FUDA2-S1x21 Series Panel PC

(10.4”/12.1”/15”/17”/19”)

Slim and Fan-less Projective Capacitive Touch Panel PC with
Wide Temperature and Panel Mount Support
Powered by Intel® Atom™ Bay Trail Quad-core Processor

User's Manual

Version 1.0

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How to Use This Manual

The manual describes how to configure your FUDA2-S1x21 Series Panel PC system to meet various operating requirements. It is divided into four chapters, with each chapter addressing a basic concept and operation of Fan-less Panel PC System.

Chapter 1: System Overview. Present what you have in the box and give you an overview of the product specifications and basic architecture for Panel PC system.

Chapter 2: System Installation. Show the definitions and locations of all the interfaces and describe a proper installation guide so that you can easily configure your system.

Chapter 3: Driver Installation and Touch Usage Guide. Describe the operation guide for included driver and software.

Chapter 4: BIOS Setup Information. Specify the meaning of each setup parameters, how to get advanced BIOS performance and update new BIOS. In addition, POST checkpoint list will give users some guidelines of trouble-shooting.

Chapter 5: Important Instructions. Indicate some instructions which must be carefully followed when the Panel PC system is used.

Chapter 6: Frequent Asked Questions. Provide the answers for the most frequently asked questions.

The content of this manual is subject to change without prior notice. These changes will be incorporated in new editions of the document. The vendor may make supplement or change in the products described in this document at any time.

Portwell, Inc. clearly informs the users that this manual only encloses a general description of technical processes and instructions which may not be applicable in every single case. In cases of doubt, please contact Portwell, Inc.

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Revision History

Revision	Date	Details of Change(s)
V1.0	2017/4/19	Initial Release

Chapter 1
System Overview

1.1 Introduction

Powered by Intel® Atom™ platform, Bay Trail-I SoC processor E3845, which provides extended temperature and high I/O connectivity within 10W thermal design power (TDP), FUDA2 Panel PC is an ideal platform for applications like highly efficient and dedicated image signal processing with secure content delivery and visually appealing HMI thin clients.

Equipped with a high resolution panel and a sleek, responsive, multi-touch screen, FUDA2 Multi-Touch Panel PC comes with an IP65 rated front bezel and true-flat design. This allows the system to be operated in harsh environment. With its refined appearance, rugged mechanical chassis and multiple modular flexibility, FUDA2 Panel PC's application-oriented design provides customers an ideal HMI solution for factory automation applications.

Thanks to its robustness and easy operation, Panel PC with projective capacitive touch screen becomes a popular solution in the factory automation industry. With the latest touch screen technology, FUDA2 Multi-Touch Panel PC Series is responsive even when thick industrial gloves are worn and supports palm rejection. Moisture, contaminant, and cutting oil are common in an industrial environment, so it is important these materials don’t cause any false actions to the machine. Last but not least, its excellent noise immunity makes it suitable in industrial application.

FUDA2 Panel PC features all required interfaces for industrial application: 12V ~ 24V DC input, dual LAN, multiple USB ports and RS-232/422/485 selectable in BIOS with auto-flow function. Different I/O extension kits can be chosen to serve different market demand.

1.2 Check List

The FUDA2-S1x21 Series Panel PC package covers the following items:

Essential

✓ One FUDA2-S1x21 Panel PC

Panel Size	Model Name
10.4”	FUDA2-S1021
12.1”	FUDA2-S1221
15”	FUDA2-S1521
17”	FUDA2-S1721
19”	FUDA2-S1921

✓ Screws for HDD installation

M3X4L Screw 4 pieces

✓ Driver CD

✓ 3-pin Terminal Block Connector (Female)

Optional

✓ Panel Mount Kits

Panel Size	Kits (pcs)
10.4”	8 pieces
12.1”	8 pieces
15”	14 pieces
17”	16 pieces
19”	20 pieces

✓ 60W Power Adapter with Power Cord (EU/US type) and Switch Cable

60W Power Adapter

Power Cord (US type)

Power Cord (EU type)

Power Switch Cable (from DC Jack to 3-pin TBC)

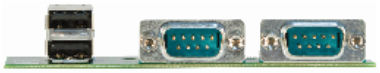
✓ I/O Extension Kit for FUDA2-S1021

2x RS-232/422/485
(Expansion: Option 0)

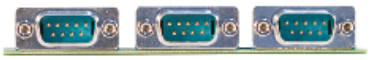
1x RS-232/422/485, 1x Line-out
(Expansion: Option 1)

2x USB 2.0, 1x Line-out
(Expansion: Option 2)

✓ I/O Extension Kit for FUDA2-S12/15/17/1921



2x RS-232/422/485, 2x USB 2.0
(Expansion: Option 0)



2x RS-232/422/485, 1x RS-232
(Expansion: Option 1)

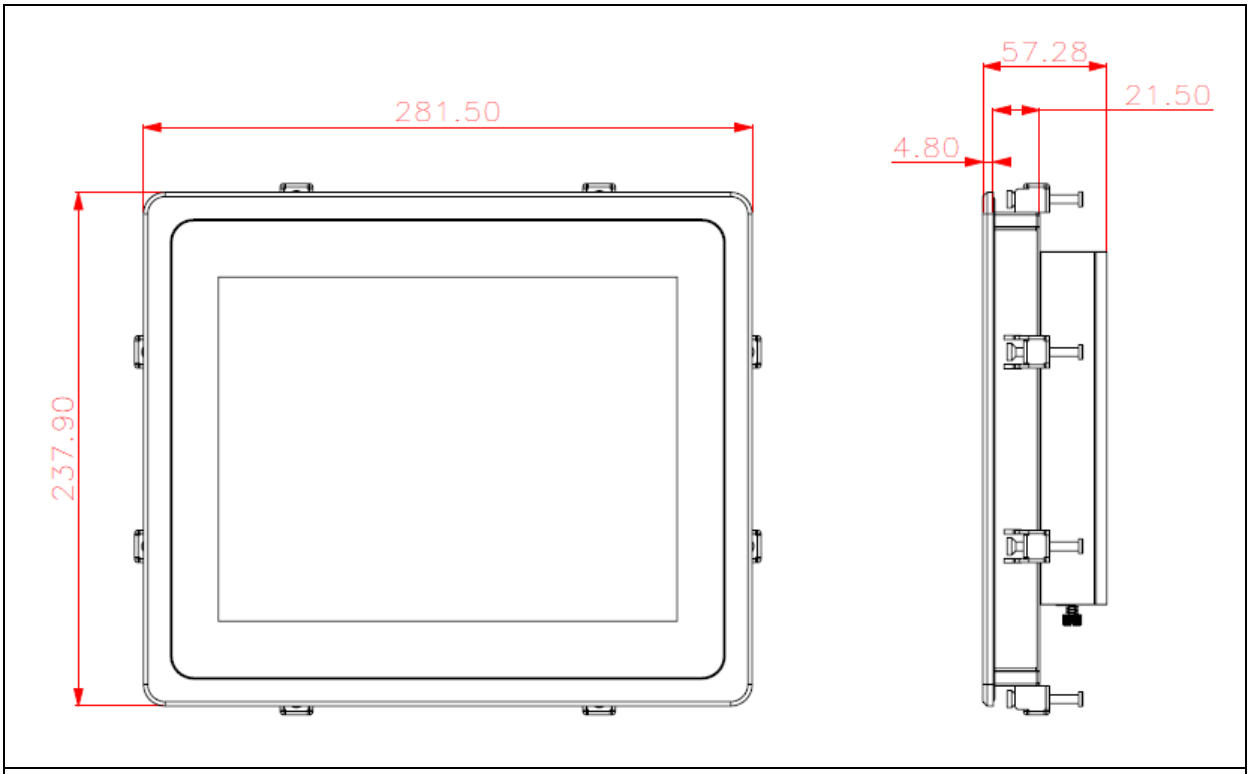
1x RS-232/422/485, 2x USB 2.0 and 1x Line-out
(Expansion: Option 2)

If any of these items is damaged or missing, please contact your vendor and keep all packing materials for future replacement and maintenance.

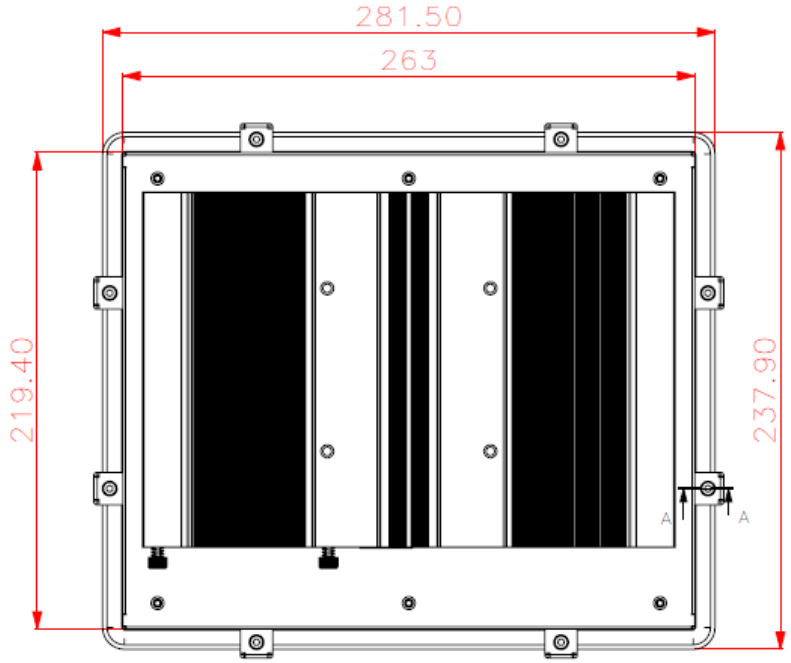
1.3 Product Specification

Model Name	FUDA2-S1021	FUDA2-S1221	FUDA2-S1521	FUDA2-S1721	FUDA2-S1921
	Display				
LCD Size	10.4"	12.1"	15"	17"	19"
Resolution	XGA 1024 x 768	XGA 1024 x 768	XGA 1024 x 768	SXGA 1280 x 1024	SXGA 1280 x 1024
Brightness	450 cd/m^2	600 cd/m^2	450 cd/m^2	350 cd/m^2	350 cd/m^2
Contrast Ratio	3000:1	700:1	700:1	1000:1	1000:1
Backlight	LED type	LED type	LED type	LED type	LED type
Touch Window	Projective Capacitive Multi-Touch (10 points)				
	System				
SOC	Intel® Atom™ Quad-Core E3845 (1.91 GHz)				
Memory	DDR3L SO-DIMM 1333/1600 MHz max up to 8 GB				
BIOS	AMI				
Graphics	Intel® Gen7 Graphics				
LVDS	Single/Dual Channel 24-bit				
LAN Chipset	Dual Intel® I210IT Gigabit Ethernet (Support Jumbo Frame)				
Audio	Realtek® High Definition Audio Codec				
Watchdog Timer	Programmable 1~255 secs				
Storage Device	2.5" SATA HDD / SSD, Compact Flash II up to 64 GB, SD card				
OS	Windows 7 / Windows 8.1 / Windows 10 / Linux™				
	I/O Interface				
Series Port	2 x RS-232/422/485 (Expansion : Option 0)				
Display	1 x DVI-I				
USB	1 x USB 2.0, 1 x USB 3.0	1 x USB 2.0, 1 x USB 3.0, 2 x USB 2.0 (Expansion: Option 0)			
Ethernet	2 x Gigabit Ethernet				
Others	1 x SMA Antenna hole for WiFi/3G Solution				
Expansion	1 x Half mPCIe socket 1 x RS-232/422/485, 1 x Line-out (Option 1) 1 x Line-out, 2 x USB 2.0 (Option 2)	1 x Half-size Mini PCIe socket 2 x RS-232/422/485, 1 x RS-232 (Expansion: Option 1) 1 x Line-out, 1 x RS-232/422/485, 2 x USB 2.0 (Expansion: Option 2)			
	Mechanical				
Mounting (mm)	VESA Mount 75 x 75 & 100 x 100 ; Panel Mount				
Weight (Kg)(N)	3.5 Kg	3.9 Kg	5.1 Kg	6.5 Kg	7.6 Kg
Weight (Kg)(G)	5.8 Kg	6 Kg	7.8 Kg	9.8 Kg	11.5 Kg
Dimension	282 x 238 x 57.3 mm	305 x 260 x 58.2 mm	384 x 310 x 56.6 mm	437 x 375 x 63.2 mm	480 x 400 x 60.4 mm
	Power				
Power Supply	DC 12 ~ 24V input with 3-pin Terminal Block Connector				
Consumption (Max)	41W (12V); 40W (24V)	34W (12V); 34W (24V)	39W (12V); 38W (24V)	47W (12V); 46W (24V)	40W (12V); 42W (24V)
Consumption (Min)	15W (12V); 16W (24V)	13W (12V); 14W (24V)	16W (12V); 17W (24V)	14W (12V); 15W (24V)	20W (12V); 21W (24V)
Power Adaptor	12V, 5A/60W(Optional)				
	Environmental				
OP /Storage Temp	-25~70 ℃ / -40~85℃(20~90% non-condensing)				
Vibration	1.0G (CF/SSD/SD) and 0.5G (HDD) , Power on & 2.16G, Packaged; 5~500Hz, IEC 60068-2-6				
Shock	15G peak acceleration, 11 ms (Power on condition), IEC 60068-2-27				
Drop	Package with Carton from 96.5 cm (1-Corner, 3-Axis, 6-Face), ISTA 2A Standard				
Front Panel Protection	IP65 (Front) / IP20 (Rear), IEC 60529 Edition 2.1 Standard				
Certification	CE/FCC Class A				
Pollution Degree	2				

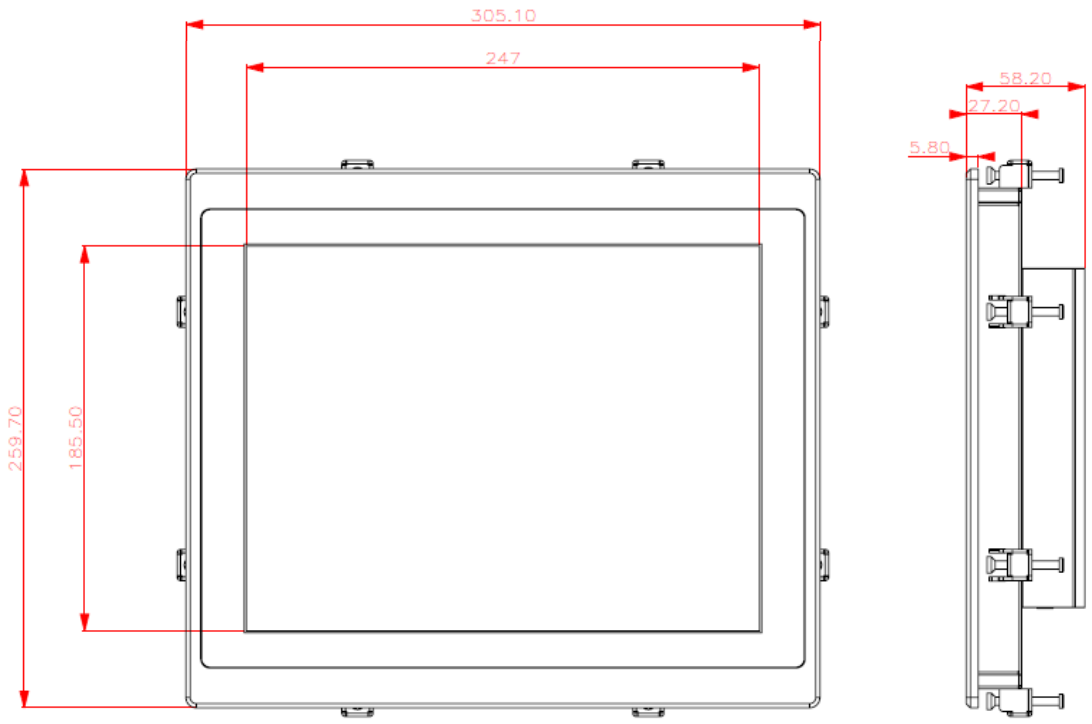
1.4 Mechanical Dimension



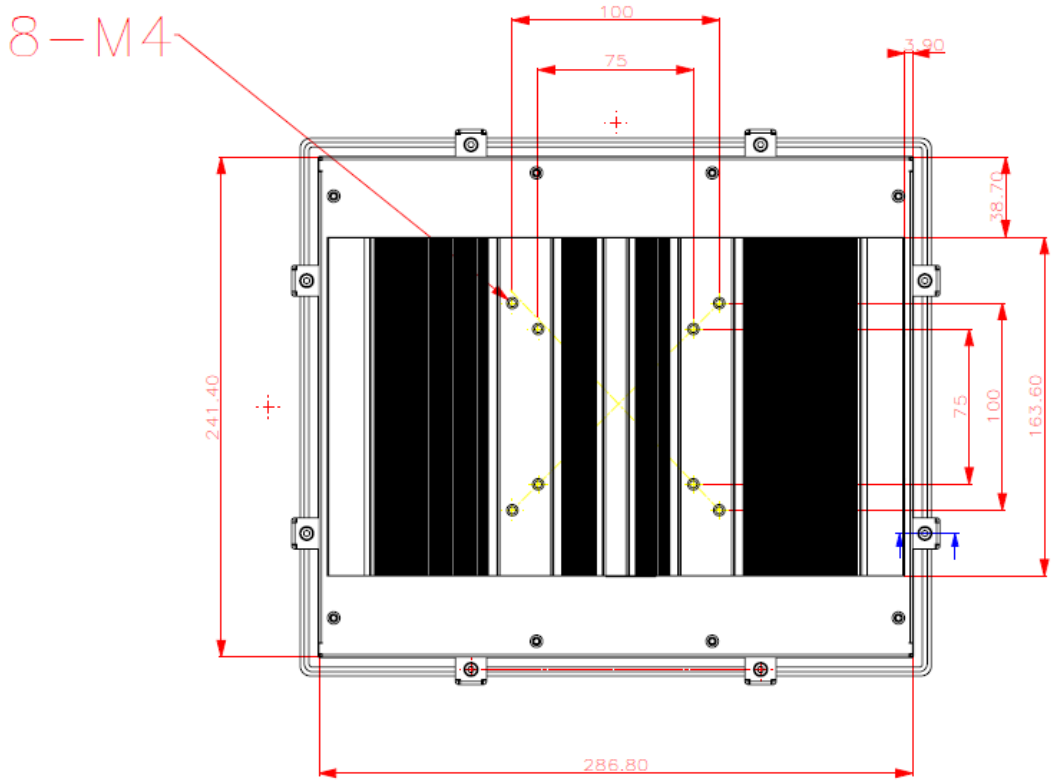
Front and side view of the FUDA2-S1021 system



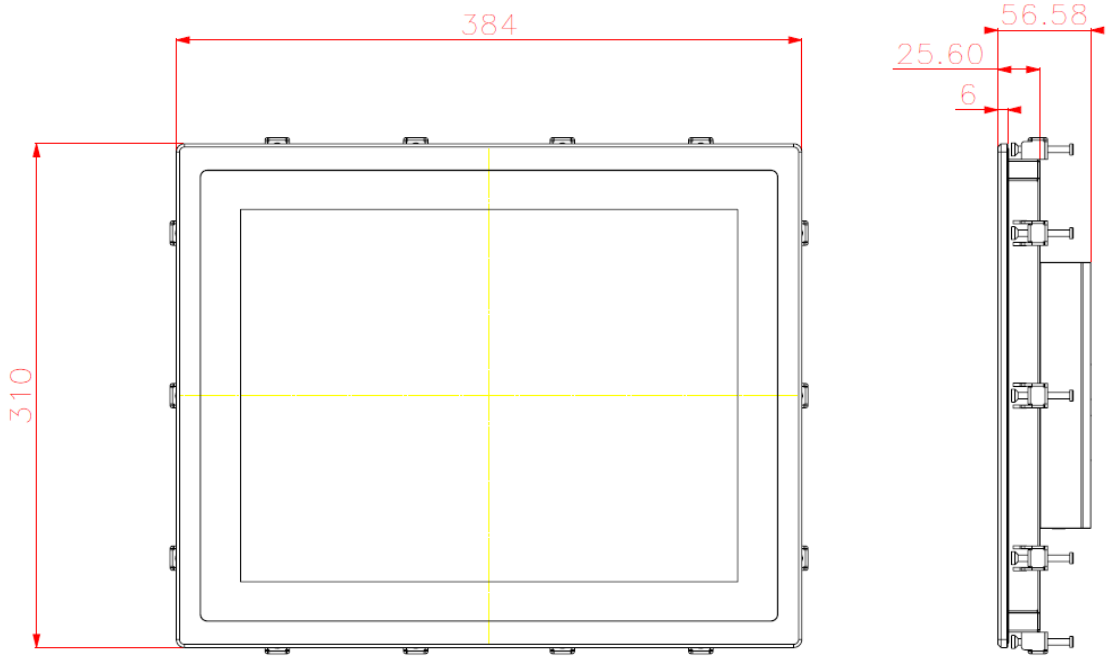
Back view of the FUDA2-S1021 system



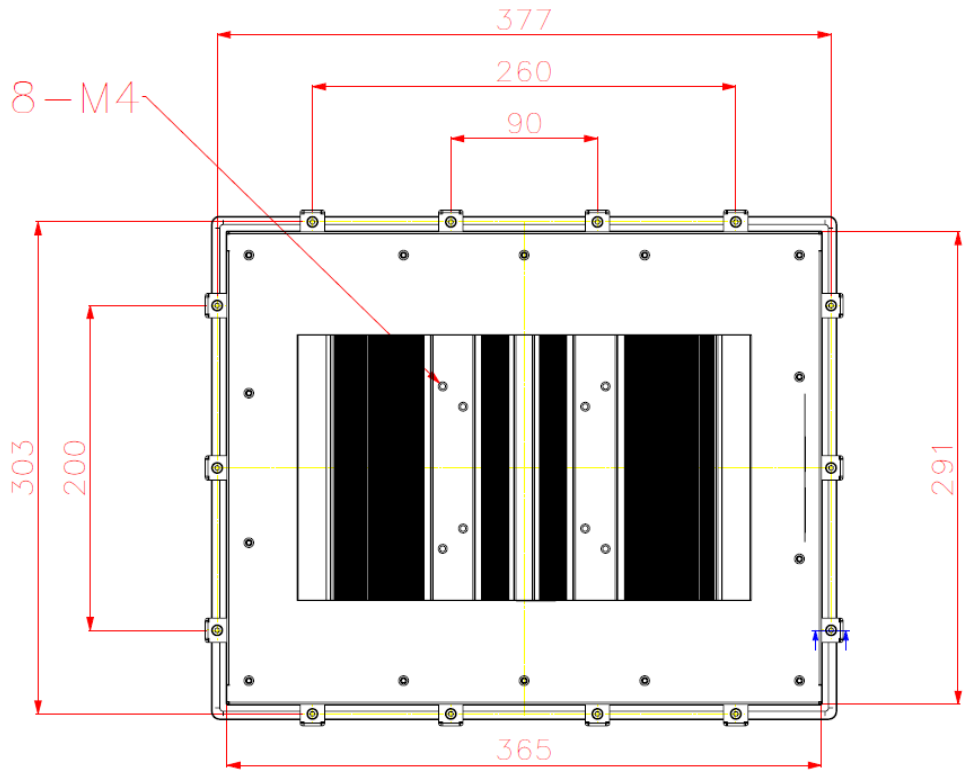
Front and side view of the FUDA2-S1221 system



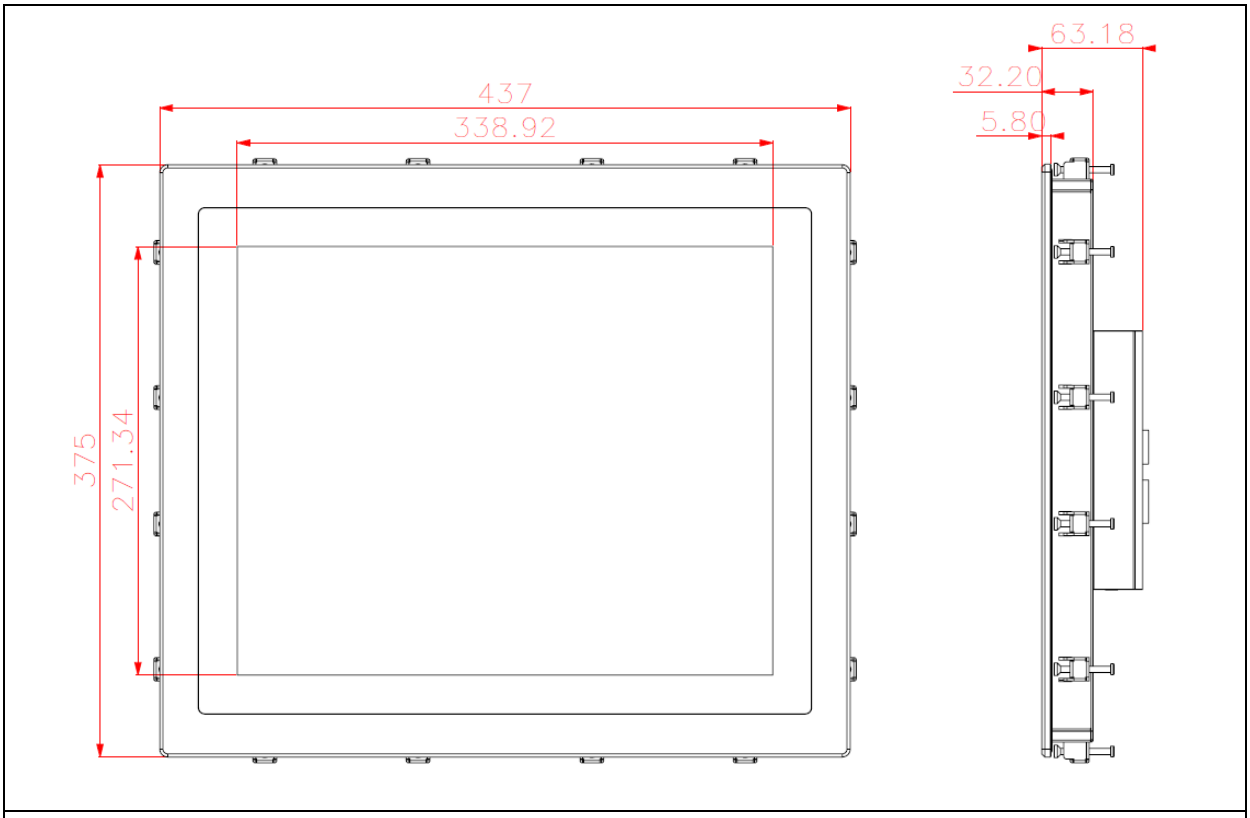
Back view of the FUDA2-S1221 system



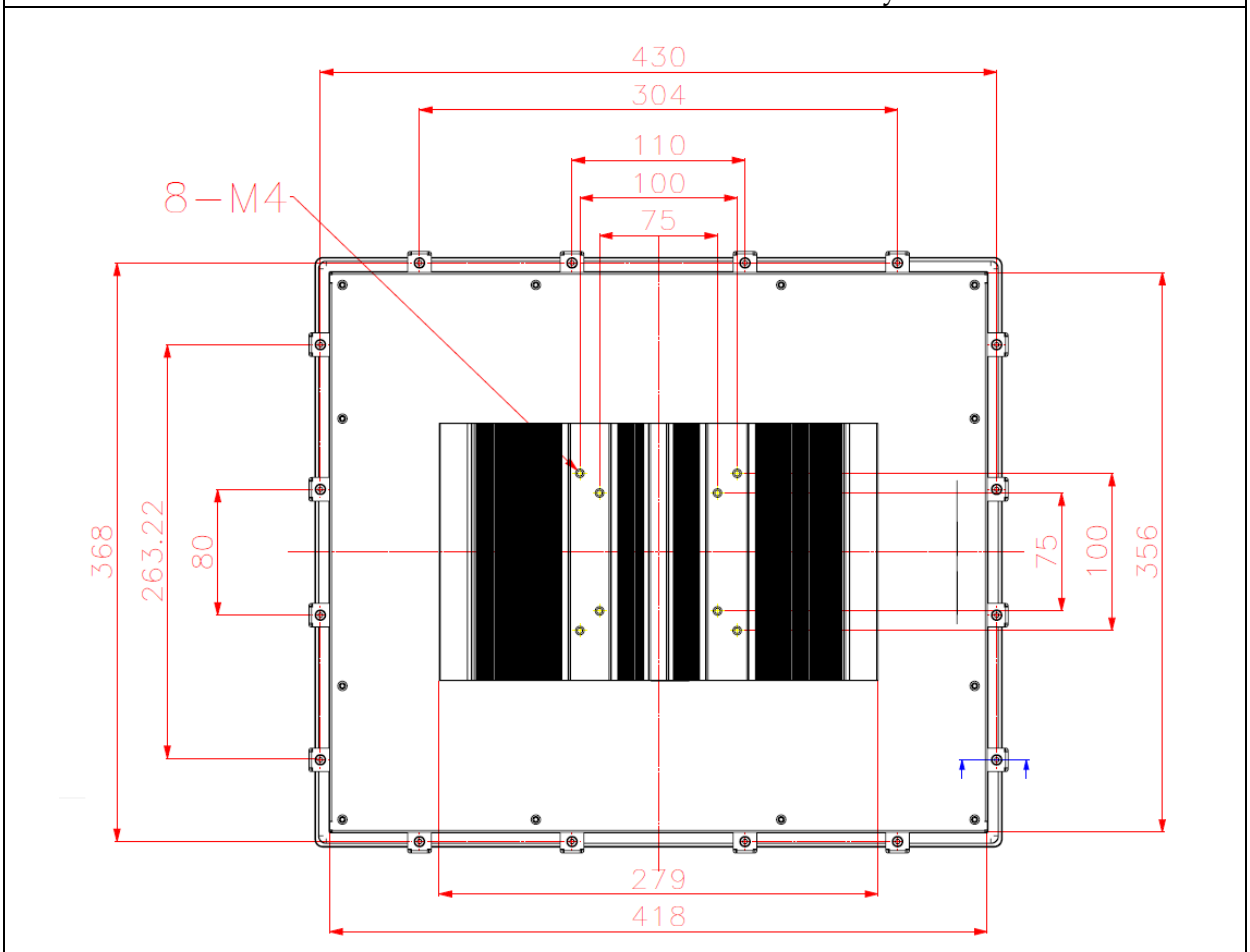
Front and side view of the FUDA2-S1521 system



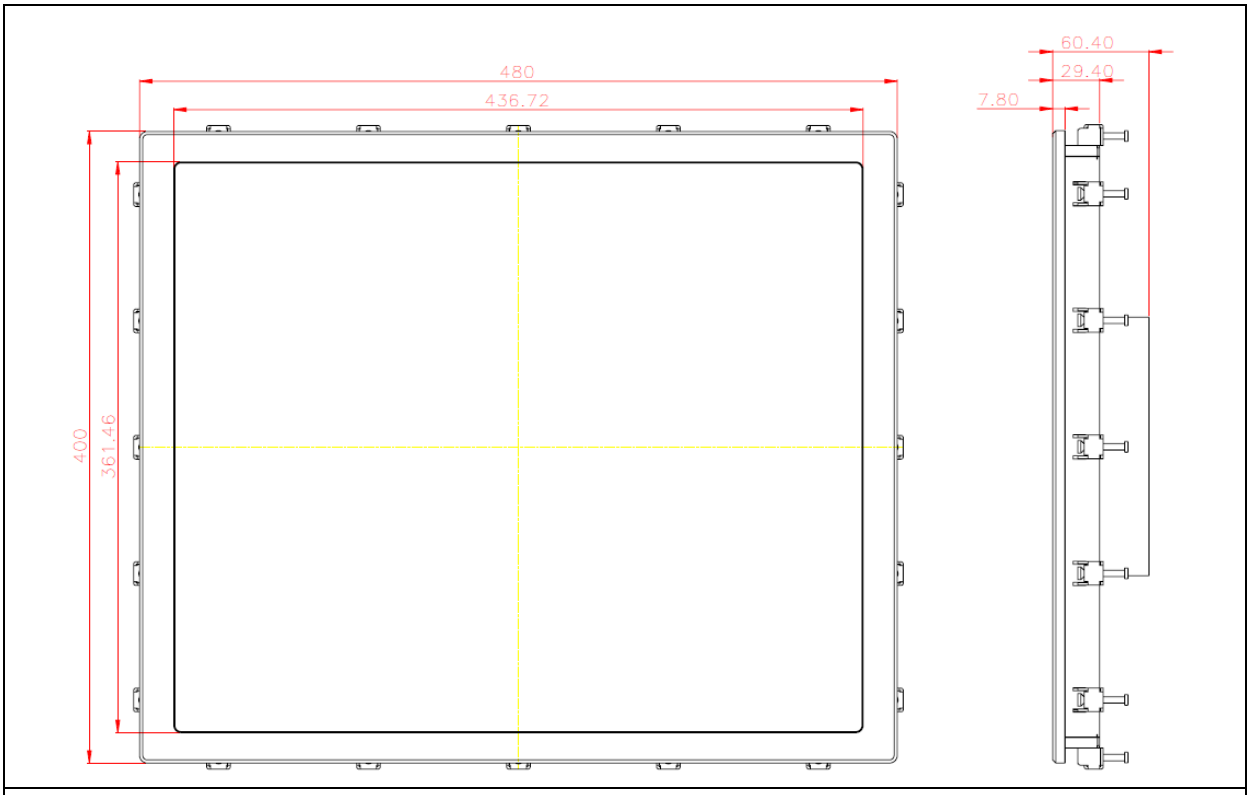
Back view of the FUDA2-S1521 system



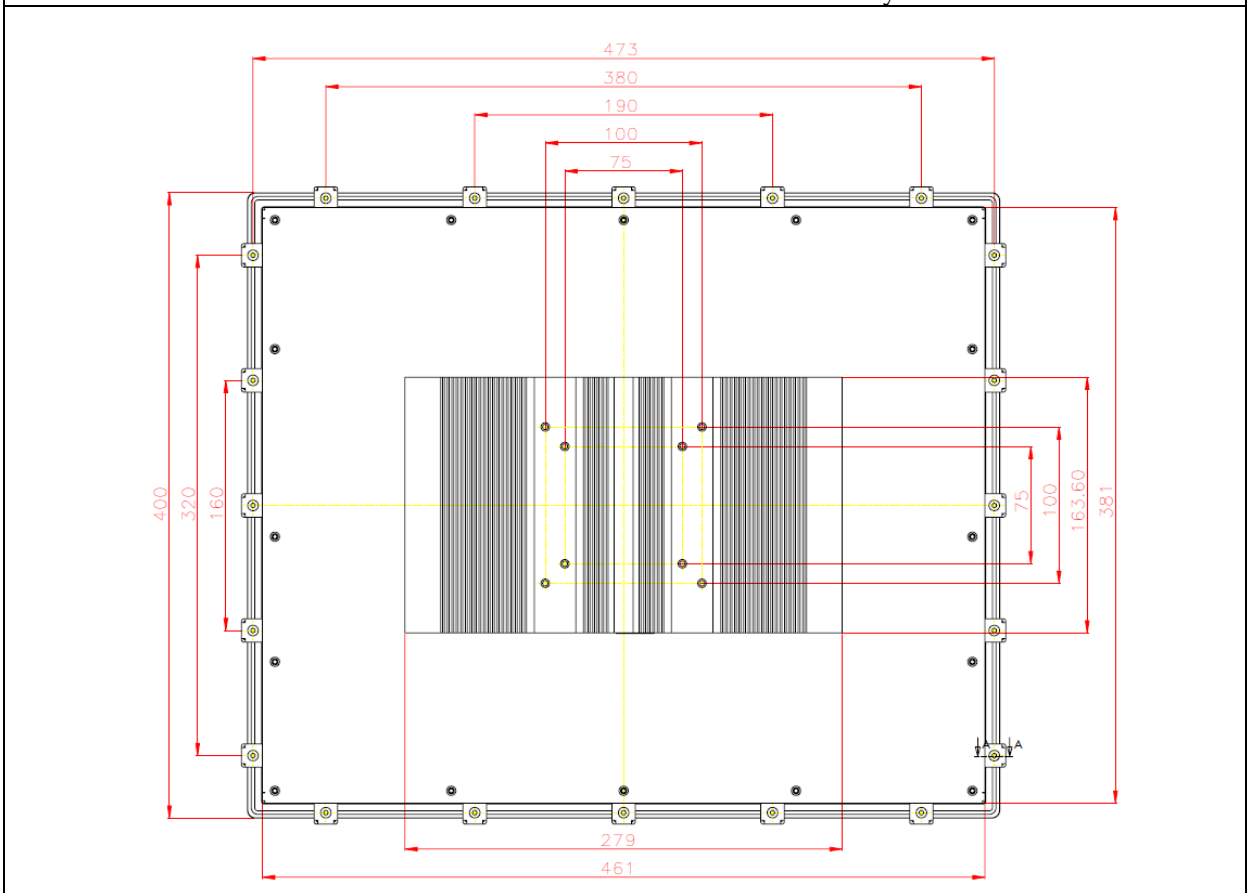
Front and side view of the FUDA2-S1721 system



Back view of the FUDA2-S1721 system



Front and side view of the FUDA2-S1921 system



Back view of the FUDA2-S1921 system

1.5 Safety Instruction

Caution:
This section should be carefully read and please abide by the instructions for your own safety and correct use of the unit.

The chapter also includes information on approval and interference inhibition of your unit. Please abide by the warnings and instructions on the unit and in the manual.
The FUDA2-S1x21 Series Panel PC was built and tested by Portwell, Inc. in accordance with and kept the company within under perfectly safe condition.
In order to retain this condition and ensure safe operation, the users must abide by the instructions and warnings

- The unit must be used in accordance with the instructions of usage.
- The electrical installations in the room must not violate the requirements of the local (country-specific) regulations.
- Pay careful attention that there are no cables, especially power cables, in areas that people can go over them.
- Only use the power cord supplied as specification. Don't use damaged power cords.

Hints for DC power connection: The DC power source should be able to be switched off and on via an isolating switch. The unit is only completely disconnected from the DC main power source when the DC power cord is disconnected either from the power source or the unit. Therefore, the DC power cord and its connectors must always remain within reach. The Power source should be SELV or from the secondary circuits are circuits where separation from MAINS CIRCUITS is achieved by a transformer in which the primary windings are separated from the secondary windings by REINFORCED INSULATION, DOUBLE INSULATION, or a screen connected to the PROTECTIVE CONDUCTOR TERMINAL
Hints for AC power connection via external AC/DC adapter: The main power cable of the optional external AC/DC adapter serves as disconnecting device. For this reason the outlet of the AC power source must be located near to the device and easy to reach.

- Never place the unit under direct sunlight, near heat sources or in a humid place. Make sure the unit has proper ventilation.
- All plugs on the connection cables must be screwed or locked to the housing.
- FUDA2-S1x21 Series Panel PC is designed to be used on the desk or upright with the I/O interfaces downwards.
- The unit generates heat under operation condition. Make sure it is properly ventilated. Never cover up the air intake and exhaust openings of the unit. Do not impede the fins of the heat sink.
- Be aware of the warm surface of heat sink at back side. A protective wear is recommended.

- Repairs may only be operated by specialists or technicians qualified and authorized by Portwell, Inc.
- Maintenance or repair on the open unit may only be operated by specialists or technicians qualified and authorized by Portwell, Inc. and familiar with the related hazards.
- When accessing internal components, users must switch off the unit and disconnect it from the power source.
- Only original accessories (or suggested optional parts) approved and supplied by Portwell, Inc. may be used.
- The installation that the safety of any system incorporating the equipment is the responsibility of the assembler of the system.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- Assumption of safe operation no longer possible must be taken,
  - if the unit has obvious damage or
  - if the unit no longer functions.
- Under such cases, the unit must be shut down and secured against any unintended operation.

1.5.1 Electrostatic Discharge (ESD)

A sudden discharge of electrostatic electricity can damage electrostatic-sensitive devices or circuits. Adequate packaging and grounding techniques are essential to avoid damage. Following precautions should be taken:

1. Deliver printed circuit boards in electrostatic-safe containers such as cartons, boxes or anti-static bags.
2. Keep electrostatic-sensitive parts in their containers until they reach an electrostatic-free station.
3. Follow adequate grounding when a sensitive PCB, components, or assemblies are touched.
4. Store electrostatic-sensitive PCB's in a protective packaging or on conductive foam.

1.5.2 Grounding Method

Protect against electrostatic damage of the unit by taking the following preventative measures:

1. Cover workstations with approved anti-electrostatic material. Provide a wrist strap connected to a working bench and properly grounded tools and equipment.
2. For extra protection use anti-electrostatic mats, heel straps, or air ionizers.
3. Handle electrostatic-sensitive components, PCBs, and assemblies with care nearby the case or the edge of the board.
4. Prevent contact with pins, leads, or circuitry.
5. Switch off power and input signals before plugging and removing connectors or test equipment.

6. Keep the work area free from non-conductive materials such as ordinary plastic assembly aids and Styrofoam.
7. Use field service tools with conductivity, such as screwdrivers, pliers, and vacuum cleaners.
8. Always put drives and PCBs with the component-side down on the working bench.

1.5.3 Instructions for the Lithium Battery

Caution:
Please contact. Portwell, Inc directly. Prohibit replace by user

Do not throw away used CMOS batteries to domestic waste. Throw away the battery according to the local regulations pertaining to the disposal of these special materials (e. g. to the collecting points for disposal of batteries).

1.5.4 FCC Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15B of the FCC Rules. These limits are designed to provide reasonable protection from harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in residential areas is likely to cause harmful interference in which case the users will be required to correct the interference at his/her own expense.

1.5.5 Electromagnetic Compatibility

The system has been designed for industrial use. The most recent version of the EMC guidelines (EMC Directive 2014/30/EU) is applied following standards, EN 55011/ EN 61000-6-4 / EN 61000-6-2 and EN 55032 / EN 55024. If users modify and/or add device to the equipment (e.g. installation of add-on cards), the prerequisite for the CE conformity declaration (safety requirement) may not be applicable anymore.

Chapter 2
System Installation

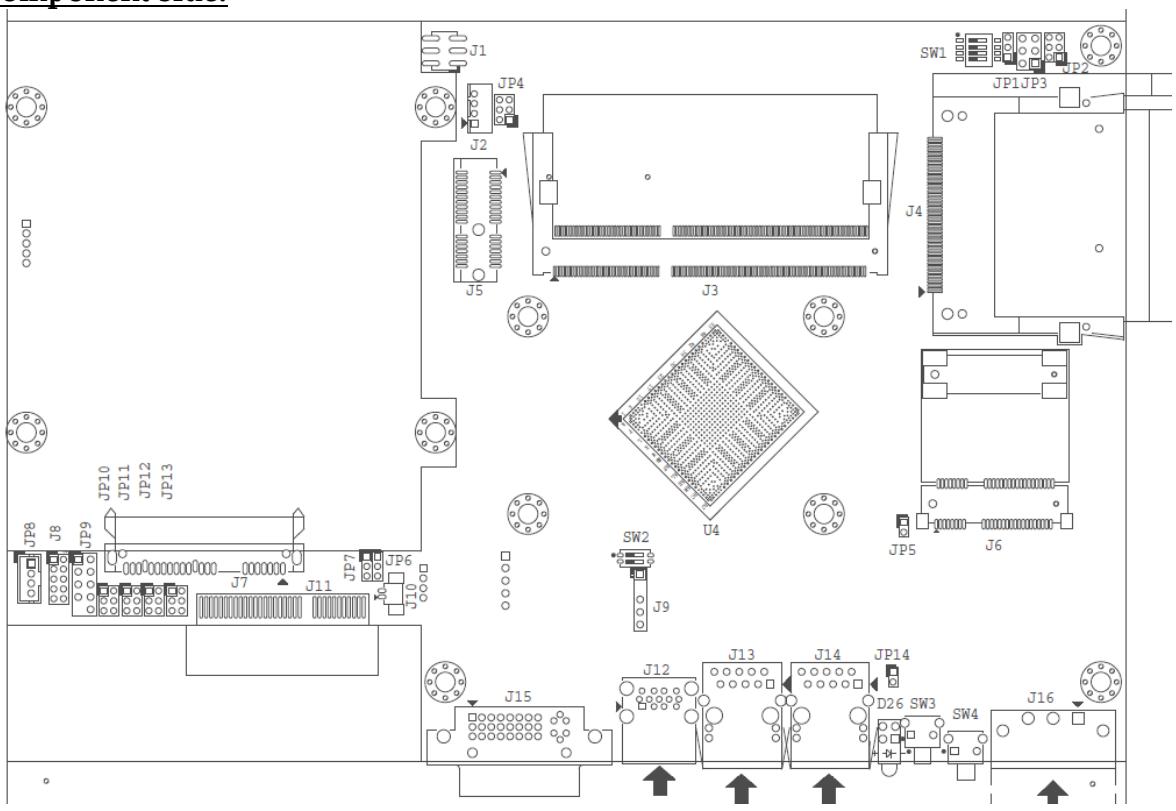
This chapter provides you with instructions to set up your FUDA2-S1x21 Series Panel PC. Definitions and locations of all the interfaces are described so that you can easily configure your system.

2.1 Embedded Board H/W Jumper Setting Introduction

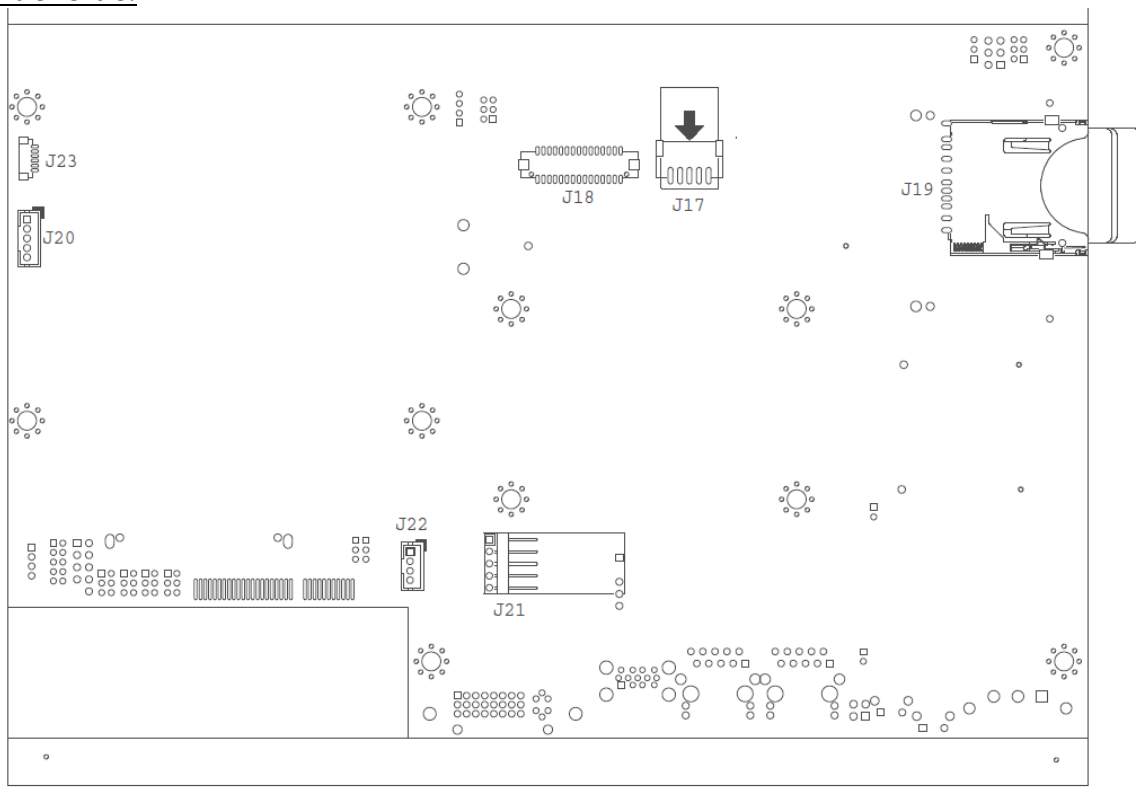
2.1.1 Main Board

FUDA2-S1x21 Series Panel PC adopts PEB-99A4 mother board. You may configure the Panel PC by setting jumpers of the mother board to match the needs of your applications. To select any option, cover the jumper cap (SHORT) or remove (NC) it from the jumper pins according to the following instructions.
*Note: NC stands for "Not Connect".

Component side:



Solder side:



Connector and Jumper setting:

Connector	
J2	Reserve for CH7511 Backlight control.(Wafer/2.0mm)
J3	DDR3 SO-DIMM Socket.
J4	Compact Flash connector.
J5	PCI-E X 1 Slot.
J6	Mini-PCI-E Slot.(Half size)
J7	SATA Connector with power.
J8	GPIO Connector.(2*5 Pin/2.0mm)
J9	SM- Bus Connector.
J10	Battery Connector.
J11	PCI-E X4 Slot(Right angle) for Audio and COM Port Signal .
J12	USB Port 0~1 D-Sub Connector. (Up:USB2.0 Down:USB3.0)
J13	RJ45 Connector.
J14	RJ45 Connector.
J15	DVI-I D-sub Connector.
J16	Power Input Connector. (Terminal Blocks 3Px1/5.08mm female)
J17	LCD Inverter Power Connector. (1*5 Pin wafer/2mm)
J18	LCD LVDS Connector. (2*15 Pin Hirose/1.25mm)
J19	SD Card.
J20	Front Panel Connector. (1*5 Pin Wafer/2mm)
J21	Touch Panel Connector. (1*5 Pin Header/2.54mm)
J22	USB Port 3 Connector (1*4 Pin Wafer/2mm).
J23	Light sensor Connector (1*6 Pin Wafer/1mm).

Jumpers	
JP1	Clear CMOS.
JP2	Backlight voltage setup.
JP3	LCD Panel Voltage Setup.
JP4	LCD Panel Type Setup.
JP7	GPIO Voltage selection.
JP8	Audio out.(From amplifier)
JP9	LPC Debug Port.
JP10	COM2 PORT RI and power source adjust pin.
JP11	COM1 PORT RI and power source adjust pin.
JP12	COM4 PORT RI and power source adjust pin.
JP13	COM3 PORT RI and power source adjust pin.
SW1	LCD Resolution Setup
SW2	AT/ATX & BIOS recovery Setup.

J8: GPIO Connector (2*5 Pin Header/2mm):

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GPIO0	2	GPIO4
3	GPIO1	4	GPIO5
5	GPIO2	6	GPIO6
7	GPIO3	8	GPIO7
9	GND	10	+5V

J16: Power Input Connector (Terminal Blocks 3Px1/5.08mm female)

PIN NO.	DESCRIPTION
1	Functional GND
2	Vin-
3	Vin+

J17: LCD Inverter Power Connector (1*5 Pin wafer/2mm)

PIN NO.	DESCRIPTION
1	LCD_ENBLT
2	GND
3	+12V
4	LCD_BLADJ
5	+5V

J18: LCD LVDS Connector (2*15 Pin Hirose/1.25mm)

PIN NO.	Description	PIN NO.	Description
1	YAP0	2	YAM0
3	YAP1	4	YAM1
5	YAP2	6	YAM2
7	YAP3	8	YAM3
9	CLKAP	10	CLKAM
11	YBP0	12	YBM0

13	YBP1	14	YBM1
15	YBP2	16	YBM2
17	YBP3	18	YBM3
19	CLKBP	20	CLKBM
21	DDCPCLK	22	DDCPDATA
23	GND	24	NC
25	GND	26	GND
27	+LVDS	28	+LVDS
29	NC	30	+LVDS

J20: Front Panel Connector (1*5 Pin Wafer/2mm)

PIN NO.	DESCRIPTION
1	LED (Hi: Green LED +; Low: Orange LED -)
2	LED (Hi: Orange LED+; Low: Green LED-)
3	Power Button
4	Power Button
5	NC

J21: Touch Panel Connector (1*6 Pin Header/2.54mm)

PIN NO.	DESCRIPTION
1	UL
2	UR
3	Probe
4	LL
5	LR

J22: USB Port 3 Connector (1*5 Pin Wafer/2mm)

PIN NO.	DESCRIPTION
1	+ 5V
2	USB_D3-
3	USB_D3+
4	GND

JP1: CMOS Setup

PIN NO.	DESCRIPTION
1-2	Normal (Keep CMOS Setup) ★ Default
2-3	Clear CMOS Setup

JP2: LCD Panel Inverter ON/OFF Signal Setup

PIN NO.		DESCRIPTION
1-3	2-4	
Short	Short	+5V High Active ★ Default
PIN NO.		DESCRIPTION
1-3	4-6	
Short	Short	+12V High Active

PIN NO.		DESCRIPTION
2-4	3-5	
Short	Short	+5V Low Active
PIN NO.		DESCRIPTION
3-5	4-6	
Short	Short	+12V Low Active

JP3: LCD Panel Voltage Setup

PIN NO.			DESCRIPTION
1-3	3-5	3-4	Voltage
Short			+3.3V TFT LCD ★ Default
	Short		+5V TFT LCD
			+12V TFT LCD

JP4: LCD Panel Type Setup

PIN NO.				DESCRIPTION
1-3	3-5	2-4	4-6	
Short				CCFL LCD
	Short			LED LCD ★ Default
		Short		CCFL LCD Brightness Limit
			Short	LED LCD Brightness Limit

JP7: GPIO Power Selection

PIN NO.	DESCRIPTION
1-2	5V Level ★ Default
2-3	3.3V Level

JP8: Internal Audio Connector

PIN NO.	DESCRIPTION
1	Audio_R+
2	Audio_R-
3	Audio_L+
4	Audio_L-

JP9: LPC Debug Port Pin Assignment

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	LAD0	2	3.3V
3	LAD1	4	LPC_RESET
5	LAD2	6	LPC_FRAME
7	LAD3	8	LPC_CLCOK
		10	GND

JP10: COM2 Pin 9 Function Setup

PIN NO.			DESCRIPTION
1-2	3-4	5-6	
Short			+5V Output
	Short		RI Function ★ Default
		Short	+12V Output

JP11: COM1 Pin 9 Function Setup

PIN NO.			DESCRIPTION
1-2	3-4	5-6	
Short			+5V Output
	Short		RI Function ★ Default
		Short	+12V Output

JP12: COM4 Pin 9 Function Setup

PIN NO.			DESCRIPTION
1-2	3-4	5-6	
Short			+5V Output
	Short		RI Function ★ Default
		Short	+12V Output

JP13: COM3 Pin 9 Function Setup

PIN NO.			DESCRIPTION
1-2	3-4	5-6	
Short			+5V Output
	Short		RI Function ★ Default
		Short	+12V Output

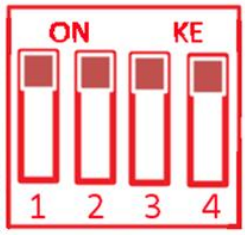
SW1: LCD Resolution Setup

PIN NO.				Resolution	Port
1	2	3	4		
ON	ON	ON	ON	800 x 600 (18bit)	Single
OFF	ON	ON	ON	1024 x768 (18bit)	Single
ON	OFF	ON	ON	1024 x768 (24bit)	Single
OFF	OFF	ON	ON	1280 x 768 (18bit)	Single
ON	ON	OFF	ON	1280 x 800 (18bit)	Single
OFF	ON	OFF	ON	1280 x 960 (18bit)	Single
ON	OFF	OFF	ON	1280 x 1024 (24bit)	Dual
OFF	OFF	OFF	ON	1366 x 768 (18bit)	Single
ON	ON	ON	OFF	1366 x 768 (24bit)	Single
OFF	ON	ON	OFF	1440 x 900 (24bit)	Dual
ON	OFF	ON	OFF	1400 x 1050 (24bit)	Dual
OFF	OFF	ON	OFF	1600 x 900 (24bit)	Dual

ON	ON	OFF	OFF	1680 x 1050 (24bit)	Dual
OFF	ON	OFF	OFF	1600 x 1200 (24bit)	Dual
ON	OFF	OFF	OFF	1920 x 1080 (24bit)	Dual
OFF	OFF	OFF	OFF	1920 x 1200 (24bit)	Dual

*Note: Default setting depends on the panel size.

*Note: Diagram of adjusting to resolution 800 x 600

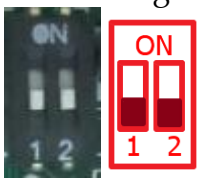


PIN NO.				Resolution	Port
1	2	3	4		
ON	ON	ON	ON	800 x 600 (18bit)	Single

SW2: AT/ATX & BIOS recovery Setup

PIN NO.	DESCRIPTION
1-4(Port1)	ON: AT Mode OFF:ATX Mode ★ Default
2-3(Port2)	ON: Recover BIOS OFF: Disable ★ Default

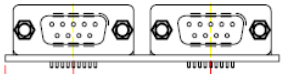
*Note: Diagram of SW2 default setting

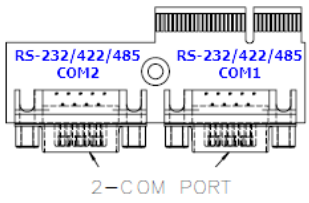


2.1.2 Extension Board

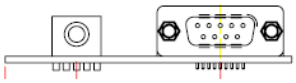
FUDA2-S1x21 Series Panel PC can adopt different I/O extension board. You may configure the Panel PC by different I/O kit options to match market needs.

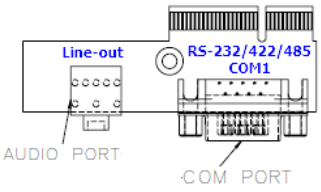
PA-P1S2 (for FUDA2-S1021)



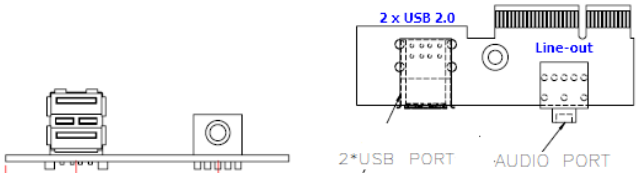


PA-P1S1A1 (for FUDA2-S1021)

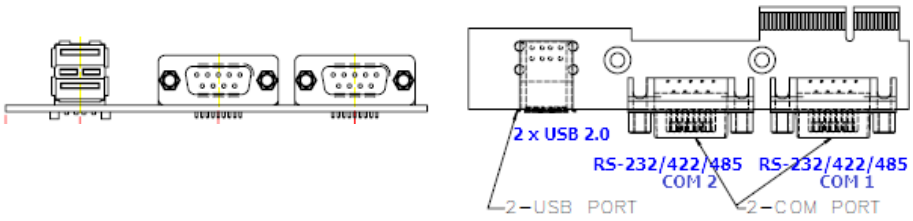




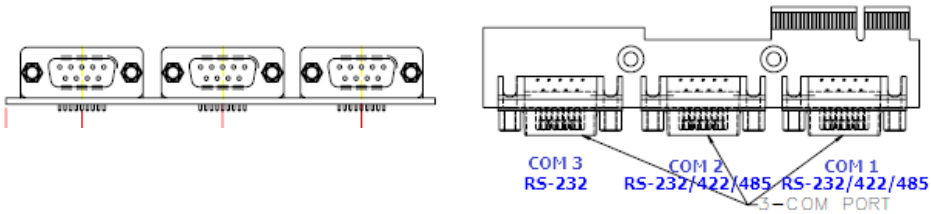
PA-P1U2A1 (for FUDA2-S1021)



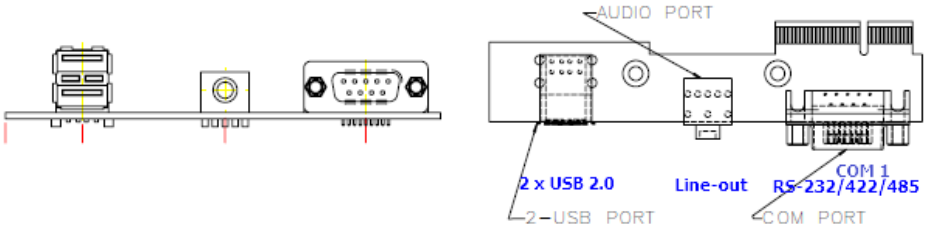
PA-P1S2U2:



PA-P1S3:

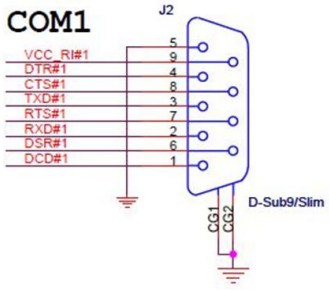


PA-P1S1U2A1



COM port RS-232/422/485 mode setup:

Note: Both COM1 & COM2 support RS-232/422/485 (selectable in BIOS menu).



RS-232 Mode Setup

PIN No.	Signal Description	PIN No.	Signal Description
1	Data Carrier Detect (DCD)	2	Receive Data (RXD)
3	Transmit Data (TXD)	4	Data Terminal Ready (DTR)
5	GND	6	Data Set Ready (DSR)
7	Request to Send (RTS)	8	Clear to Send (CTS)
9	Ring Indicator (RI)		

RS-422 Mode Setup

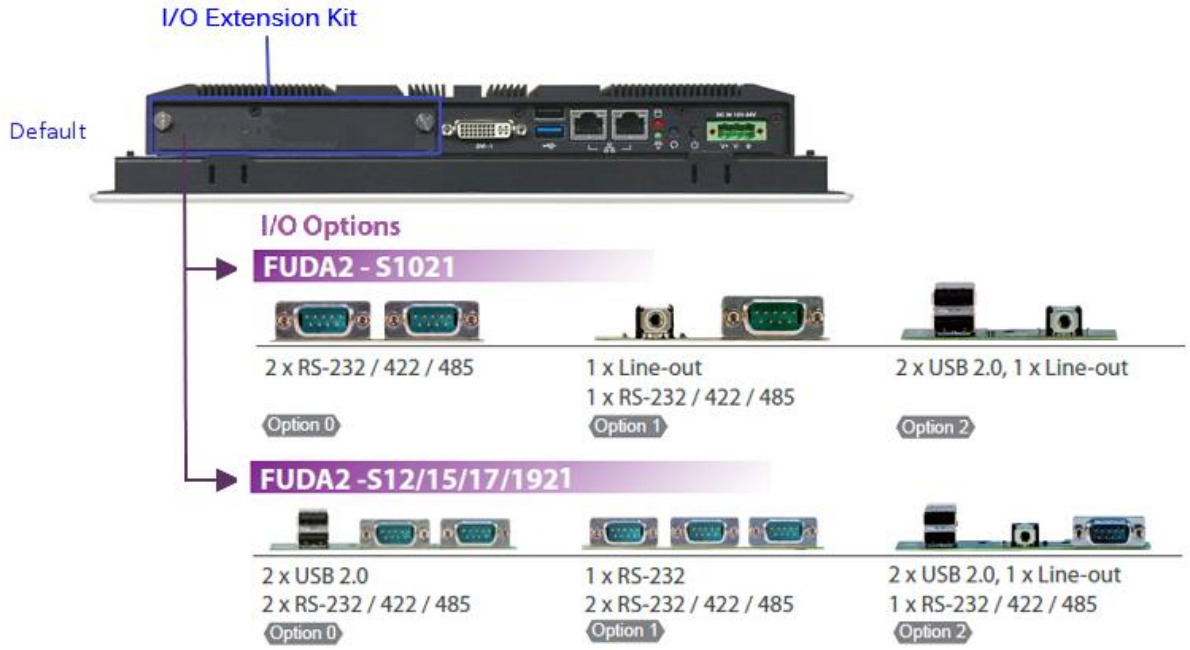
PIN No.	Signal Description	PIN No.	Signal Description
1	TX-	2	TX+
3	Rx+	4	Rx-
5	GND	6	RTS-
7	RTS+	8	CTS+
9	CTS-		

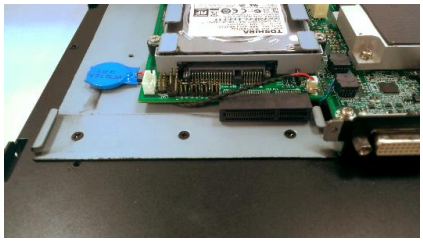
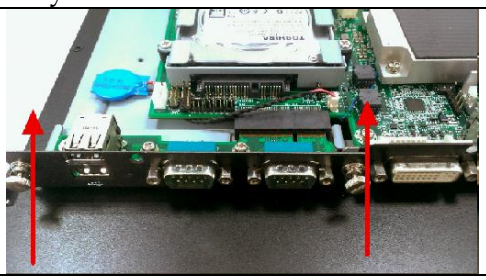
RS-485 Mode Setup

PIN No.	Signal Description	PIN No.	Signal Description
1	DATA-	2	DATA+
3	NC	4	NC
5	GND	6	NC
7	NC	8	NC
9	NC		

2.2 I/O Extension Kit Installation

In addition to basic I/O interfaces, including 1x DVI, 1x USB 2.0, 1x USB 3.0 and 2x Gigabit Ethernet, to further enhance system flexibility as well as to increase the versatility in application fields, FUDA2-S1x21 Series Panel PC allows users to select different I/O combinations for various market demands.
*Note: For FUDA2-S1021, there're three I/O options including 2x RS-232/422/485 or 1x Line-out and 1x RS-232/422/485, or 2x USB 2.0 and 1x Line-out.
*Note: For FUDA2-S12/15/17/1921, there're three I/O options including 2x USB 2.0 and 2x RS-232/422/485 or 1x RS-232 and 2x RS-232/422/485, or 2x USB 2.0, 1x Line-out and 1x RS-232/422/ 485.



1. Confirm the position of Golden Finger Connector	2. Fix the I/O extension board to the main board system
	
	

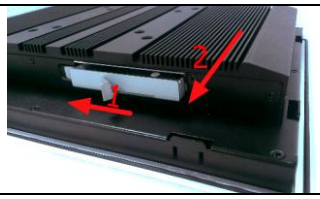
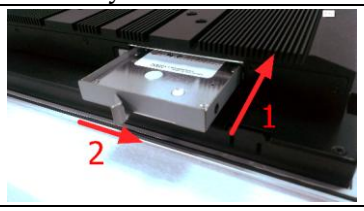
2.3 Memory Installation

FUDA2 Series supports one DDR3L SO-DIMM memory module. It's easy to install by just opening the back cover.

1. Unscrew the back cover to detach it	2. Remove the IPC back cover
	
3. Insert Memory module to the slot	4. Press down the memory module and finish installation
	

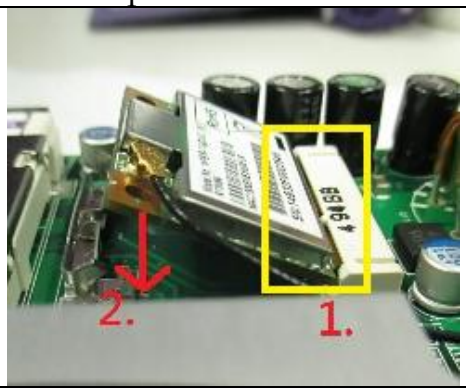
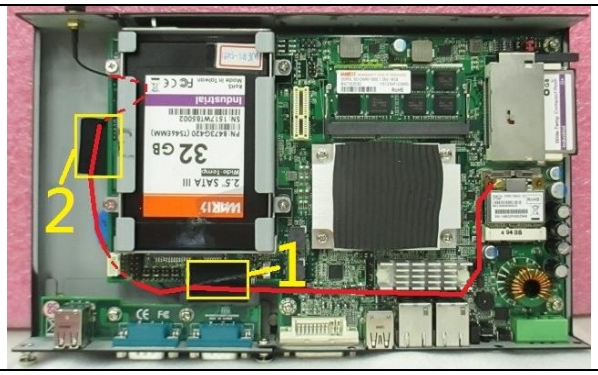
2.4 HDD Installation

FUDA2 Series supports 1x 2.5" HDD/SSD. The unique design of the HDD tray allows easy installation and maintenance. (The height must be less than 10mm)

1. Remove the screws of HDD tray cover	2. Push the rod to release HDD tray
	
3. Install the HDD into tray with screws	4. Push HDD tray back into PPC
	
5. Screw the cover and finish installation	6. Inside view of installed HDD in PPC
	

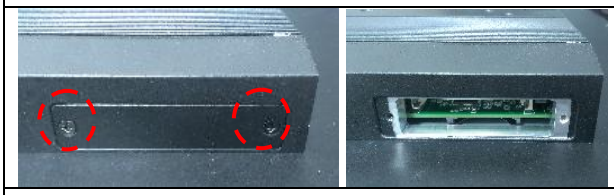
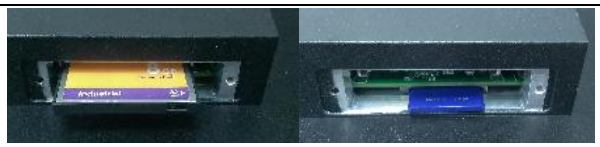
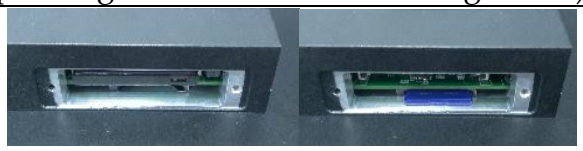
2.5 Half-size mini PCIe module Installation

FUDA2 Series supports 1x half-size mini PCIe module expansion. Half-size WIFI module is used as an example to demonstrate installation process below.

1. Unscrew the back cover to detach it	2. Remove the IPC back cover
	
3. Connect SMA cable to module	4. Insert the card to mini PCIe socket onboard and press down to fix it
	
5. Screw the SMA cable to ANT hole at top I/O cover	6. Arrange the SMA cable inside
	
7. Screw the cover and finish installation	8. Install the antenna and connect to router
	

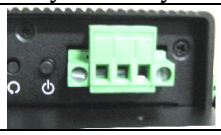
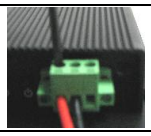
2.6 CF and SD card Installation

CF and SD card are both supported in FUDA2 Series. It is easy to install CF and SD card by opening the cover at side and insert the card.

1. CF cover locates at the right side. Unscrew and remove the side bracket.	2. Carefully insert CF and SD card into the socket.
	 CF card SD card
3. Complete insertion (Eject CF card by pressing the elastic stick on the right side)	4. Screw the side bracket and finish installation
 CF card SD card	

2.7 Getting Started

FUDA2 Series support 12~24V DC (±20%) input via 3-pin terminal block connector. (Minimum 22 AWG, 90°C wiring conductor for power connection)

1. Male-type 3-pin terminal block connector located at rear I/O	2. Take the female type 3-pin terminal block connector in accessory kit
	
3. Fix female type 3-pin terminal block connector to the system by screw.	4. Follow pin definition and fix power cable to 3-pin thermal block connector by screw
	

60W AC to DC power adapter and switch cable from adapter to 3-pin terminal block connector are optional accessories. Users must select suitable AC to DC adapter if necessary.

1. Screw 3 pin terminal block cable to adaptor	2. Connect 3-pin terminal block connector to PPC through AC in with adaptor
	

2.8 I/O Interfaces

2.8.1 Front View

TFT-LCD Display with Projective Capacitive Touch Screen:
The Panel PC is built in a TFT-LCD display and designed with a projective capacitive touch screen. The surface of the display is also mechanically protected through the touch screen. The touch screen of FUDA2-S1x21 Series can support up to 10 touch points.

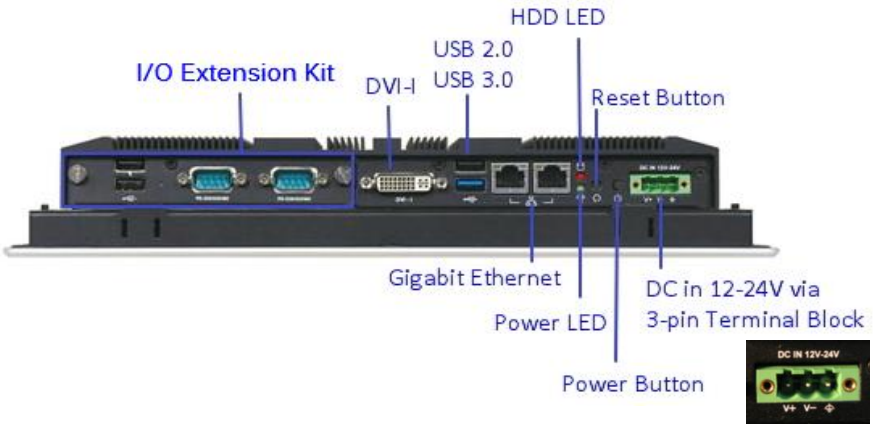
Aluminum Front Bezel:
Rugged Aluminum front bezel meets IP65 protection.

True Flat Projective Capacitive Touch Screen:
The projective capacitive touch screen (USB interface) registers contacts of a conductive object such as fingers and allows moving the mouse pointer. It can sense a passive stylus or gloved fingers as well. Users don't need to install touch screen driver for projected capacitive multi-touch because driver is included in operating system.

Do not use a hard or a pointed object (like screw drivers or pliers) to operate the touch screen, because such an action will damage the surface of touch screen.

Front Panel Care and Clean
Front Mild detergent and water, or isopropyl alcohol is recommended for cleaning. Use of solvents with strong acidity or alkalinity, which could react with the paint or printed color or plastic, should be avoided.
The true flat touch screen surface is subject to burning and scaring from direct heat sources such as lighters or cigarettes. The front display is against water and dust (IP65). The touch screen built in FUDA2-S1x21 Series can resist the following chemicals such as acetone, methylene chloride, methyl ethyl ketone, isopropyl alcohol, hexane, unleaded gas, diesel fuel, motor oil vinegar, cooking oil, saline water, and so on.

2.8.2 Rear View



DC in 12-24V via 3-pin Terminal Block Connector:
Provide power connection of Panel PC to the main power source via DC power cable or AC/DC adapter.

Power Button:
Press the button to turn ON/OFF the Panel PC.

Reset Button:
Press the button to restart the Panel PC.

Power LED and HDD LED:
It demonstrates the power in and HDD working status of the Panel PC.

Status	Power LED	HDD LED
Off	N/A	N/A
Working	Green	Red

Gigabit Ethernet:
Two Gigabit Ethernet (10/100/1000 Mbits/sec) LAN ports by using dual Intel® I210IT GbE Ethernet Controller (Support Jumbo Frame)

USB (Universal Serial Bus) ports:
Connectors for USB-compatible devices

Model	With different I/O kit combination…	Total # of USB ports	Details
FUDA2-S1021	Default	2	1x USB 2.0 & 1x USB 3.0
	Option 0	2	1x USB 2.0 & 1x USB 3.0
	Option 1	2	1x USB 2.0 & 1x USB 3.0
	Option 2	4	3x USB 2.0 & 1x USB 3.0
FUDA2-S1221/ FUDA2-S1521/ FUDA2-S1721/ FUDA2-S1921	Default	2	1x USB 2.0 & 1x USB 3.0
	Option 0	4	3x USB 2.0 & 1x USB 3.0
	Option 1	2	1x USB 2.0 & 1x USB 3.0
	Option 2	4	3x USB 2.0 & 1x USB 3.0

DVI-I:
An external monitor can be provided via DVI-I interface.

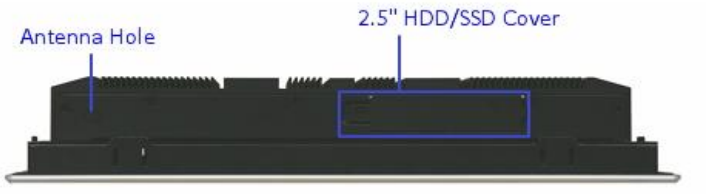
COM ports:
Connectors for RS-232/422/485 connection
*Note: The RS-232/422/485 configuration is determined by BIOS setting. Check BIOS setting for details.

Model	With different I/O kit combination…	Total # of COM ports	Details
FUDA2-S1021	Default	0	N/A
	Option 0	2	2x RS-232/422/485
	Option 1	1	1x RS-232/422/485
	Option 2	0	N/A
FUDA2-S1221/ FUDA2-S1521/ FUDA2-S1721/ FUDA2-S1921	Default	0	N/A
	Option 0	2	2x RS-232/422/485
	Option 1	3	2x RS-232/422/485 & 1x RS-232
	Option 2	1	1x RS-232/422/485

Line-out:
Connectors for audio line-out

Model	With different I/O kit combination…	Total # of COM ports	Details
FUDA2-S1021	Default	0	N/A
	Option 0	0	N/A
	Option 1	1	1x Line-out
	Option 2	1	1x Line-out
FUDA2-S1221/ FUDA2-S1521/ FUDA2-S1721/ FUDA2-S1921	Default	0	N/A
	Option 0	0	N/A
	Option 1	0	N/A
	Option 2	1	1x Line-out

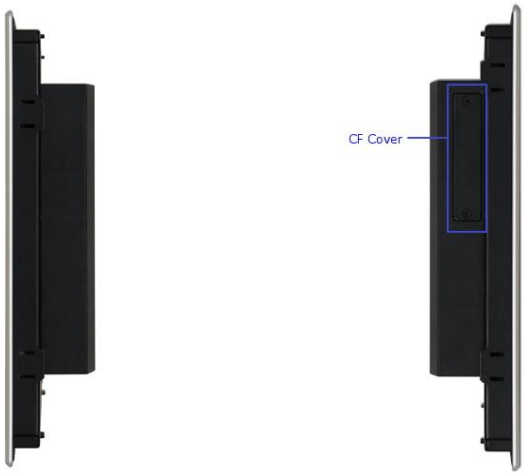
2.8.3 Top View



2.5″ HDD/SSD Cover:
Remove the cover and install the 2.5″ HDD/SSD.
*Note: Refer to section 2.4 for installation guide.

Antenna Hole:
It is reserved for WiFi or 3G solution.

2.8.4 Side View



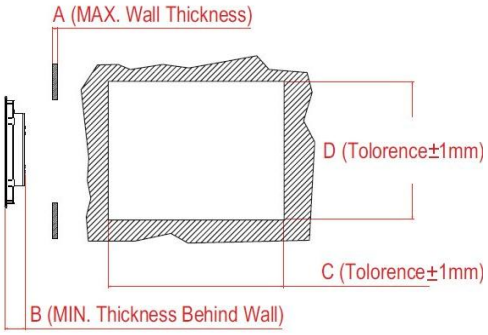
CF Cover:
Remove the cover and install the CF card.
*Note: Refer to section 2.5 for installation guide.

2.9 Mounting Method

2.9.1 Panel Mount

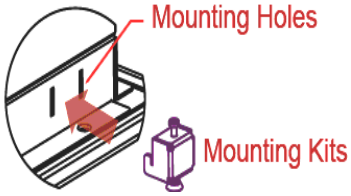
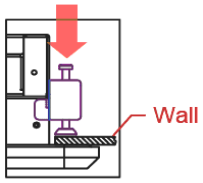
The Panel PC can be mounted into a panel or a sub-frame for industrial cabinet via panel mount holes and kits. Check the wall thickness, cut-out dimension and installation guide below.
*Note: These mounting clips have to be removed at first in order to install the system into a sub-frame or a panel. Loosen the screws to allow the removing of the mounting clips from the enclosure (but do not entirely remove the screws from clamps).

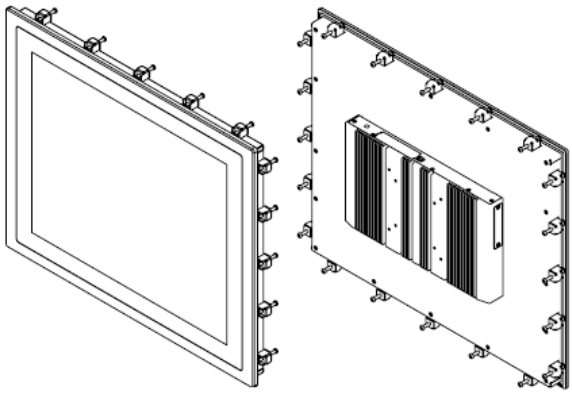
Cut-out Dimension



FUDA2-S1x21	A(mm)	B(mm)	C(mm)	D(mm)	Kits
10.4”	<10	52.5	265	222	X 8
12.1”	<10	52.4	289	244	X 8
15”	<7	50.6	367	293	X 14
17”	<8	57.4	420	358	X 16
19”	<7.8	52.6	463	383	X 20

Installation Guide

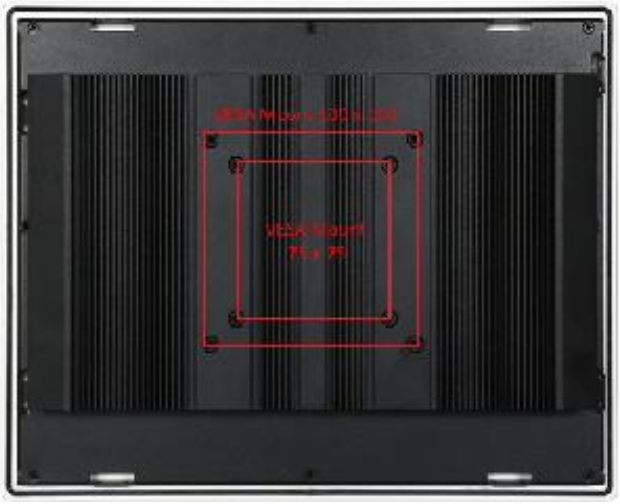
<table>
<tr><td colspan="2">1. Hook Clip</td></tr>
<tr><td> 
</td><td> 

Mounting Kits Section</td></tr>
<tr><td>2. Screw the Clip tightly (Torque Value = 8kg)</td><td>3. Hook the mounting clamps with screws (included) from the back side</td></tr>
<tr><td>  </td><td>  </td></tr>
</table>

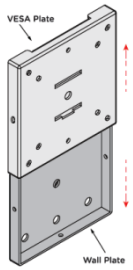
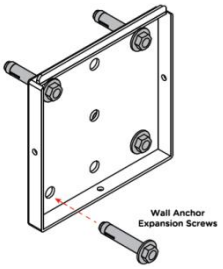
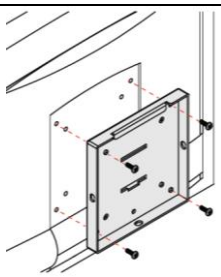
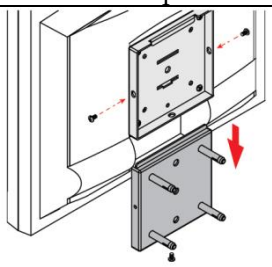
Mount the system on a non-textured surface in order to ensure front sealing against dust and water. Verify the perfect condition of the seal at the rear of the front plate. The seal has to be in place without injury/defects and dirt.

2.9.2 VESA® Mount

The Panel PC can install with VESA® 75x75/100x100 compliant adapter plate in order to be mounted on a wall. M4*10L screws must be used to fix the system onto the wall mount adapter plate.



Installation Guide

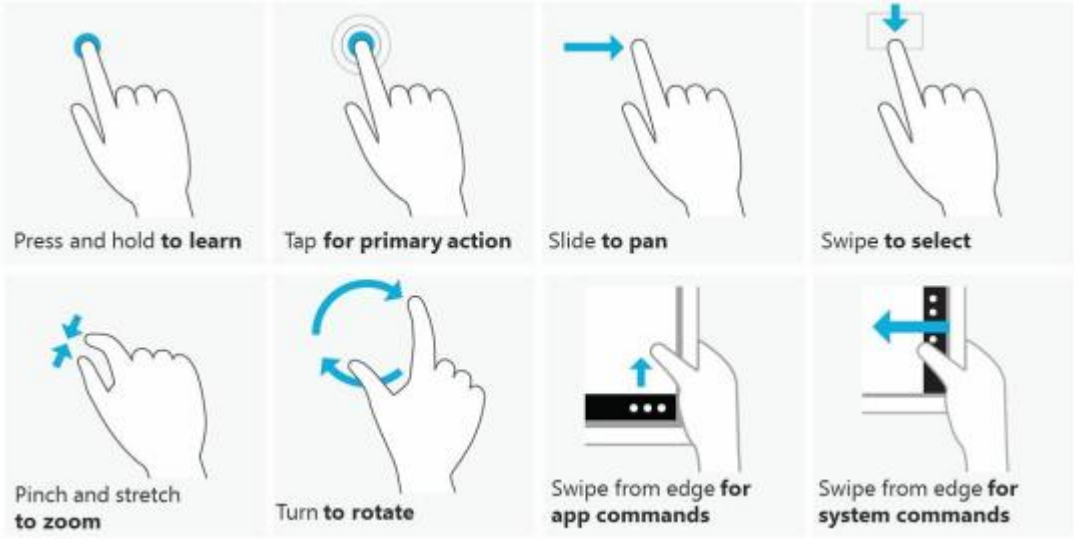
1. Separate the VESA plate from the wall plate	2. Fix the wall plate to desired mounting position on the wall	3. Attach the unit to VESA plate using M4*10L screws.	4.Slide the unit with VESA plate attached onto the wall plate
			

Chapter 3
Driver Installation and Touch Usage Guide

3.1 Driver Installation

All drivers are included in Panel PC Series CD-title in the accessory box.

3.2 Windows 7 Gesture for Multi-Touch Demand



Windows Touch Pack for windows 7
For multi-touch application, please download Windows Touch Pack for windows 7 from the following link to learn more usage of multi-touch.
http://www.microsoft.com/en-us/download/details.aspx?id=17368

Chapter 4
BIOS Setup Information

FUDA2-S1x21 Series Panel PC adopts PEB-99A4 mother board. PEB-99A4 is equipped with the AMI BIOS stored in Flash ROM. These BIOS has a built-in Setup program that allows users to modify the basic system configuration easily. This type of information is stored in CMOS RAM so that it is retained during power-off periods. When system is turned on, PEB-99A4 communicates with peripheral devices and checks its hardware resources against the configuration information stored in the CMOS memory. If any error is detected, or the CMOS parameters need to be initially defined, the diagnostic program will prompt the user to enter the SETUP program. Some errors are significant enough to abort the start up.

4.1 Entering Setup—Launch System Setup

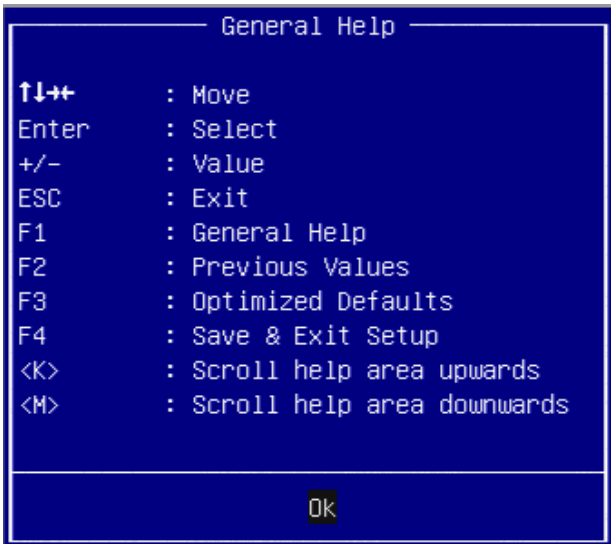
Power on the computer and the system will start POST (Power On Self Test) process. When the message below appears on the screen, press <Del> key will enter BIOS setup screen.

Press <Del> to enter SETUP

If the message disappears before responding and still wish to enter Setup, please restart the system by turning it OFF and On or pressing the RESET button. It can be also restarted by pressing <Ctrl>, <Alt>, and <Delete> keys on keyboard simultaneously.

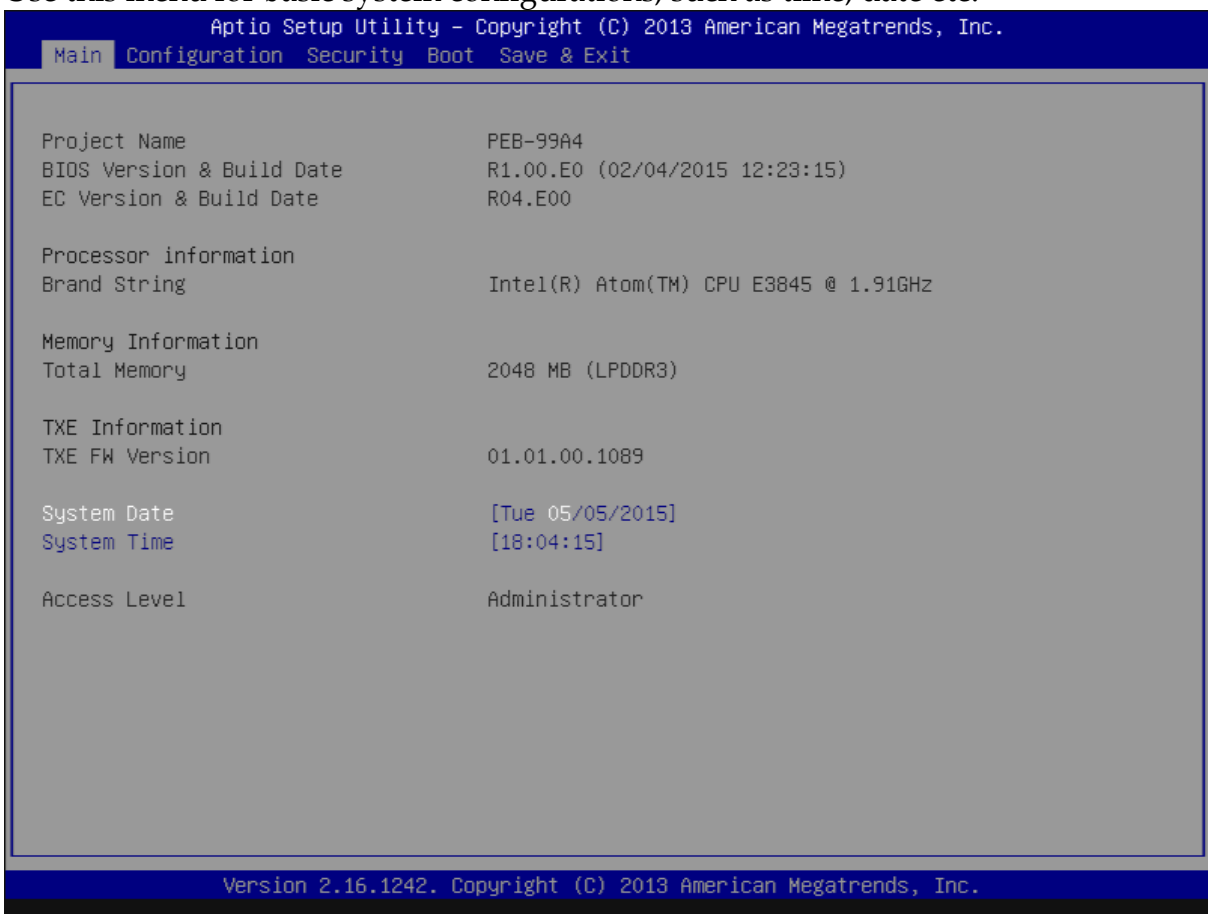
Press <F1> to Run General Help or Resume

The BIOS setup program provides a General Help screen. The menu can be easily called up from any menu by pressing <F1>. The Help screen lists all the possible keys to use and the selections for the highlighted item. Press <Esc> to exit the Help screen.



4.2 Main

Use this menu for basic system configurations, such as time, date etc.



BIOS Information, Memory Information

These items show the firmware and memory specifications of your system. Read only.

System Date

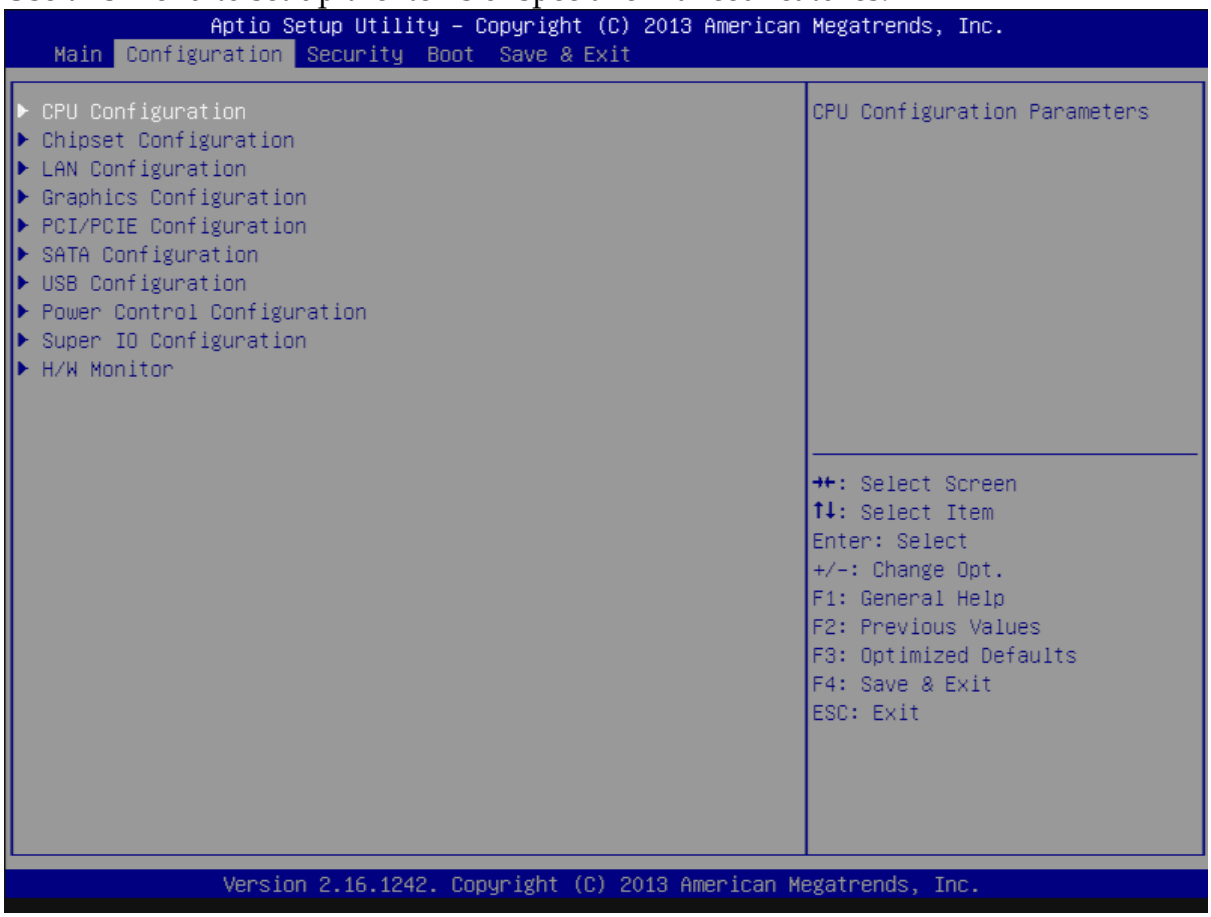
The date format is <Day>, <Month> <Date> <Year>. Use [+] or [−] to configure system Date.

System Time

The time format is <Hour> <Minute> <Second>. Use [+] or [−] to configure system Time.

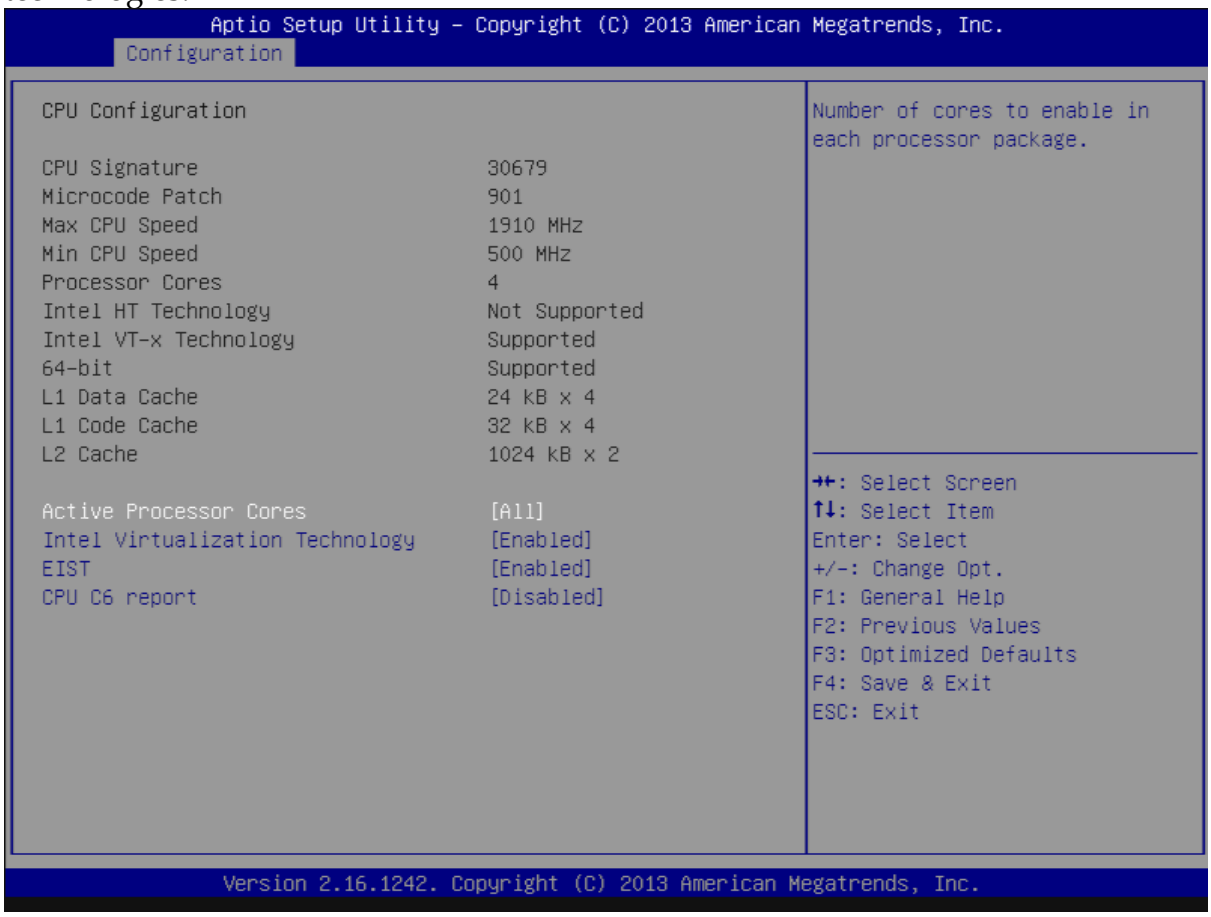
4.3 Configuration

Use this menu to set up the items of special enhanced features.



CPU configuration

CPU Configure the specific active core(s) and advanced processor management technologies.



Active Processor Cores

Number of cores to enable in each processor package.
The choice: All(Default), 1.

Intel Virtualization Cores

When enabled, a VMM can utilize the additional hardware capabilities provided by Vander pool Technology.
The choice: Disabled. Enabled(Default).

EIST

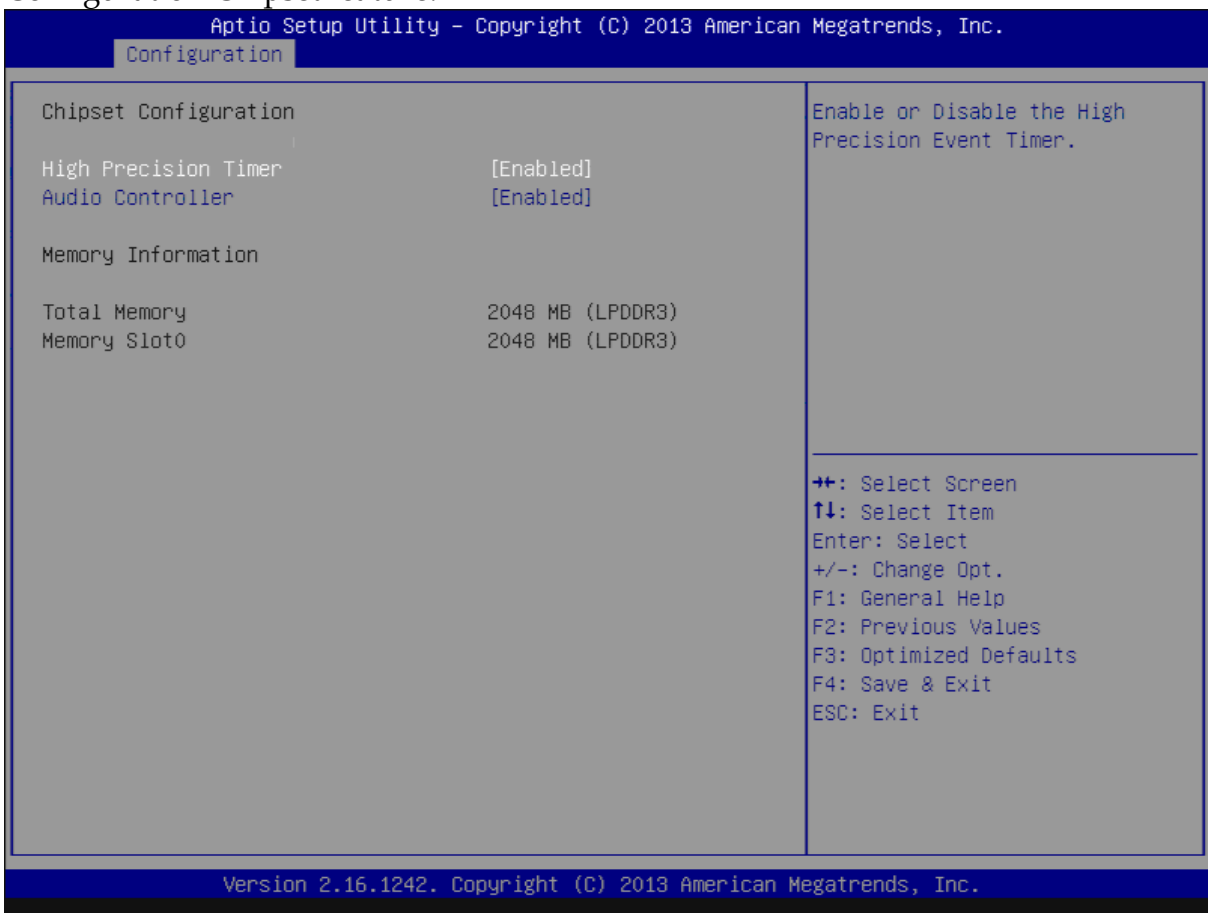
Enable/Disable Intel Speed Step.
The choice: Disabled. Enabled(Default).

CPU C6 report

Enable or Disable the CPU C6 (ACPI C3) report to OS.
The choice: Disabled(Default). Enabled.

Chipset Configuration

Configuration Chipset feature.



High Precision Timer

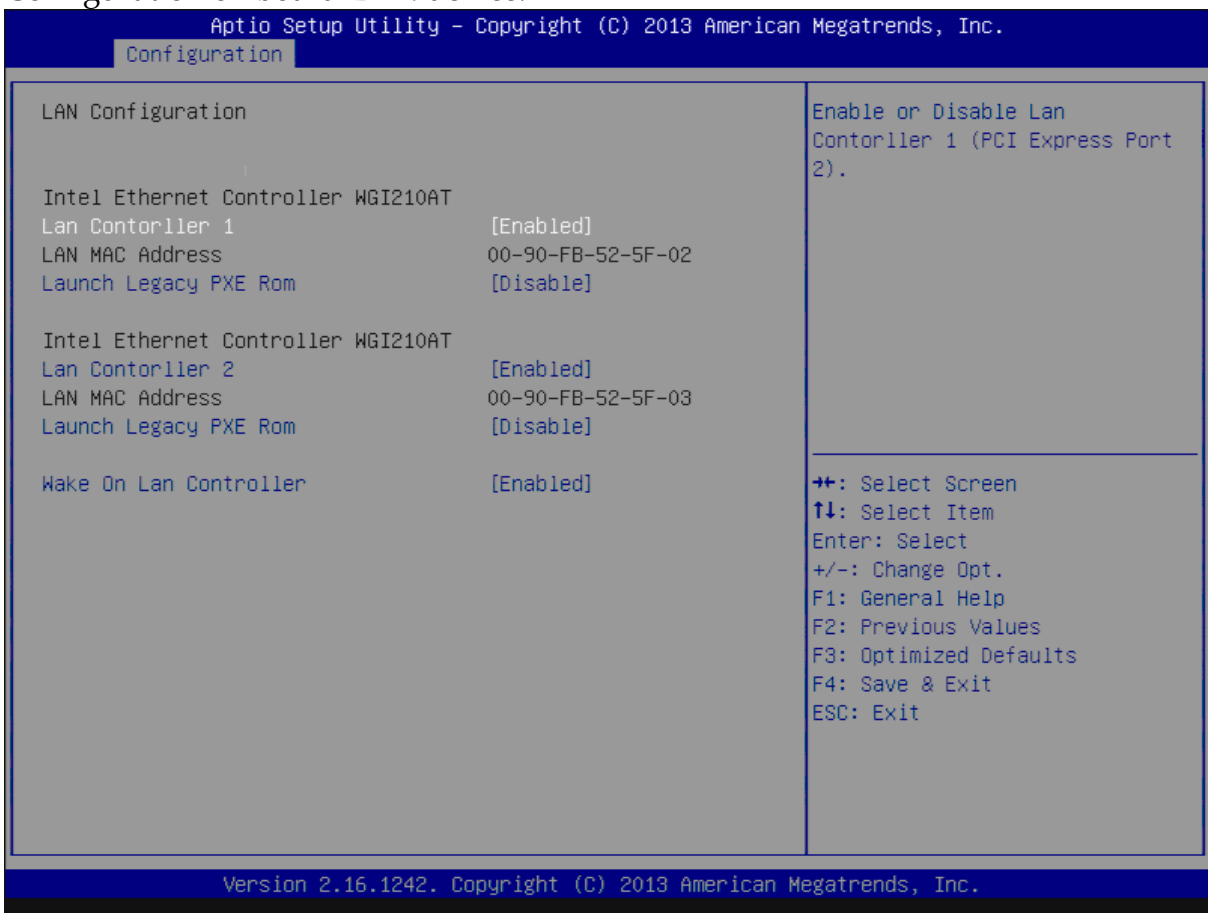
Enable or Disable the High Precision Event Timer.
The choice: Disabled. Enabled(Default).

Audio Controller

Control Detection of the Azalia device. Disabled = Azalia will be unconditionally disabled. Enabled = Azalia will be unconditionally Enabled.
The choice: Disabled. Enabled(Default).

LAN Configuration

Configuration on board LAN device.



LAN Controller 1

Enable or Disable LAN Controller 1 (PCI Express Port 2).
The choice: Disabled. Enabled(Default).

Launch Legacy PXE Rom

Launch Legacy PXE Rom. [Disable] Not Launch Rom, [Enabled] Force Launch Rom.
The choice: Disabled(Default). Enabled.

LAN Controller 2

Enable or Disable LAN Controller 2 (PCI Express Port 3).
The choice: Disabled. Enabled(Default).

Launch Legacy PXE Rom

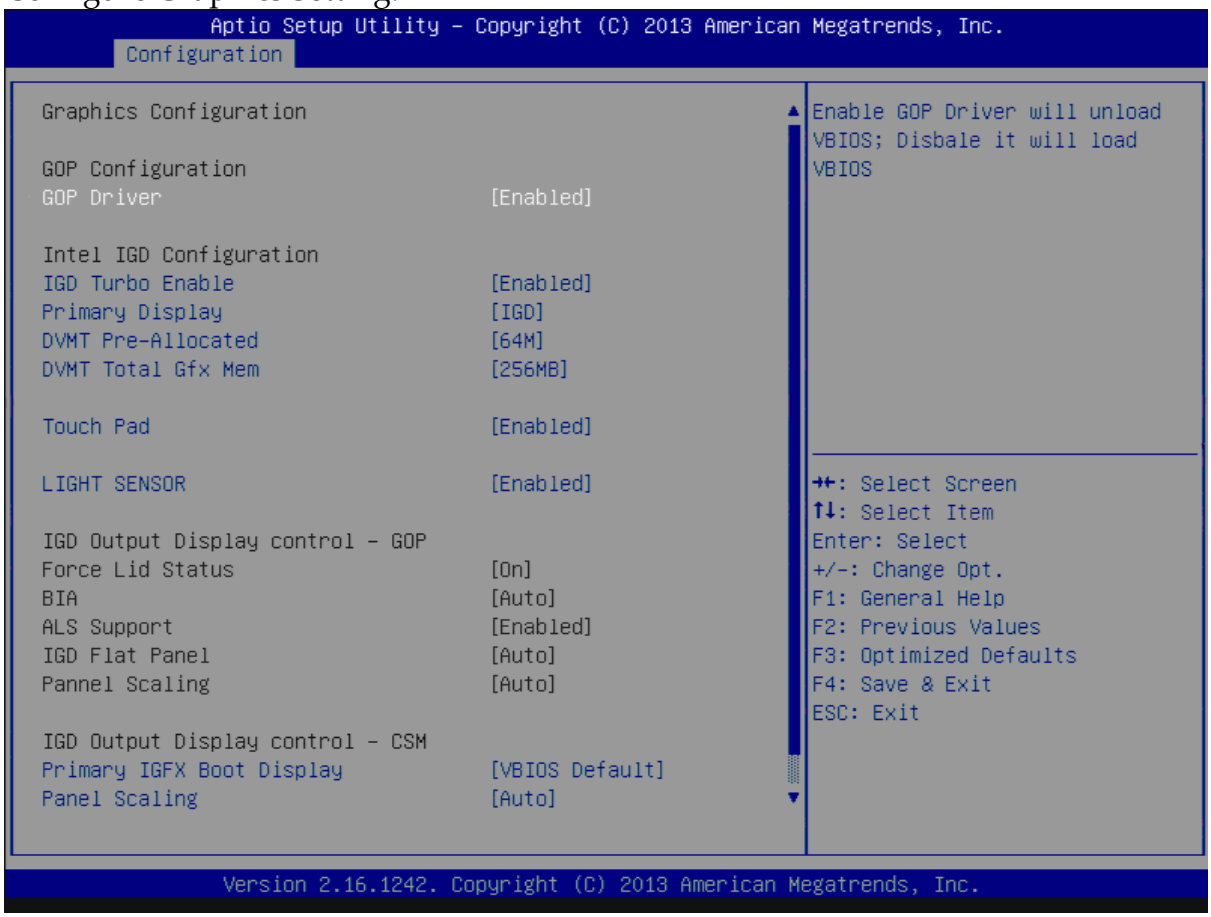
Launch Legacy PXE Rom. [Disable] Not Launch Rom, [Enabled] Force Launch Rom.
The choice: Disabled(Default). Enabled.

Wake on LAN Controller

Enable or Disable Intel LAN 0 and Intel LAN 1 WGI210AT wakeup function.
The choice: Disabled. Enabled(Default).

Graphic Configuration

Configure Graphics Setting.



GOP Driver

Enable GOP Driver will unload VBIOS; Disable it will load VBIOS
Choices: Enable(Default), Disable.

IGD Turbo Enable

Enable IGD Turbo Enable; Disable IGD Turbo Disable.
Choices: Enable(Default), Disable.

Primary Display

Select which of IGD/PCI Graphics device should be Primary Display.
Choices: Auto, IGD(Default), PCI, SG.

DVMT Pre-Allocated

Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory sized used by the Internal Graphic Device
Choices: 64M(Default), 96M, 128M, 160M, 192M, 224M, 256M, 288M, 320M, 352M, 384M,416M, 448M, 480M, 512M.

DVMT Total GFX Mem
Select DVMT 5.0 Total Graphics Memory sized used by the Internal Graphic Device.
Choices: 128MB, 256MB(Default), Max.

Touch Pad
Touch Pad Enable/Disable.
Choices: Enable(Default), Disable.

LIGHT SENSOR
LIGHT SENSOR Support Enable/Disable..
Choices: Enable(Default), Disable.

Primary IGFX Boot Display
Select the Video Device which will be activated during POST. This as no effect if external graphics present. Secondary will appear based on your Selection. VGA modes will be supported only on primary display.
Choices: VBIOS Default(Default), DVI, LVDS.

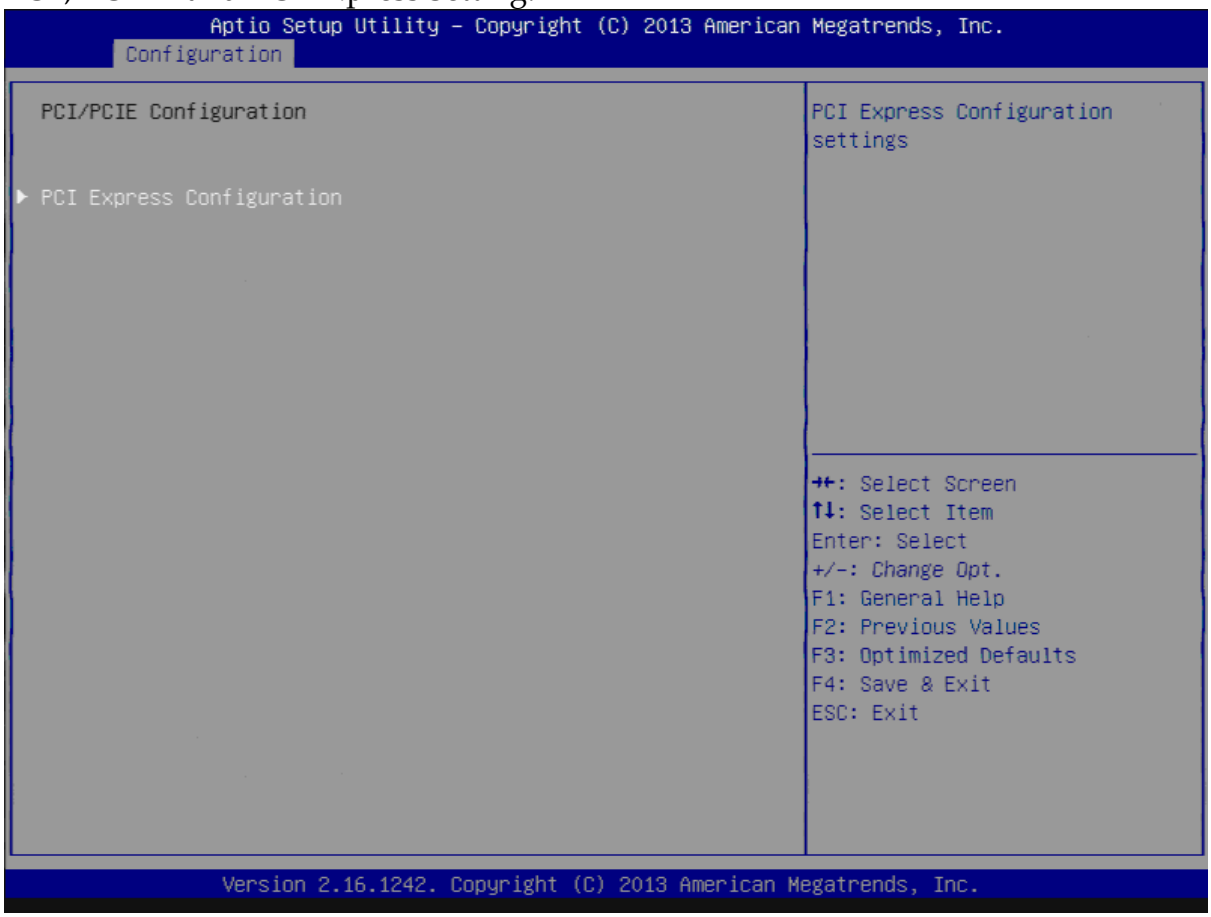
Panel Scaling
Select the LCD Panel scaling option used by Internal Graphic device.
Choices: Auto(Default), Off, Force Scaling.

Backlight Control
Back Light Control Setting.
Choices: PWM Inverted, PWM Normal(Default), GMBus Inverted, GMBus Normal.

Active LFP
Select the Active LEP Configuration. Mo LVDS: VBIOS does not enable LVDS. eDP Port-A: LFP driven by Int-DisplayPort encoder from Port-A.
Choices: No LVDS, eDP Port-A(Default).

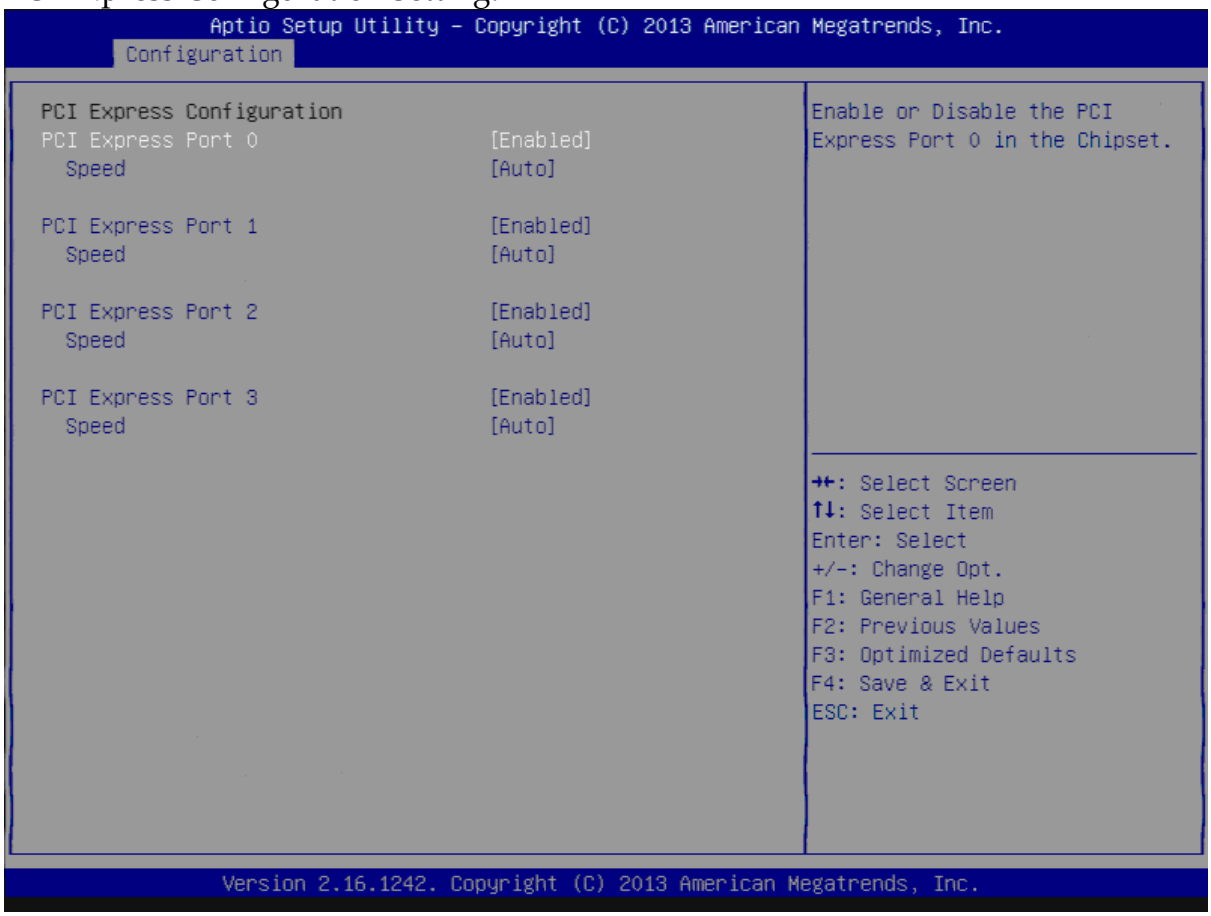
PCI/PCIE Configuration

PCI , PCI –X and PCI Express Setting.



PCIE Express Configuration

PCI Express Configuration Setting.



PCI Express Configuration Port 0

Enable or Disable the PCI Express Port 0 in the Chipset.
Choices: Enable(Default), Disable.

Speed

Configuration PCIe Speed
Choices: Auto(Default), Gen1, Gen2.

PCI Express Configuration Port 1

Enable or Disable the PCI Express Port 1 in the Chipset.
Choices: Enable(Default), Disable.

Speed

Configuration PCIe Speed
Choices: Auto(Default), Gen1, Gen2.

PCI Express Configuration Port 2

Enable or Disable the PCI Express Port 2 in the Chipset.
Choices: Enable(Default), Disable.

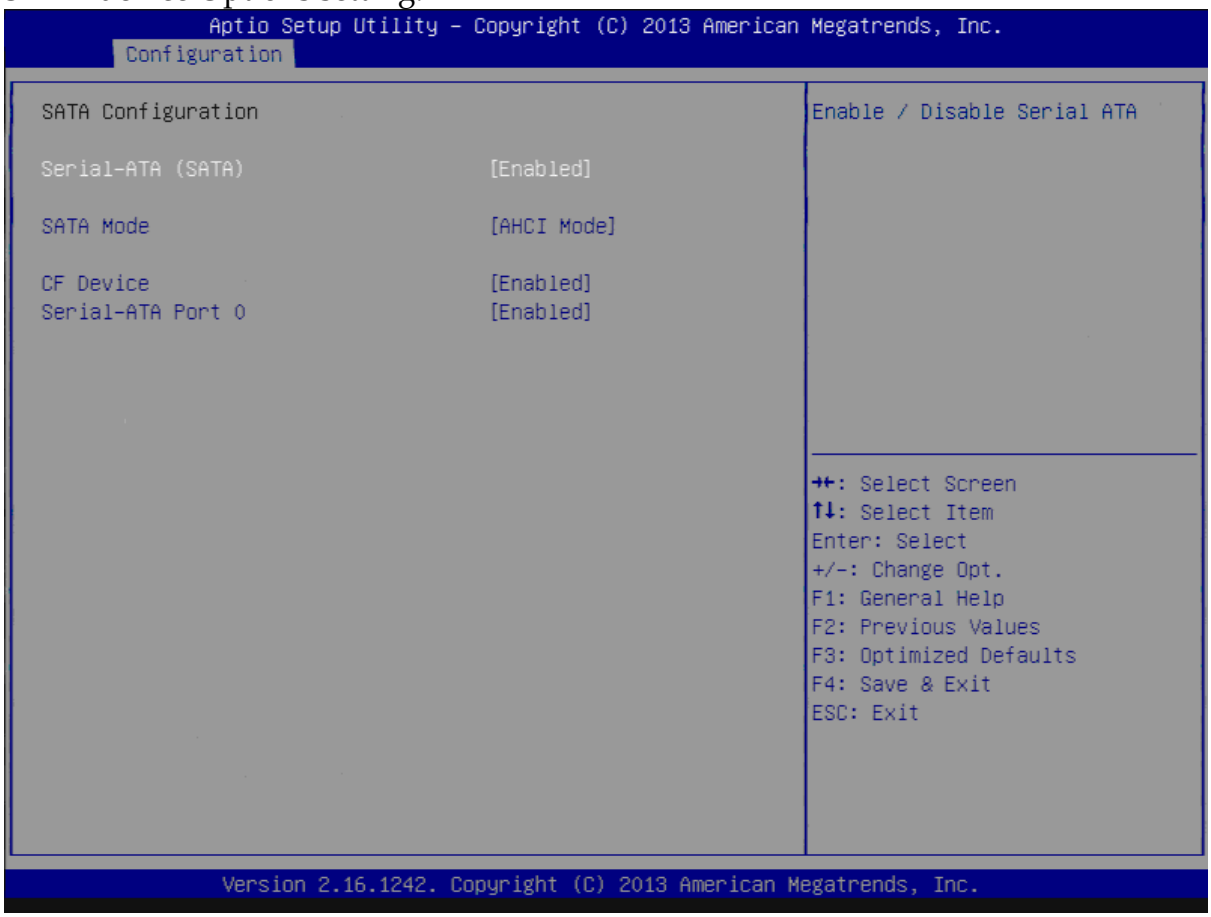
Speed
Configuration PCIe Speed
Choices: Auto(Default), Gen1, Gen2.

PCI Express Configuration Port 3
Enable or Disable the PCI Express Port 3 in the Chipset.
Choices: Enable(Default), Disable.

Speed
Configuration PCIe Speed
Choices: Auto(Default), Gen1, Gen2.

SATA Configuration

SATA device Options setting.



Serial-ATA (SATA)

Enable or Disable Serial ATA.
Choices: Disabled, Enabled(Default).

SATA Mode

Select IDE / AHCI.
Choices: Disabled, IDE, AHCI(Default).

CF Device

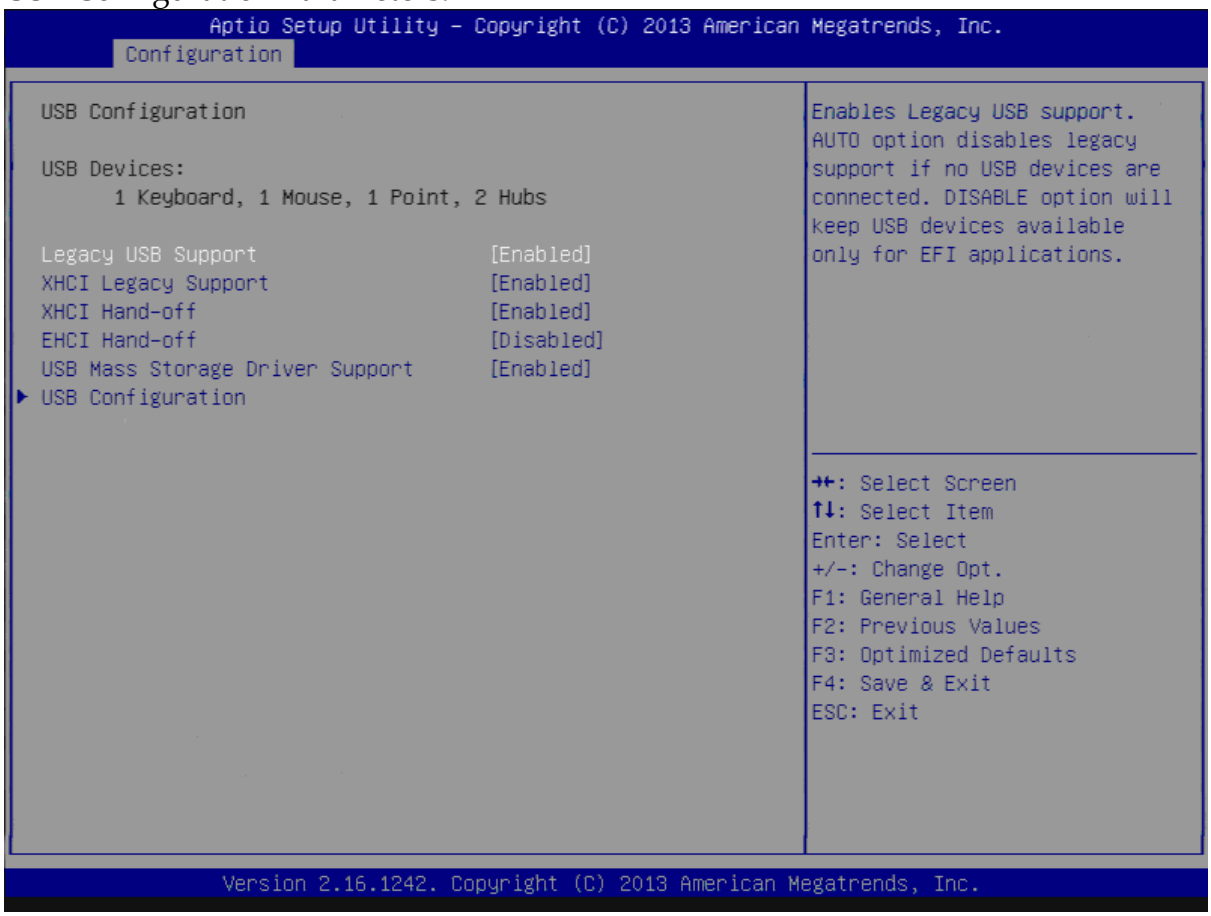
Enabled / Disabled CF Device.
Choices: Disabled, Enabled(Default).

Serial-ATA Port 0

Enable or Disable Serial ATA Port 0.
Choices: Disabled, Enabled(Default).

USB Configuration

USB Configuration Parameters.



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.
Choices: Enabled, Disabled(Default).

XHCI Legacy Support

Enable/Disable XHCI Controller Legacy support.
Choices: Enabled, Disabled(Default).

XHCI Hand-off

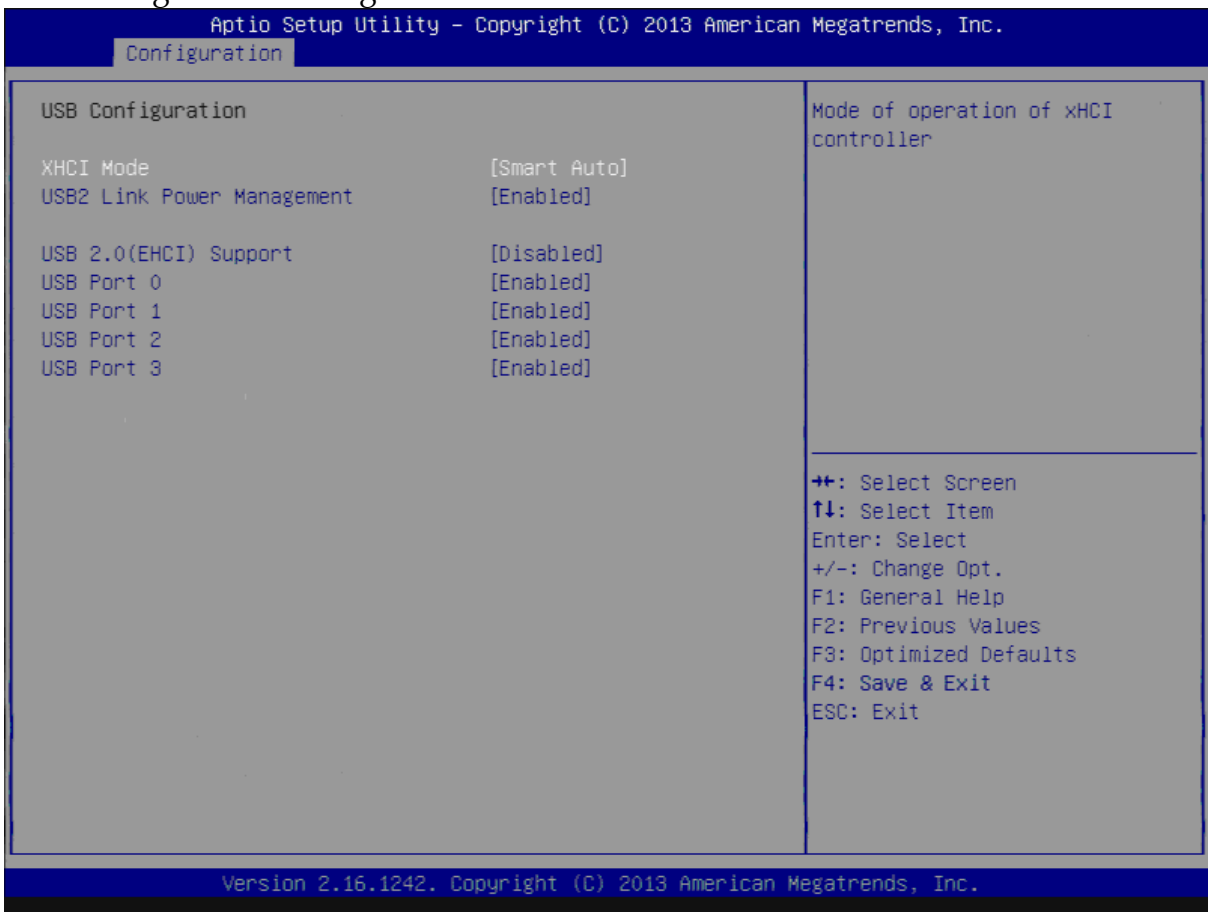
This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.
Choices: Enabled, Disabled(Default).

EHCI Hand-off

This is a workaround for OSes without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.
Choices: Enabled, Disabled(Default).

USB Mass storage Driver Support
Enable/Disable USB Mass storage Driver Support.
Choices: Enabled(Default), Disabled.

USB Configuration
USB Configuration settings.



XHCI Mode
Mode of operation of XHCI controller
Choices: Smart Auto(Default), Auto, Enable, Disable.

USB2 Link Power Management
Enable/Disable USB2 Link Power Management.
Choices: Enable(Default), Disable.

USB 2.0 (EHCI) Support
Control the USB EHCI (USB2.0) functions. One EHCI controller must always be enabled.
Choices: Enable, Disable(Default).

USB Port 0
Enable/Disable USB Port 0: USB 3.0 port on Board.
Choices: Enable(Default), Disable.

USB Port 1

Enable/Disable USB Port 1: USB 2.0 port on Board.
Choices: Enable(Default), Disable.

USB Port 2

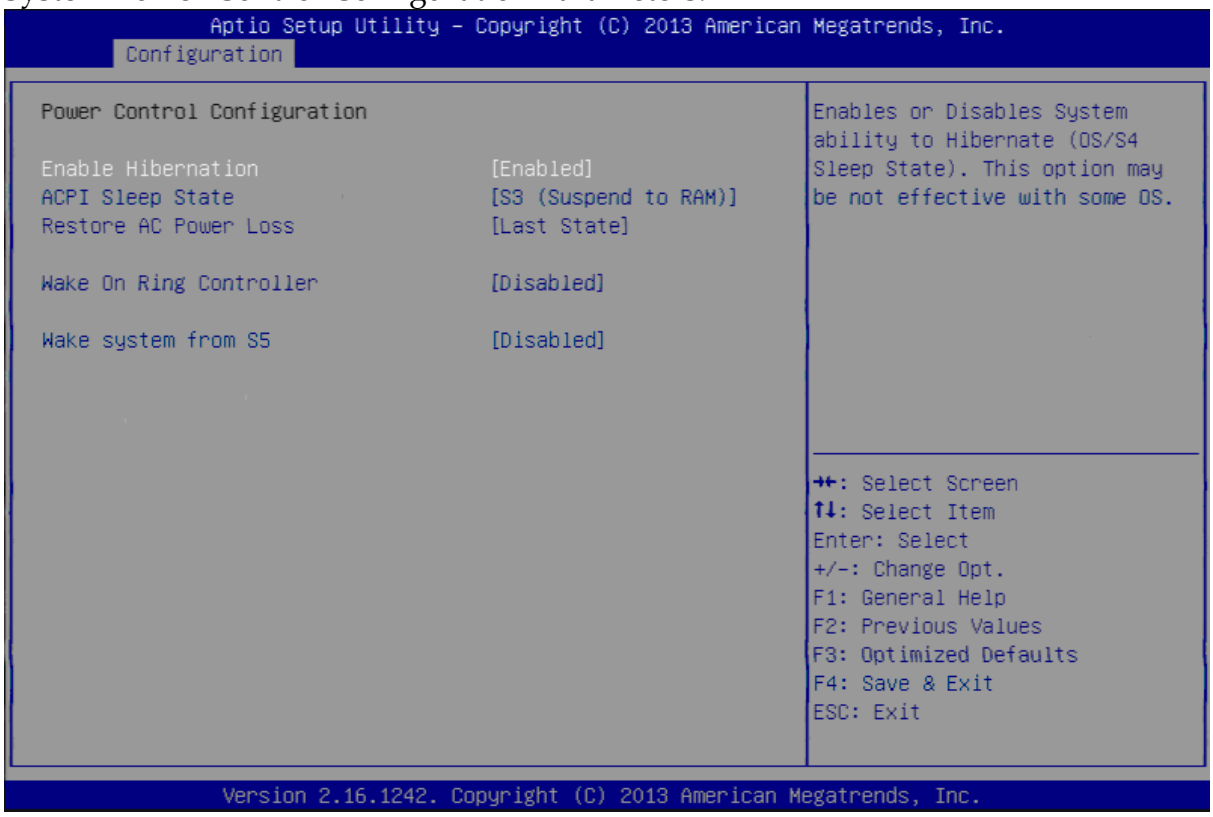
Enable/Disable USB Port 2: The USB port turn into a mini PCIE.
Choices: Enable(Default), Disable.

USB Port 3

Enable/Disable USB Port 3: The USB port as USB HUB have 2 USB Port in external cart.
Choices: Enable(Default), Disable.

Power Control Configuration

System Power Control Configuration Parameters.



Enable Hibernation

Enable or disable System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS.
Choices: Disabled, Enabled(Default).

ACPI Sleep State

Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.
Choices: Suspend Disable, S3 (Suspend to RAM) (Default)

Restore AC Ring Loss

Select AC Power state when power is re-applied after a power failure.
Choices: Power Off, Power on, Last State(Default).

Wake on Ring Controller

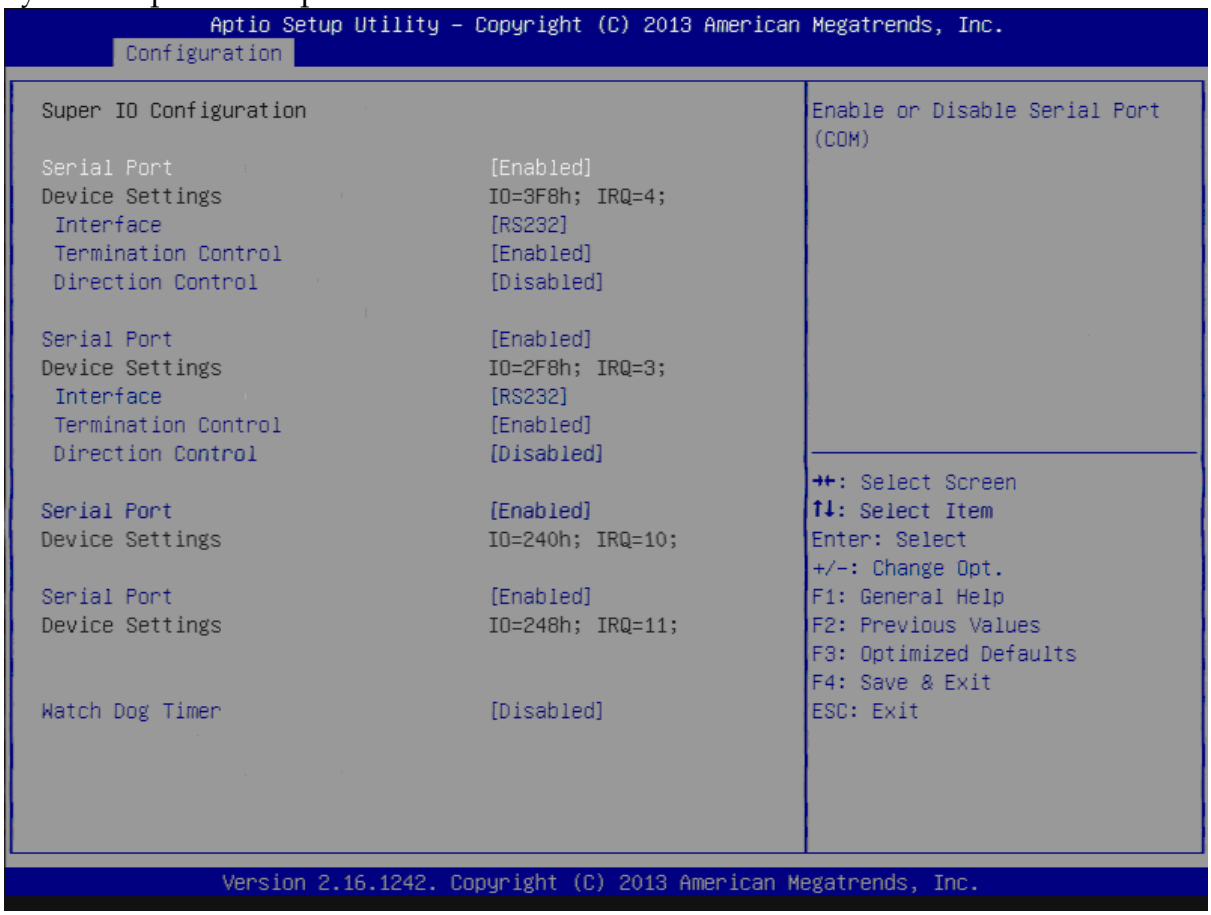
Enable / Disable GPIO wake on Ring function.
Choices: Disabled(Default), Enabled.

Wake System from S5

Enable or Disable System wake on alarm event, Select Enable, system will wake on the hr: mm: sec: specified.
Choices: Disabled(Default), Enabled.

Super IO Configuration

System Super IO Chip Parameters.



Serial Port

Enable or Disable Serial Port (COM) IO=3F8H; IRQ=4.
Choices: Disabled, Enabled(Default).

Interface

Set Current UART mode RS232, RS485, RS485/RS422.
Choices: RS232(Default), RS485 HALF DUFLEX, RS485/422 FULL DUFLEX.

Termination Control

Set Termination Control Disabled/ Enabled.
Choices: Disabled, Enabled(Default).

Direction Control

Set Direction Control set Enabled as Transceiver else; Disabled as Receiver.
Choices: Disabled(Default), Enabled.

Serial Port

Enable or Disable Serial Port (COM) IO=2F8H; IRQ=3.
Choices: Disabled, Enabled(Default).

Interface
Set Current UART mode RS232, RS485, RS485/RS422.
Choices: RS232(Default), RS485 HALF DUFLEX, RS485/422 FULL DUFLEX.

Termination Control
Set Termination Control Disabled/ Enabled.
Choices: Disabled, Enabled(Default).

Direction Control
Set Direction Control set Enabled as Transceiver else; Disabled as Receiver.
Choices: Disabled(Default), Enabled.

Serial Port
Enable or Disable Serial Port (COM) IO=240H; IRQ=10.
Choices: Disabled, Enabled(Default).

Serial Port
Enable or Disable Serial Port (COM) IO=248H; IRQ=11.
Choices: Disabled, Enabled(Default).

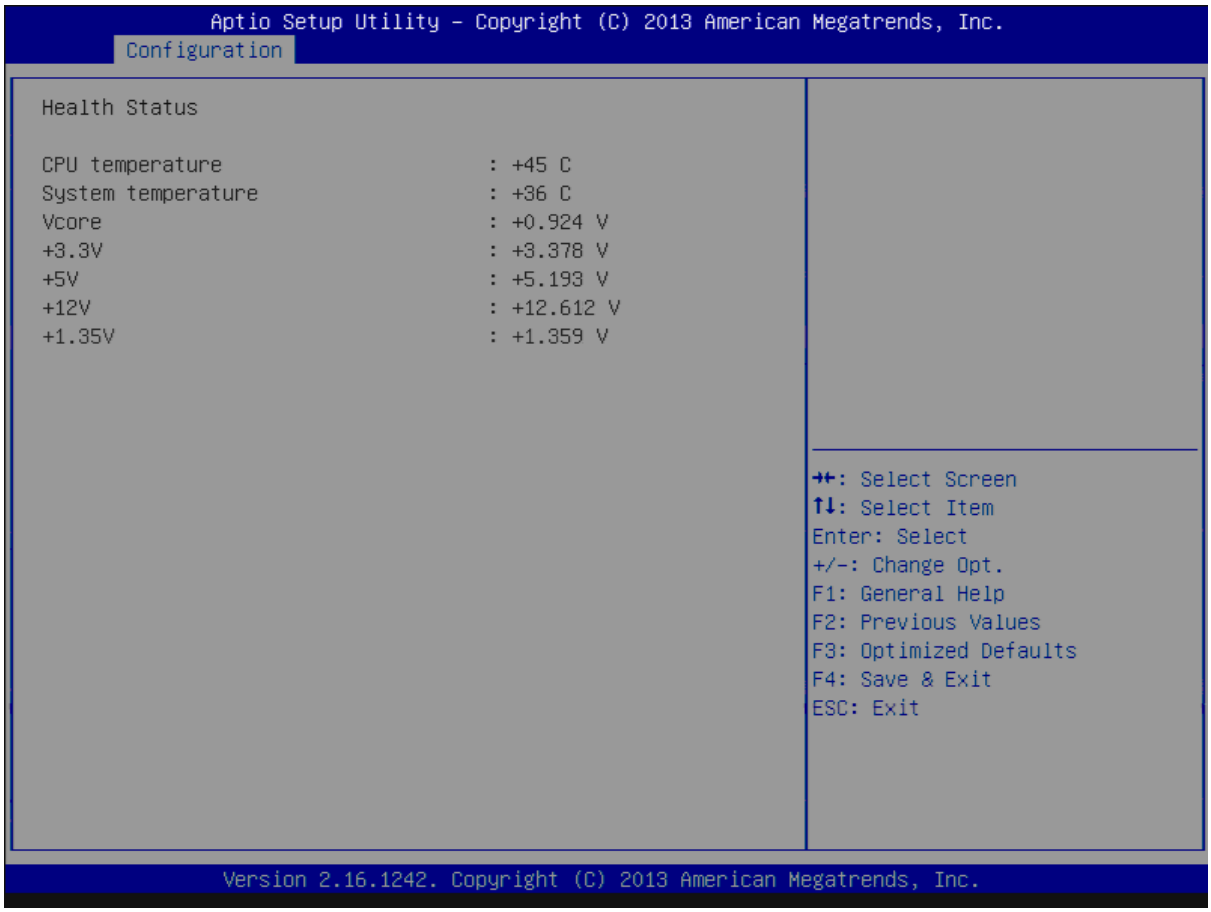
Watch Dog Timer
Enable or Disable Watch Dog Timer.
Choices: Disabled(Default), Enabled.

Timer Unit (Watch Dog Timer Enabled)
Select Timer count unit of WDT.
Choices: Seconds(Default), Minutes.

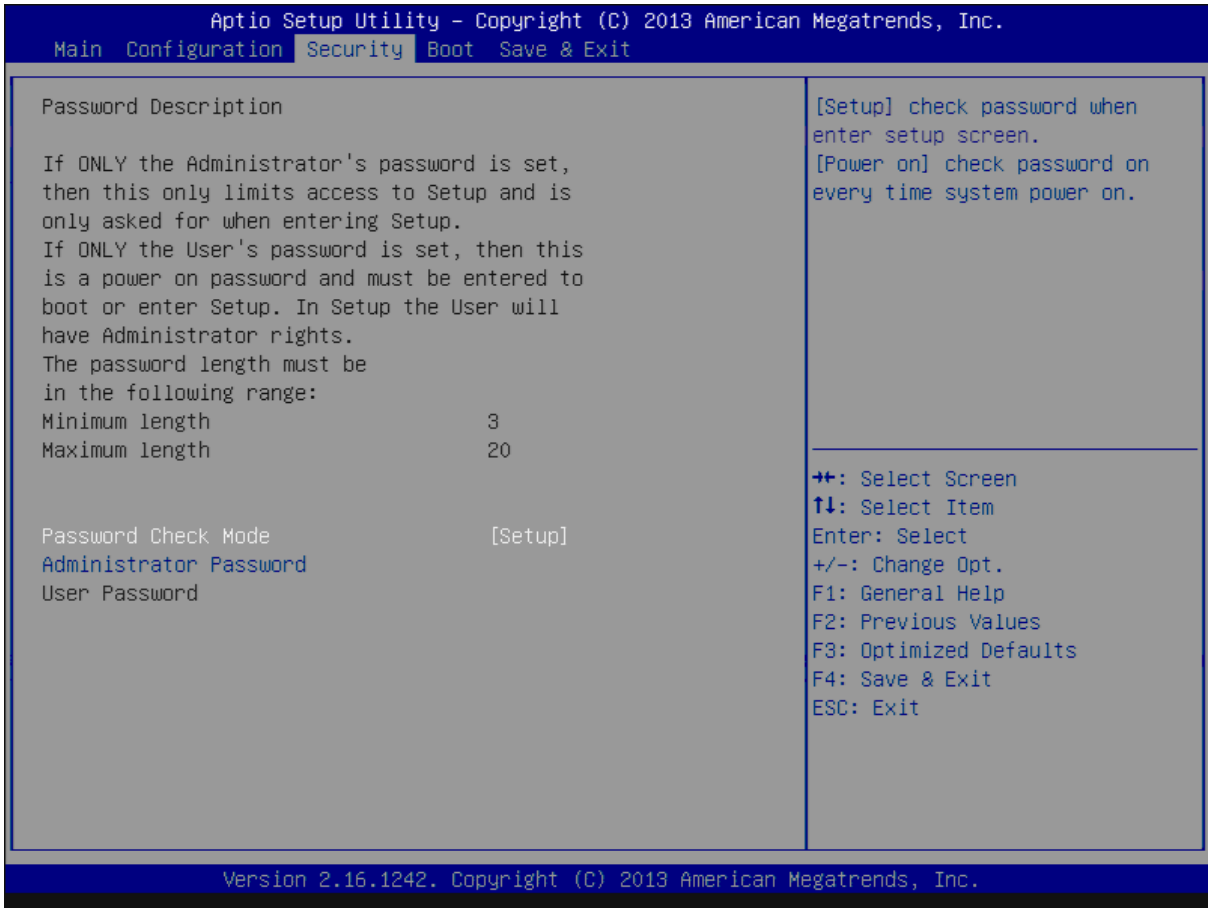
Timer value (Watch Dog Timer Enabled)
Set WDT Timer value Seconds/minutes.
Choices: Default [20].

Hardware Monitor

Monitor hardware status.



4.4 Security



Password Check Mode
[Setup] check password when enter setup screen, [Power On] check password on every time system power on.

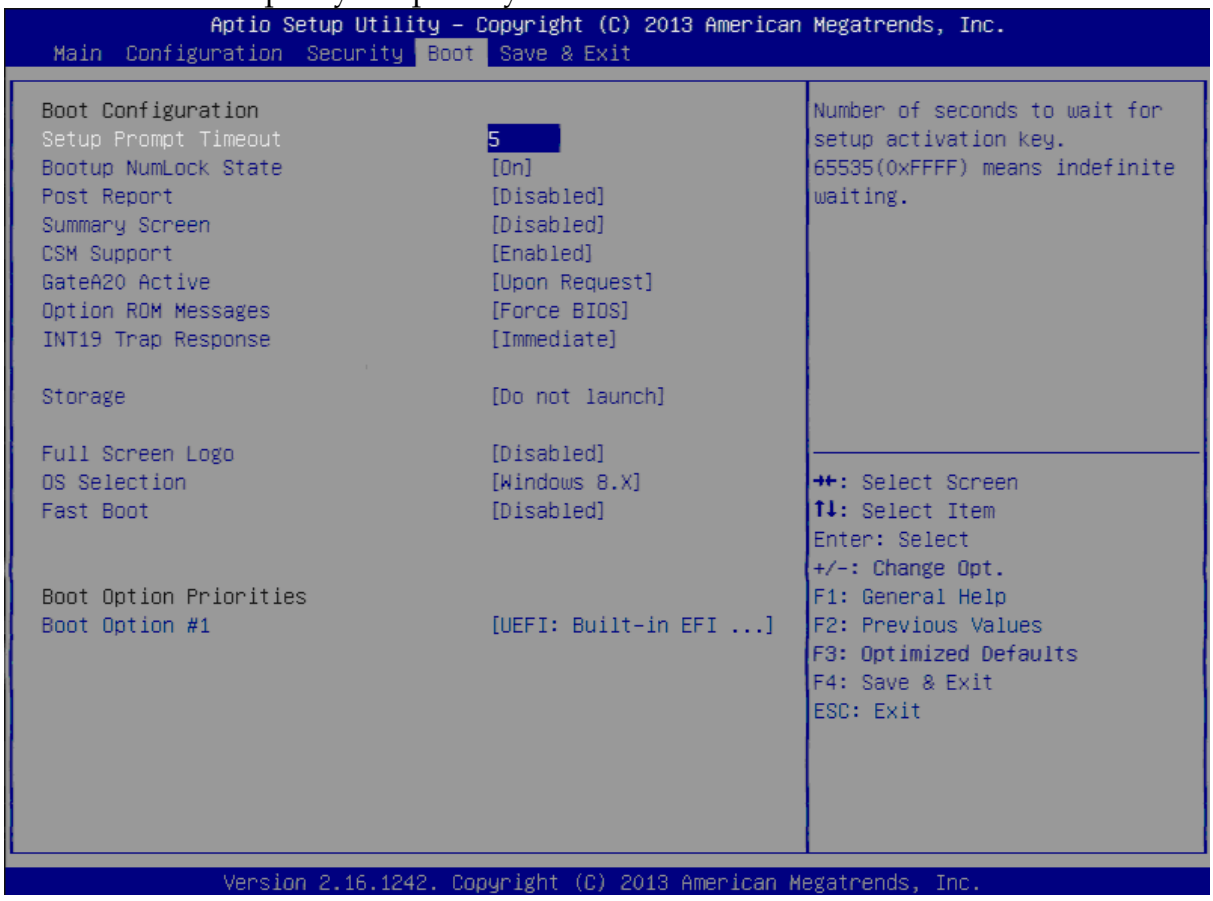
Choices: Setup(Default), Power On.

Administrator Password
Set Administrator Password

User Password
Set User Password.

4.5 Boot

Use this menu to specify the priority of boot devices.



Setup Prompt Timeout
Number of seconds to wait for setup activation key. 65535 (0xFFFF) means indefinite waiting.
Choices: Default [5].

Bootup NumLock state
Select the keyboard NumLock state.
Choices: On(Default), Off.

Post Report
Post Report Support Enabled/Disabled.
Choices: Disabled(Default), Enabled.

Summary Screen
Summary Screen Support Enabled/Disabled.
Choices: Disabled(Default), Enabled.

CSM Support
Enabled/Disabled CSM Support.
Choices: Disabled, Enabled(Default).

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.
Choices: Upon Request(Default), Always.

Option ROM Messages
Set display mode for Option ROM.
Choices: Force BIOS(Default), Keep Current.

INT19 Trap Response
BIOS reaction on INT19 trapping by Option ROM: IMMEDIATE – execute the trap right away; POSTPONED – execute the trap during legacy boot.
Choices: Immediate(Default), Postponed.

Storage
Controls the of execution of UEFI and Legacy Storage OpROM.
Choices: Do not launch(Default), UEFI only, Legacy only.

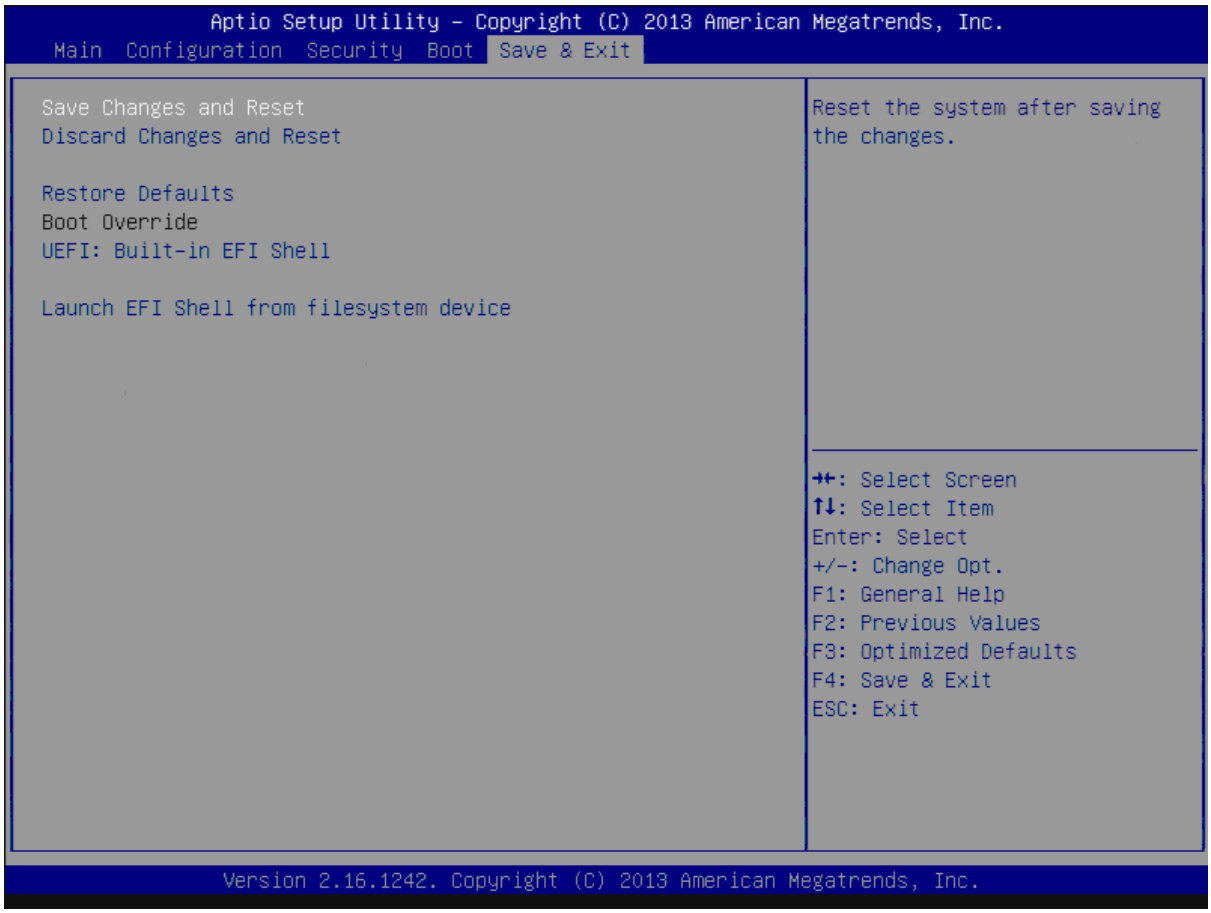
Full Screen Logo
Enables or Disables Quiet Boot option and Full screen Logo.
Choices: Disabled(Default), Enabled.

OS Selection
OS Selection
Choices: Windows 8.X(Default), Windows 7.

Fast Boot
Enables or Disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.
Choices: Disable(Default), Enabled.

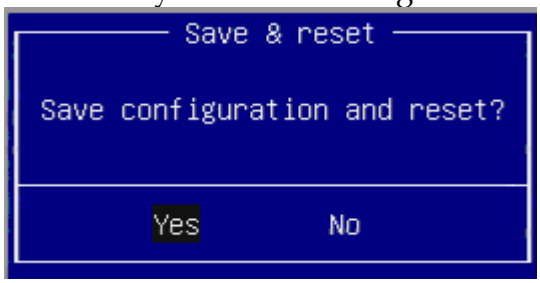
Boot Option #1
Sets the system boot order
Choices: UEFI: Built-in EFI Shell, Disabled.

4.6 Save and Exit



Save Changes and Reset

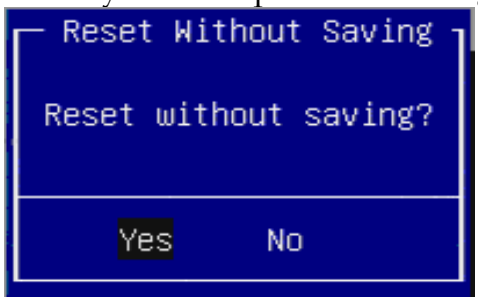
Reset the system after saving the changes.



Pressing <Enter> on this item asks for confirmation: Save configuration and reset.

Discard Changes and Exit

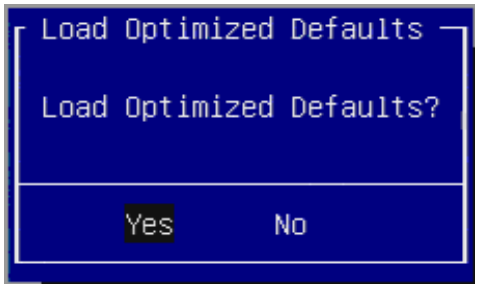
Reset system setup without saving any changes.



Pressing <Enter> on this item asks for confirmation: Reset without saving.

Restore Defaults

Restore/Load Default values for all the setup options.



Pressing <Enter> on this item asks for confirmation: Load Optimized Default.

Chapter 5
Important Instructions

This chapter includes instructions which must be carefully followed when the fan-less embedded system is used.

5.1 Note on the Warranty

Due to their limited service life, parts which, by their nature, are especially subject to wear are not included in the guarantee beyond the legal stipulations.

5.2 Exclusion of Accident Liability Obligation

Portwell, Inc. shall be exempt from the statutory accident liability obligation if users fail to abide by the safety instructions.

5.3 Liability Limitations / Exemption from the Warranty Obligation

In the event of damage to the system unit caused by failure to abide by the hints in this manual and on the unit (especially the safety instructions), Portwell, Inc. shall not be required to respect the warranty even during the warranty period and shall be free from the statutory accident liability obligation.

5.4 Declaration of Conformity

EMC: CE/FCC Class A.
Operation is subject to the following two conditions:
1. This equipment may not cause harmful interference.
2. This equipment must accept any interference that may cause undesired operation.
Applicable Standards:
EN 55032 / EN 55024
EN 55011 / EN 61000-6-4 / EN 61000-6-2
FCC 47 CFR Part 15 Subpart

Chapter 6
Frequent Asked Questions

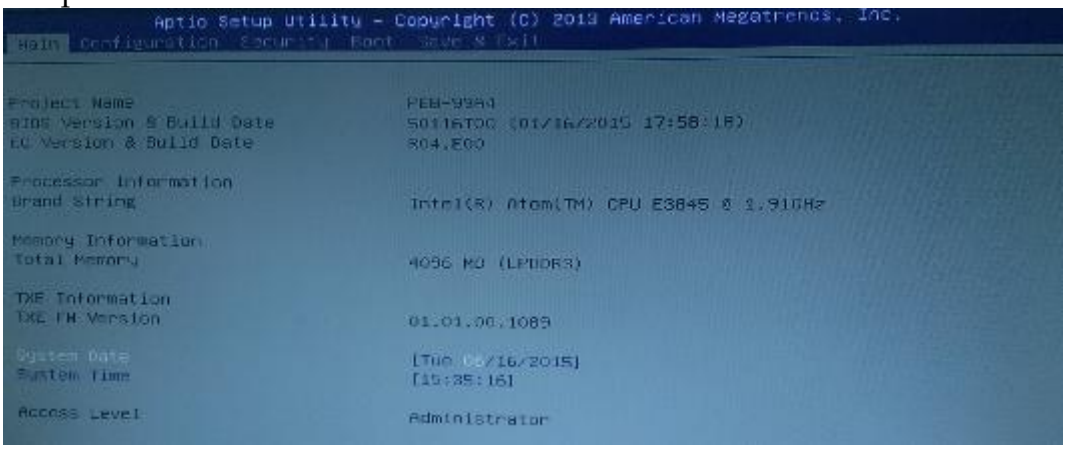
Q1: What materials can be applied to clean the front of Panel PC?

Answer:
Mild detergent and water, or isopropyl alcohol is recommended for cleaning. Use of solvents with strong acidity or alkalinity, which could react with the paint or printed color or plastic, should be avoided.

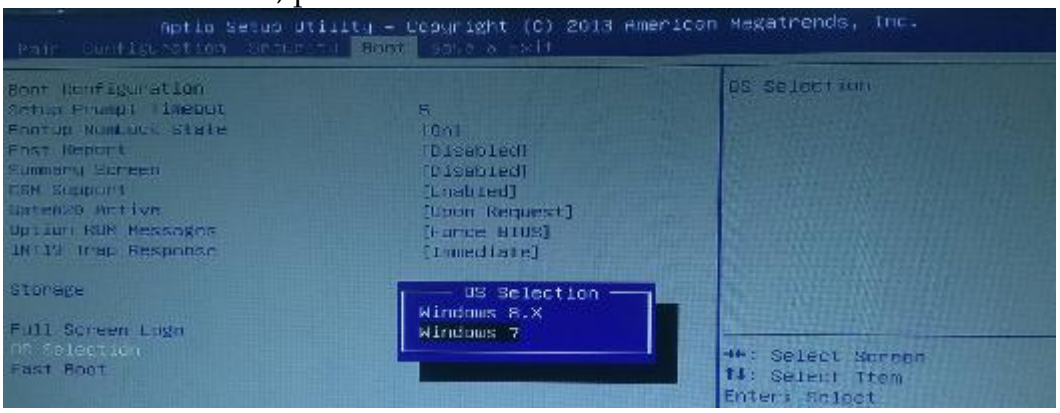
Q2: How to set OS Selection for different OS?

Answer:
You can find OS Selection under BIOS setting.

Step1. Power on the computer and the system will start POST (Power on Self Test) process. When the message appears on the screen, press <Del> key and enter BIOS setup screen.



Step2. In page "Boot", you can find OS Selection and choose the corresponding OS.
Note: For Linux OS, please choose Windows 7.



Q3: What supposed to do when forget the password of system BIOS?

Answer:
Please turn off the power supply, and then find the JP1 to set it from 1-2 short to 2-3 short. Wait for 5 seconds to clean password; then set it back to 1-2 short to turn on power supply.

JP1: CMOS Setup

PIN NO.	DESCRIPTION
1-2	Normal (Keep CMOS Setup) ★ Default
2-3	Clear CMOS Setup

Q4: How to set AT mode for the system?

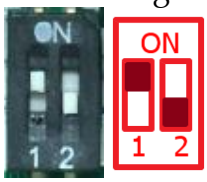
Answer:
The default setting is ATX mode: user needs to press the power button in order to turn on the system. By adjusting SW2 port 1 jumper on board and restart the system, user can set the system as AT mode.

SW2: AT/ATX & BIOS recovery Setup

PIN NO.	DESCRIPTION
1-4(Port1)	ON: AT Mode OFF:ATX Mode ★ Default

*Note: Diagram ATX mode setting

*Note: Diagram AT mode setting



Q5: How to update BIOS?

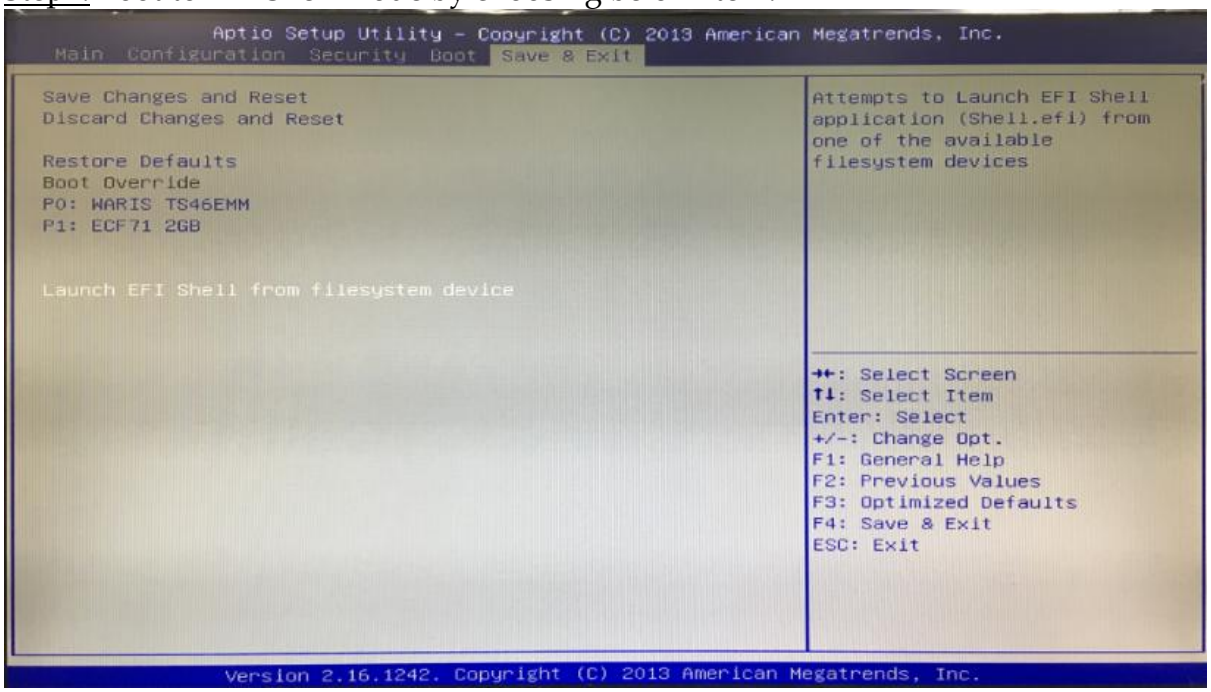
Answer:
Please follow procedures below step by step.

Step1. Execute the "Updaet.zip" file to root of the bootable USB pen drive. You can get the "Update.efi" and "Readme.txt" two files.

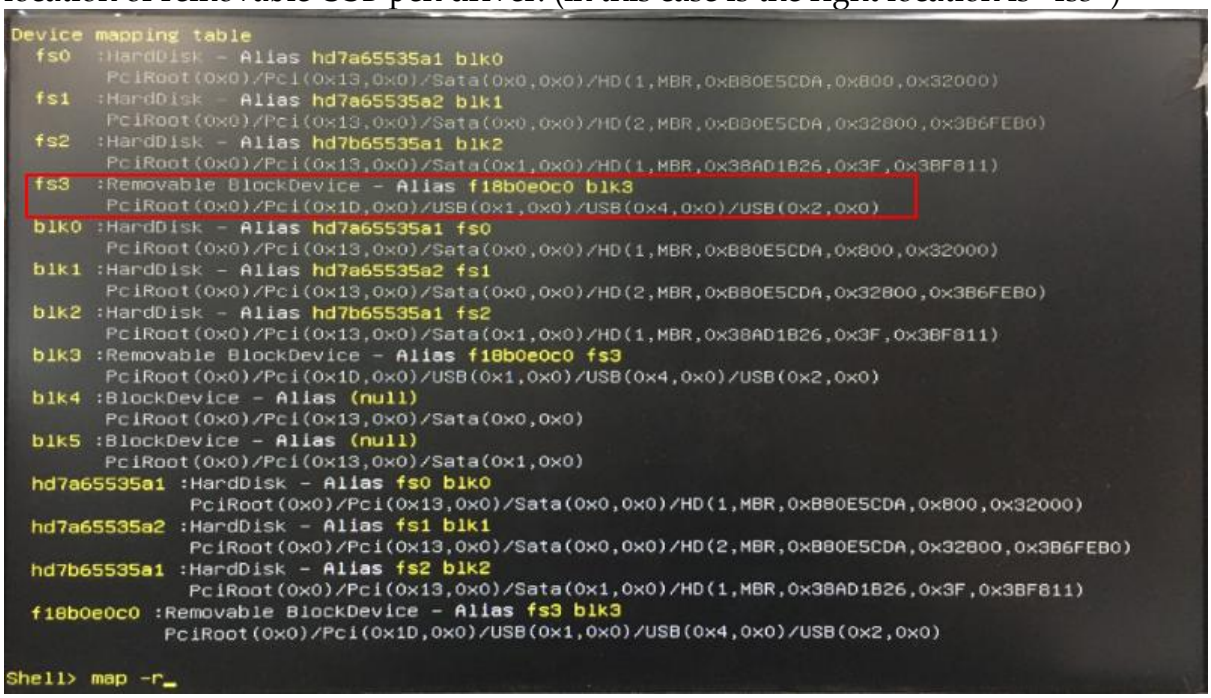
Step2. Insert your USB pen drive in USB port of the FUDA2-S1x21 Series Panel PC and press the power button to power on.

Step3. Press <Del> key during the POST (Power On Self Test) process will enter BIOS setup screen.

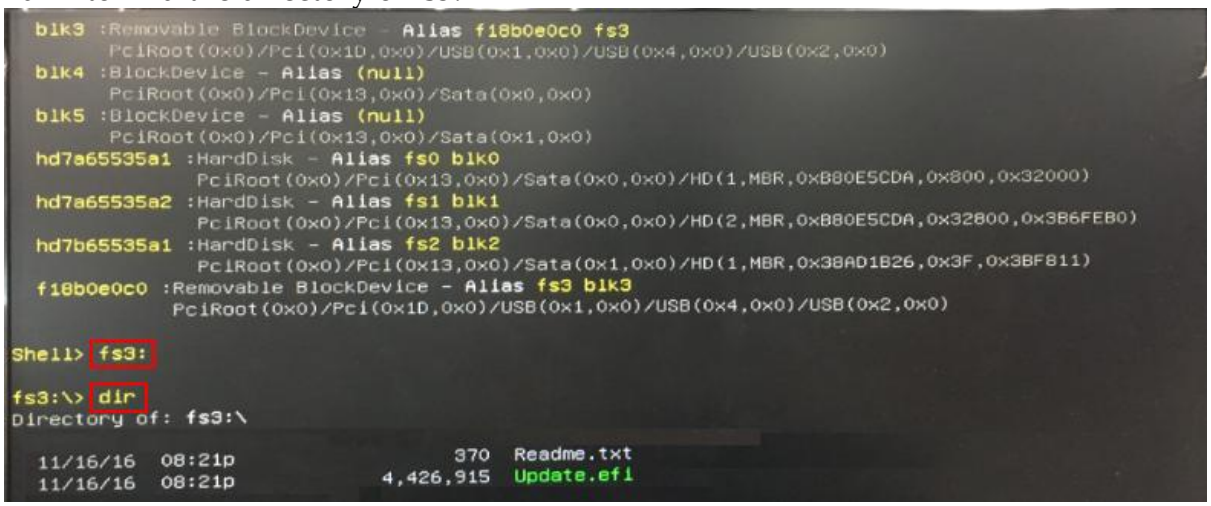
Step4. Boot to EFI-Shell mode by choosing below item.



Step5. Type "map –r" command to show the mapping table and find the right location of removable USB pen driver. (in this case is the right location is "fs3")



Step5. Type “fs3:” command to switch to the root of the USB pen drive. And type “dir” to find the directory of fs3.



Step6. Type the ”update” command to start flash BIOS processes.

Step7. Press “Ctrl+Alt+Del” to reboot when it finish all update process.