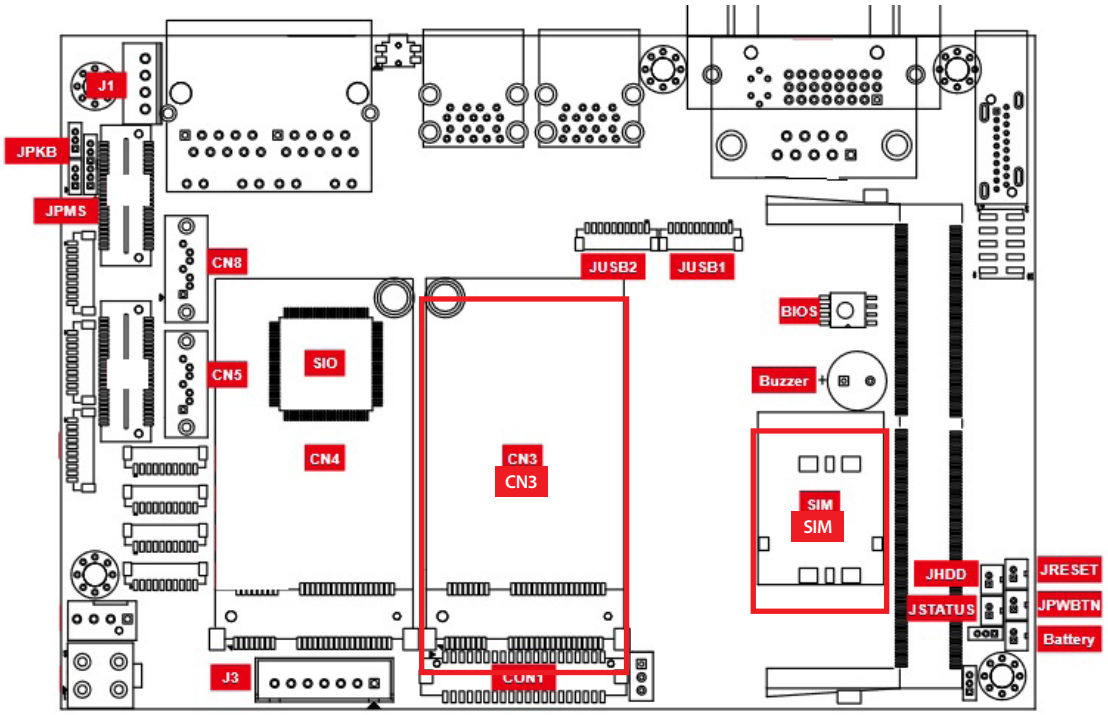


2.3.1 Serial Port COM 2 and COM 3



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 PCIe

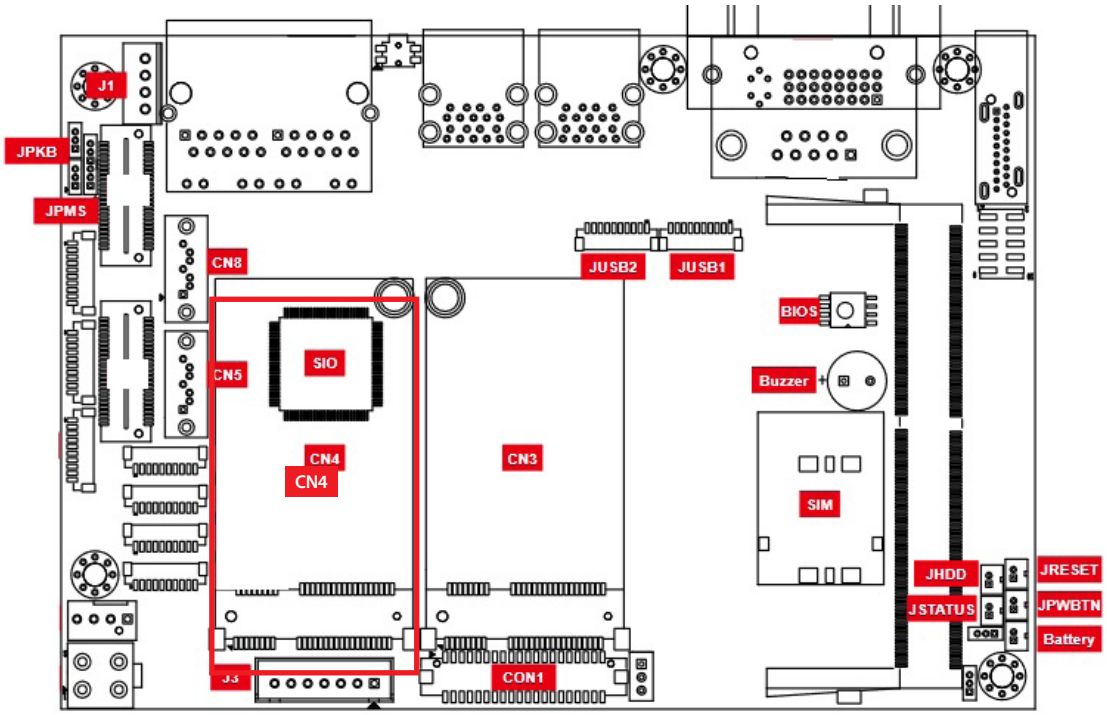


Note :
The SIM card sockets do not support hot-plug. Please make sure to unplug the system power before inserting the SIM card(s).

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
Mechanical 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

2.3.3 CN4 : Mini PCIe, mSATA



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).

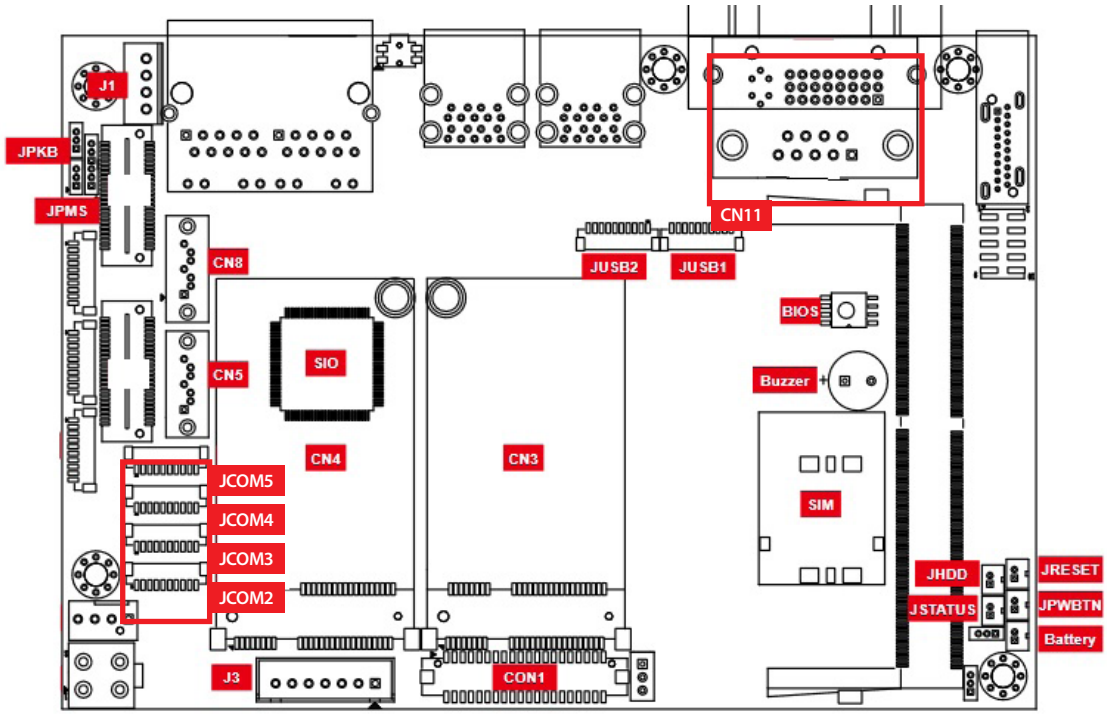
When an mSATA drive is inserted, its pin-43 is "no connect", and the respective pin on the socket is being pulled-up to logic 1. When a Mini PCIe device is inserted, its pin-43 forces the respective pin on the socket to ground, or logic 0.

The pin assignments of CN4 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	Status	44	Reserved
41	+3.3Vaux	42	Reserved
39	+3.3Vaux	40	GND
37	GND	38	USB_D+
35	GND	36	USB_D-

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
Mechanical 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.

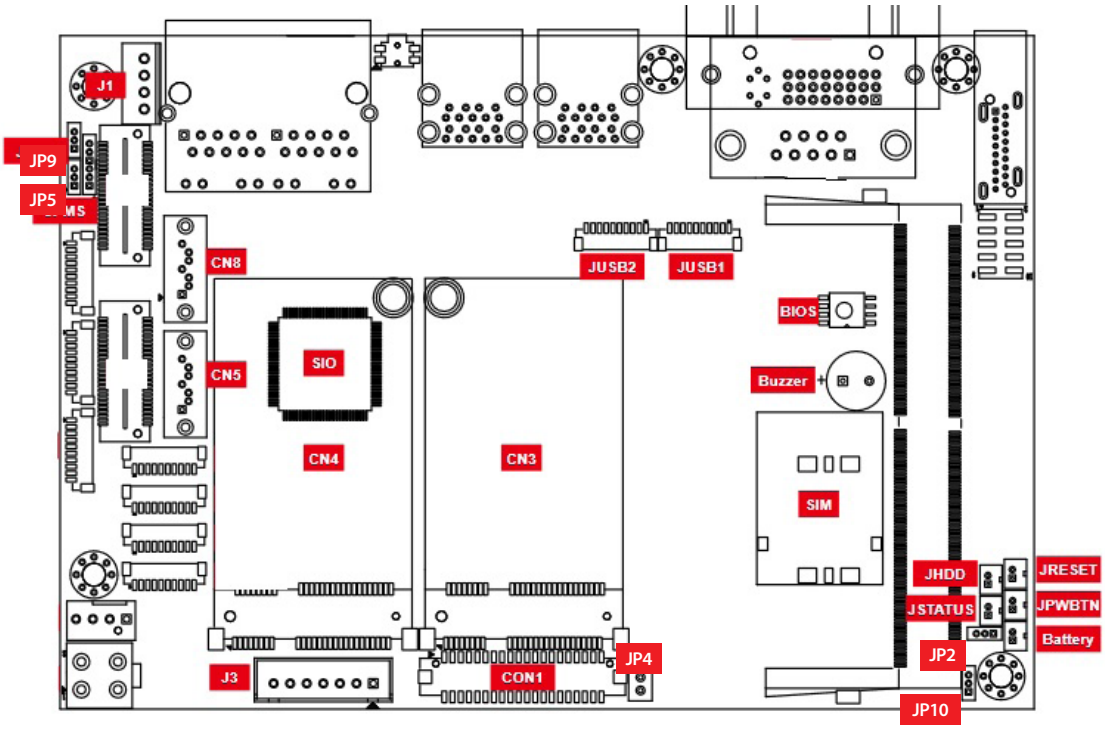
Series Port	Description
COM2 (JCOM2)/ COM3 (JCOM3)/ COM4 (JCOM4)/ COM5 (JCOM5)	RS-232
	RS-422 (5 wire)
	RS-422 (9 wire)
	RS-485
	RS-485 w/z auto-flow control

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

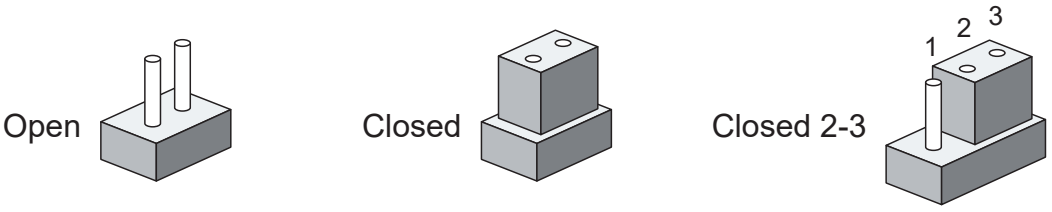
Serial Port	Pin No.	RS-232	RS-422 (5-wire)	RS-422 (5-wire)	RS-485
2 3 4 5	1	GND_EARTH	GND_EARTH	GND_EARTH	GND_EARTH
	2	GND	GND	GND	GND
	3	RI	----	CTS-	RI
	4	DTR	RXD-	RXD-	----
	5	CTS	----	CTS+	----
	6	TXD	RXD+	RXD+	----
	7	RTS	----	RTS+	----
	8	RXD	TXD+	TXD+	DATA+
	9	DSR	----	RTS-	----
	10	DCD	TXD-	TXD-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

2.4 STC-6015 Main Board Jumper Settings

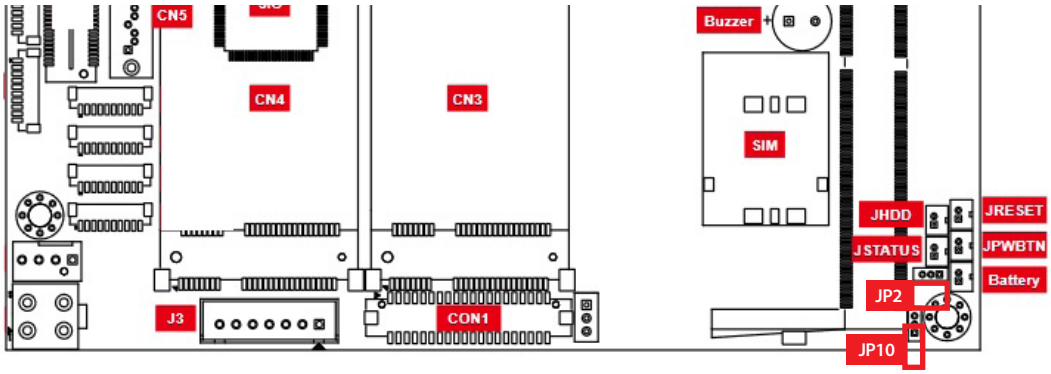
2.4.1 Front View of Main Board With Jumper Location



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.

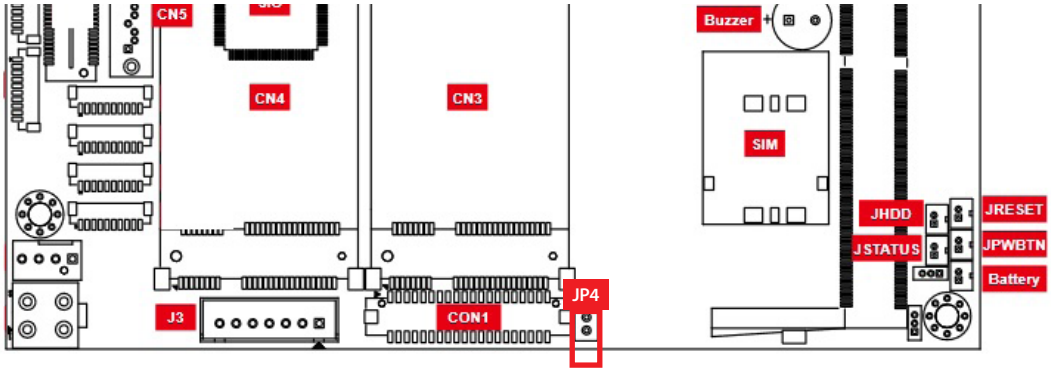


2.4.2 JP2 (CMOS), JP10 (ME)



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

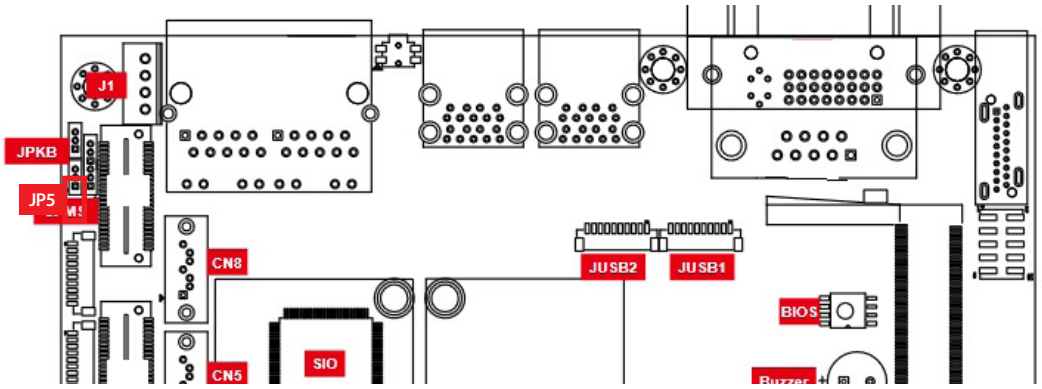
2.4.3 JP4 : LVDS Module, Power Selection



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.

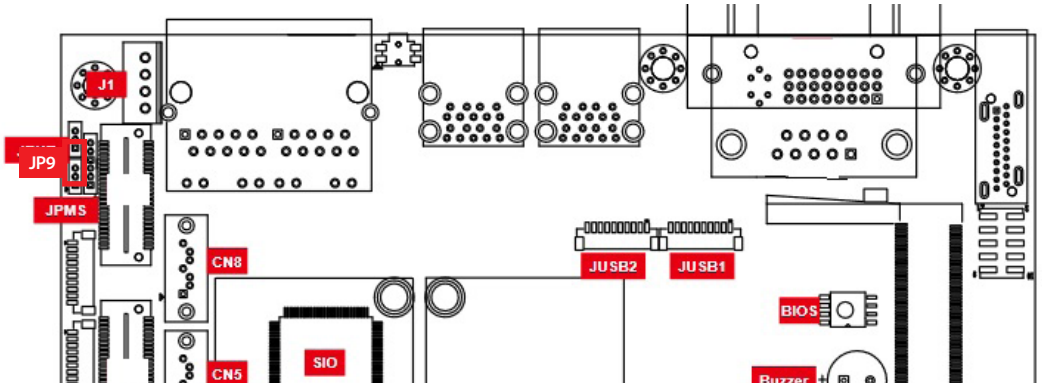
Pin No.	Definition
1-2	+3.3V (Default)
2-3	+5V

2.4.4 JP5 : External USB 3.0/2.0 Power Select



Pin No.	Definition
1-2	+5V Standby Power
2-3	+5V System Power

2.4.5 JP9 : Backlight Control Level Select



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

3

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.

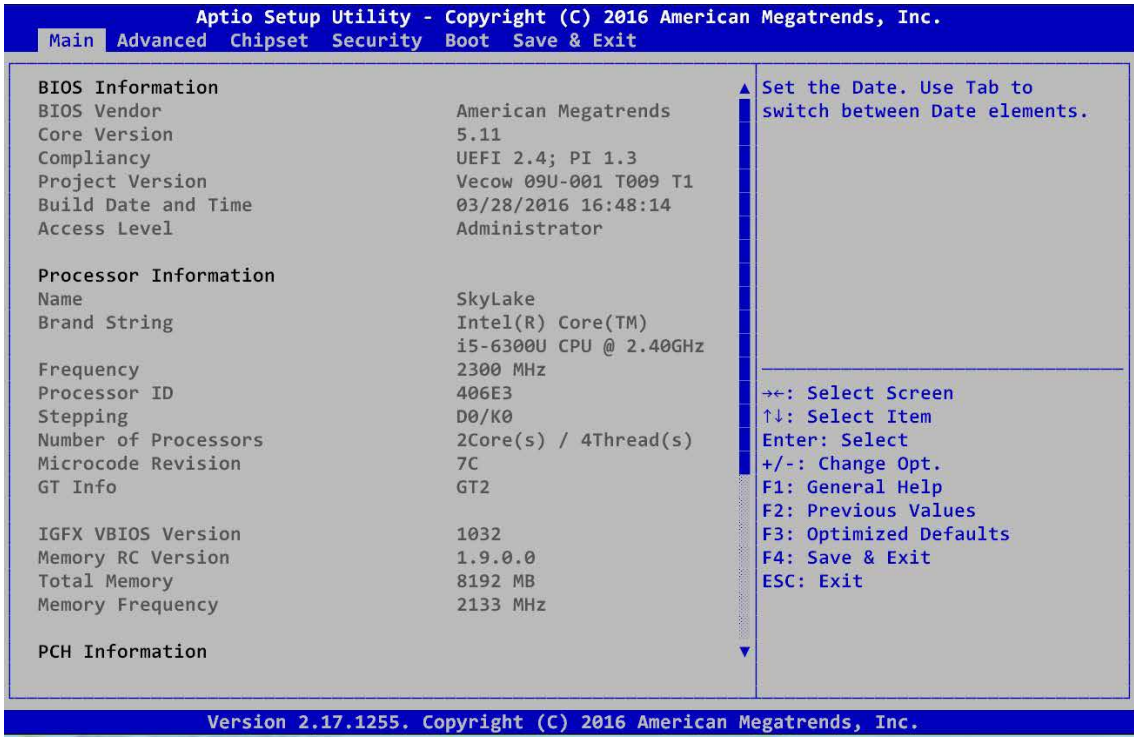


Figure 4-1 : Entering Setup Screen

3.2 Main Menu

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

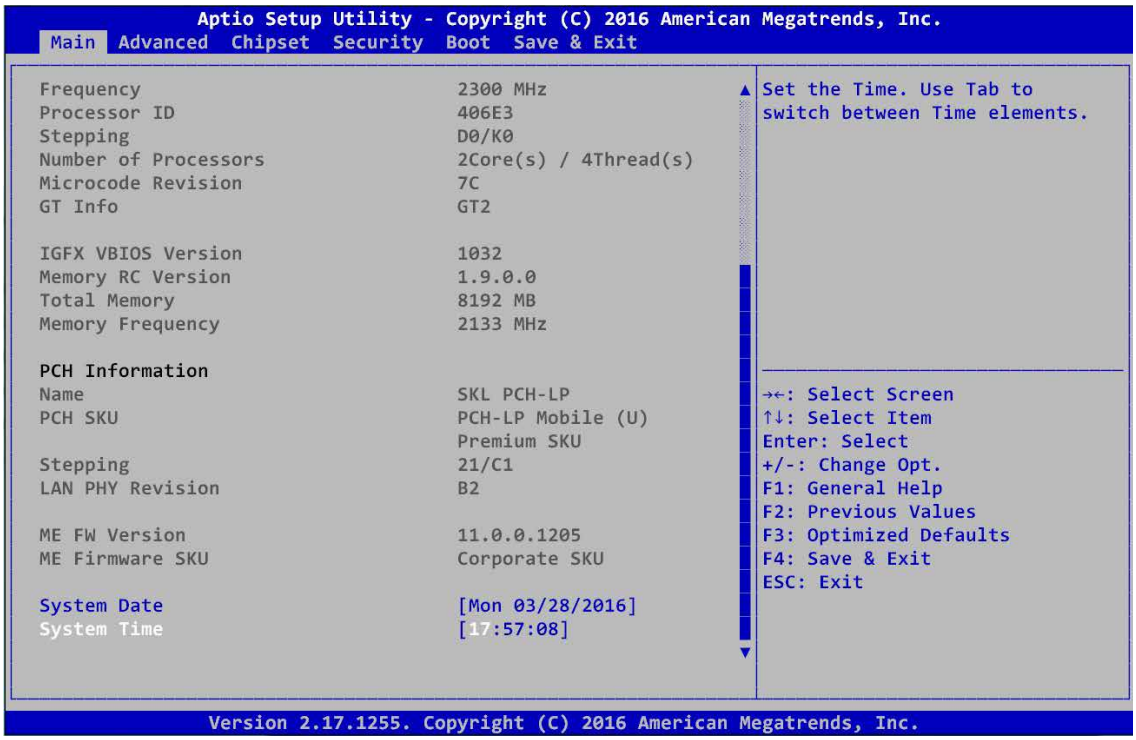


Figure 4-2 : BIOS Main Menu

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.

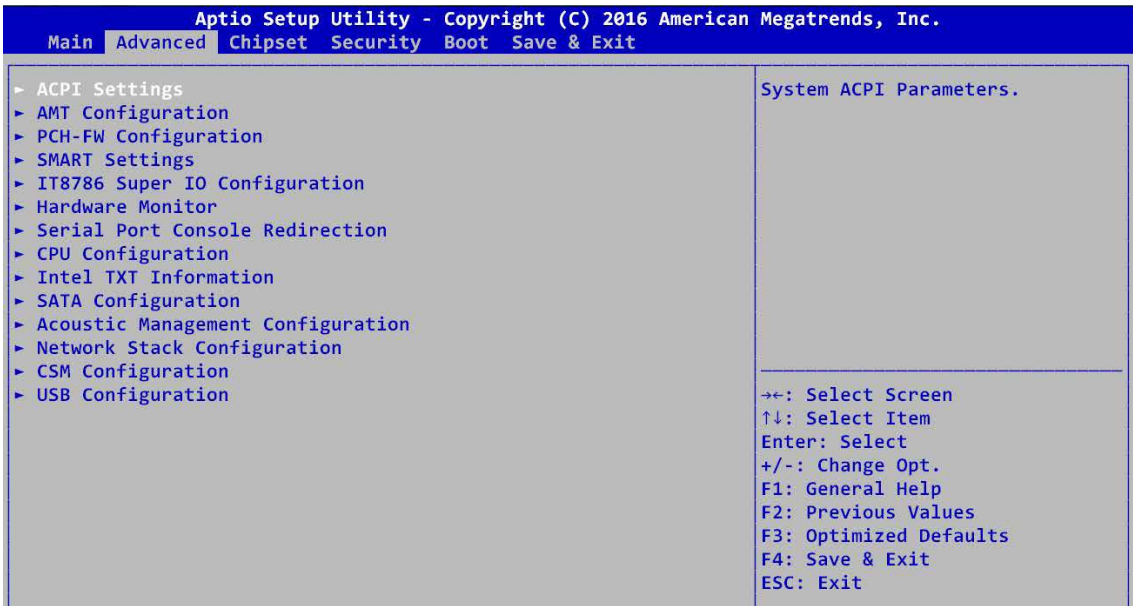


Figure 4-3 : BIOS Advanced Menu

3.3.1 ACPI Setting

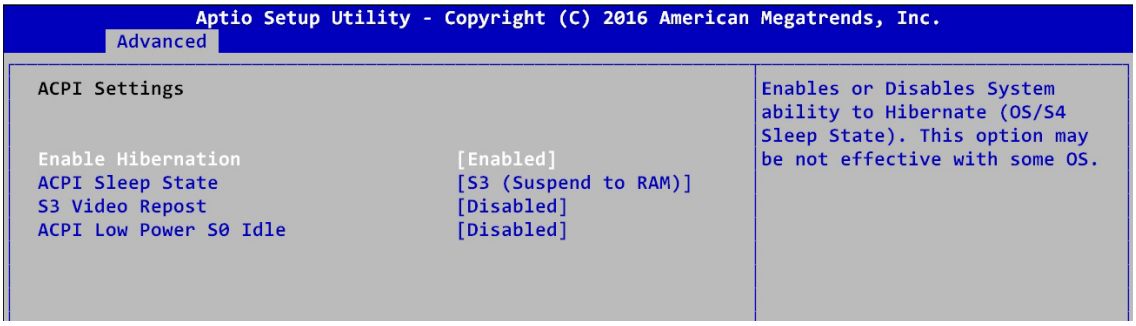


Figure 4-3-1 : ACPI Settings

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

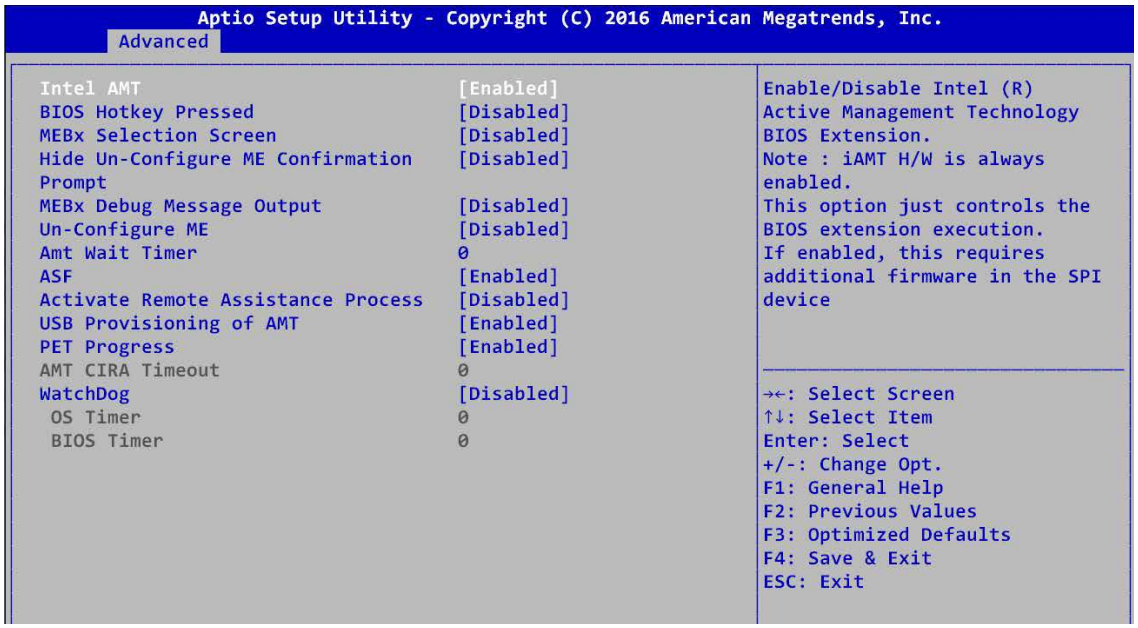


Figure 4-3-2 : Intel AMT Settings

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

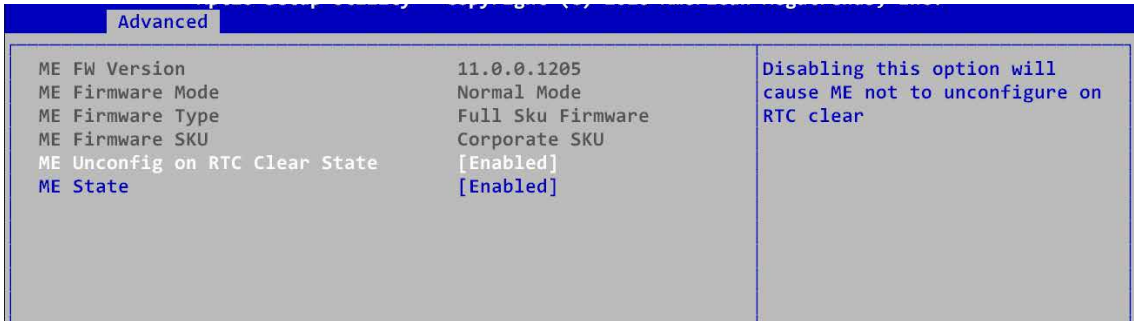


Figure 4-3-3 : PCH-FW Settings

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

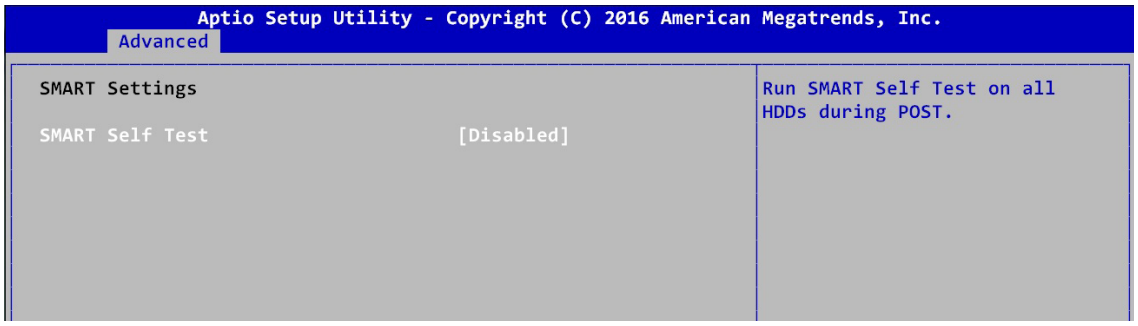


Figure 4-3-4 : SMART Settings

SMART Self Test

Run SMART Self Test on all HDDs during POST.

3.3.5 IT8786 Super IO Configuration

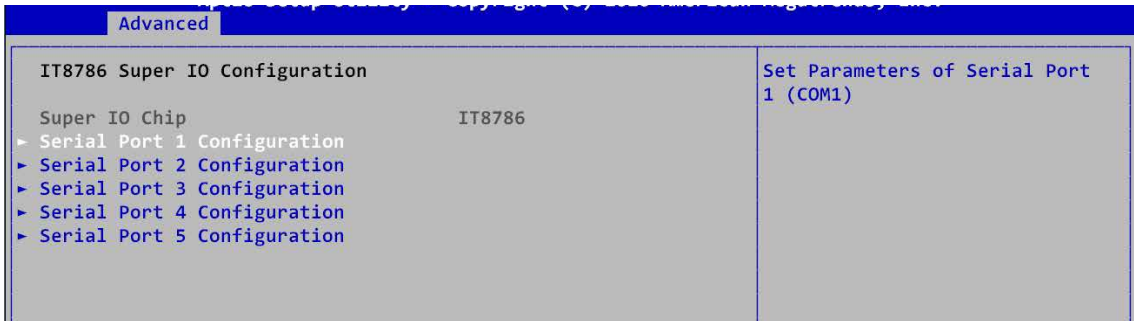


Figure 4-3-5 : Super IO Settings

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.

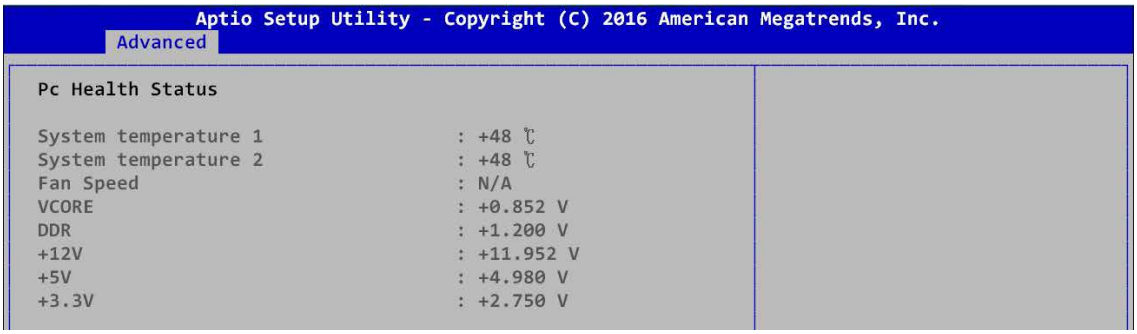


Figure 4-3-6 : Hardware Monitor Settings

3.3.7 Serial Port Console Redirection

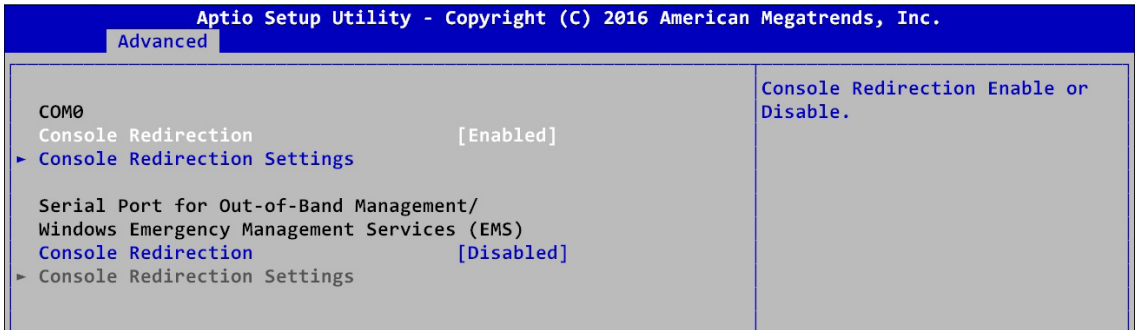


Figure 4-3-7 : Serial Port Console Redirection Settings

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

Display CPU-related related information and features supported.

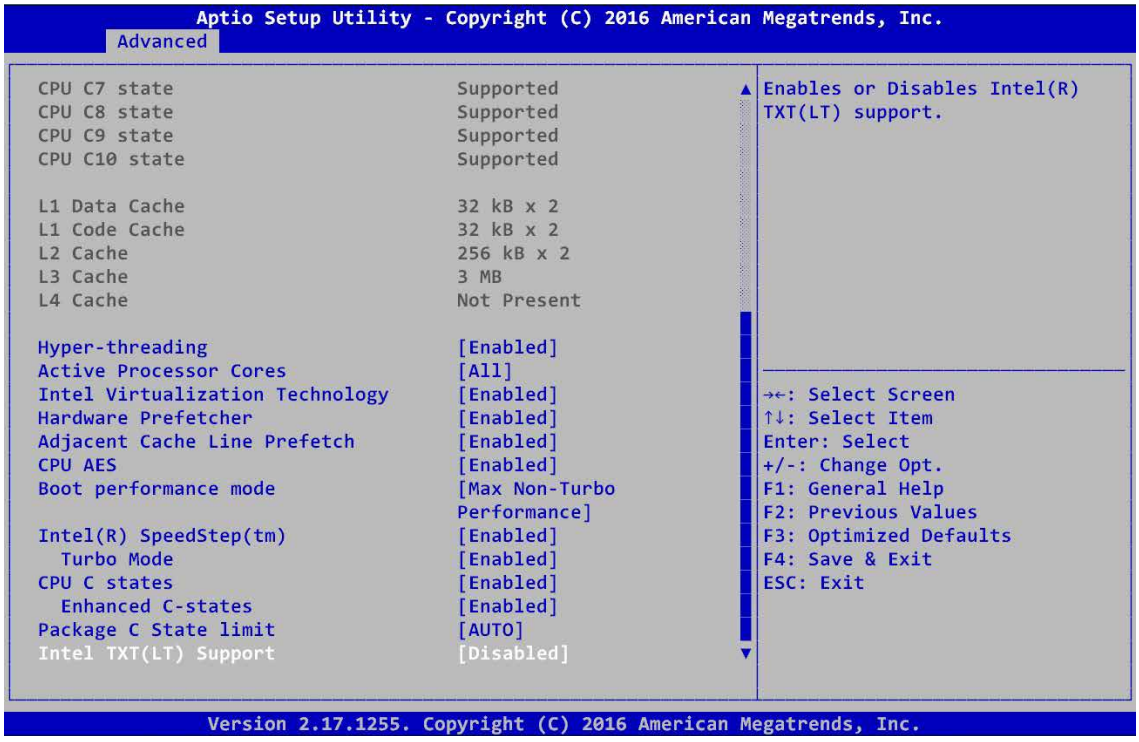


Figure 4-3-8 : CPU Function Settings

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
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.

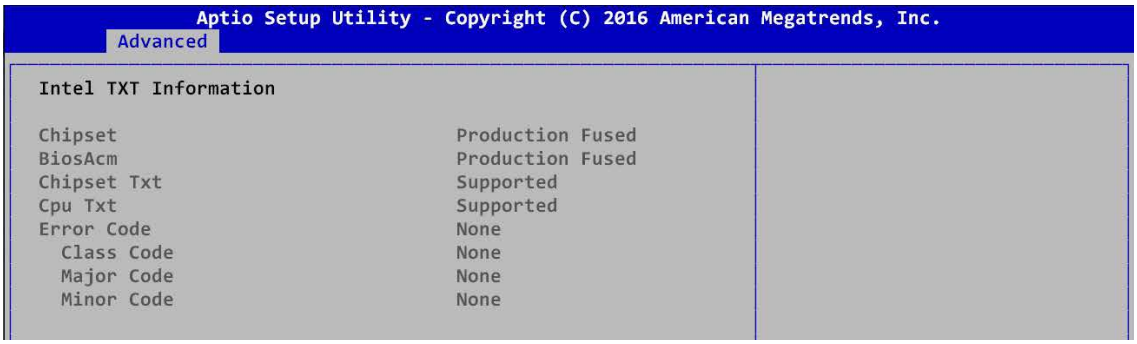


Figure 4-3-9 : Intel TXT Information

3.3.10 SATA Configuration

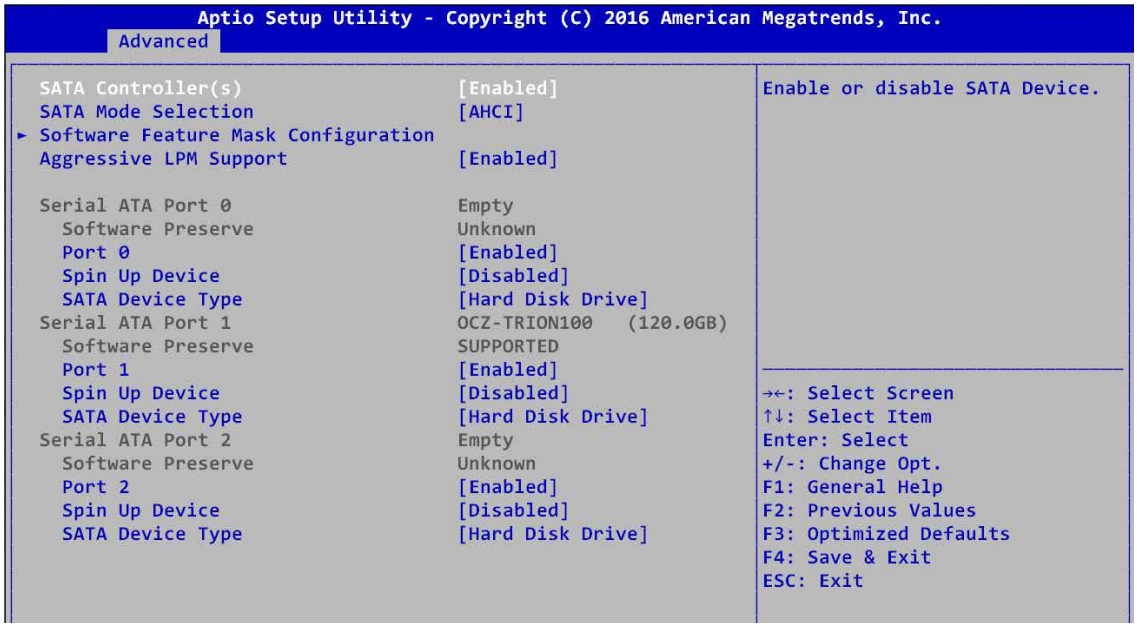


Figure 4-3-10 : SATA Devices Settings

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

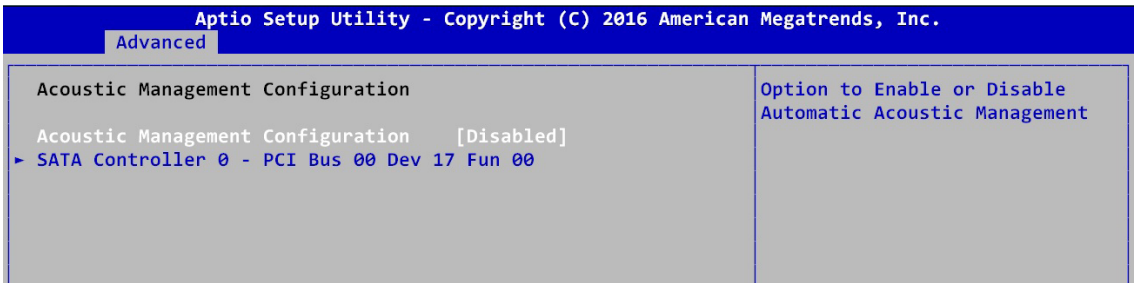


Figure 4-3-11 : Acoustic Management Settings

Acoustic Management Configuration

Option to enable or disable Automatic Acoustic Management.

3.3.12 Network Stack Configuration

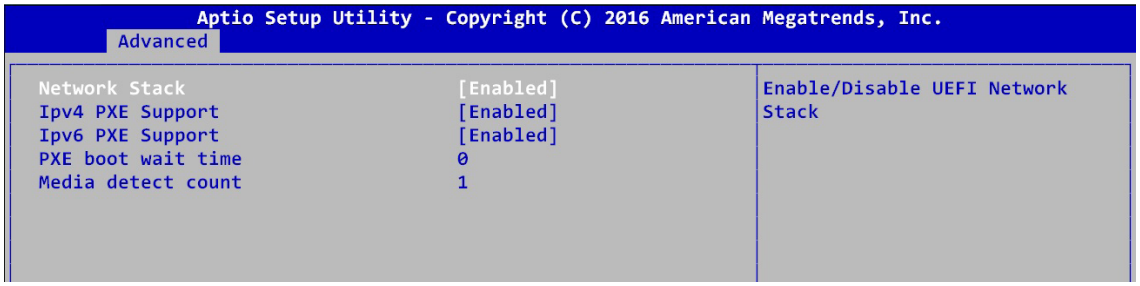


Figure 4-3-12 : Network Stack Settings

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

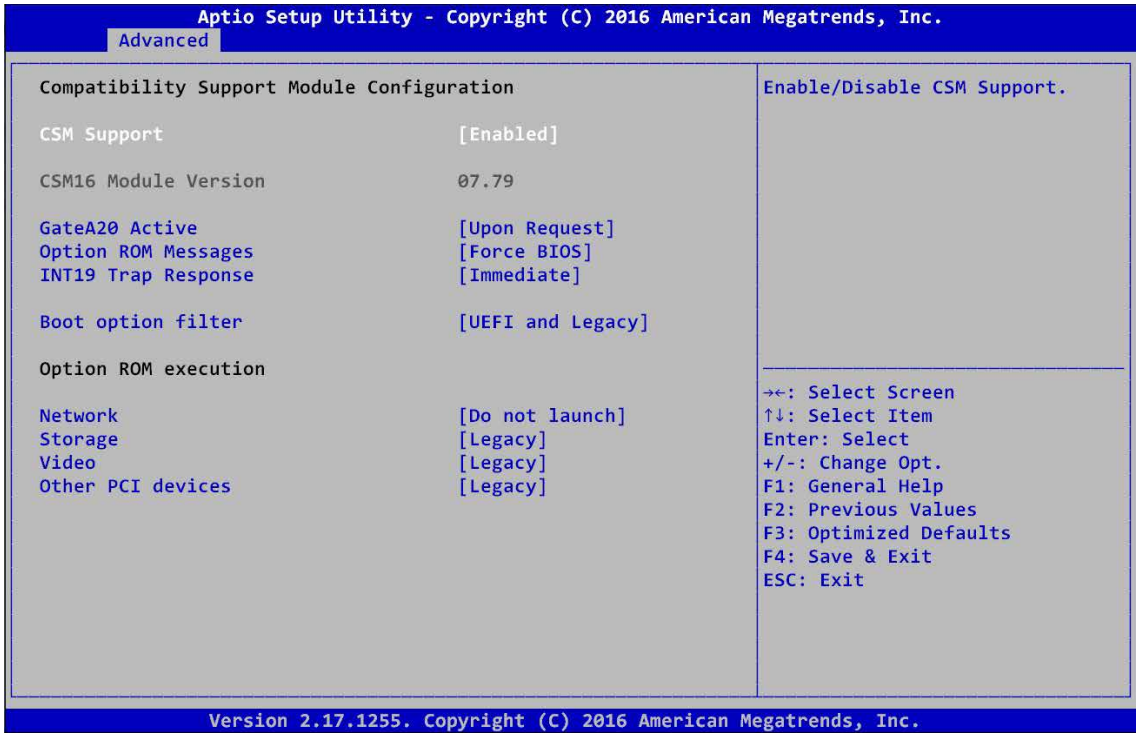


Figure 4-3-13 : CSM Settings

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

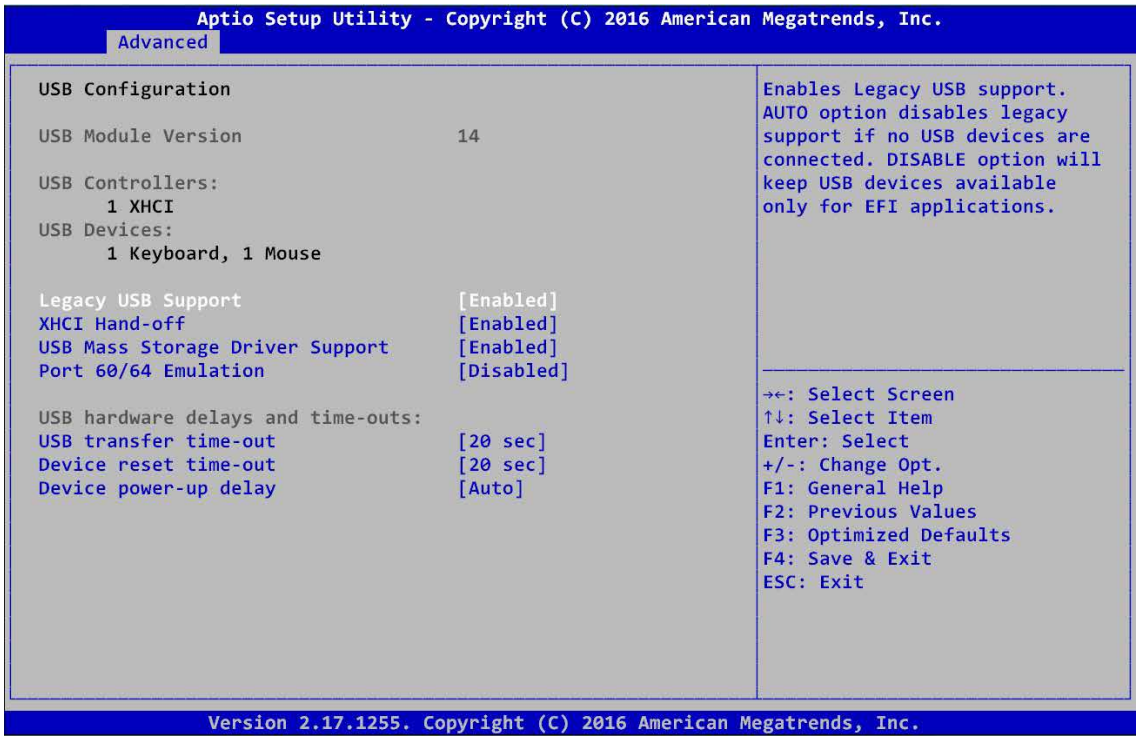


Figure 4-3-14 : USB Settings

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

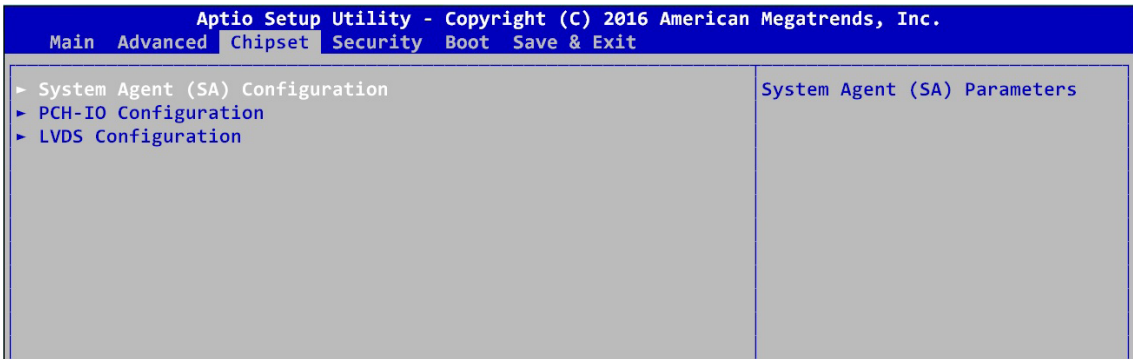


Figure 4-4 : BIOS Chipset Menu

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

PCH-IO Configuration
PCH Parameters.

LVDS Configuration
LVDS Configuration.

3.4.1 System Agent (SA) Configuration

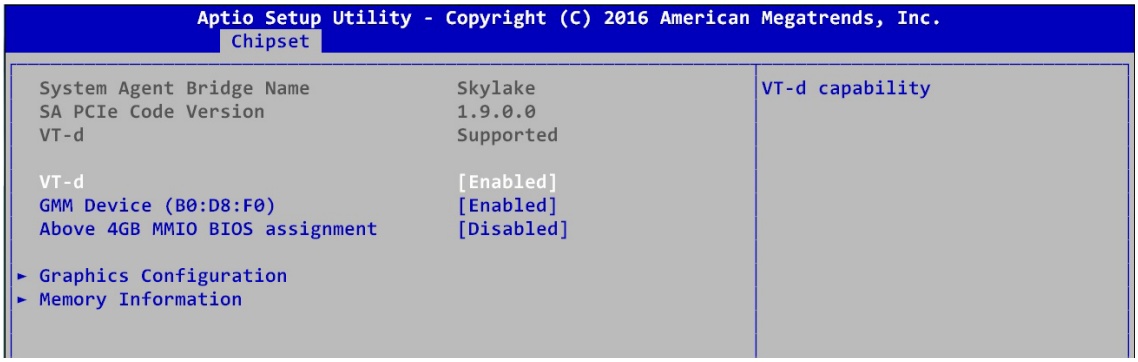


Figure 4-4-1 : USB Settings

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)

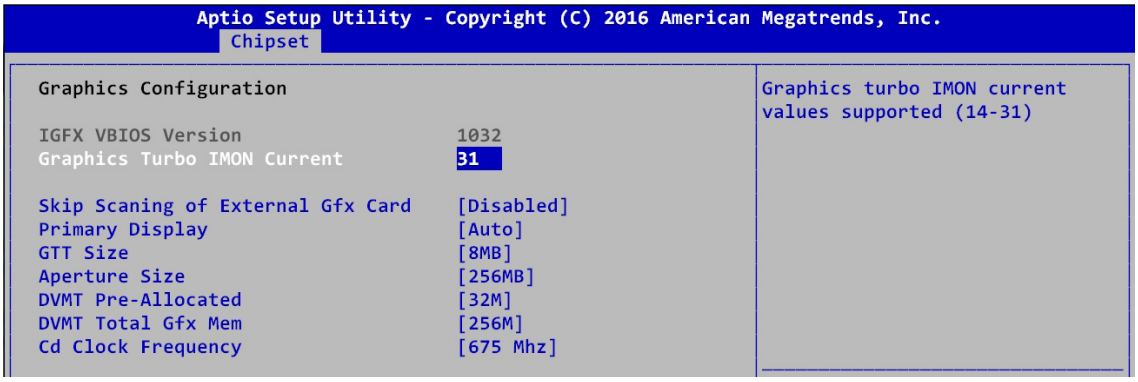


Figure 4-4-1 : USB Settings

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)

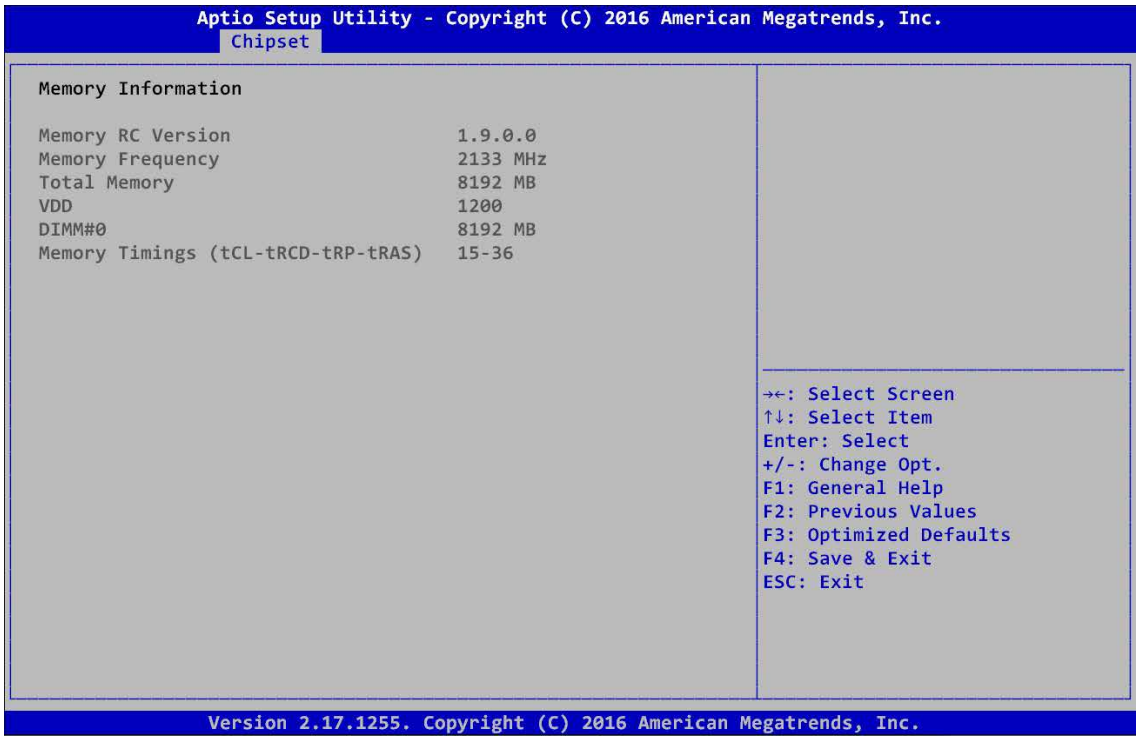


Figure 4-4-3 : Memory Information

Display memory information.

3.4.4 PCH-IO Configuration

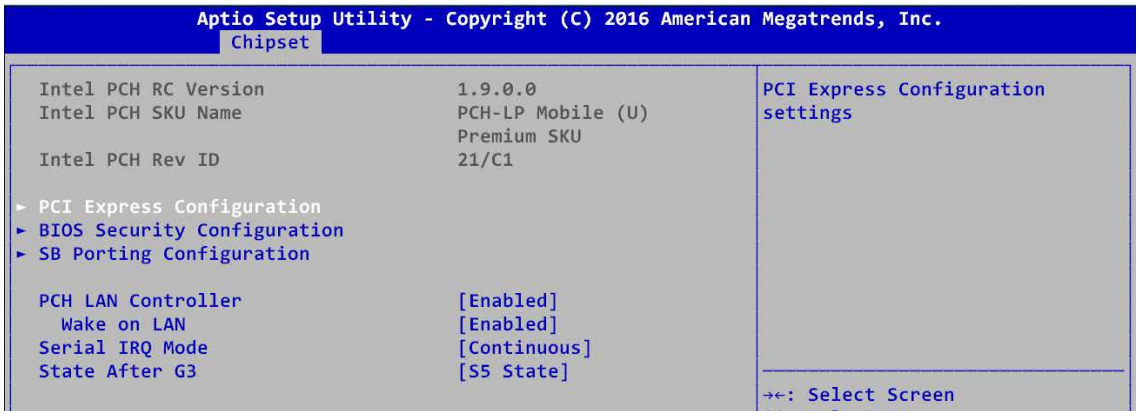


Figure 4-4-4 : USB Settings

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

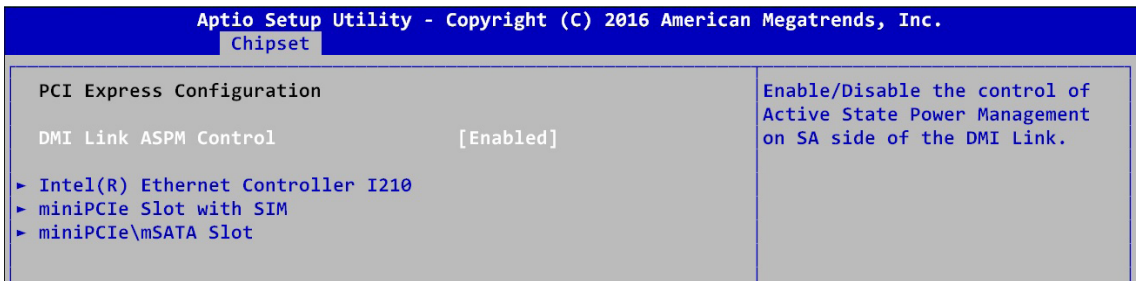


Figure 4-4-5 : PCH-IO Settings

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

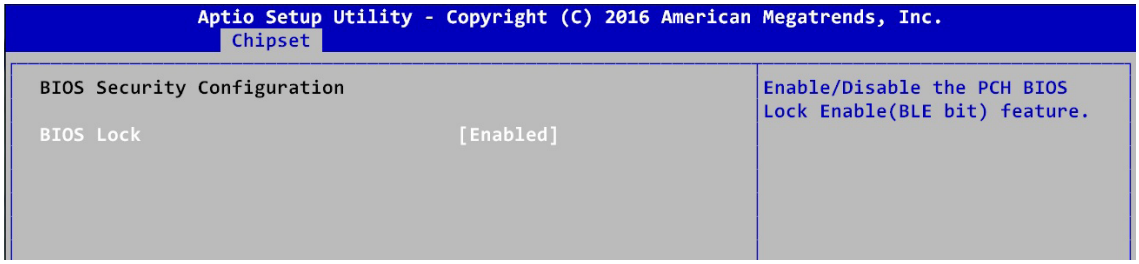


Figure 4-4-6 : BIOS Security Settings

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

3.4.7 SB Porting Configuration of PCH-IO

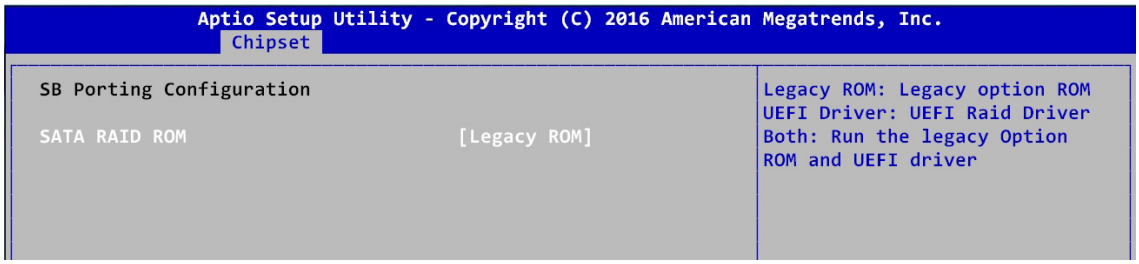


Figure 4-4-7 : RAID ROM Settings

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

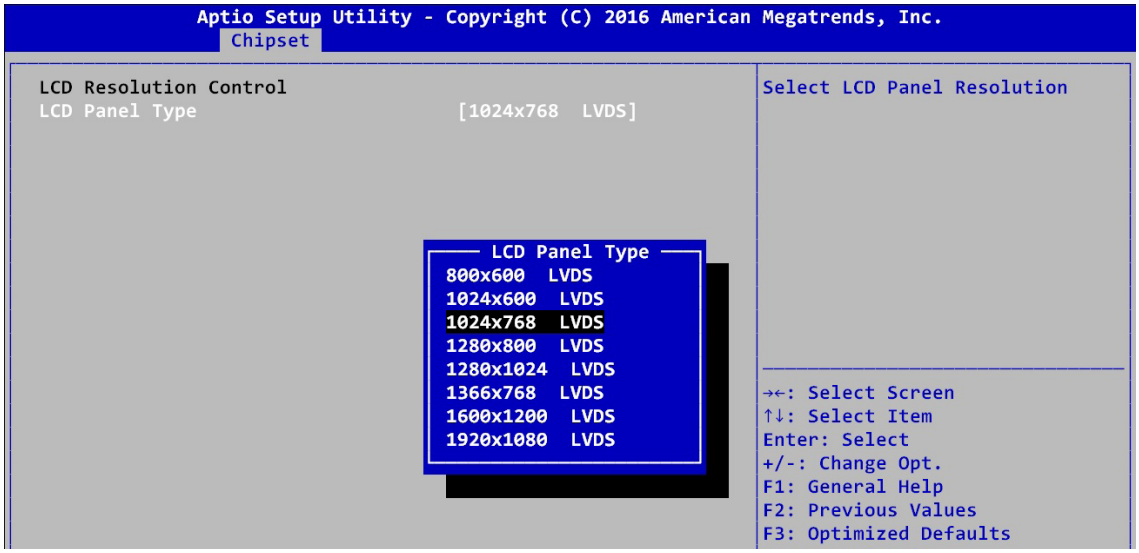


Figure 4-4-8 : LVDS Panel Settings

LCD Panel Type

Select LCD Panel Resolution.

3.5 Security

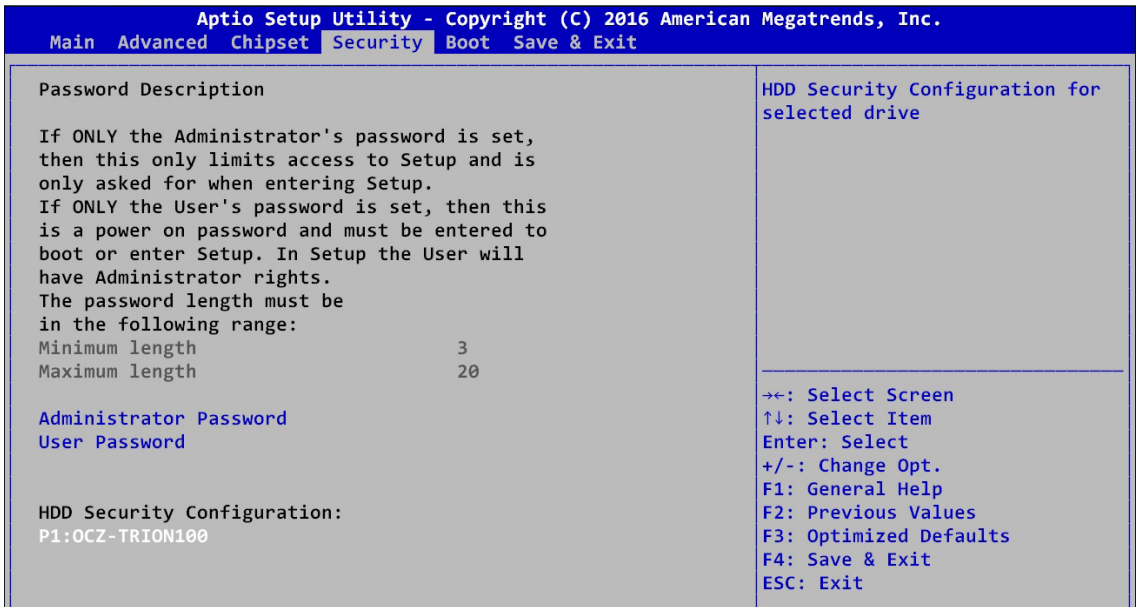


Figure 4-5 : BIOS Security Menu

Administrator Password

Set Administrator Password.

User Password

Set User Password.

3.5.1 HDD Security Configuration

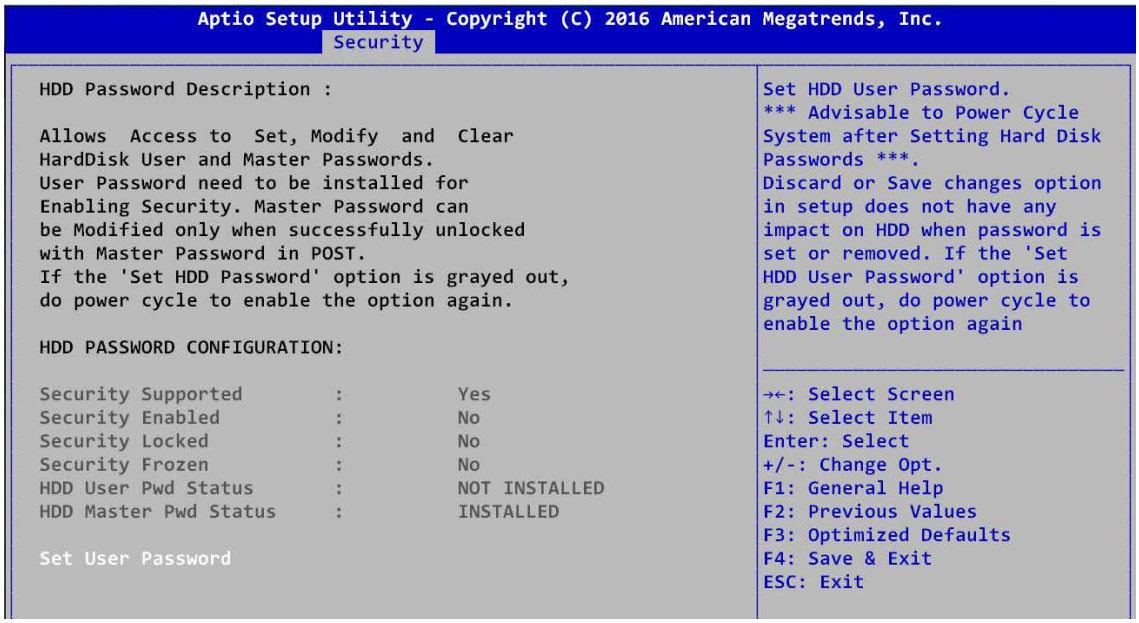


Figure 4-5-1 : HDD Security Settings

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

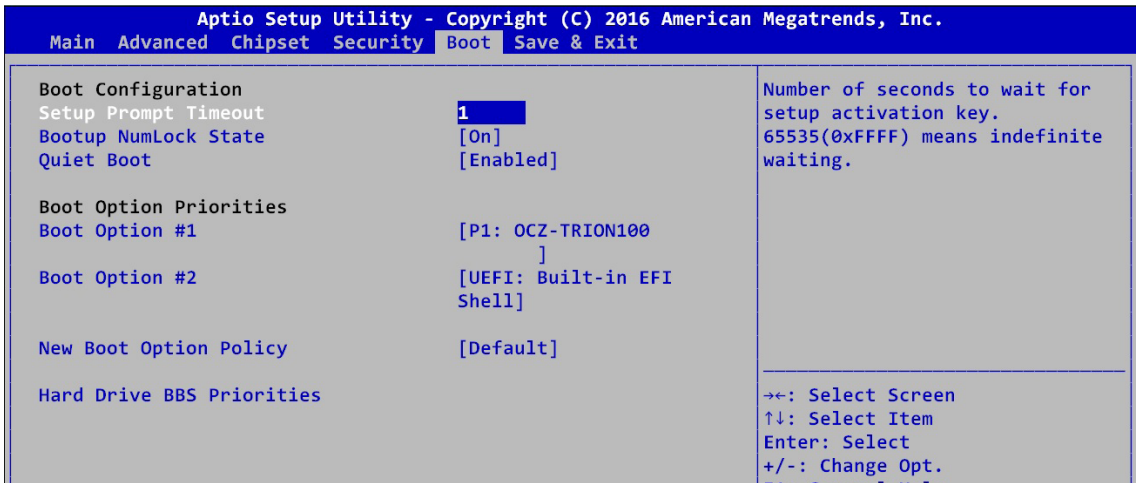


Figure 4-6 : BIOS Boot Menu

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

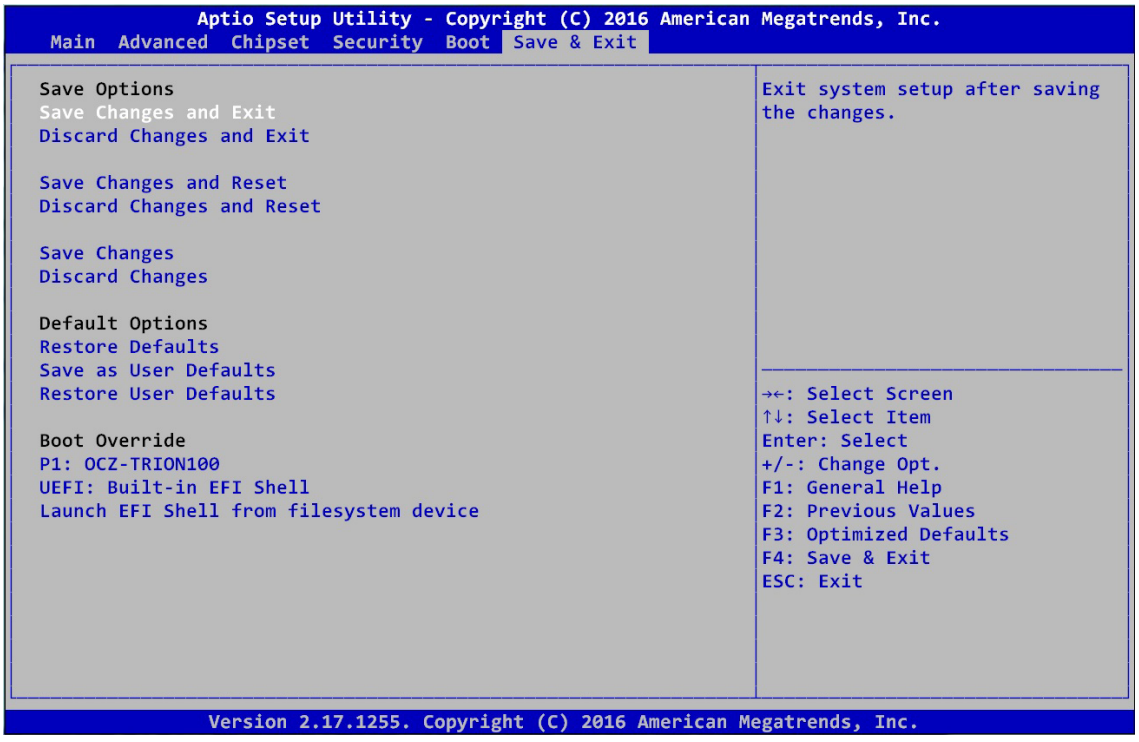


Figure 4-7 : Bios Save and Exit Menu

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.

There are included as fallowed :

Win7_32.bat :
Installation for 32-bit driver

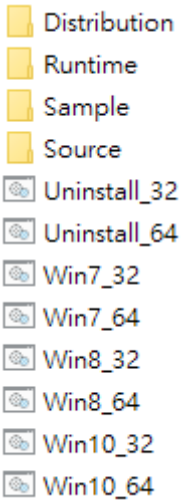
Win7_64.bat :
Windows update package which driver required (need to restart), and Installation for 64-bit driver

Win8_32.bat, Win8_64.bat :
Installation for driver, and guideline to Framework 3.5 distribution for sample

Win10_32.bat, and Win10_64.bat :
Installation for driver, and installation to Framework 3.5 distribution for sample

Uninstall_32.bat, and Uninstall_64.bat :
Uninstallation for driver

Run batch file as Administrator.
Support Windows 7 above.
Make sure Windows version before installation.



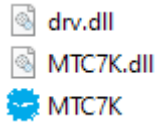
Runtime folder include head file for software developer or System Integration.

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

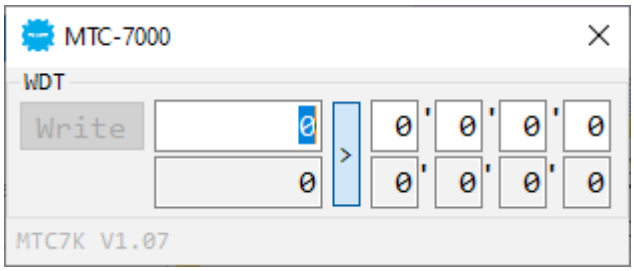
Source folder include sample program source code that compile on Visual Studio 2008.

A.3 Sample

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



Sample MTC-7000.exe, as shown below :



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.

B

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)

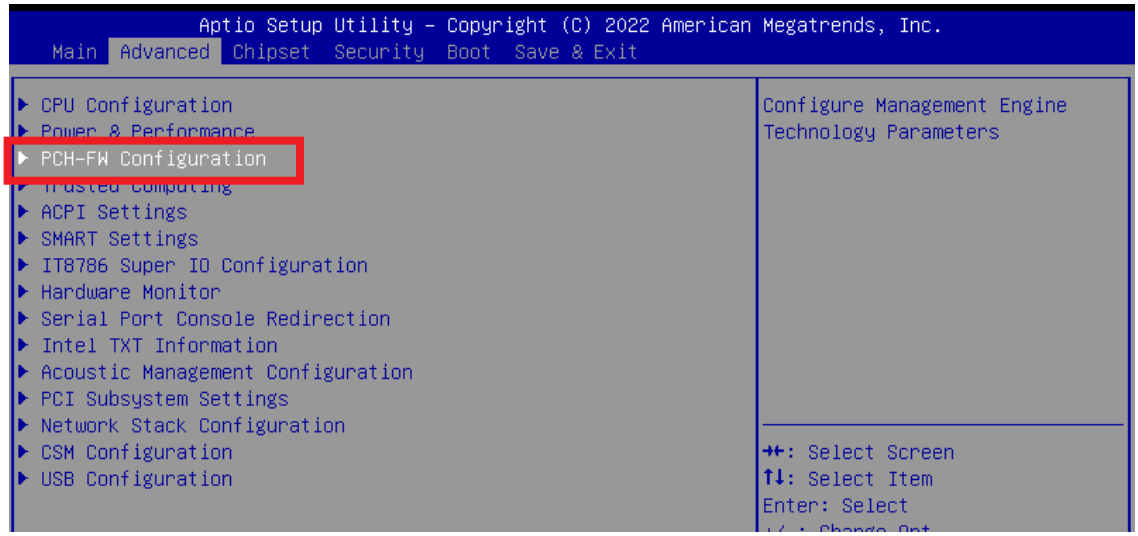
BOOL CancelWDT ()

Cancel watchdog timer

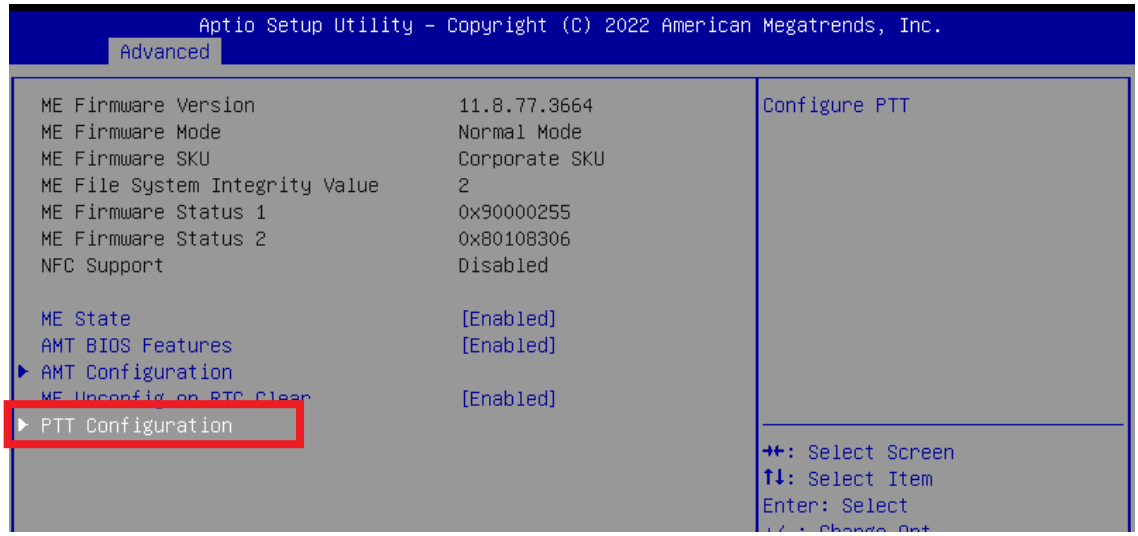
Return :
TRUE (1) : Success;
FALSE (0) : Fail (Initial error, or hardware problem)

APPENDIX C : Install Win11 (BIOS TPM Setting)

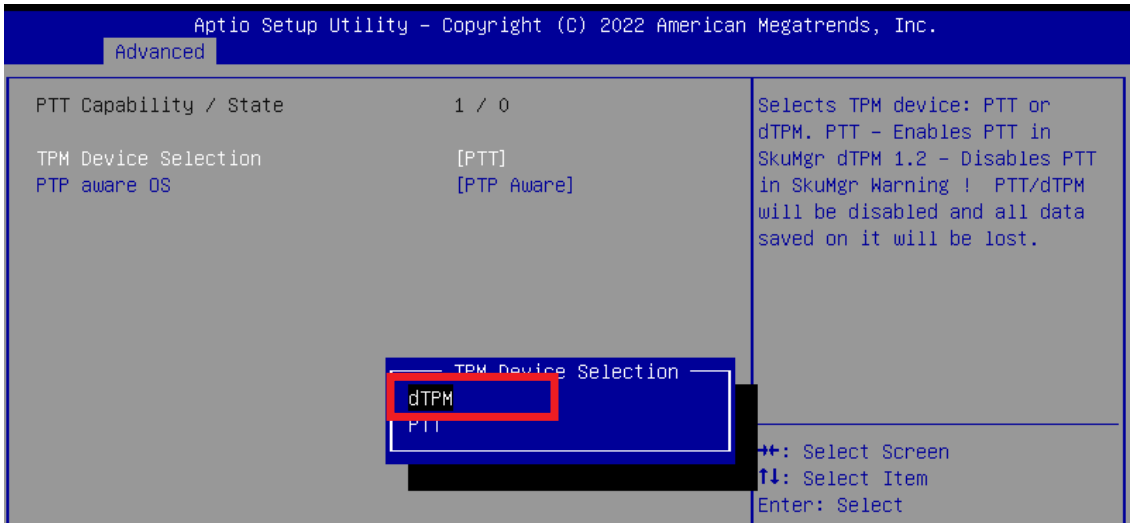
Step 1 Click on “Advanced”, then click on “PCH-FW Configuration”

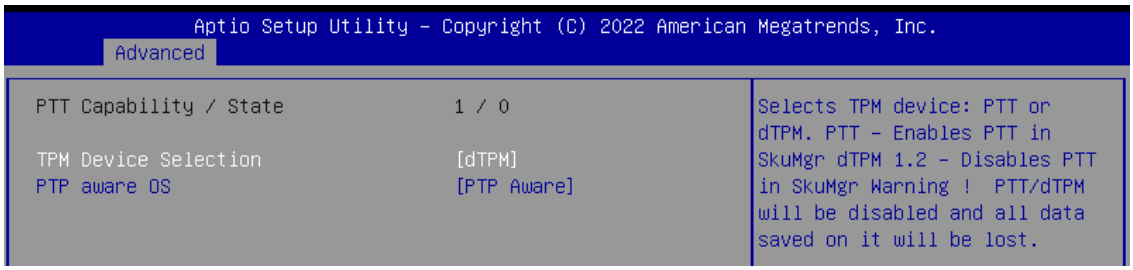


Step 2 Click on “PTT Configuration”

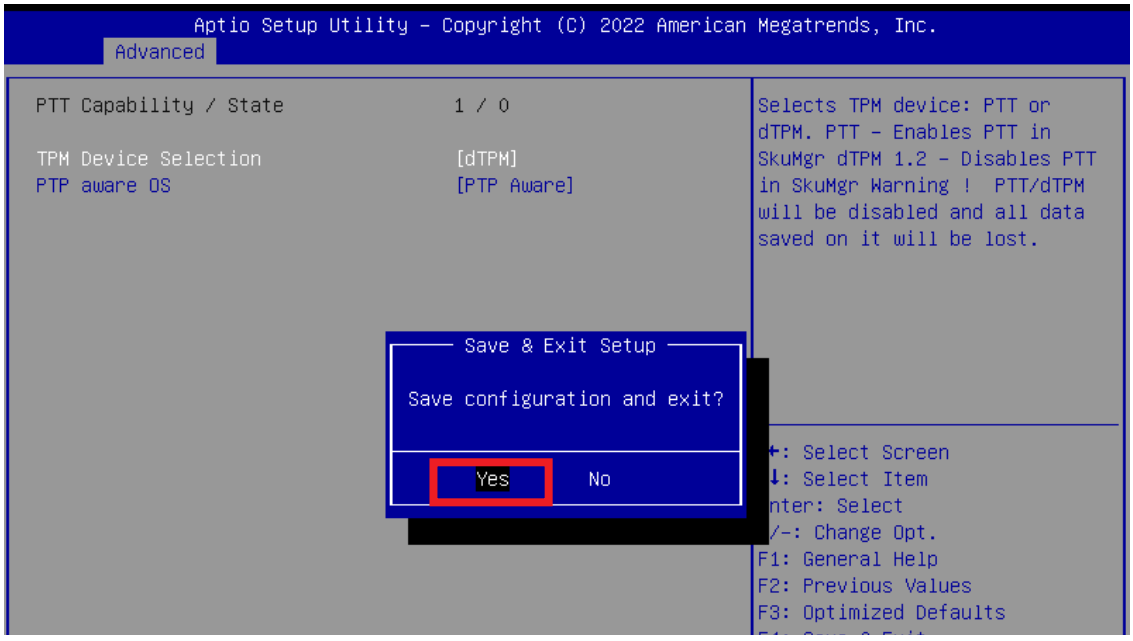


Step 3 Click on “dTPM” (TPM Device Selection)

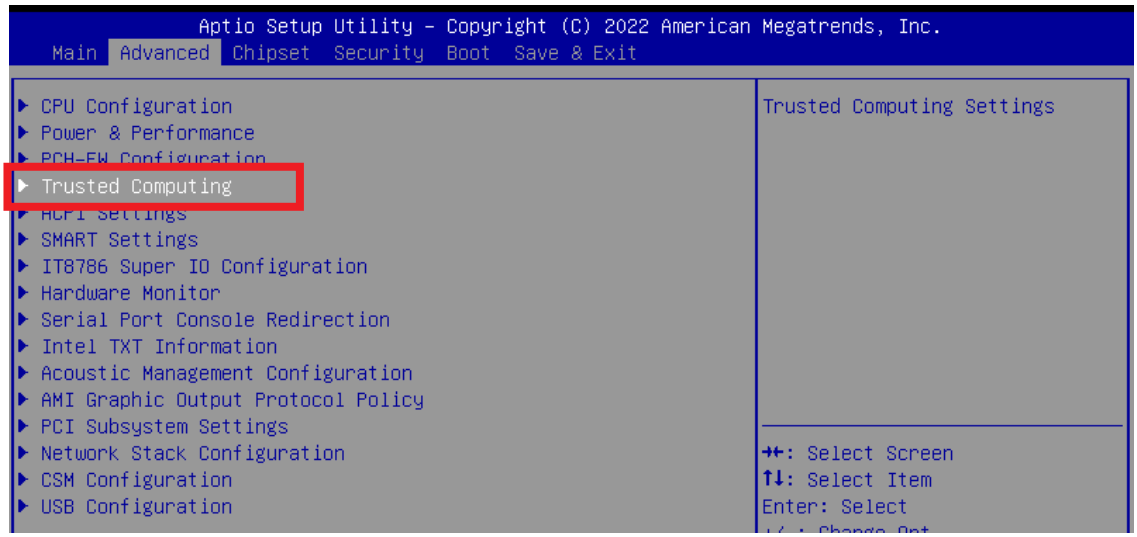




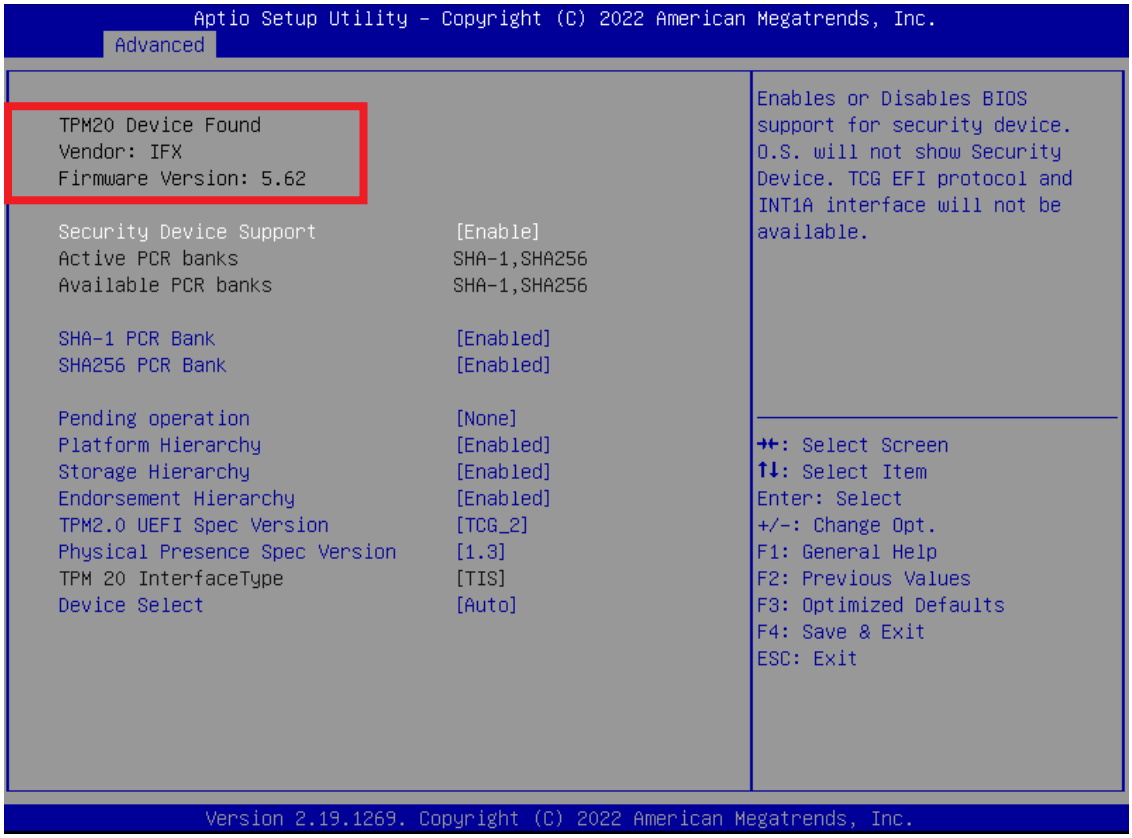
Step 4 Please save the BIOS settings by pressing F4. Please press Enter when the pop-up window which asks “Save configuration and exit?” appears. The computer will then restart.



Step 5 Click on “Trusted Computing”



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 **

Vecow

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