SPC-1500/1700/1900 Series

Open Pluggable Specification Compliant
15"/17"/19" Multi-touch Bezel-Free Flat Panel PC with
4th Gen. / 5th Gen. Intel® Core™ i / Celeron® Processor

User's Guide

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Safety Instructions

■ Before You Begin

Before handling the product, read the instructions and safety guidelines on the following pages to prevent damage to the product and to ensure your own personal safety. Refer to the "Advisories" section in the Preface for advisory conventions used in this user's guide, including the distinction between Warnings, Cautions, Important Notes, and Notes.

- Always use caution when handling/operating a computer. Only qualified, experienced, authorized electronics service personnel should access the interior of a computer. The power supplies produce high voltages and energy hazards, which can cause bodily harm.
- Use extreme caution when installing or removing components. Refer to the installation instructions in this user's guide for precautions and procedures. If you have any questions, please contact Quanmax Post-Sales Technical Support.
- Access can only be gained by service persons or by users who have been instructed about the reasons for the restrictions applied to the location and about any precautions that shall be taken; and access is through the use of a tool or lock and key, or other means of security, and is controlled by authority responsible for the location.

WARNING

High voltages are present inside the chassis when the unit's power cord is plugged into an electrical outlet. Turn off system power, turn off the power supply, and then disconnect the power cord from its source before removing the chassis cover. Turning off the system power switch does not remove power to components.

■ When Working Inside a Computer

Before taking covers off a computer, perform the following steps:

1. Turn off the computer and any peripherals.
2. Disconnect the computer and peripherals from their power sources or subsystems to prevent electric shock or system board damage. This does not apply when hot swapping parts.
3. Follow the guidelines provided in “Preventing Electrostatic Discharge” on the following page.
4. Disconnect any telephone or telecommunications lines from the computer.

In addition, take note of these safety guidelines when appropriate:

- To help avoid possible damage to system boards, wait five seconds after turning off the computer before removing a component, removing a system board, or disconnecting a peripheral device from the computer.
- When you disconnect a cable, pull on its connector or on its strain-relief loop, not on the cable itself. Some cables have a connector with locking tabs. If you are disconnecting this type of cable, press in on the locking tabs before disconnecting the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before connecting a cable, make sure both connectors are correctly oriented and aligned.

CAUTION

Do not attempt to service the system yourself except as explained in this user’s guide. Follow installation and troubleshooting instructions closely.

■ Preventing Electrostatic Discharge

Static electricity can harm system boards. Perform service at an ESD workstation and follow proper ESD procedure to reduce the risk of damage to components. Quanmax strongly encourages you to follow proper ESD procedure, which can include wrist straps and smocks, when servicing equipment.
You can also take the following steps to prevent damage from electrostatic discharge (ESD):

- When unpacking a static-sensitive component from its shipping carton, do not remove the component's antistatic packing material until you are ready to install the component in a computer. Just before unwrapping the antistatic packaging, be sure you are at an ESD workstation or grounded. This will discharge any static electricity that may have built up in your body.
- When transporting a sensitive component, first place it in an antistatic container or packaging.
- Handle all sensitive components at an ESD workstation. If possible, use antistatic floor pads and workbench pads.
- Handle components and boards with care. Don't touch the components or contacts on a board. Hold a board by its edges or by its metal mounting bracket.
- Do not handle or store system boards near strong electrostatic, electromagnetic, magnetic, or radioactive fields.

■ Instructions for Lithium Battery

WARNING

Danger of explosion when battery is replaced with incorrect type. Only replace with the same or equivalent type recommended by the manufacturer.

Do not dispose of lithium batteries in domestic waste. Dispose of the battery according to the local regulations dealing with the disposal of these special materials (e.g. to the collecting points for disposal of batteries)

Preface

■ How to Use This Guide

This guide is designed to be used as step-by-step instructions for installation, and as a reference for operation, troubleshooting, and upgrades.

NOTE

Driver downloads and additional information are available under Downloads on our web site: www.quanmax.com.

■ Unpacking

When unpacking, follow these steps:

1. After opening the box, save it and the packing material for possible future shipment.
2. Remove all items from the box. If any items listed on the purchase order are missing, notify Quanmax customer service immediately.
3. Inspect the product for damage. If there is damage, notify Quanmax customer service immediately. Refer to “Warranty Policy” for the return procedure.

■ Regulatory Compliance Statements

This section provides the FCC compliance statement for Class A devices.

FCC Compliance Statement:

This equipment has been tested and found to comply with 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 in residential installations. This equipment generates, uses, and can radiate radiofrequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause

interference to radio or television equipment reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by Quanmax could void the user's authority to operate the equipment.

NOTE

The assembler of a personal computer system may be required to test the system and/or make necessary modifications if a system is found to cause harmful interference or to be noncompliant with the appropriate standards for its intended use.

■ Warranty Policy

Limited Warranty

Quanmax Inc.'s detailed Limited Warranty policy can be found under Support at www.quanmax.com. Please consult your distributor for warranty verification.
The limited warranty is void if the product has been subjected to alteration, neglect, misuse, or abuse; if any repairs have been attempted by anyone other than Quanmax or its authorized agent; or if the failure is caused by accident, acts of God, or other causes beyond the control of Quanmax or the manufacturer. Neglect, misuse, and abuse shall include any installation, operation, or maintenance of the product other than in accordance with the user's guide.
No agent, dealer, distributor, service company, or other party is authorized to change, modify, or extend the terms of this Limited Warranty in any manner whatsoever. Quanmax reserves the right to make changes or improvements in any product without incurring any obligation to similarly alter products previously purchased.

Return Procedure

For any Limited Warranty return, please contact Support at www.quanmax.com and login to obtain a Return Material Authorization (RMA) Number. If you do not have an

account, send an email to support@quanmax.com to apply for one.
All product(s) returned to Quanmax for service or credit must be accompanied by a Return Material Authorization (RMA) Number. Freight on all returned items must be prepaid by the customer who is responsible for any loss or damage caused by common carrier in transit. Returns for Warranty must include a Failure Report for each unit, by serial number(s), as well as a copy of the original invoice showing the date of purchase.
To reduce risk of damage, returns of product must be in a Quanmax shipping container. If the original container has been lost or damaged, new shipping containers may be obtained from Quanmax Customer Service at a nominal cost.
Quanmax owns all parts removed from repaired products. Quanmax uses new and reconditioned parts made by various manufacturers in performing warranty repairs and building replacement products. If Quanmax repairs or replaces a product, its warranty term is not extended.
Shipments not in compliance with this Limited Warranty Return Policy will not be accepted by Quanmax.

Limitation of Liability

In no event shall Quanmax be liable for any defect in hardware, software, loss, or inadequacy of data of any kind, or for any direct, indirect, incidental, or consequential damages in connection with or arising out of the performance or use of any product furnished hereunder. Quanmax's liability shall in no event exceed the purchase price of the product purchased hereunder. The foregoing limitation of liability shall be equally applicable to any service provided by Quanmax or its authorized agent.

■ Maintaining Your Computer

Environmental Factors

- **Temperature**

  The ambient temperature within an enclosure may be greater than room ambient temperature. Installation in an enclosure should be such that the amount of air flow required for safe operation is not compromised. Consideration should be given to the maximum rated ambient temperature. Overheating can cause a variety of problems, including premature aging and failure of chips or mechanical failure of devices.

  If the system has been exposed to abnormally cold temperatures, allow a two-hour warm-up period to bring it up to normal operating temperature before

turning it on. Failure to do so may cause damage to internal components, particularly the hard disk drive.

- **Humidity**

  High-humidity can cause moisture to enter and accumulate in the system. This moisture can cause corrosion of internal components and degrade such properties as electrical resistance and thermal conductivity. Extreme moisture buildup inside the system can result in electrical shorts, which can cause serious damage to the system.

  Buildings in which climate is controlled usually maintain an acceptable level of humidity for system equipment. However, if a system is located in an unusually humid location, a dehumidifier can be used to maintain the humidity within an acceptable range. Refer to the “Specifications” section of this user’s guide for the operating and storage humidity specifications.

- **Altitude**

  Operating a system at a high altitude (low pressure) reduces the efficiency of the cooling fans to cool the system. This can cause electrical problems related to arcing and corona effects. This condition can also cause sealed components with internal pressure, such as electrolytic capacitors, to fail or perform at reduced efficiency.

Power Protection

The greatest threats to a system's supply of power are power loss, power spikes, and power surges caused by electrical storms, which interrupt system operation and/or damage system components. To protect your system, always properly ground power cables and one of the following devices.

- **Surge Protector**

  Surge protectors are available in a variety of types and usually provide a level of protection proportional with the cost of the device. Surge protectors prevent voltage spikes from entering a system through the AC power cord. Surge protectors, however, do not offer protection against brownouts, which occur when the voltage drops more than 20 percent below the normal AC line voltage level.

- **Line Conditioner**

  Line conditioners go beyond the overvoltage protection of surge protectors. Line conditioners keep a system's AC power source voltage at a fairly constant level and, therefore, can handle brownouts. Because of this added protection, line conditioners cost more than surge protectors. However, line conditioners cannot protect against a complete loss of power.

- **Uninterruptible Power Supply**

  Uninterruptible power supply (UPS) systems offer the most complete protection against variations on power because they use battery power to keep the server running when AC power is lost. The battery is charged by the AC power while it is available, so when AC power is lost, the battery can provide power to the system for a limited amount of time, depending on the UPS system.
  UPS systems range in price from a few hundred dollars to several thousand dollars, with the more expensive units allowing you to run larger systems for a longer period of time when AC power is lost. UPS systems that provide only 5 minutes of battery power let you conduct an orderly shutdown of the system, but are not intended to provide continued operation. Surge protectors should be used with all UPS systems, and the UPS system should be Underwriters Laboratories (UL) safety approved.

Chapter 1

Introduction

■ Overview

The SPC-1500/1700/1900 Series is an open pluggable specification compliant 15/17/19-inch 10-point PCT multi-touch bezel-free flat panel PC equipped with 4th Generation Intel® Quad Core Processor. It boasts (1) excellent processing / graphics performance for complicated visualization; (2) simplified / friendly platform for installation, usage, maintenance & upgrade; and (3) multi-touch interface for fast / intuitive operation.

Checklist

- SPC-1500/1700/1900 Series
- Power Adapter
- Power Cord
- Driver CD
- Quick installation Guide
- Optional VESA Mounting Kit
- Optional wireless LAN
- 1x Panel Mounting Kit (with screw bag)

Features

- 15"/17"/19" 10-point multi-touch LCD Display
- 4th Gen. Intel® Haswell / 5th Gen. Intel® Broadwell / Celeron® Processor
- Intel® HM87 / QM87 Express Chipset (for Core™ i Processors)
- Intel® Iris Pro Graphics 6200 / HD Graphics 4600/5600 / HD Graphics
- 2x DDR3L SO-DIMM up to 16/8GB
- 1x HDMI, 1x DP (for Core™ i Processor)
- Up to 6x USB3.0, 2x GbE LAN
- Up to 2x Mini-PCIe slot supported
- 1x Removable 2.5" Slim Type HDD Slot

■ Product Specifications

CPU Support	SPC-1500/1700/1900: Intel® Celeron® J1900 Processor SPC-1510/1710/1910: Intel® Haswell Core™ i7-4700HQ Processor SPC-1520/1720/1920: Intel® Haswell Core™ i7-4700EQ Processor SPC-1530/1730/1930: Intel® Haswell Core™ i5-4400E Processor SPC-1540/1740/1940: Intel® Broadwell Core™ i7-5700EQ Processor SPC-1550/1750/1950: Intel® Broadwell Core™ i7-5850EQ Processor		
Chipset	Intel® HM87 / QM87 Express Chipset (for Core™ i CPU)		
Memory	2x DDR3L 1333/1600 MT/S SO-DIMM up to 16 GB (for Core™ i CPU) 2x DDR3L 1333 MT/S SO-DIMM up to 8GB (for Celeron® CPU)		
BIOS	AMI Plug & Play SPI BIOS		
Graphic	Intel® Iris Pro Graphics 6200 (for Broadwell Core™ i7-5850EQ CPU) Intel® HD Graphics 5600 (for Broadwell Core™ i7-5700EQ CPU) Intel® HD Graphics 4600 (for Haswell CPU) Intel® HD Graphics (for Celeron® CPU)		
LCD Display	SPC-1500/10/20/30/40/50	SPC-1700/10/20/30/40/50	SPC-1900/10/20/30/40/50
Display Size	15 inch, 4:3	17 inch, 5:4	19 inch, 5:4
Resolution	1024 x 768	1280 x 1024	1280 x 1024
Backlight	LED	LED	LED
Contrast Ratio	600:1 (typical)	1000:1 (typical)	1000:1 (typical)
Brightness	350cd/m² (typical)	350cd/m² (typical)	250cd/m² (typical)
Touch Sensor	10-point PCT multi-touch sensor		
External Display	1x HDMI (on OPS module) 1x DP (on OPS module, for Core™ i CPU)		
LAN	2x GbE (1x Intel® I217-LM, 1x Realtek RTL8111G, on OPS module) PXE/WOL supported		
Audio	Realtek ALC662 HD Codec w/ 2W Audio Amplifier 1x Audio Jack for Line-out/Line-in/Mic-in (on OPS module) 1x Audio Jack for Line-out (on Display)		
Storage	1x 2.5" Slim Type HDD Slot (Removable)		
USB	6x USB3.0 (for Core™ i CPU, 4x on OPS module, 2x on Display) / 3x USB3.0 (for Celeron® CPU, 1x on OPS module, 2x on Display) 3x USB2.0 (for Celeron® CPU, on Display)		
COM	1 x COM (Tx/Rx only, on Display)		
Expansion slot	2x mPCIe slot (for Core™ i CPU) / 1x mPCIe slot (for Celeron® CPU) 1x SIM card slot		

Hardware Monitor	Operating voltage, CPU temperature		
Watchdog Timer	1-255 step, can be set with software on Super I/O		
Power	DC 19V input		
OS Support	Windows 7, Windows 8, Linux		
Dimensions (W x H x D)	SPC-1500/10/20/30/40/50	SPC-1700/10/20/30/40/50	SPC-1900/10/20/30/40/50
	381.7 x 305.6 x 68.2 mm / 15.03" x 12.03" x 2.69"	413.0 x 334.0 x 73.3 mm / 16.26" x 13.15" x 2.89"	447.3 x 372.0 x 70.4 mm / 17.61" x 14.65" x 2.77"
Environment	Operation Temperature: 0°C ~ 50°C / 32°F ~ 122°F Storage Temperature: -20°C ~ 60°C / -4°F ~ 140°F Humidity: 0% ~ 95%		
Certification	CE, FCC Class A		

Table 1 SPC-1500/1700/1900 Series product specification

■ System tour

Refer to the diagrams below to identify the components of the system.

■ I/Os

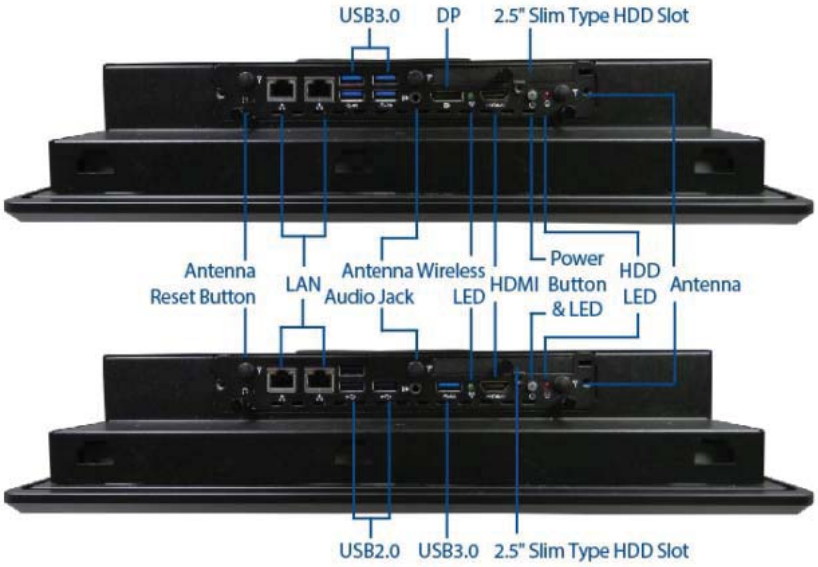


Figure 1 I/Os on OPS Module (Upper for Core™ i; Lower for Celeron®)

Figure 2 I/Os on Display Rear Side

Power Input

The supplied power adapter converts AC power to DC for use with this jack. Power supplied through this jack supplies power to the PC. To prevent damage to the PC, always use the supplied power adapter.

Power button (with power LED-blue)

The power push button allows powering ON and OFF the system.
The power LED will light when the PC is power-on.

HDD LED (Red)

The hard disk LED blinks when data is being written into or read from the HDD.

Wireless LED (Green)

When the data is Transferring, the Wireless LED will blink.

Ethernet

The eight-pin RJ-45 LAN port supports a standard Ethernet cable for connection to a local network.

HDMI

HDMI connector for display output

DP

DP is a display interface used to connect a video source to a display device such as a computer monitor or a television set.

Audio Jack

Audio Jack for Line-out/Line-In/MIC-In (on OPS module)
Audio Jack for Line-out (on Display)

USB

The USB (Universal Serial Bus) port is compatible with USB devices such as keyboards, mouse devices, cameras, and hard disk drives. USB allows many devices to run simultaneously on a single computer, with some peripheral acting as additional plug-in sites or hubs.

Reset Switch

To clear the CMOS, use the tip of a pen to press the button briefly (for less than three seconds).

HDD Slot

2.5” Slim Type HDD Slot

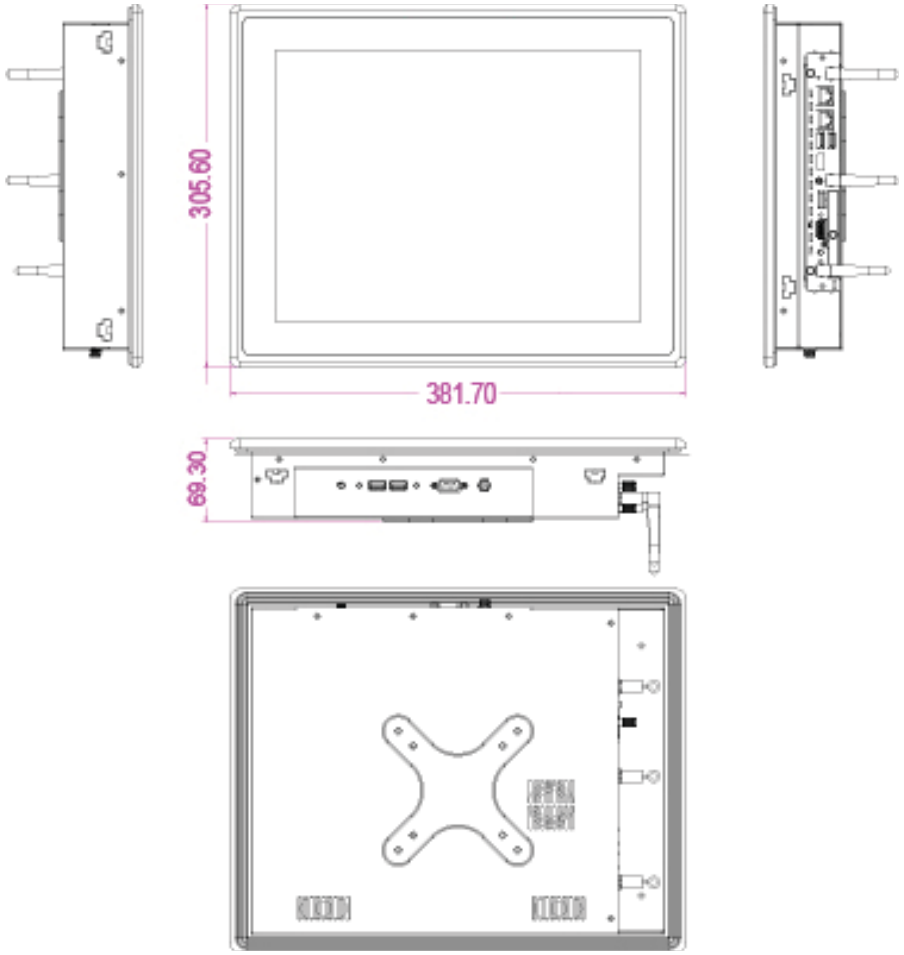
COM

D-Sub 9 pin connector for Tx/Rx connection

External Antenna

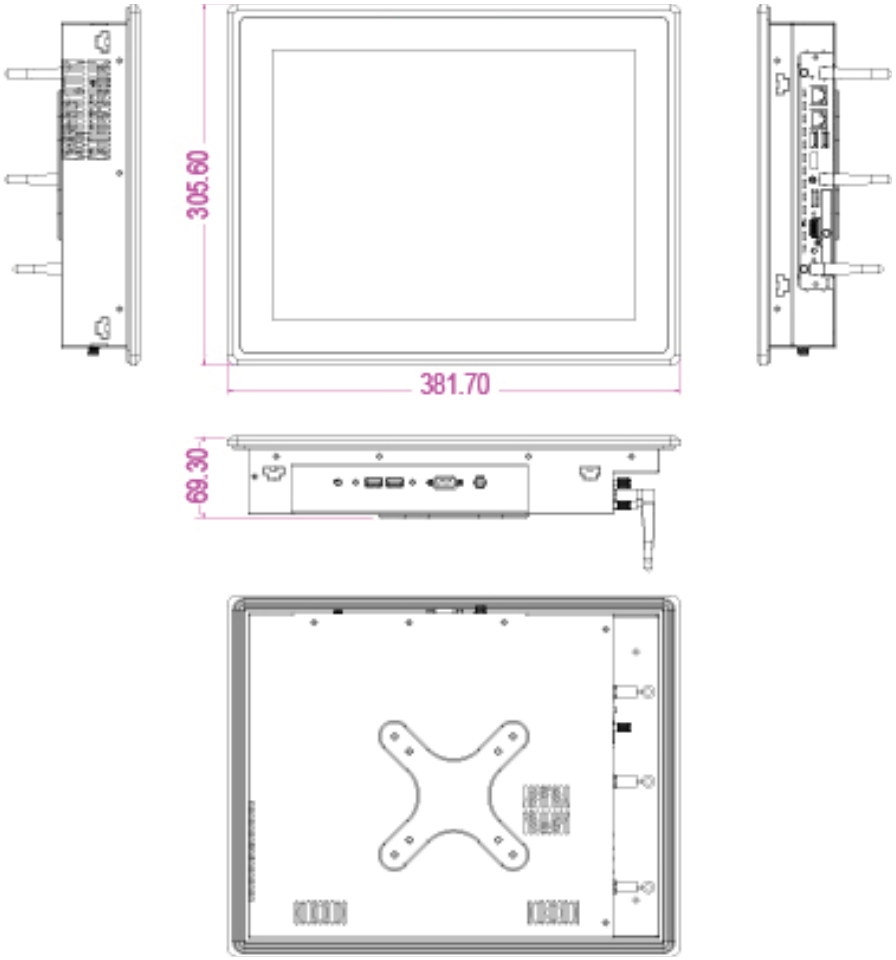
Spared hole on the casing for connecting an external antenna

Mechanical Dimensions



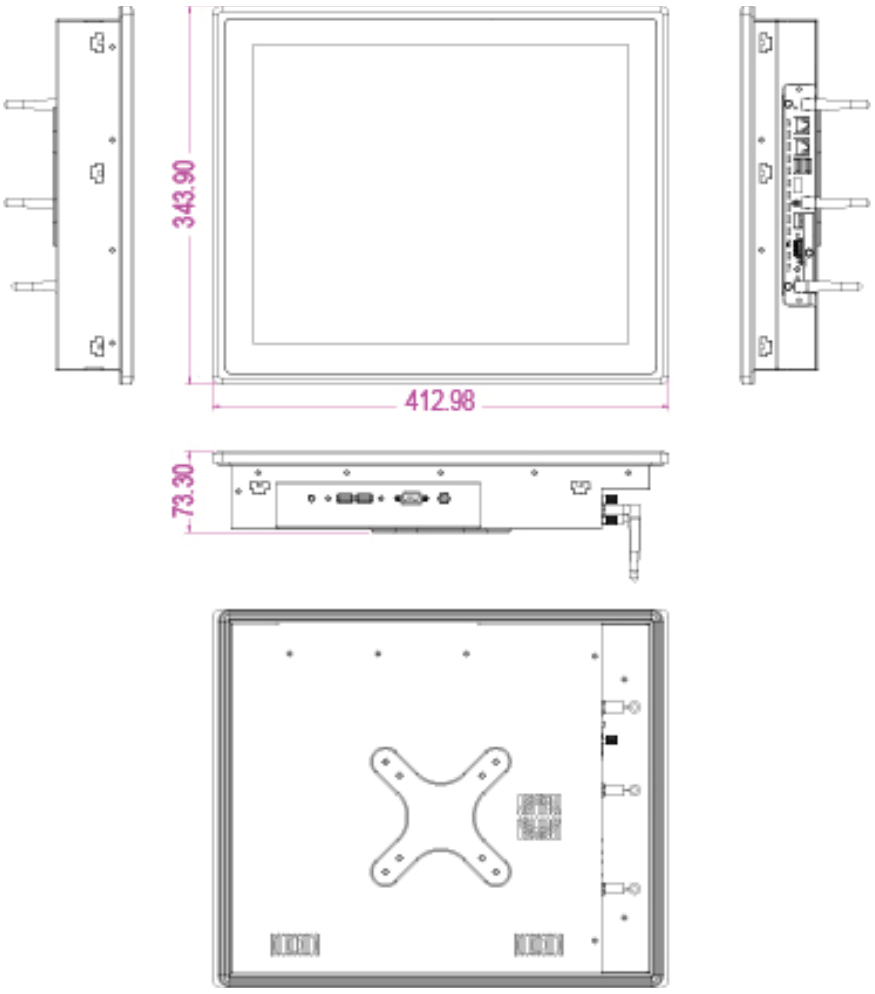
381.7 x 305.6 x 69.3 mm (W x H x D)

Figure 3 SPC-1500 Mechanical Dimensions



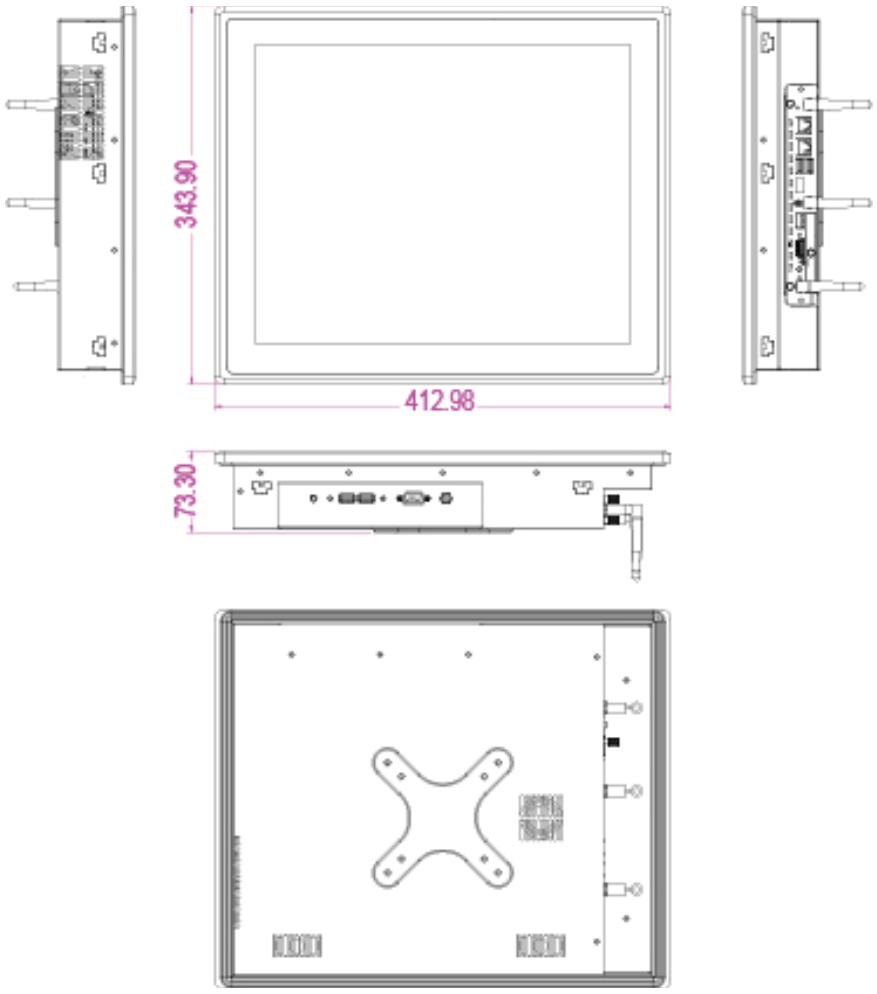
381.7 x 305.6 x 69.3 mm (W x H x D)

Figure 4 SPC-1510/1520/1530/1540/1550 Mechanical Dimensions



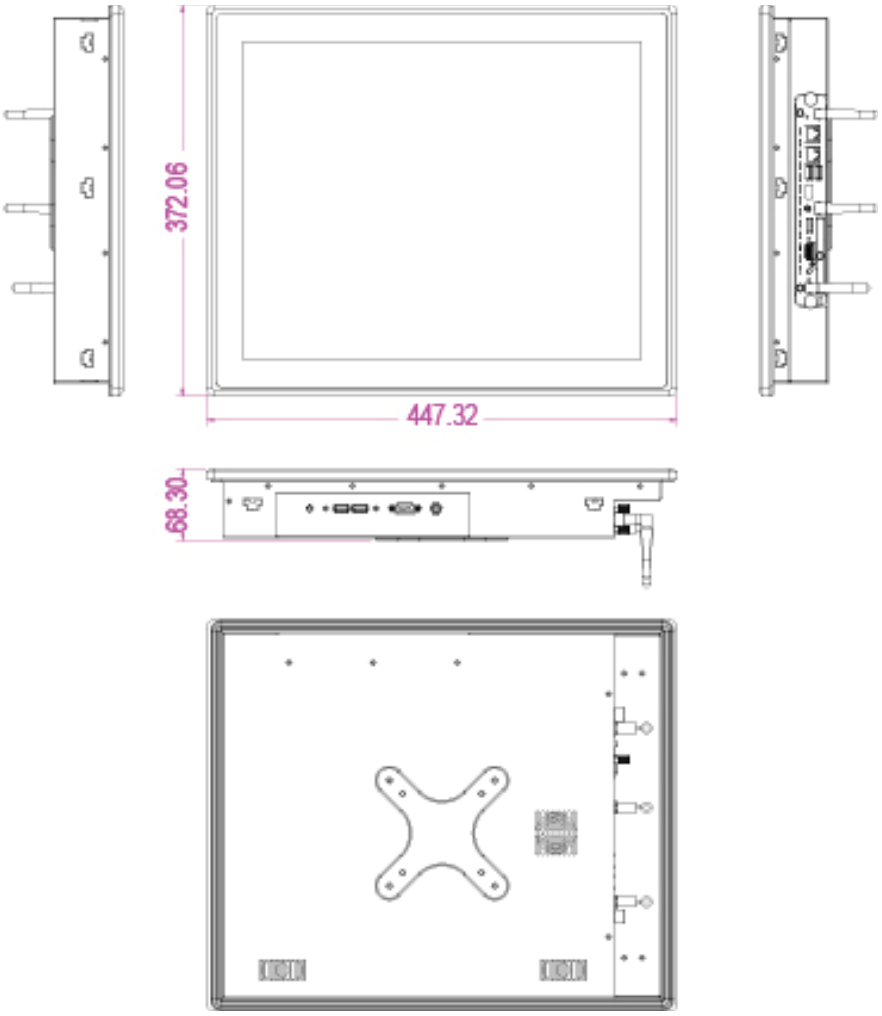
412.98 x 343.9 x 73.3 mm (W x H x D)

Figure 5 SPC-1700 Mechanical Dimensions



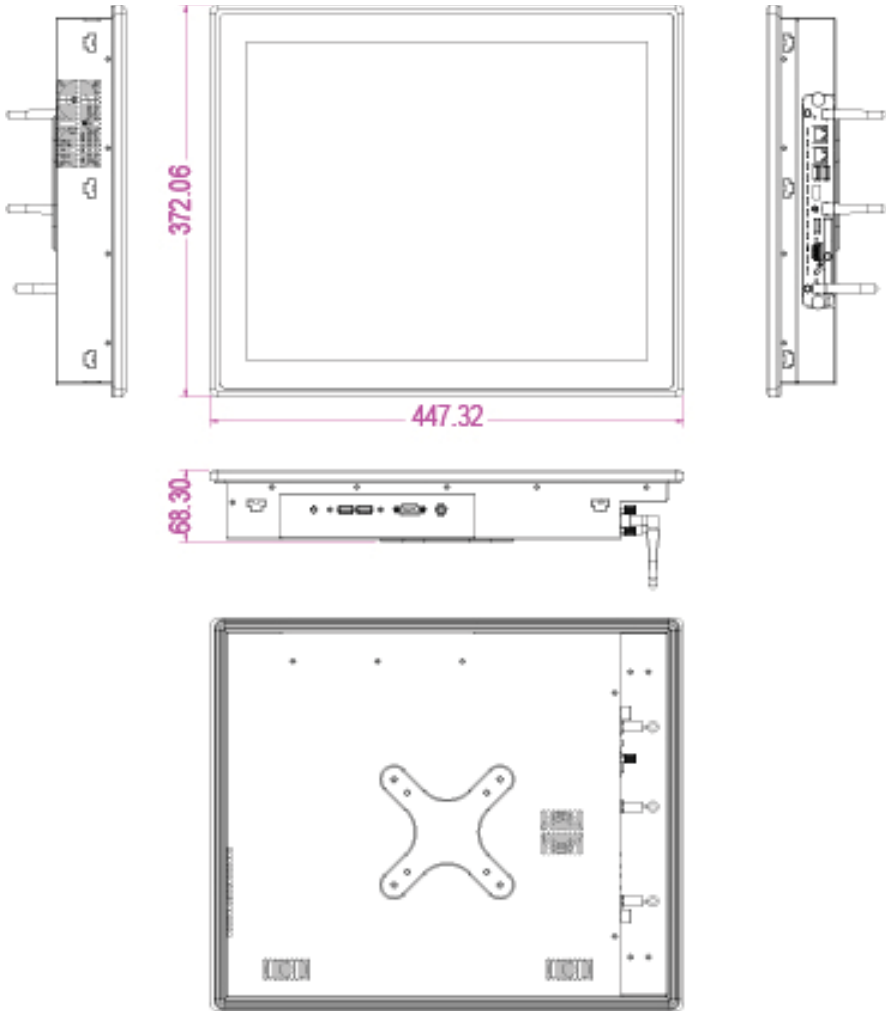
412.98 x 343.9 x 73.3 mm (W x H x D)

Figure 6 SPC-1710/1720/1730/1740/1750 Mechanical Dimensions



447.32 x 372.06 x 68.3 mm (W x H x D)

Figure 7 SPC-1900 Mechanical Dimensions



447.32 x 372.06 x 68.3 mm (W x H x D)

Figure 8 SPC-1910/1920/1930/1940/1950 Mechanical Dimensions

Chapter 2

Getting Started

■ Setting up your PC

■ Connecting the monitor

Connect the DP / HDMI cable from your display to the DP / HDMI port.

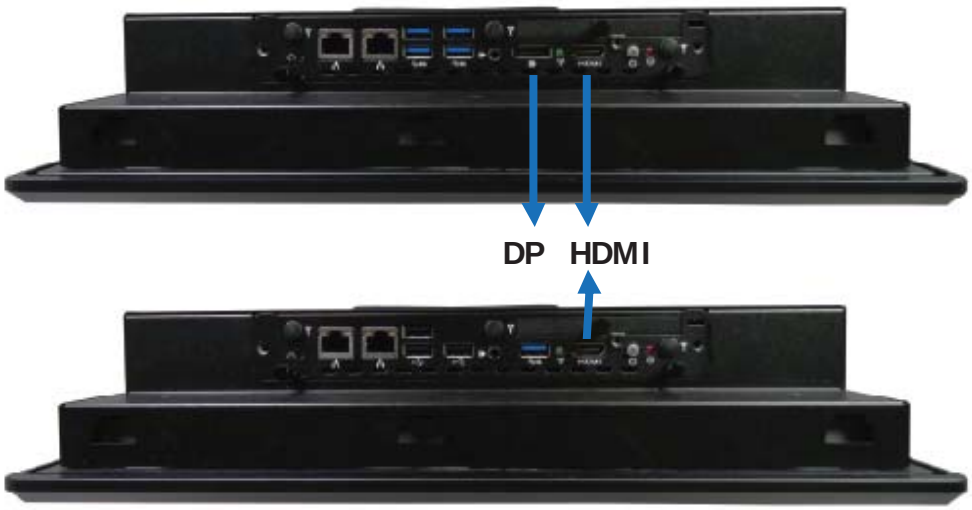


Figure 9 DP / HDMI (Upper for Core™ I; Lower for Celeron®)

■ Connecting USB mouse & keyboard

Your SPC-1500/1700/1900 Series does not come with a keyboard and mouse, but you can use any USB keyboard or mouse with your computer.

Figure 10 Connect USB mouse & keyboard

NOTE

Using a third-party USB mouse or keyboard may require software drivers. Check the manufacturer's website for the latest software drivers.

■ Connecting to a network device

Connect one end of a network cable to the LAN port on the OPS module and the other end to a hub or switch.

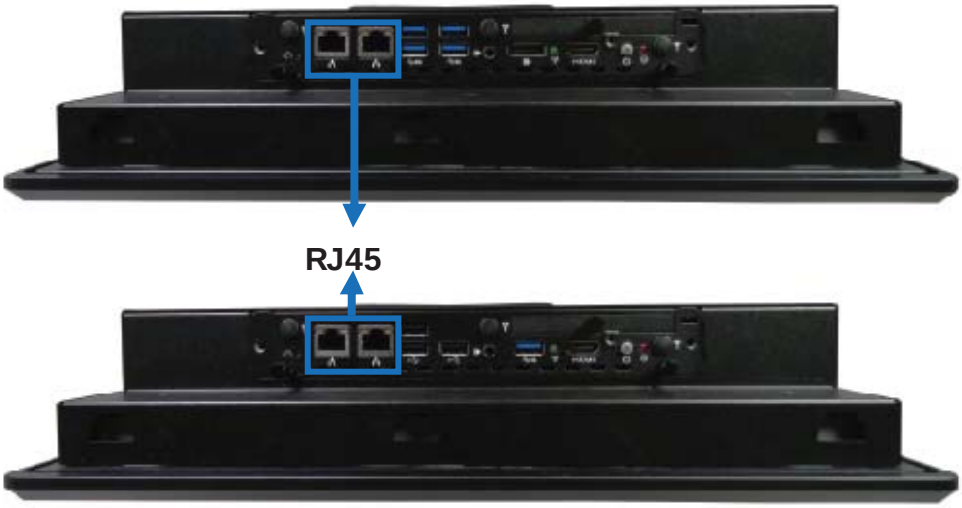
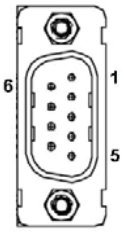


Figure 11 RJ45 connector

■ COM ports

COM ports with the pin definitions.

COM RS-232 / 422 / 485 Port DB-9



Pin	RS-232	RS-422 (Default)	Half Duplex RS-485	Full Duplex RS-485
1	N/A	TX-	DATA-	TX-
2	RXD	RX+	N/A	RX+
3	TXD	TX+	DATA+	TX+
4	N/A	RX-	N/A	RX-
5	GND	GND	GND	GND
6	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A
9	+5V	+5V	+5V	+5V

Figure 12 COM port

■ Turning on the system

1. Connect the power adapter cable to the DC jack (DC IN) located on the rear side of the SPC-1500/1700/1900 Series
2. Connect the power cable to the power adapter
3. Connect the power cable to a power outlet
4. Press the power button on the OPS module to turn on the system

Figure 13 Turning on the system

■ VESA Mounting

The product comes with VESA FDMI 75/100 standard mounting holes as shown below. Use 4 screws with the appropriate length for your mounting bracket.

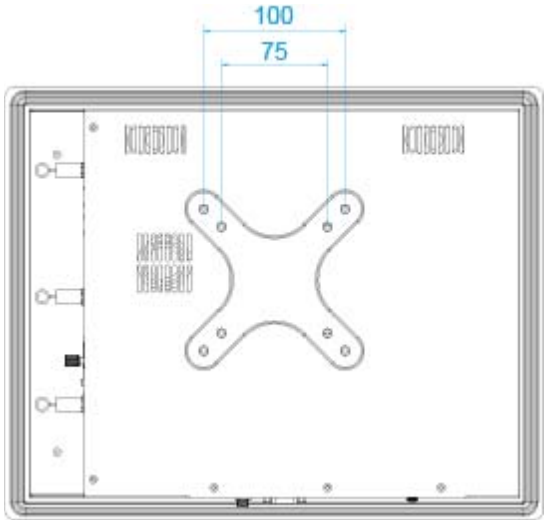


Figure 14 VESA Mounting Hole Locations

NOTE

To fasten the metal shelf, your monitor must comply with VESA75 or VESA100 standard. The VESA mounting kit is optional.

■ Panel Mounting

The Panel PC can be panel mounted and comes with brackets and screws for this purpose. The required cutout for panel mounting and maximum panel thickness is shown below.

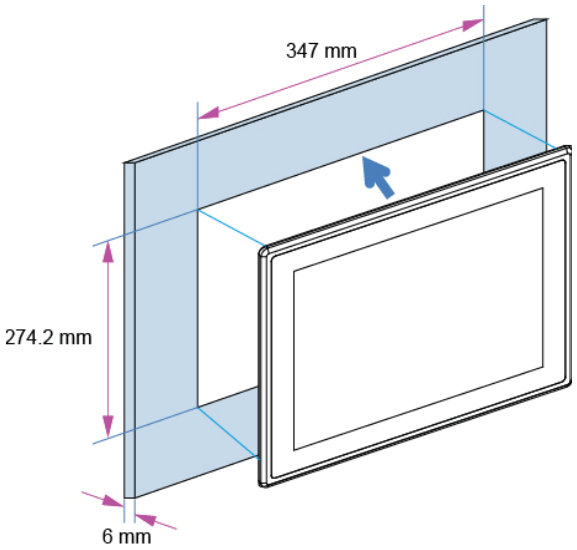


Figure 15 SPC-15xx Panel Mount Cut-out hole and maximum panel thickness

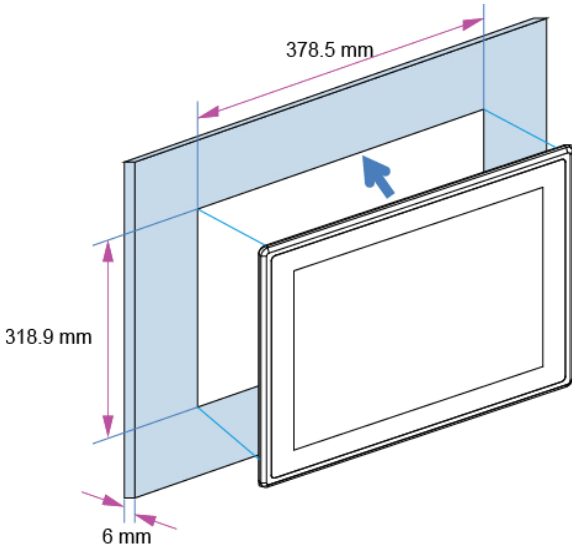


Figure 16 SPC-17xx Panel Mount Cut-out hole and maximum panel thickness

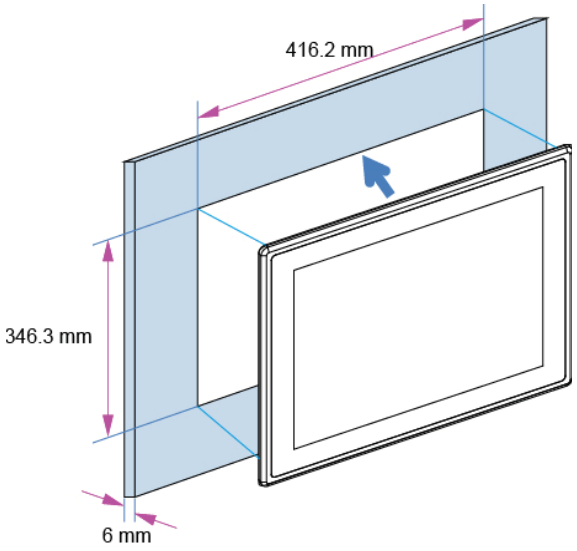
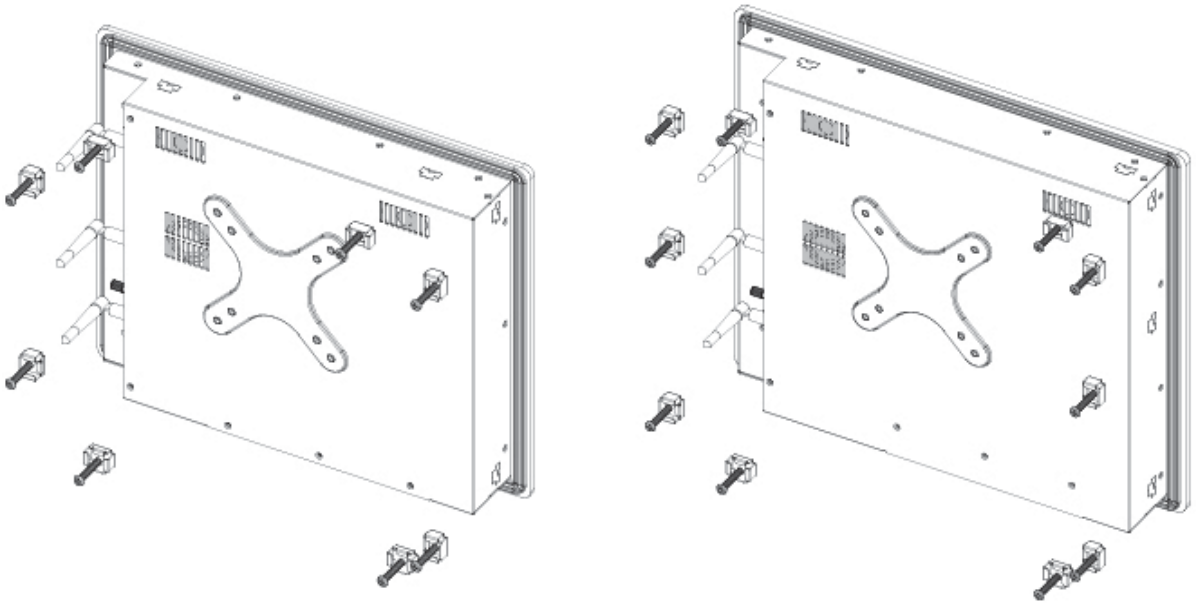


Figure 17 SPC-19xx Panel Mount Cut-out hole and maximum panel thickness

Below are the demonstrations of how to do panel mounting.

Step1

Tighten the screws as shown below. (Left: 15” models; right: 17” / 19” models)



Step2

Done (Left: 15” models; right: 17” / 19” models)

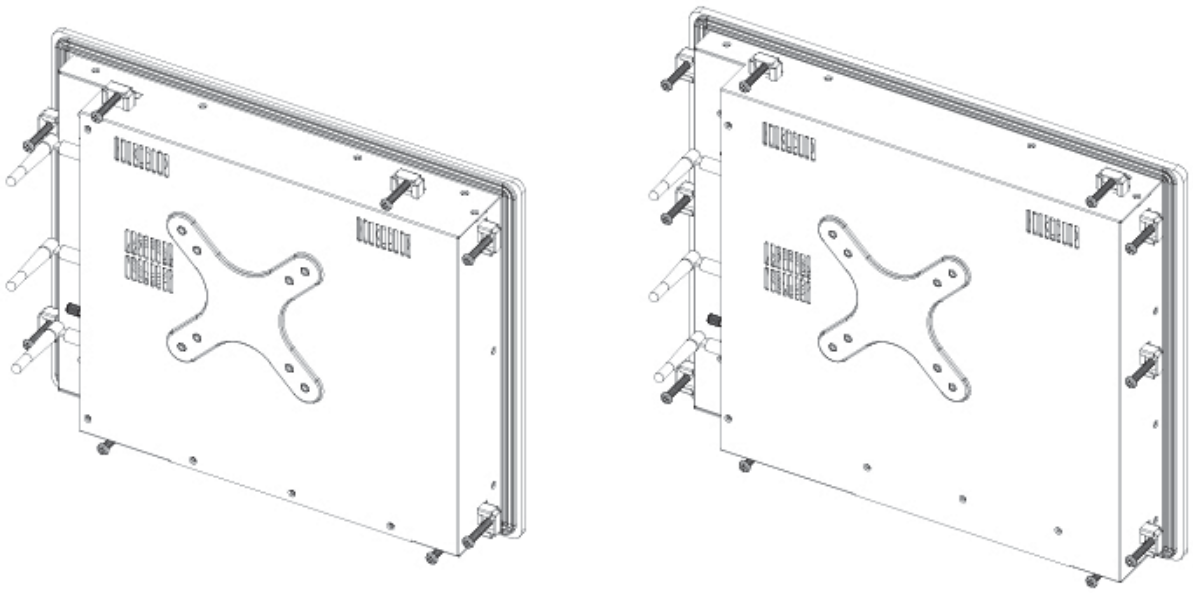


Figure 18 Panel Mounting

Chapter 3

AMI BIOS Setup

■ Overview

This chapter provides a description of the AMI BIOS. The BIOS setup menus and available selections may vary from those of your product. For specific information on the BIOS for your product, please contact Quanmax.

NOTE: The BIOS menus and selections for your product may vary from those in this chapter. For the BIOS manual specific to your product, please contact Quanmax

AMI's ROM BIOS provides a built-in Setup program, which allows the user to modify the basic system configuration and hardware parameters. The modified data will be stored in a battery-backed CMOS, so that data will be retained even when the power is turned off. In general, the information saved in the CMOS RAM will not need to be changed unless there is a configuration change in the system, such as a hard drive replacement or when a device is added.
It is possible for the CMOS battery to fail, which will cause data loss in the CMOS only. If this happens you will need to reconfigure your BIOS settings.

■ Main Menu

The BIOS Setup is accessed by pressing the DEL key after the Power-On Self-Test (POST) memory test begins and before the operating system boot begins. Once you enter the BIOS Setup Utility, the Main Menu will appear on the screen. The Main Menu provides System Overview information and allows you to set the System Time and Date. Use the “<” and “>” cursor keys to navigate between menu screens.

Table 2 SPC-1500/1700/1900 BIOS Main Menu

BIOS SETUP UTILITY					
Main	Advanced	Boot	Security	Save & Exit	
Product Information					
Product Name		SPC-1500			
BIOS Version		R0.08 (x64)			
BIOS Build Date		04/23/2014			
ME FW Version		01.01.00.1089			
CPU Information Intel® Celeron® CPU J1900 @ 1.99GHz					
Microcode Revision		809			
Processor Cores		4			
Memory Information					→ ← Select Screen
					↑↓ Select Item
Total Size		2048 MB (DDR3L)			Enter: Select
Frequency		1333 MHz			+- Change Opt.
System date		[Tue 05/20/2014]			F1: General Help
System time		[13:43:19]			F2: Previous Values
					F3: Optimized Defaults
					F4 Save & Exit
					ESC Exit
Version 2.15.1236. Copyright (C) 2013, American Megatrends, Inc.					

Table 3 SPC-1510/1710/1910 BIOS Main Menu

BIOS SETUP UTILITY				
Main	Advanced	Boot	Security	Save & Exit
Product Information				
Product Name		SPC-1510		
BIOS Version		R0.0B (x64)		
BIOS Build Date		09/05/2013		
ME FW Version		9.0.13.1402		
CPU Information Intel® Core™ i7-4700HQ CPU @ 3.40GHz				
Microcode Revision		12		
Processor Cores		4		
Memory Information				→ ← Select Screen ↑↓ Select Item
Total Size		4096 MB (DDR3)		Enter: Select +- Change Opt.
Frequency		1333 MHz		F1: General Help
System date		[Fri 10/11/2013]		F2: Previous Values
System time		[13:43:19]		F3: Optimized Defaults F4 Save & Exit ESC Exit
Version 2.15.1236. Copyright (C) 2012, American Megatrends, Inc.				

Table 4 SPC-1520/1720/1920 BIOS Main Menu

BIOS SETUP UTILITY				
Main	Advanced	Boot	Security	Save & Exit
Product Information				
Product Name		SPC-1520		
BIOS Version		R0.0B (x64)		
BIOS Build Date		09/05/2013		
ME FW Version		9.0.13.1402		
CPU Information Intel® Core™ i7-4700EQ CPU @ 3.40GHz				
Microcode Revision		12		
Processor Cores		4		
Memory Information				→ ← Select Screen ↑↓ Select Item
Total Size		4096 MB (DDR3)		Enter: Select +- Change Opt.
Frequency		1333 MHz		F1: General Help
System date		[Fri 10/11/2013]		F2: Previous Values
System time		[13:43:19]		F3: Optimized Defaults F4 Save & Exit ESC Exit
Version 2.15.1236. Copyright (C) 2012, American Megatrends, Inc.				

Table 5 SPC-1530/1730/1930 BIOS Main Menu

BIOS SETUP UTILITY				
Main	Advanced	Boot	Security	Save & Exit
Product Information				
Product Name		SPC-1530		
BIOS Version		R0.0B (x64)		
BIOS Build Date		09/05/2013		
ME FW Version		9.0.13.1402		
CPU Information Intel® Core™ i5-4400E CPU @ 3.30GHz				
Microcode Revision		12		→ ← Select Screen
Processor Cores		2		↑↓ Select Item
				Enter: Select
Memory Information				+- Change Opt.
				F1: General Help
Total Size		4096 MB (DDR3)		F2: Previous Values
Frequency		1333 MHz		F3: Optimized Defaults
System date		[Fri 10/11/2013]		F4 Save & Exit
System time		[13:43:19]		ESC Exit
Version 2.15.1236. Copyright (C) 2012, American Megatrends, Inc.				

Table 6 SPC-1540/1740/1940 BIOS Main Menu

BIOS SETUP UTILITY				
Main	Advanced	Boot	Security	Save & Exit
Product Information				
Product Name	SPC-1540			
BIOS Version	R0.0B (x64)			
BIOS Build Date	10/12/2015			
ME FW Version	9.0.13.1402			
CPU Information Intel® Core™ i7-5700EQ CPU @ 3.40GHz				
Microcode Revision	d			→ ← Select Screen
Processor Cores	4			↑↓ Select Item
				Enter: Select
Memory Information				+- Change Opt.
				F1: General Help
Total Size	4096 MB (DDR3)			F2: Previous Values
Frequency	1600 MHz			F3: Optimized Defaults
System date	[Thu 01/01/2015]			F4 Save & Exit
System time	[13:43:19]			ESC Exit
Version 2.15.1236. Copyright (C) 2012, American Megatrends, Inc.				

Table 7 SPC-1550/1750/1950 BIOS Main Menu

BIOS SETUP UTILITY				
Main	Advanced	Boot	Security	Save & Exit
Product Information				
Product Name	SPC-1550			
BIOS Version	R0.0B (x64)			
BIOS Build Date	10/12/2015			
ME FW Version	9.0.13.1402			
CPU Information Intel® Core™ i7-5850EQ CPU @ 3.40GHz				
Microcode Revision	d			→ ← Select Screen
Processor Cores	4			↑↓ Select Item
				Enter: Select
Memory Information				+- Change Opt.
				F1: General Help
Total Size	4096 MB (DDR3)			F2: Previous Values
Frequency	1600 MHz			F3: Optimized Defaults
System date	[Thu 01/01/2015]			F4 Save & Exit
System time	[13:43:19]			ESC Exit
Version 2.15.1236. Copyright (C) 2012, American Megatrends, Inc.				

■ Advanced Menu

Table 8 Advanced Menu

BIOS SETUP UTILITY					
Main	**Advanced**	Boot	Security	Save & Exit	
Onboard LAN1 Controller		[Enabled]			
Onboard LAN1 Boot		[Disabled]			
Onboard LAN2 Controller		[Enabled]			
Onboard LAN2 Boot		[Disabled]		→ ← Select Screen	
Audio Controller		[Enabled]		↑↓ Select Item	
				Enter: Select	
> Display Configuration				+- Change Opt.	
> CPU Chipset Configuration				F1: General Help	
> SATA Configuration				F2: Previous Values	
> USB Configuration				F3: Optimized Defaults	
> AMT Configuration				F4 Save & Exit	
>TPM Configuration				ESC Exit	
>H/W Monitor					
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Onboard LAN 1 Controller

Options: Disabled, Enabled

Onboard LAN 1 Boot

Options: Disabled, Enabled

Onboard LAN 2 Controller

Options: Disabled, Enabled

Onboard LAN 2 Boot

Options: Disabled, Enabled

Audio Controller

Options: Disabled, Enabled

Table 9 Advanced Menu – Display Configuration

BIOS SETUP UTILITY					
Main	**Advanced**	Boot	Security	Save & Exit	
Display Configuration					
Primary Display		[Auto]		→ ← Select Screen	
UMA Frame Buffer Size		[256 MB]		↑↓ Select Item	
DVMT Pre-Allocated		[64M]		Enter: Select	
DVMT Total Gfx Mem		[256 M]		+- Change Opt.	
Primary IGFX Boot Display		[VBIOS Default]		F1: General Help	
OPS DDI Setting		[Display Port Enabled]		F2: Previous Values	
				F3: Optimized Defaults	
				F4 Save & Exit	
				ESC Exit	
Version 2.15.1236. Copyright (C) 2012, American Megatrends, Inc.					

Primary Display

Options: Auto, IGFX, PEG, PCIE

UMA Frame Buffer Size

Options: 128MB, 256MB, 512MB

DVMT Pre-Allocated

Options:32M, 64M, 96M, 128M, 160M, 192M, 224M, 256M, 288M, 320M, 352M, 384M, 416M, 448M, 480M, 512M, 1024M

DVMT Total Gfx Mem

Options: 128M, 256M, MAX

Primary IGFX Boot Display

Options: VBIOS Default, CRT, DVI, HDMI1, DP1, DP2 / HDMI2

OPS DDI Setting

Options: Display Port Enabled, HDMI /DVI Enabled, HDMI / DVI First

Table 10 Advanced Menu – CPU Chipset Configuration (SPC-1500/1700/1900)

BIOS SETUP UTILITY					
Main	**Advanced**	Boot	Security	Save & Exit	
CPU Chipset Configuration					
EIST		[Enabled]			
Turbo Mode		[Enabled]		→ ← Select Screen	
Active Processor Cores		[All]		↑↓ Select Item	
Limit CPUID Maximum		[Disabled]		Enter: Select	
Execute Disable Bit		[Enabled]		+- Change Opt.	
Intel Virtualization Technology		[Disabled]		F1: General Help	
				F2: Previous Values	
				F3: Optimized Defaults	
				F4 Save & Exit	
				ESC Exit	
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EIST

Options: Disabled, Enabled

Turbo Mode

Options: Disabled, Enabled

Active Processor Cores

Options: All, 1, 2, 3

Limit CPUID Maximum

Options: Disabled, Enabled

Execute Disable Bit

Options: Disabled, Enabled

Intel ® Virtualization Tech

Options: Disabled, Enabled

Table 11 Advanced Menu – CPU Chipset Configuration (except SPC-1500/1700/1900)

BIOS SETUP UTILITY					
Main	**Advanced**	Boot	Security	Save & Exit	
CPU Chipset Configuration					
EIST	[Enabled]			→ ← Select Screen	
Turbo Mode	[Enabled]			↑↓ Select Item	
Hyper Treading	[Enabled]			Enter: Select	
VT-d	[Enabled]			+- Change Opt.	
Active Processor Cores	[All]			F1: General Help	
Limit CPUID Maximum	[Disabled]			F2: Previous Values	
Execute Disable Bit	[Enabled]			F3: Optimized Defaults	
Intel Virtualization Technology	[Disabled]			F4 Save & Exit	
				ESC Exit	
Version 2.15.1236. Copyright (C) 2012, American Megatrends, Inc.					

EIST

Options: Disabled, Enabled

Turbo Mode

Options: Disabled, Enabled

Hyper Threading

Options: Disabled, Enabled

VT-d

Options: Disabled, Enabled

Active Processor Cores

Options: All, 1, 2, 3

Limit CPUID Maximum

Options: Disabled, Enabled

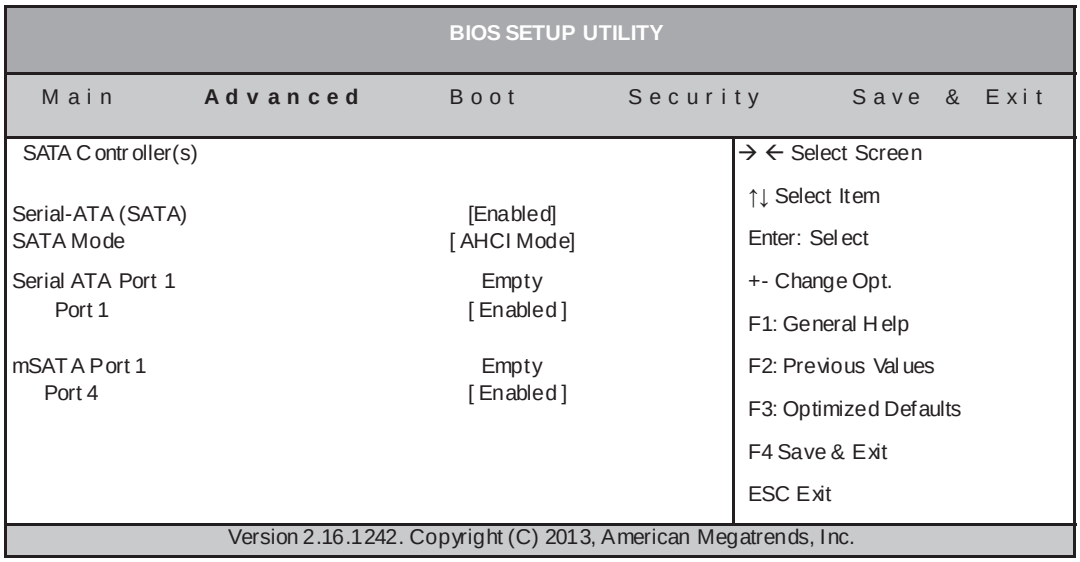
Execute Disable Bit

Options: Disabled, Enabled

Intel ® Virtualization Tech

Options: Disabled, Enabled

Table 12 Advanced Menu –SATA Configuration (SPC-1500/1700/1900)



SATA

Options: Disabled, Enabled

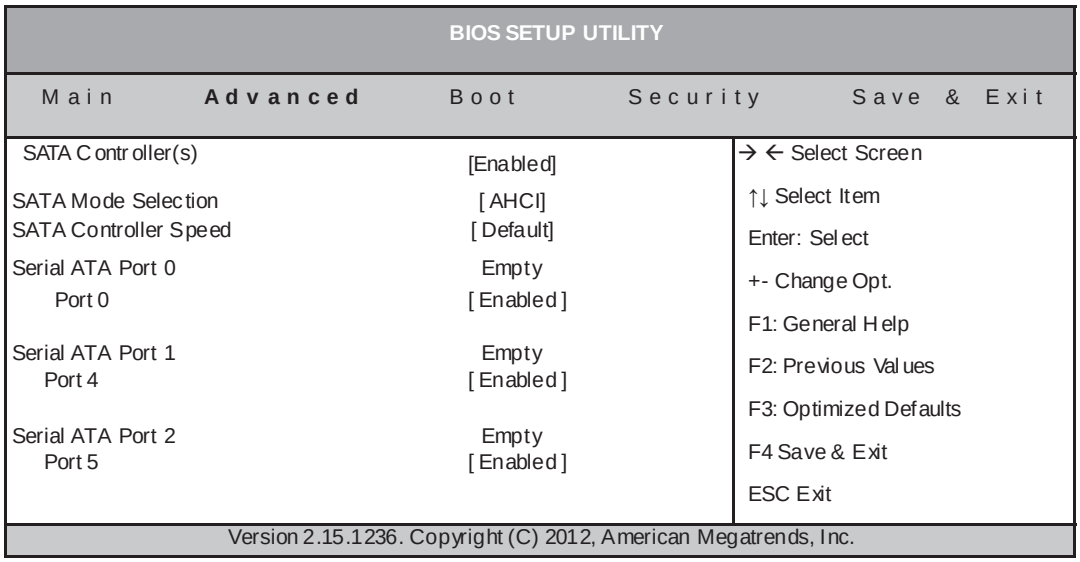
SATA Mode

Options: IDE, AHCI

Port 1

Options: Disabled, Enabled

Table 13 Advanced Menu – SATA Configuration (except SPC-1500/1700/1900)



SATA Controller(s)

Options: Disabled, Enabled

SATA Mode Selection

Options: IDE, AHCI, RAID

SATA Controller Speed

Options: Gen 1, Gen 2, Gen 3

Port 0, 4, 5

Options: Disabled, Enabled

Table 14 Advanced Menu – USB Configuration (SPC-1500/1700/1900)

BIOS SETUP UTILITY					
Main	**Advanced**	Boot	Security	Save & Exit	
USB Configuration				→ ← Select Screen	
				↑↓ Select Item	
USB Devices:				Enter: Select	
1 Keyboard, 2 Hubs				+- Change Opt.	
Legacy USB Support		[Enabled]		F1: General Help	
xHCI Legacy Support		[Enabled]		F2: Previous Values	
xHCI hand-off		[Enabled]		F3: Optimized Defaults	
EHCI Hand-off		[Disabled]		F4 Save & Exit	
USB Mass Storage Driver Support		[Enabled]		ESC Exit	
Version 2.16.1242. Copyright (C) 2013, American Megatrends, Inc.					

Legacy USB Support

Options: Disabled, Enabled, Auto

XHCI Legacy Support

Options: Disabled, Enabled

XHCI hand-off

Options: Disabled, Enabled

EHCI hand-off

Options: Disabled, Enabled

USB Mass Storage Driver Support

Options: Disabled, Enabled

Table 15 Advanced Menu – USB Configuration (except SPC-1500/1700/1900)

BIOS SETUP UTILITY					
Main	**Advanced**	Boot	Security	Save & Exit	
USB Configuration				→ ← Select Screen	
				↑↓ Select Item	
USB Devices:				Enter: Select	
1 Keyboard, 1 Mouse, 2 Hubs				+- Change Opt.	
Legacy USB Support		[Enabled]		F1: General Help	
USB 3.0 Support		[Enabled]		F2: Previous Values	
XHCI hand-off		[Enabled]		F3: Optimized Defaults	
EHCI Hand-off		[Disabled]		F4 Save & Exit	
USB Mass Storage Driver Support		[Enabled]		ESC Exit	
Version 2.15.1236. Copyright (C) 2012, American Megatrends, Inc.					

Legacy USB Support

Options: Disabled, Enabled, Auto

USB 3.0 Support

Options: Disabled, Enabled

XHCI hand-off

Options: Disabled, Enabled

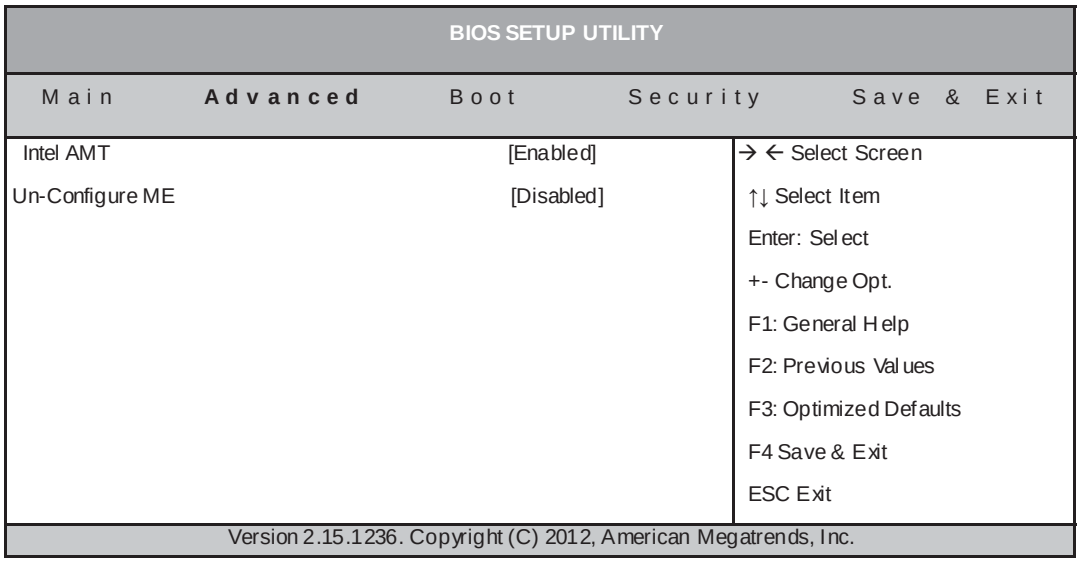
EHCI hand-off

Options: Disabled, Enabled

USB Mass Storage Driver Support

Options: Disabled, Enabled

Table 16 Advanced Menu – AMT Configuration (except SPC-1500/1700/1900)



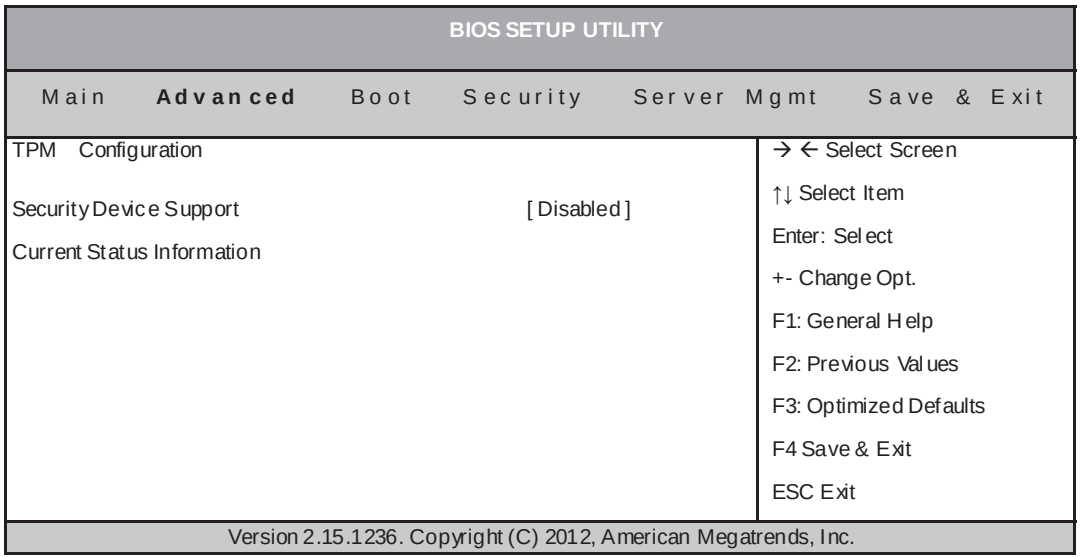
Intel AMT

Options: Disabled, Enabled

Un-Configure ME

Options: Disabled, Enabled

Table 17 Advanced Menu – TPM Configuration



Security Device Support

Options: Disabled, Enabled

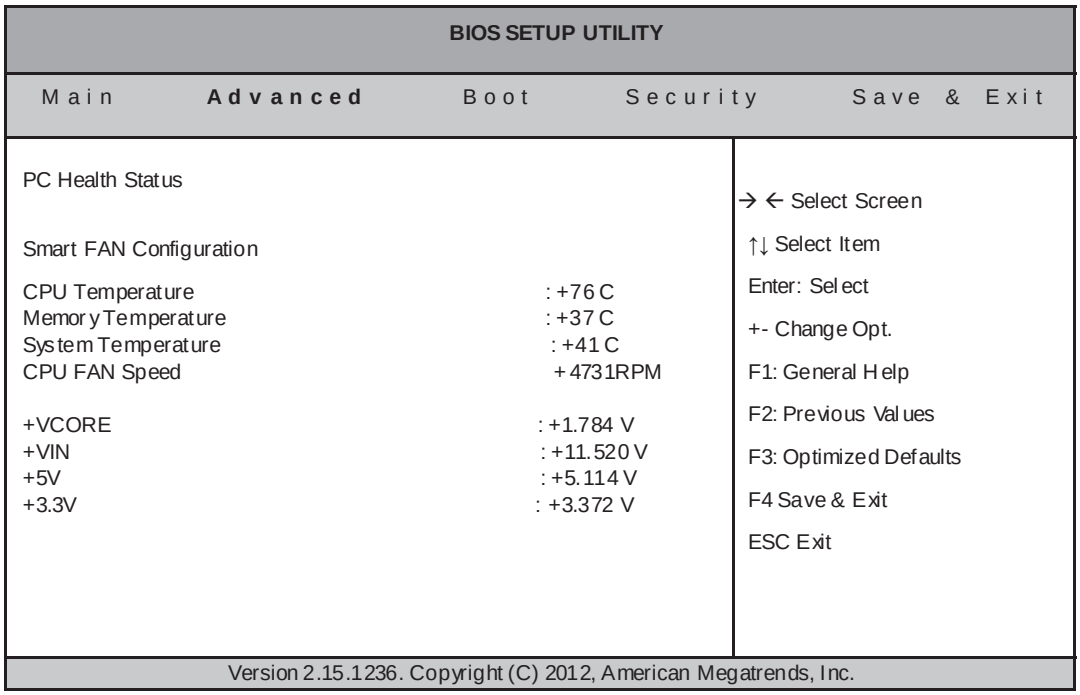
Table 18 Advanced Menu – H/W Monitor (SPC-1500/1700/1900)

BIOS SETUP UTILITY					
Main	**Advanced**	Boot	Security	Save & Exit	
PC Health Status				→ ← Select Screen	
CPU Warning Temperature		[Disabled]		↑↓ Select Item	
CPU Temperature		: +39 C		Enter: Select	
System Temperature		: +39 C		+- Change Opt.	
+VCORE		: +0.893 V		F1: General Help	
+VIN		: +19.548 V		F2: Previous Values	
+5V		: +5.066 V		F3: Optimized Defaults	
+VMEN		: +1.349 V		F4 Save & Exit	
				ESC Exit	
Version 2.16.1242. Copyright (C) 2013, American Megatrends, Inc.					

CPU Warning Temperature

Options: Disabled, 80, 85, 90, 95

Table 19 Advanced Menu – H/W Monitor (except SPC-1500/1700/1900)



Smart FAN Configuration

CPU FAN Setting [Manual]

Options: Manual , Smart

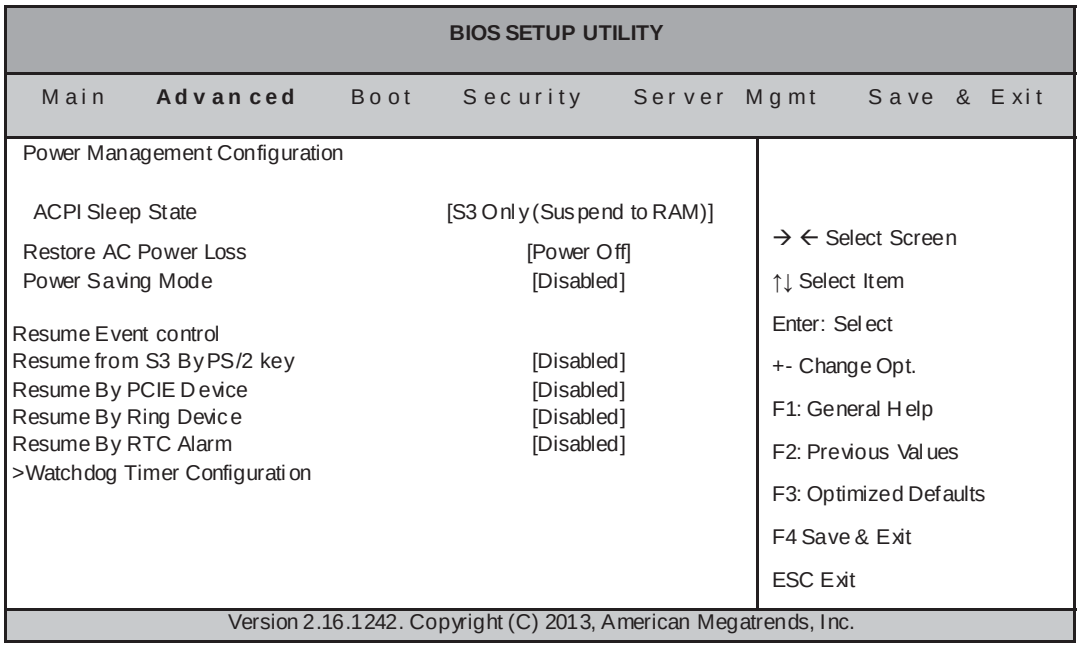
Manual Duty 255

System FAN Setting [Manual Mode]

Options: Manual , Smart

Manual Duty 255

Table 20 Power Configuration (SPC-1500/1700/1900)



ACPI Sleep State

Options: Suspend Disabled, S1 Only (CPU Stop Clock),
S3 Only (Suspend to RAM)

Restore AC Power Loss

Options: Power Off, Power On, Last State

Power Saving Mode

Options: Disabled, EUP Enabled

Resume By PCIE Device

Options: Disabled, Enabled

Resume By Ring Alarm

Options: Disabled, Enabled

Resume By RTC Alarm

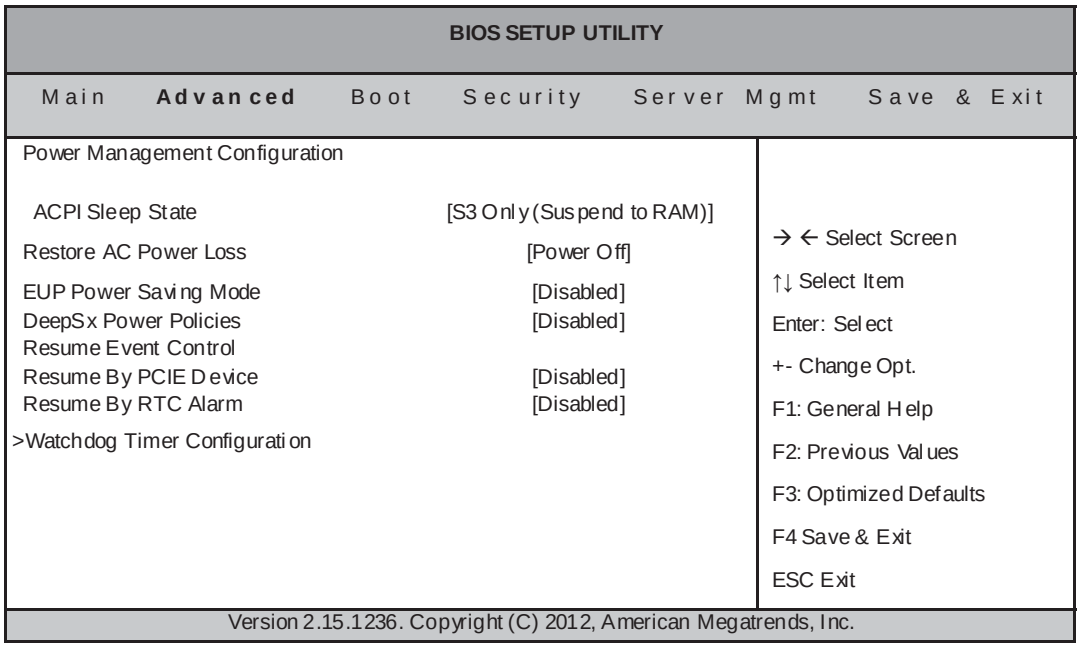
Options: Disabled, Enabled

Watchdog Timer Configuration

- **WDT Function** [Disabled]

  Options: Disabled, Enabled

Table 21 Power Configuration (except SPC-1500/1700/1900)



ACPI Sleep State

Options: Suspend Disabled, S1 Only (CPU Stop Clock),
S3 Only (Suspend to RAM)

Restore AC Power Loss

Options: Power Off, Power On, Last State

EUP Power Saving Mode

Options: Disabled, Enabled

DeepSx Power Policies

Options: Disabled, EUP Enabled, DeepSx in S5,
DeepSx in S4-S5, DeepSx in S3-S4-S5

Resume By PCIE Device

Options: Disabled, Enabled

Resume By RTC Alarm

Options: Disabled, Enabled

Watchdog Timer Configuration

- **WDT Function** [Disabled]

  Options: Disabled, Enabled

■ Boot Menu

Table 22 Boot Menu (SPC-1500/1700/1900)

BIOS SETUP UTILITY				
Main	Advanced	**Boot**	Security	Save & Exit
Boot Configuration			→ ← Select Screen	
Full Screen LOGO Display		[Disabled]	↑↓ Select Item	
Setup Prompt Timeout		1	Enter: Select	
Bootup NumLock State		[On]	+- Change Opt.	
Keyboard Detect Warning		[Disabled]	F1: General Help	
CSM Support		[Enabled]	F2: Previous Values	
Boot Option Filter		[Legacy Only]	F3: Optimized Defaults	
Boot Option Priorities			F4 Save & Exit	
			ESC Exit	
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.				

Full Screen LOGO Display

Options: Disabled, Enabled

Bootup Numlock State

Options: On, Off

Keyboard Detect Warning

Options: Disabled, Enabled

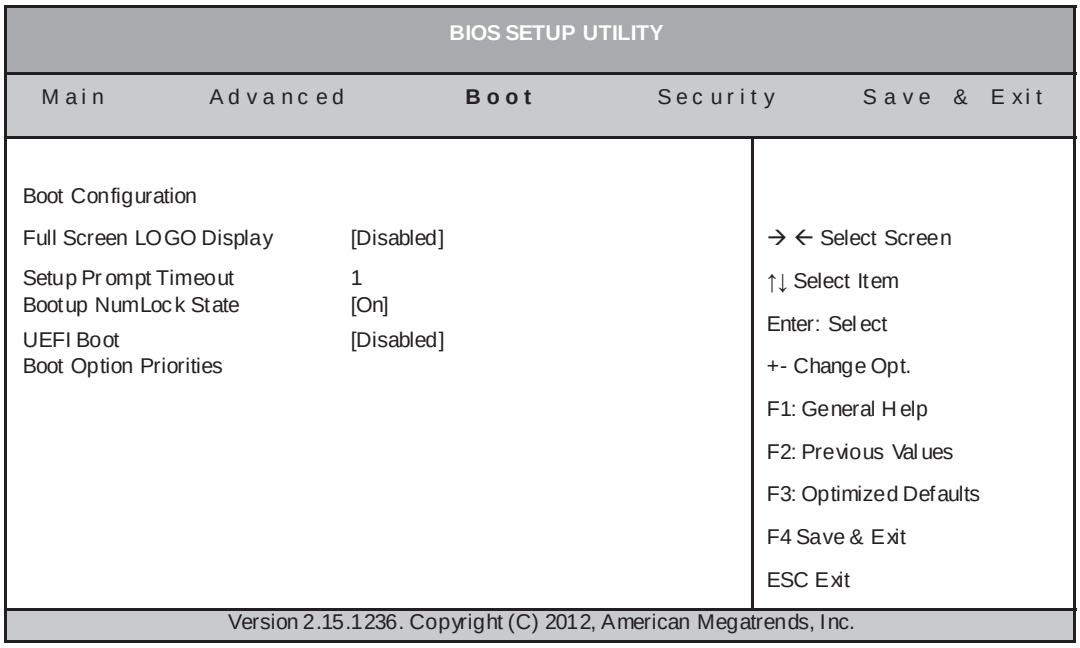
CSM Support

Options: Disabled, Enabled

Boot Option Filter

Options: UEFI and Legacy, Legacy only, UEFI only

Table 23 Boot Menu (except SPC-1500/1700/1900)



Full Screen LOGO Display

Options: Disabled, Enabled

Bootup Numlock State

Options: On, Off

UEFI Boot

Options: Disabled, Enabled

■ Security Menu

Table 24 Security Menu

BIOS SETUP UTILITY	
Main Advanced Boot **Security** Save & Exit	
Password Description If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User will have Administrator rights The password length must be in the following range: Minimum Length 3 Maximum length 20 Administrator Password User Password	→ ← Select Screen ↑↓ Select Item Enter: Select +- Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4 Save & Exit ESC Exit
Version 2.15.1236. Copyright (C) 2012, American Megatrends, Inc.	

■ Save & Exit Menu

Table 25 Save & Exit Menu

BIOS SETUP UTILITY				
Main	Advanced	Boot	Security	**Save & Exit**
Discard Changes and Reset				→ ← Select Screen
Discard Changes and Reset				↑↓ Select Item
Save Options				Enter: Select
Save Changes				+- Change Opt.
Discard Changes				F1: General Help
Restore Defaults				F2: Previous Values
				F3: Optimized Defaults
				F4 Save & Exit
				ESC Exit
Version 2.15.1236. Copyright (C) 2012, American Megatrends, Inc.				

Save Changes and Exit

Exit system setup after saving the changes. Once you are finished making your selections, choose this option from the Exit menu to ensure the values you selected are saved to the CMOS RAM. The CMOS RAM is sustained by an onboard backup battery and stays on even when the PC is turned off. When you select this option, a confirmation window appears. Select [Yes] to save changes and exit.

Discard Changes and Exit

Exit system setup without saving any changes. Select this option only if you do not want to save the changes that you made to the Setup program. If you made changes to fields other than system date, system time, and password, the BIOS asks for a confirmation before exiting.

Discard Changes

Discards changes done so far to any of the setup values. This option allows you to discard the selections you made and restore the previously saved values. After selecting this option, a confirmation appears. Select [Yes] to discard any changes and load the previously saved values.

Load Optimal Defaults

Load Optimal Default values for all the setup values. This option allows you to load optimal default values for each of the parameters on the Setup menus, which will provide the best performance settings for your system. The F9 key can be used for this operation.

Load Failsafe Defaults

Load Optimal Default values for all the setup values. This option allows you to load failsafe default values for each of the parameters on the Setup menus, which will provide the most stable performance settings. The F8 key can be used for this operation.

Chapter 4

Driver Installation

If your SPC-1500/1700/1900 Series does not come with an operating system pre-installed, you will need to install an operating system and the necessary drivers to operate it. After you have finished assembling your system and connected the appropriate power source, power it up using the power supply and install the desired operating system.

You can download the drivers for the SPC-1500/1700/1900 Series from the Quanmax website at www.quanmax.com and install as instructed there. For other operating systems, please contact Quanmax.