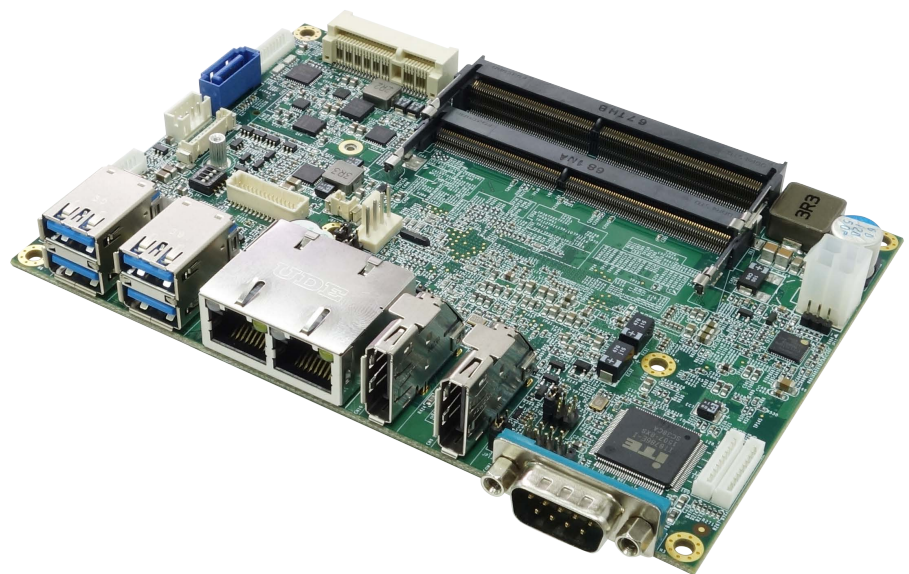




OXY5361A

3.5" SBC with Intel® Skylake-U SoC



Safety Information

Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.
- Before connecting or removing signal cables from the motherboard, ensure that all power cables are unplugged.
- Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.
- Make sure that your power supply is set to the correct voltage in your area.
- If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your local distributor.

Operation safety

- Before installing the motherboard and adding devices on it, carefully read all the manuals that came with the package.
- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Place the product on a stable surface.
- If you encounter any technical problems with the product, contact your local distributor

Statement

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- All trademarks are the properties of the respective owners.
- All product specifications are subject to change without prior notice

Revision History

Revision	Date (dd.mm.yyyy)	Changes
Version 0.9	01.06.2017	Draft
Version 1.0	13.06.2017	Initial Release
Version 1.1	15.06.2017	Update latest product photo Change JP13,JP14,JP15 default setting Change LVDS and CN18 pin define.
Version1.2	02.12.2020	Add LVDS VDD JP24 pin define

Packing list

- OXY5361A 3.5" SBC
- CD (Driver + user's manual)
- Optional Accessories
 - Cable kit
 - SATA cable
 - SATA power cable
 - USB cable
 - COM cable
 - Thermal kit:
 - Copper heat spreader
 - Passive heatsink



If any of the above items is damaged or missing, please contact your local distributor.

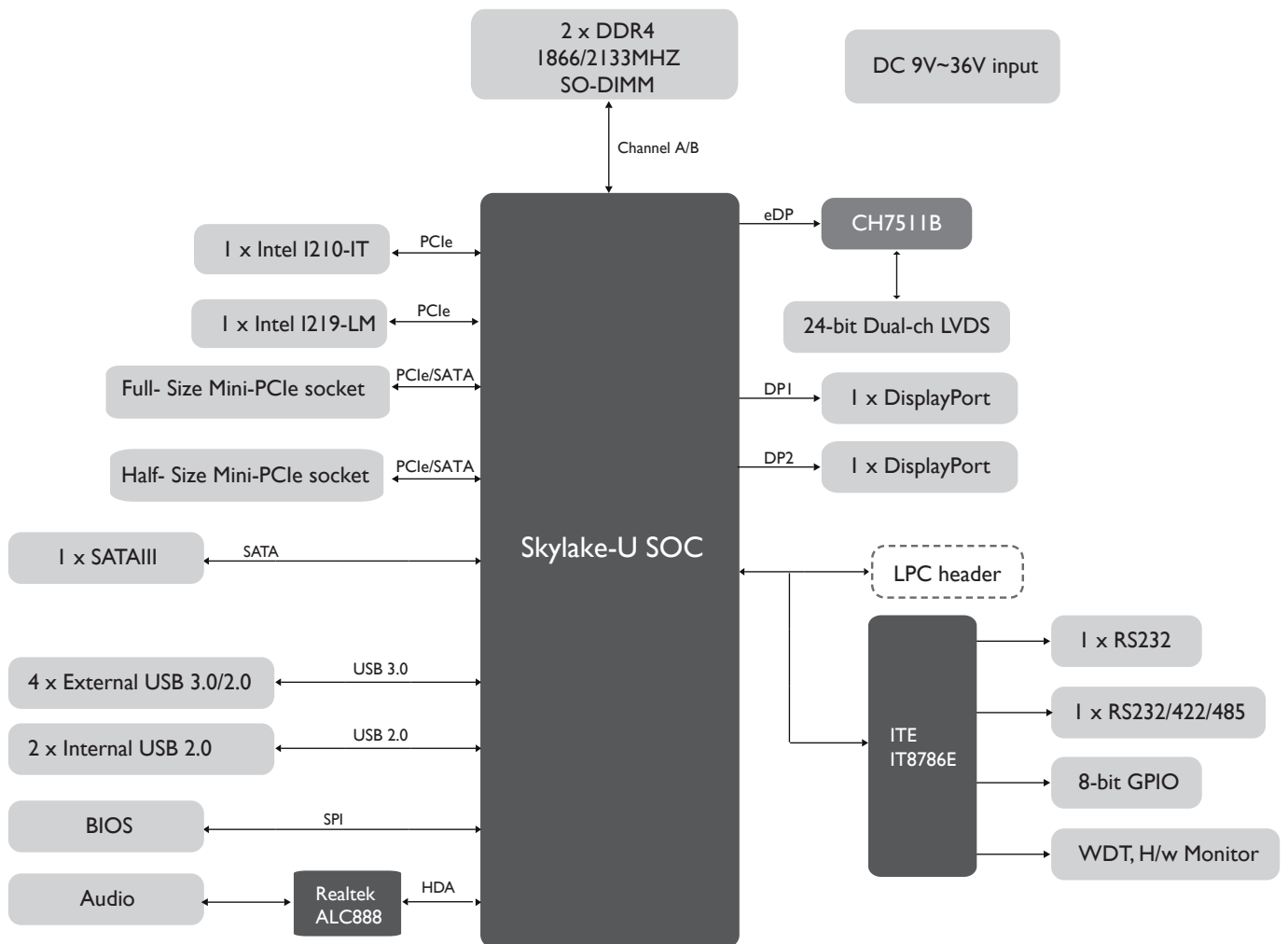
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Chapter 1: Product Information

1.1 Block Diagram

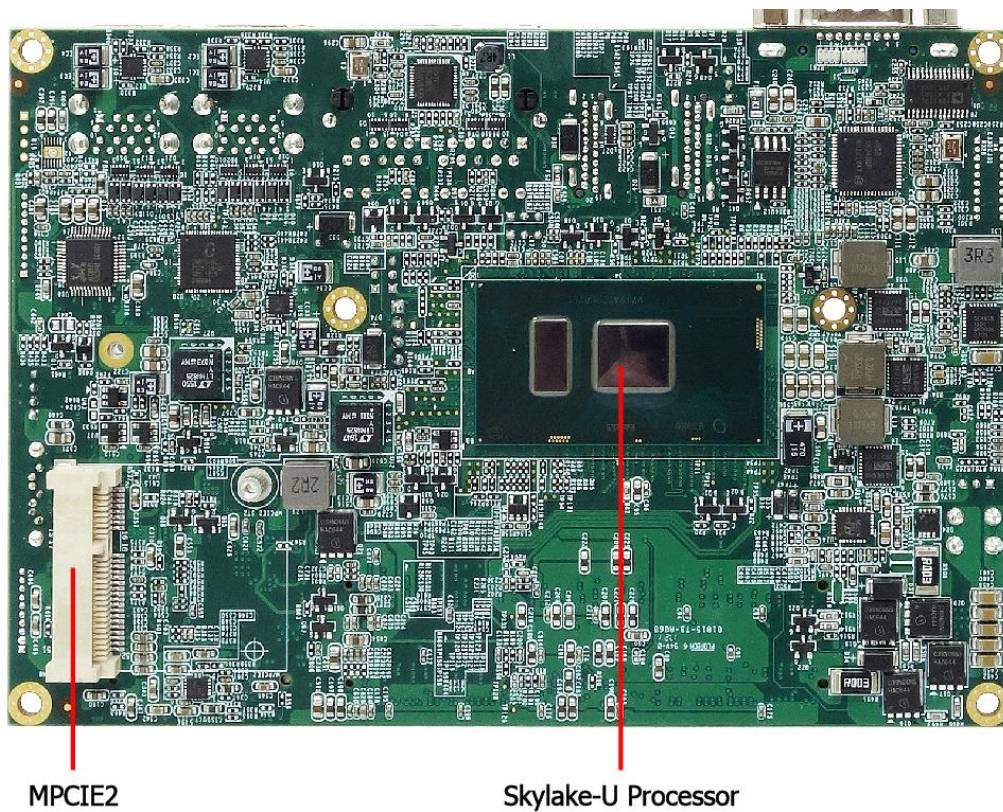
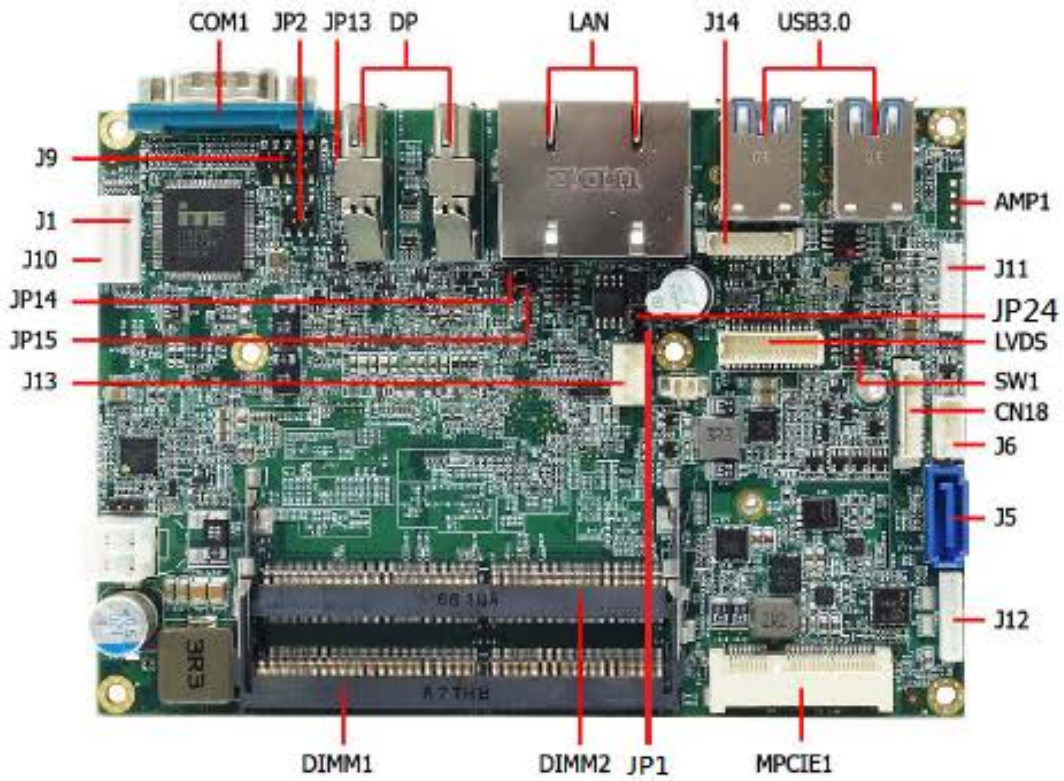


1.2 Key Features

Processor & System	
CPU Type	Intel® Skylake-U series, BGA type Intel® Core™ i3-6100U (3M Cache, 2.3 GHz) (15W) Intel® Core™ i5-6300U (3M Cache, 2.4 GHz) (15W) Intel® Core™ i7-6600U (4M Cache, 2.6 GHz) (15W)
Memory Type	2 x SO-DIMM DDR4 2133 MHz up to 32 GB
BIOS	AMI® UEFI BIOS
Super I/O	Fintek F8786E
Watchdog	1-255 sec.
Expansion Slot	1 x Full-size mPCIe/mSATA 1 x Half-size mPCIe/mSATA
Display	
Chipset	Intel® Integrated
DisplayPort	Max. resolution 4096 x 2304
LVDS	Dual channel 24-bit LVDS
Display Type	DisplayPort, LVDS
Audio	
Codec	Realtek ALC888 High Definition Audio Codec
Ethernet	
Chipset	Intel® I210-IT + I219-LM
WOL	Yes
Boot from LAN	Yes for PXE
Rear I/O	
DisplayPort	2 x DisplayPort
Ethernet	2 x RJ45
USB	4 x USB 3.0
COM	1 x RS232
Internal I/O	
SATA	1 x SATAIII (6 Gb/s)
USB	2 x USB 2.0
COM	1 x RS232/422/485
Audio	Mic-in, Line-In/out
FAN	1 x CPU fan
LVDS	30-pin connector
DIO	8-bit
Mechanical and Environment	
Form Factor	3.5" SBC
Power Type	9~36V DC-in, 4-pin ATX power connector, AT/ATX mode support
Dimension	146 x 101mm (5.7" x 4")
Operating Temp.	-40 to 85°C
Storage Temp	-40 to 85°C
Relative Humidity	10% to 90%, non-condensing

*All specifications and photos are subject to change without notice.

1.3 Board Placement



Chapter 2: Jumpers and Connectors



2.1 Onboard connector and jumper list

Label	Function
COM1 (Rear)	RS232, DB9 connector
DP1 (Rear)	DisplayPort
DP2 (Rear)	DisplayPort
LAN1 (Rear)	RJ45 connector
LAN2 (Rear)	RJ45 connector
USB1/2 (Rear)	2 x USB3.0
USB3/4 (Rear)	2 x USB3.0
MPCIE1	Full-size mPCIe/mSATA
MPCIE2	Half-size mPCIe/mSATA
AMP1	Audio amplifier
LVDS	LVDS
CN18	LVDS Control Connector
J1	DIO header
J5	SATAIII connector
J6	SATA power
J9	Front panel
J10	LPC header
J11	Audio
J12	COM2, RS232/422/485
J13	CPU fan
J14	2 x USB2.0, USB5/6
SW1	LVDS resolution Select
JP1	Clear CMOS
JP2	COM1 RI/+5V/+12V select
JP13	AT/ATX select
JP14	mPCIe1 SATA/PCIe select
JP15	mPCIe2 SATA/PCIe select

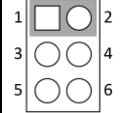
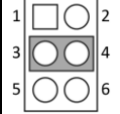
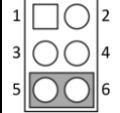
2.2 Connector and jumper pin definition

2.2.1 Jumper



JP1: Clear CMOS

Jumper	Function description	Setting
1-2	Normal	
2-3	Clear CMOS	
Default setting: 1-2		



JP2: COM1 RI/+5V/+12V

Jumper	Function description	Setting
1-2	Ring	
3-4	5V	
5-6	12V	
Default setting: 1-2		

JP13: AT/ATX Mode

Jumper	Function description	Setting
1-2	ATX	
2-3	AT	
Default setting: 2-3		

JP14: mPCIe1 signal select

Jumper	Function description	Setting
1-2	SATA	
2-3	PCIe	
Default setting: 2-3		

JP15: mPCIe2 signal select

Jumper	Function description	Setting
1-2	SATA	1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>
2-3	PCIe	1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/>
Default setting: 2-3		

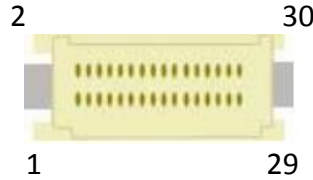
SW1: LVDS Resolution

Resolution	Color depth	Channel	Setting				Drawing
			Switch 1	Switch 2	Switch 3	Switch 4	
800 x 600	18-bit	Single	Off	Off	Off	Off	<p>The diagram shows a 4-position slide switch labeled SW1. The positions are numbered 1 through 4 on the left. Position 1 is currently selected, indicated by a blue arrow pointing to the top of the switch. The switch has four horizontal bars representing the positions.</p>
1024 x 768	18-bit	Single	On	Off	Off	Off	
1024 x 768	24-bit	Single	Off	On	Off	Off	
1280 x 800	18-bit	Single	On	On	Off	Off	
1280 x 1024	24-bit	Dual	Off	Off	On	Off	
1366 x 768	24-bit	Single	On	Off	On	Off	
1440 x 900	24-bit	Dual	Off	On	On	Off	
1920 x 1080	24-bit	Dual	On	On	On	Off	

2.2.2 Connector

LVDS

Pin	Definition	Pin	Definition
1	LVDS_CLK+	2	GND
3	LVDS_CLK-	4	LVDSA3+
5	GND	6	LVDSA3-
7	LVDSB3+	8	GND
9	LVDSB3-	10	LVDSA_CLK+
11	LVDSB2+	12	LVDSA_CLK-
13	LVDSB2-	14	GND
15	LVDSB1+	16	LVDSA2+
17	LVDSB1-	18	LVDSA2-
19	LVDSB0+	20	LVDSA1+
21	LVDSB0-	22	LVDSA1-
23	GND	24	LVDSA0+
25	LVDS_SCLK	26	LVDSA0-
27	LVDS_SDATA	28	GND
29	VDD	30	VDD



CN18: LVDS Control connector

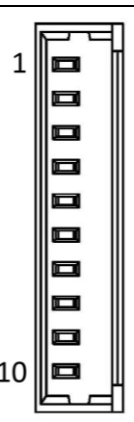
PIN	DEFINITION
1	+12V
2	+12V
3	+12V
4	5V
5	5V
6	GND
7	GND
8	Backlight Enable
9	Backlight control
10	GND
11	JP24 : LVDS VDD connector



JP24 LVDS Signal Power	
1-2	5V
2-3	3V3

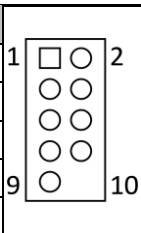
J1: DIO

PIN	DEFINITION
1	DIO0
2	DIO1
3	DIO2
4	DIO3
5	DIO4
6	DIO5
7	DIO6
8	DIO7
9	3.3V
10	GND



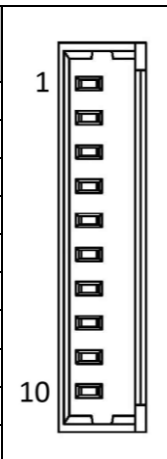
J9: Front Panel

PIN	DEFINITION	PIN	DEFINITION
1	FP_HDLED+	2	FP_PLED+
3	SATALED#	4	GND
5	GND	6	EC_PWR_BTN
7	RESET-	8	GND
9			



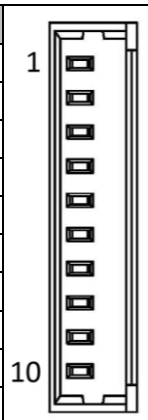
J10: LPC

PIN	DEFINITION
1	GND
2	TPM_IRQ
3	+3.3VSB
4	LPC_AD0
5	LPC_AD1
6	LPC_AD2
7	LPC_AD3
8	LPC_FRAME#
9	PLTRST#_BUF1
10	LPC_CLK_1



J11: Audio

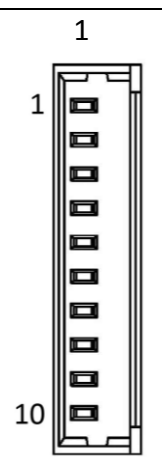
PIN	DEFINITION
1	GND
2	MIC1_JD
3	MIC1_R
4	MIC1_L
5	FRONT_JD
6	FRONT_R
7	FRONT_L
8	LINE1_JD
9	LINE1_R
10	LINE1_L




J12: COM2 RS232/422/485

Note: RS232/422/485 can be set by BIOS.

Pin	RS232 mode (Default)	RS422 mode	RS485 mode
1	5V		
2	GND	GND	GND
3	RI		
4	DTR	RX-	
5	CTS		
6	TXD	RX+	
7	RTS		
8	RXD	TX+	DATA-
9	DSR		
10	DCD	TX-	DATA+



J14: USB2.0 x2

PIN	DEFINITION	
1	+5V	
2	USB5-	
3	USB5+	
4	GND	
5	GND	
6	+5V	
7	USB6-	
8	USB6+	
9	GND	
10	GND	

Chapter 3: AMI BIOS UTILITY

This chapter provides users with detailed descriptions on how to set up a basic system configuration through the AMI BIOS setup utility.

3.1 Starting

To enter the setup screens, perform the following steps:

- Turn on the computer and press the key immediately.
- After the key is pressed, the main BIOS setup menu displays. Other setup screens can be accessed from the main BIOS setup menu, such as the Chipset and Power menus.

3.2 Navigation Keys

The BIOS setup/utility uses a key-based navigation system called hot keys. Most of the BIOS setup utility hot keys can be used at any time during the setup navigation process.

Some of the hot keys are <F1>, <F10>, <Enter>, <ESC>, and <Arrow> keys.

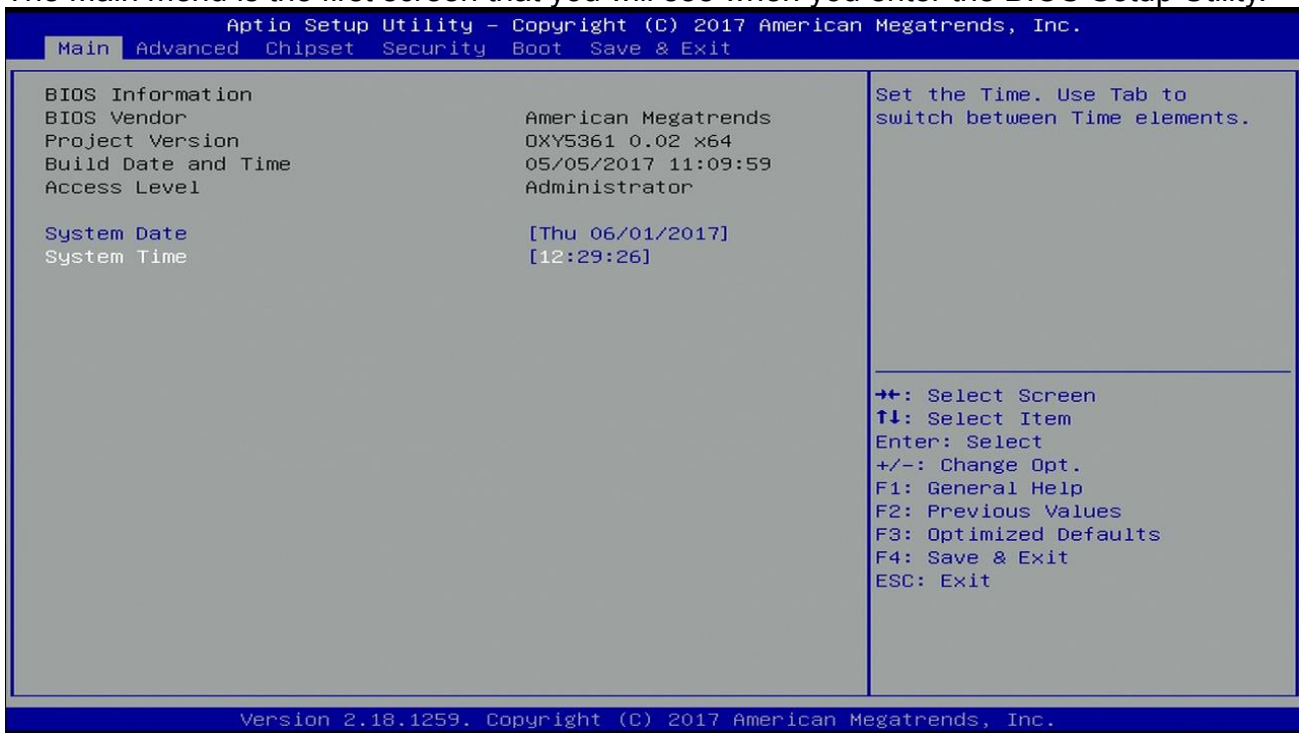


Some of the navigation keys may differ from one screen to another.

Left/Right	The Left and Right <Arrow> keys moves the cursor to select a menu.
Up/Down	The Up and Down <Arrow> keys moves the cursor to select a setup screen or sub-screen.
+– Plus/Minus	The Plus and Minus <Arrow> keys changes the field value of a particular setup setting.
F1	The <F1> key offer general help.
F2	The <F2> key load previous values.
F3	The <F3> key load optimized defaults.
F4	The <F4> key saves any changes made and exits the BIOS setup utility.
Esc	The <Esc> key discards any changes made and exits the BIOS setup utility.
Enter	The <Enter> key displays a sub-screen or changes a selected or highlighted option in each menu.

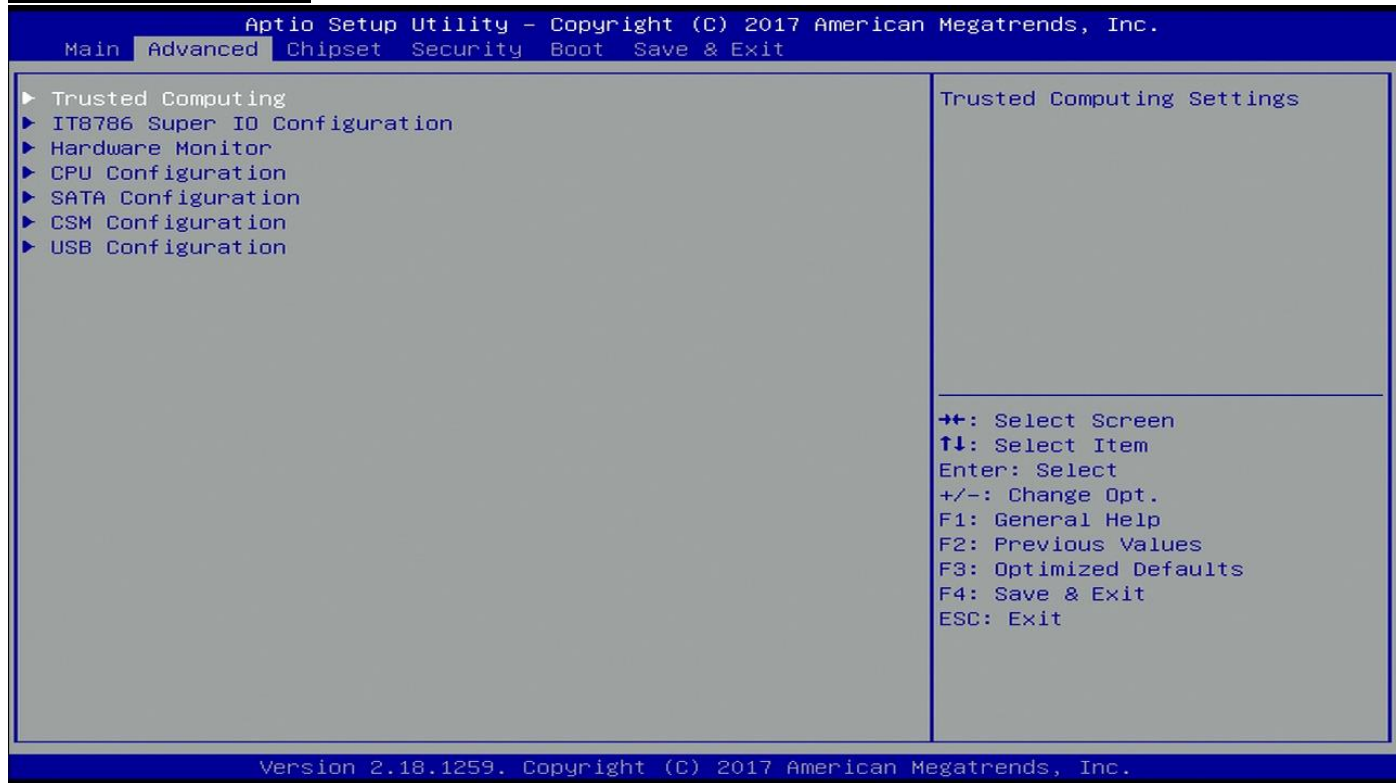
3.3 Main Menu

The Main menu is the first screen that you will see when you enter the BIOS Setup Utility.



3.4 Advanced Menu

The Advanced Menu allows you to configure your system for basic operation. Some entries are defaults required by the system board, while others, if enabled, will improve the performance of your system or let you set some features according to your preference. **Setting incorrect field values may cause the system to malfunction.**



3.4.1 Trust Computing

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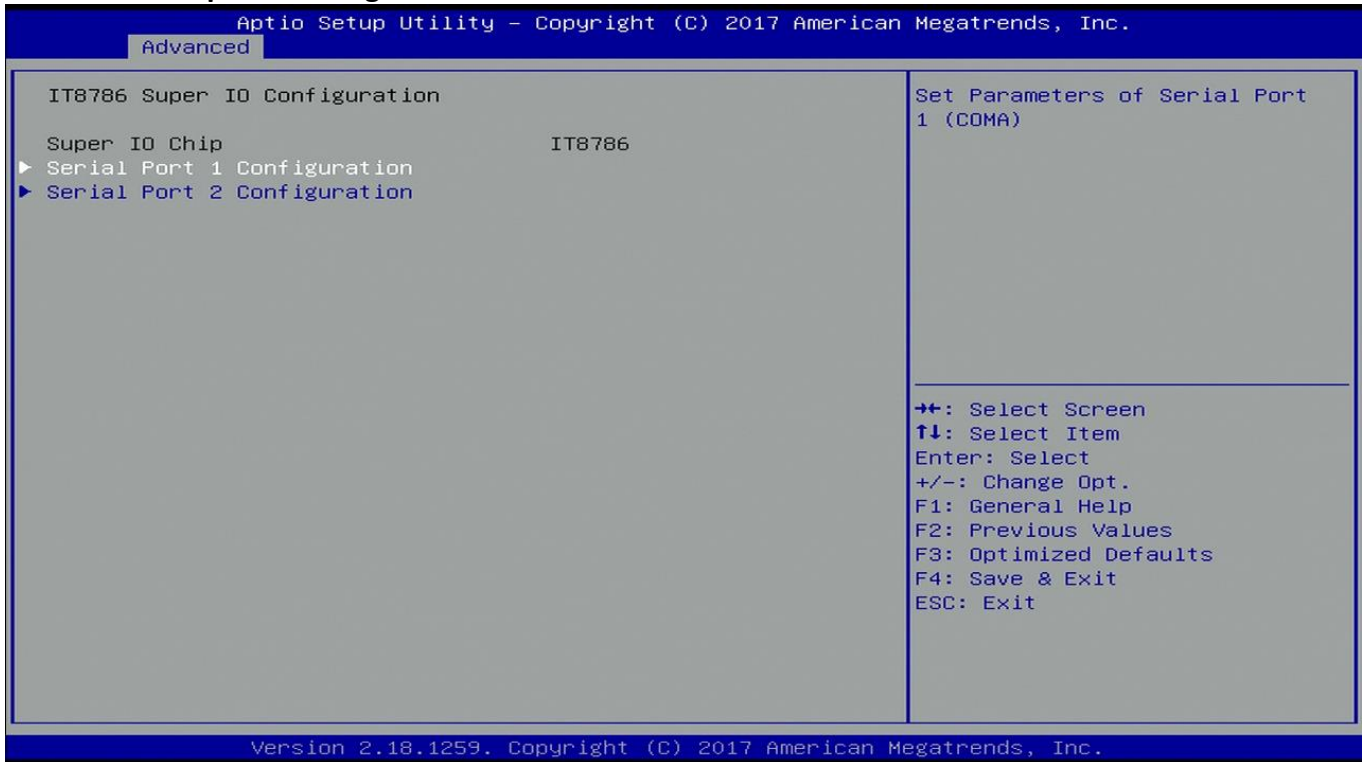
Advanced

Configuration Security Device Support [Enable] NO Security Device Found	Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.
---	---

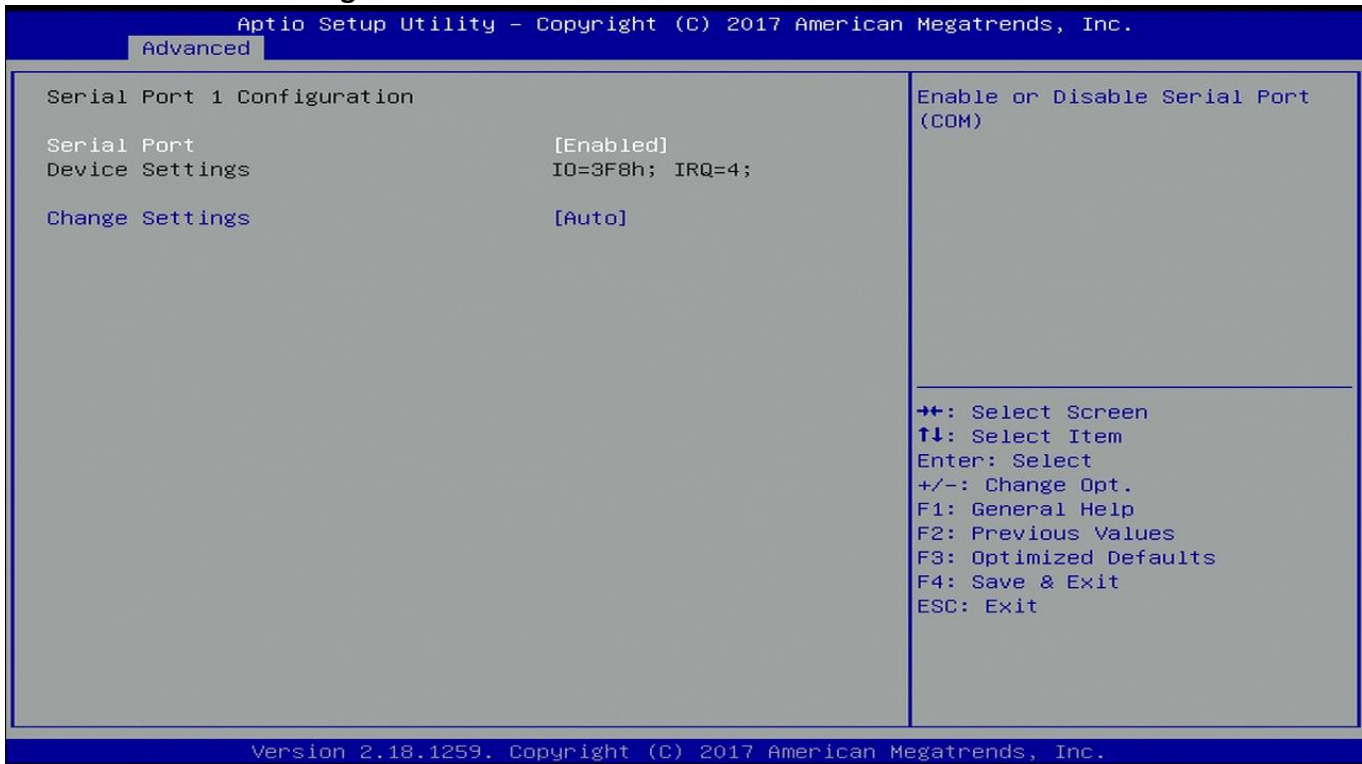
++: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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3.4.2 IT8786 Super IO Configuration



3.4.2.1 Serial Port 1 Configuration



3.4.2.2 Serial Port 2 Configuration

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Advanced

Serial Port 2 Configuration

Serial Port	[Enabled]
Device Settings	ID=2F8h; IRQ=3;
Change Settings	[Auto]
Device Mode	[RS422]
Device Termination	[Disabled]

Enable or Disable Serial Port (COM)

++: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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Advanced

Serial Port 2 Configuration

Serial Port	[Enabled]
Device Settings	ID=2F8h; IRQ=3;
Change Settings	[Auto]
Device Mode	[RS422]
Device Termination	[Disabled]

RS232/RS422/RS485 mode

Device Mode

- RS232
- RS422
- RS485

++: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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3.4.3 Hardware Monitor

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Advanced

<p>Pc Health Status</p> <p>CPU temperature : +47 C</p> <p>Fan Speed : N/A</p> <p>VCORE : +0.960 V</p> <p>VDDQ : +1.200 V</p> <p>+12V : +11.808 V</p> <p>+5V : +5.160 V</p> <p>VSB3V : +3.312 V</p> <p>VBAT : +3.048 V</p>		<p>→←: Select Screen</p> <p>↑↓: Select Item</p> <p>Enter: Select</p> <p>+/-: Change Opt.</p> <p>F1: General Help</p> <p>F2: Previous Values</p> <p>F3: Optimized Defaults</p> <p>F4: Save & Exit</p> <p>ESC: Exit</p>
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3.4.4 CPU Configuration

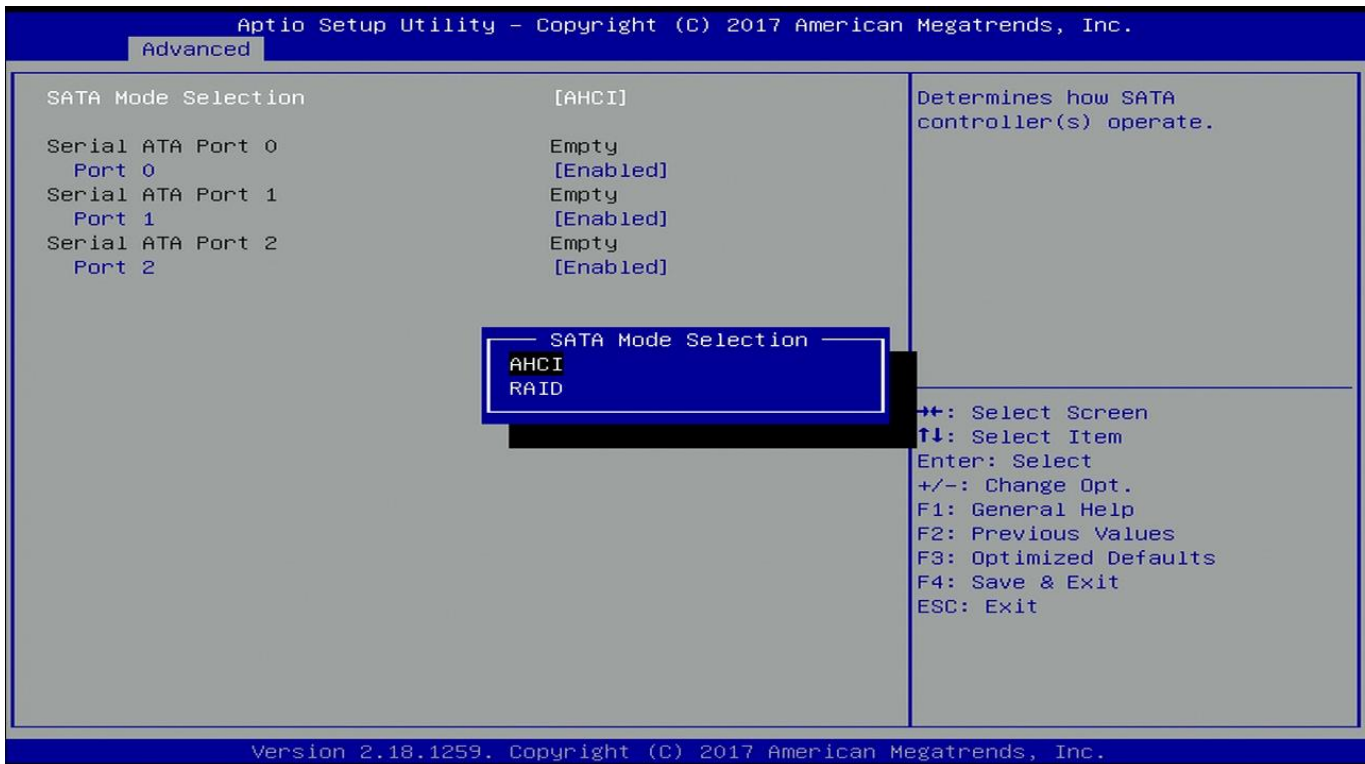
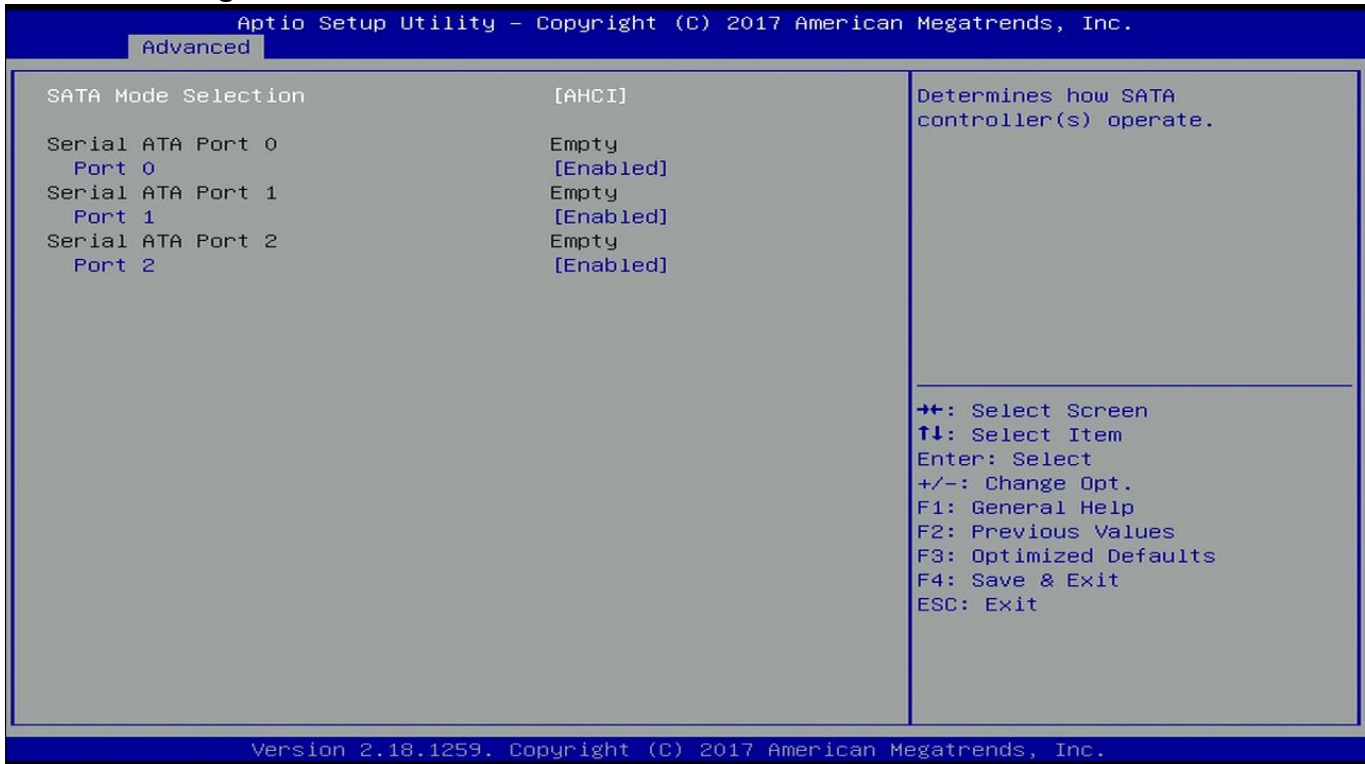
Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.

Advanced

<p>CPU Configuration</p> <p>Intel(R) Core(TM) i7-6600U CPU @ 2.60GHz</p> <p>CPU Signature : 406E3</p> <p>CPU Speed : 2600 MHz</p> <p>Processor Cores : 2</p> <p>Hyper Threading Technology : Supported</p> <p>L1 Data Cache : 32 KB x 2</p> <p>L1 Code Cache : 32 KB x 2</p> <p>L2 Cache : 256 KB x 2</p> <p>L3 Cache : 4 MB</p> <p>Hyper-threading : [Enabled]</p> <p>Active Processor Cores : [All]</p>		<p>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.</p> <p>→←: Select Screen</p> <p>↑↓: Select Item</p> <p>Enter: Select</p> <p>+/-: Change Opt.</p> <p>F1: General Help</p> <p>F2: Previous Values</p> <p>F3: Optimized Defaults</p> <p>F4: Save & Exit</p> <p>ESC: Exit</p>
---	--	---

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3.4.5 SATA Configuration



3.4.6 CMS Configuration

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Advanced

<p>Compatibility Support Module Configuration</p> <p>CSM Support [Enabled]</p> <p>CSM16 Module Version 07.79</p> <p>Boot option filter [UEFI and Legacy]</p> <p>Option ROM execution</p> <p>Network [Do not launch]</p> <p>Storage [Legacy]</p> <p>Video [Legacy]</p> <p>Other PCI devices [UEFI]</p>	<p>Enable/Disable CSM Support.</p> <hr/> <p> ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit </p>
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3.4.7 USB Configuration

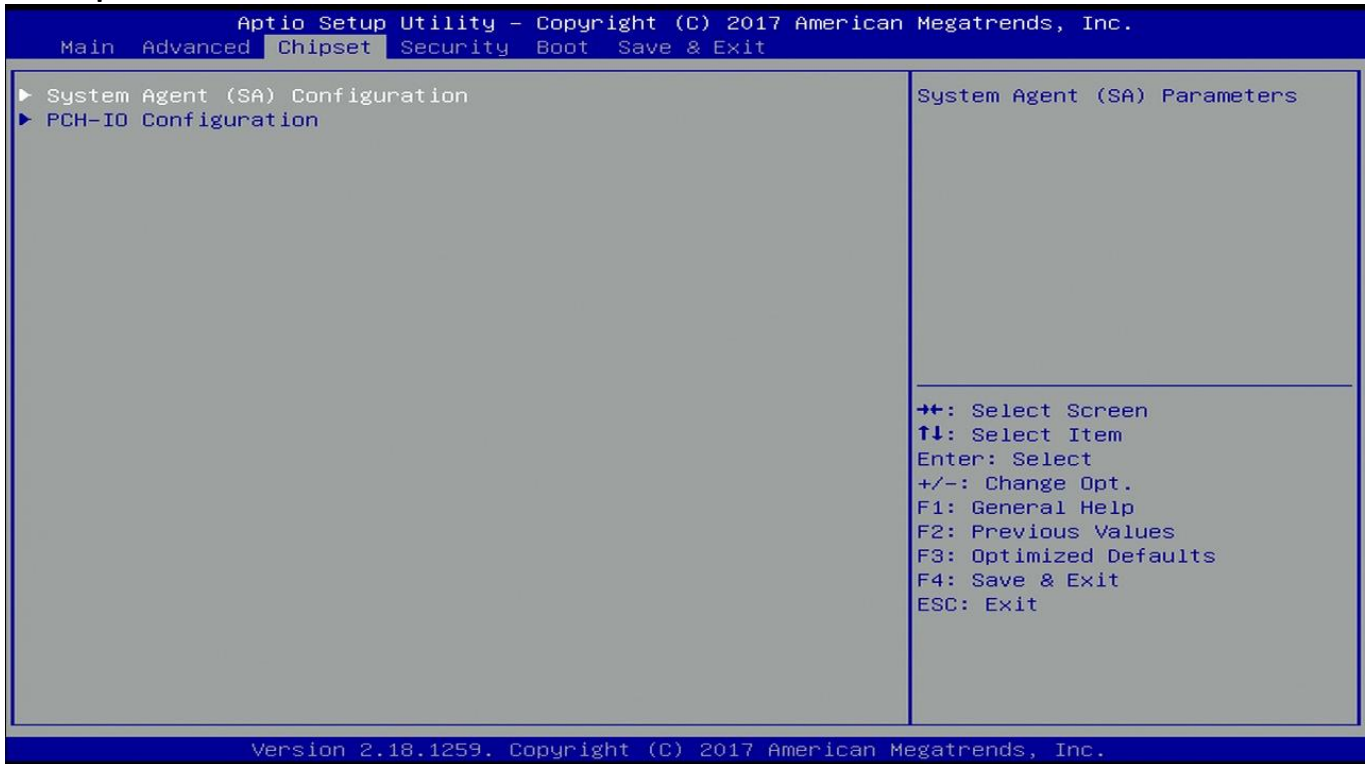
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Advanced

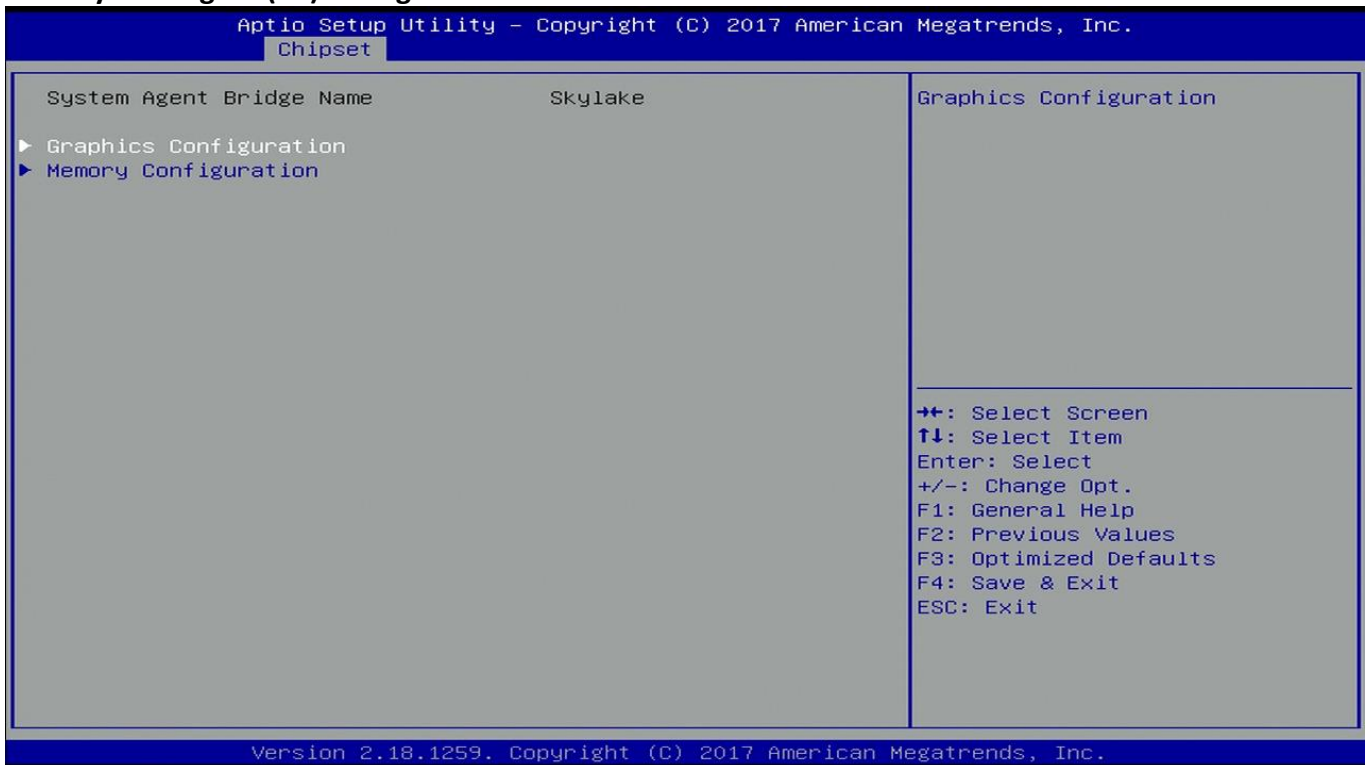
<p>USB Configuration</p> <p>USB Devices: 1 Keyboard</p> <p>Legacy USB Support [Enabled]</p> <p>XHCI Hand-off [Enabled]</p>	<p>Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.</p> <hr/> <p> ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit </p>
--	---

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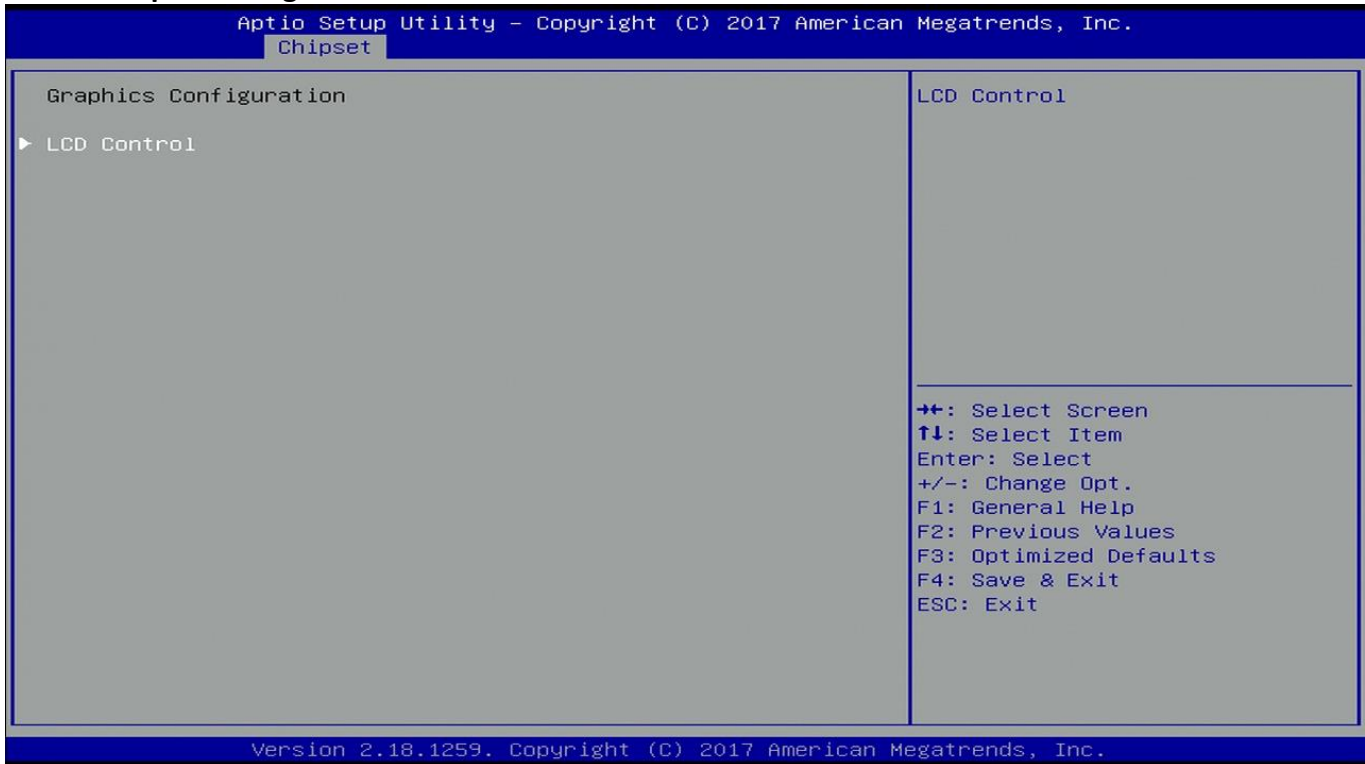
3.5 Chipset



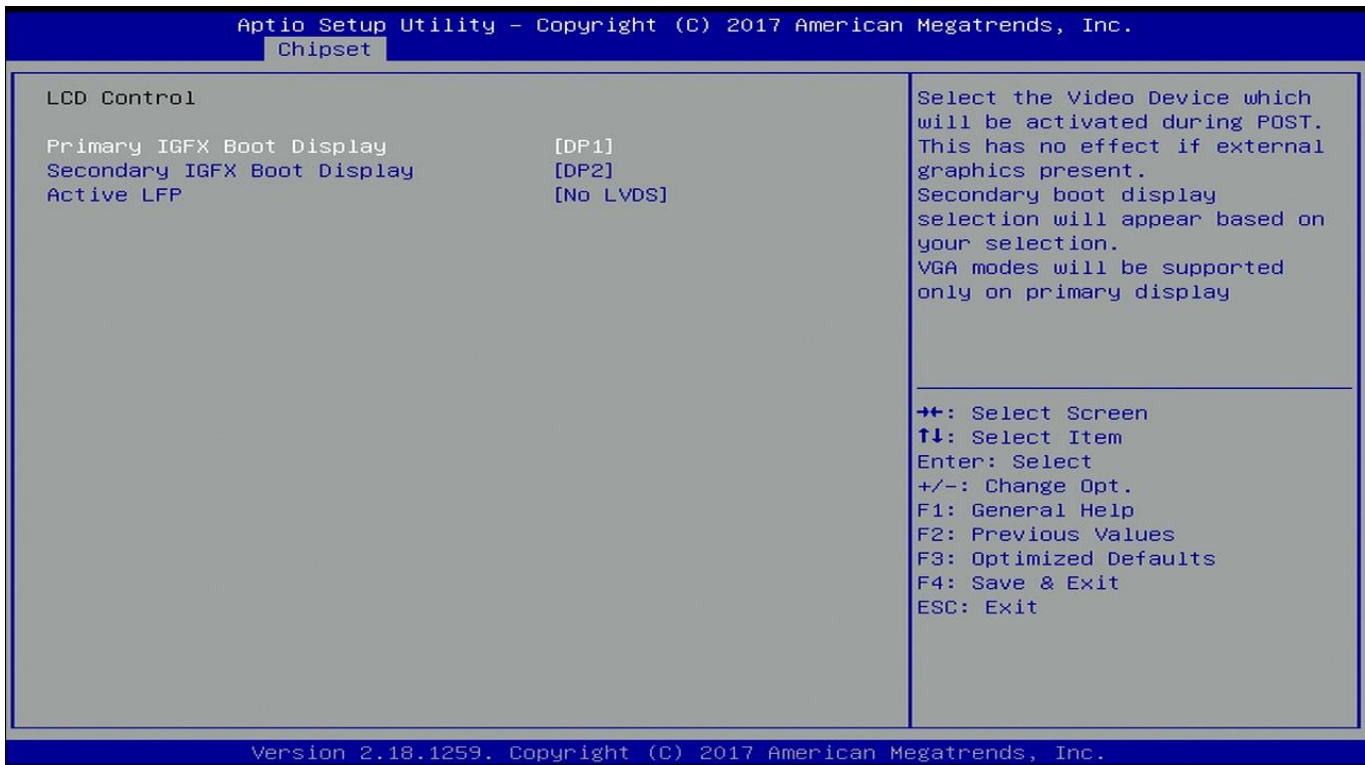
3.5.1 System Agent (SA) Configuration



3.5.1.1 Graphic Configuration



3.5.1.1.1 LCD Control



3.5.1.2 Memory Configuration

Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.

Chipset

Memory Configuration	
Total Memory	16384 MB
DIMM#1	16384 MB
DIMM#2	Not Present

++: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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3.5.2 PCH-IO Configuration

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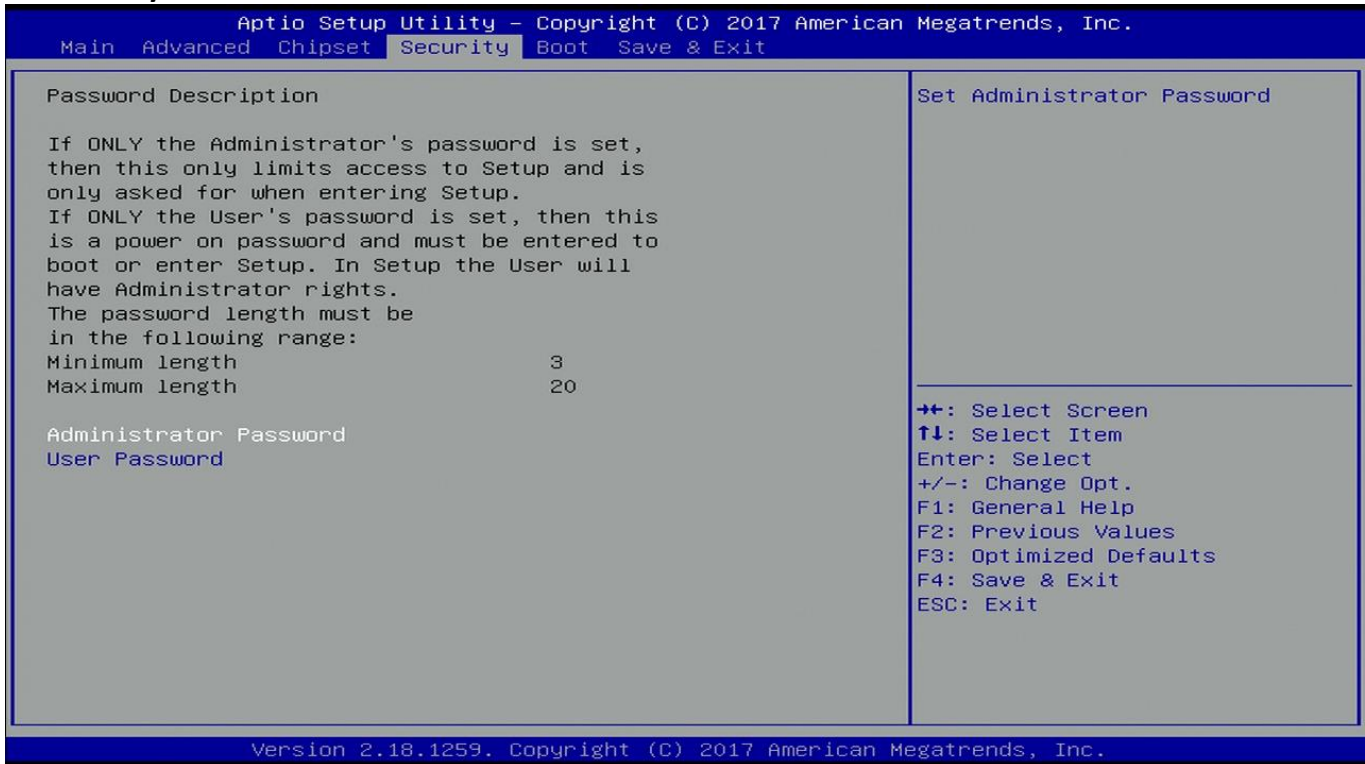
Chipset

Intel PCH RC Version	2.0.0.0
Intel PCH SKU Name	PCH-LP Mobile (U) Premium SKU
Intel PCH Rev ID	21/C1

++: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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3.6 Security



Administrator Password

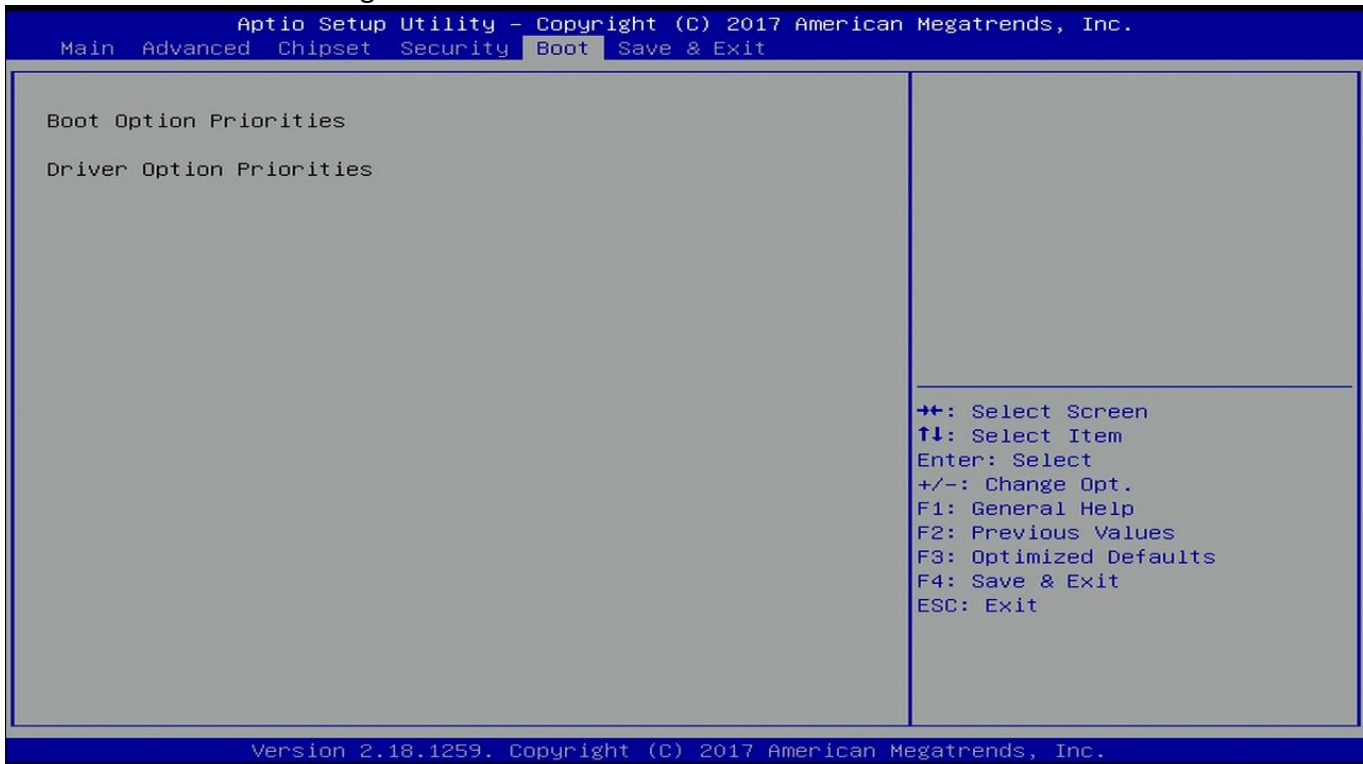
Set administrator password.

User Password

Set user Password.

3.7 Boot Menu

This section is used to configure the boot features.



3.8 Save & Exit

