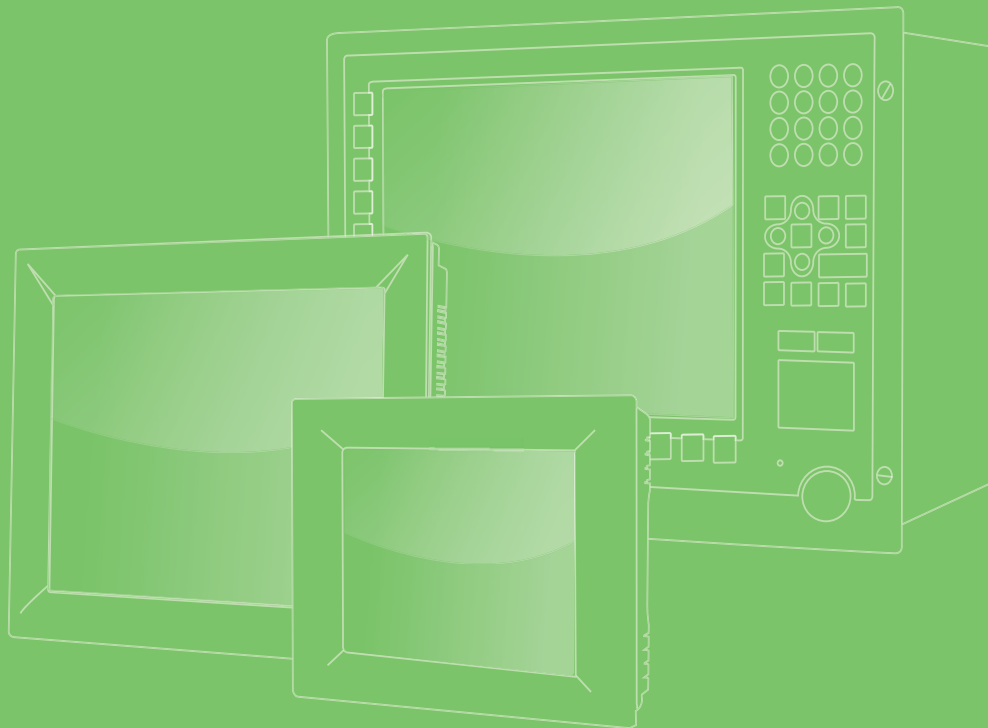


User Manual



PPC-3151W PPC-3211W

**15.6"/21.5" Panel PC with TFT
LCD and Intel® Core™ i
Processor**

ADVANTECH

Enabling an Intelligent Planet

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Product Warranty (2 years)

Advantech warrants the original purchaser that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

This warranty does not apply to any products that have been repaired or altered by persons other than repair personnel authorized by Advantech, or products that have been subject to misuse, abuse, accident, or improper installation. Advantech assumes no liability under the terms of this warranty as a consequence of such events.

Because of Advantech's high quality-control standards and rigorous testing, most customers never need to use our repair service. If an Advantech product is defective, it will be repaired or replaced free of charge during the warranty period. For out-of-warranty repairs, customers are billed according to the cost of replacement materials, service time, and freight. Please consult your dealer for more details.

If you believe that your product is defective, follow the steps outlined below.

1. Collect all information about the problem encountered (for example, CPU speed, Advantech products used, other hardware and software used, etc.) Note anything abnormal and list any messages displayed onscreen when the problem occurs.
2. Call your dealer and describe the problem. Have your manual, product, and any relevant information readily available.
3. If your product is diagnosed as defective, obtain a return merchandise authorization (RMA) number from your dealer. This allows us to process your return more quickly.
4. Carefully pack the defective product, a completed Repair and Replacement Order Card, and proof of purchase date (such as a photocopy of your sales receipt) into a shippable container. Products returned without a proof of purchase date are not eligible for warranty service.
5. Write the RMA number visibly on the outside of the package and ship the package prepaid to your dealer.

Declaration of Conformity

CE

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This type of cable is available from Advantech. Contact your local supplier for ordering information.

Test conditions for passing also include the equipment being operated within an industrial enclosure. In order to protect the product from damage due to electrostatic discharge (ESD) or electromagnetic interference (EMI) leakage, we strongly recommend the use of CE-compliant industrial enclosure products.

FCC Class B

This equipment has been tested and found to comply with the limits for a Class B 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 radio frequency energy and, if not installed and operated 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 harmful interference to radio or television reception, which can be determined by turning the equipment off and on again, 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 distance between the equipment and receiver
- Connect the equipment to an outlet on a circuit that differs from that to which the receiver is connected
- Consult your dealer or an experienced radio/TV technician for assistance

Technical Support and Assistance

1. Visit the Advantech website at <http://support.advantech.com> to obtain the latest product information.
2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you require additional assistance. Please have the following information ready before calling:
 - Product name and serial number
 - Description of your peripheral attachments
 - Description of your software (operating system, version, application software, etc.)
 - A complete description of the problem
 - The exact wording of any error messages

Safety Instructions

1. Read these safety instructions carefully. Veuillez lire attentivement ce manuel d'instructions de sécurité.
2. Retain this user manual for future reference. Veuillez conserver ce manuel d'instructions pour référence ultérieure.
3. Disconnect the equipment from all power outlets before cleaning. Use only a damp cloth for cleaning. Do not use liquid or spray detergents. Débranchez l'appareil de toutes les prises de courant avant le nettoyage. Nettoyez-le uniquement à l'aide d'un chiffon humide. Ne pas utiliser de détergents liquides ou pulvérisateurs.
4. For pluggable equipment, the power outlet socket must be located near the equipment and easily accessible. Pour les appareils enfichables, la prise de courant doit être placée près de l'appareil et facilement accessible.
5. Protect the equipment from humidity. Protégez l'appareil contre l'humidité.
6. Place the equipment on a reliable surface during installation. Dropping or letting the equipment fall may cause damage. Placez l'appareil sur une surface fiable pendant l'installation. L'abandon ou la chute de l'appareil pourrait causer des dommages.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. Do not cover the openings. Les ouvertures du boîtier sont pour la convection d'air. Protégez l'appareil contre la surchauffe. Ne couvrez pas les ouvertures.
8. Ensure that the voltage of the power source is correct before connecting the equipment to a power outlet. The power outlet socket should have ground connection. Assurez-vous que la tension de la source d'alimentation est correcte avant de connecter l'appareil à une prise de courant. La prise de courant doit avoir une bonne connexion mise à la terre.
9. Position the power cord away from high-traffic areas. Do not place anything over the power cord. Placez le cordon d'alimentation à l'écart des zones à fort trafic. Ne placez rien sur le cordon d'alimentation.
10. All cautions and warnings on the equipment should be noted. Attention à toutes les précautions et avertissements indiqués sur l'appareil.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage from transient overvoltage. Si l'appareil n'est pas utilisé pendant une longue période, déconnectez-le de la source d'alimentation pour éviter les dommages causés par une surtension transitoire.
12. Never pour liquid into an opening. This may cause fire or electrical shock. Ne versez jamais de liquide dans une ouverture. Sinon, cela pourrait provoquer un incendie ou un choc électrique.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel. N'ouvrez jamais l'appareil. Pour des raisons de sécurité, l'appareil ne doit être ouvert que par un technicien qualifié.
14. If one of the following occurs, have the equipment checked by service personnel: Si l'un des cas suivants se produit, demandez aide à un technicien qualifié:
 - The power cord or plug is damaged. Le cordon d'alimentation ou la fiche est endommagé.
 - Liquid has penetrated the equipment. Le liquide a pénétré dans l'appareil.
 - The equipment has been exposed to moisture. L'appareil a été exposé à l'humidité.
 - The equipment is malfunctioning or does not function according to the user manual. L'appareil est défectueux ou ne fonctionne pas conformément aux instructions.

- The equipment has been dropped or damaged. L'appareil a été abandonné et endommagé.
 - The equipment shows obvious signs of breakage. L'appareil montre des signes évidents de rupture.
15. Do not leave the equipment in an environment with a storage temperature of below -20 °C (-4 °F) or above 60 °C (140 °F) as this may cause damage. The equipment should be kept in a controlled environment. Ne laissez pas cet appareil dans un environnement dont la température de stockage est inférieure à -20 °C (-4 °F) ou supérieure à 60 °C (140 °F), car cela pourrait causer des dommages. L'appareil doit être surveillé dans l'environnement.
 16. CAUTION: Batteries are at risk of exploding if incorrectly replaced. Replace only with the same or equivalent type as recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions. ATTENTION: Il y a danger d'explosion s'il y a remplacement incorrect de la pile. Remplacer uniquement avec une pile du même type ou d'un type équivalent recommandé par le constructeur.
 17. In accordance with the IEC 704-1:1982 specifications, the sound pressure level at the operator's position does not exceed 70 dB (A). Conformément aux spécifications de l'IEC 704-1:1982, le niveau de pression acoustique à la position de l'opérateur ne dépasse pas 70 dB (A).
 18. The PPC-3211W-X7XX products are intended to be supplied by a UL-certified power supply (Adapter: FSP150-ABAN2) suitable for use at a TMA of 40 °C (104 °F) min., with output rated 19V_{DC}, 7.89A min., ES1 (or SELV) or a UL-certified power supply or DC source suitable for use at a TMA of 50 °C (122 °F) min., with output rated 9 ~ 32V_{DC}, 10 ~ 2.5A min., ES1 (or SELV). If you need further assistance, contact Advantech for more information. Le produit PPC-3211W-X7XX doit être alimenté par une alimentation certifiée UL (Adaptateur: FSP150-ABAN2) approprié pour l'utilisation à une température de 40 °C (104 °F) au minimum, et la sortie nominale est 19V_{DC}, 7.89A min., ES1 (ou SELV). Ou le produit doit être alimenté par une alimentation certifiée UL ou CC pour l'utilisation à une température de 50 °C (122 °F) au minimum, et la sortie nominale est 9 ~ 32V_{DC}, 10 ~ 2.5A min., ES1 (ou SELV). Si vous avez besoin d'aide supplémentaire, veuillez contacter Advantech pour plus d'informations.
 19. The PPC-3151W-X7XX products are intended to be supplied by a UL-certified power supply (Adapter: FSP090-DIEBN2) suitable for use at a TMA of 40 °C (104 °F) min., and output is rated 19V_{DC}, 4.74A min., ES1 (or SELV) or a UL-certified power supply or DC source suitable for use at a TMA of 50 °C (122 °F) min., with output rated 9 ~ 32V_{DC}, 9 ~ 2.5A min., ES1 (or SELV). If you need further assistance, contact Advantech for more information. Le produit PPC-3151W-X7XX doit être alimenté par une alimentation certifiée UL (Adaptateur: FSP090-DIEBN2) approprié pour l'utilisation à une température de 40 °C (104 °F) au minimum, et la sortie nominale est 19V_{DC}, 4.74 A min., ES1 (ou SELV). Ou le produit doit être alimenté par une alimentation certifiée UL ou CC pour l'utilisation à une température de 50 °C (122 °F) au minimum, et la sortie nominale est 9 ~ 32V_{DC}, 9 ~ 2.5A min., ES1 (ou SELV). Si vous avez besoin d'aide supplémentaire, veuillez contacter Advantech pour plus d'informations.
 20. DISCLAIMER: These instructions are provided in accordance with IEC 704-1 standards. Advantech disclaims all responsibility for the accuracy of any statements contained herein. AVERTISSEMENT: Ces instructions sont fournies conformément aux normes IEC 704-1. Advantech décline toute responsabilité quant à la précision de toute déclaration contenue dans le présent document.
 21. CAUTION: This product is not intended for use by children and is not suitable for use in locations where children are likely to be present (this product is not a toy).

ATTENTION: Ce produit n'est pas un jouet et devrait être gardé hors de la portée des enfants.

Safety Precautions - Static Electricity

Follow these simple precautions to protect yourself from harm and the products from damage:

- To avoid electrical shock, always disconnect the power from your PC chassis before manual handling. Do not touch any components on the CPU card or other cards while the PC is powered on.
- Disconnect the power before making any configuration changes. A sudden rush of power after connecting a jumper or installing a card may damage sensitive electronic components.

Battery Information

Batteries, battery packs, and accumulators should not be disposed of as unsorted household waste. Please use the public collection system to return, recycle, or treat them in compliance with local regulations.



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Chapter 1

General Information

- Introduction
- Specifications
- Dimensions

1.1 Introduction

PPC-3151W/3211W is a new-generation panel PC equipped with a WXGA (1920 x 1080) display, high-performance Intel® Core™ i processor, fanless thermal design, multiple I/O (5 x COM, 5 x USB, and 2 x Gigabit Ethernet), and PCIe/PCI expansion slots for integrating additional fieldbus or proprietary cards according to application requirements.

1.2 Key Features

- True-flat full HD LCD panel with PCAP touchscreen and anti-glare coating
- Intel® Core™ i5-7300U processor (i7-7600U/i3-7100U available upon request)
- Fanless system design
- PCIe x4/PCI expansion
- 1 x isolated RS-422/485 with auto flow
- Wide input power range (9 ~ 32 V_{DC})
- Dual Gigabit Ethernet with IEEE1588 support
- 3 x Independent displays
- 1 x M.2 bay (2242) for storage only
- 1 x TPM 2.0 internal support (optional)

1.3 Front Panel

The PPC-3151W/PPC-3211W front panel is a true-flat color TFT LCD with projected capacitive (PCAP) touch control and IP65-rated protection from dust and water ingress.

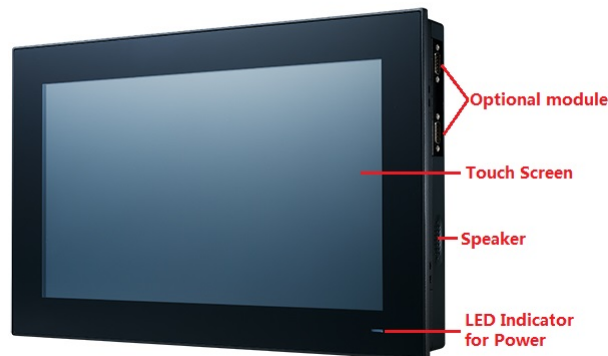


Figure 1.1 Front Panel

Note! Figure 1.1 shows the PPC-3151W model. The PPC-3151W and PPC-3211W models feature the same design.



1.4 Rear Panel

The PPC-3151W rear panel features four VESA mount holes (100 x 100 mm), as shown in Figure 1.2.



Figure 1.2 PPC-3151W Rear Panel

The PPC-3211W rear panel features eight VESA mount holes (100 x 100 mm or 75 x 75 mm), as shown in Figure 1.3.



Figure 1.3 PPC-3211W Rear Panel

1.5 Dimensions

Unit: mm

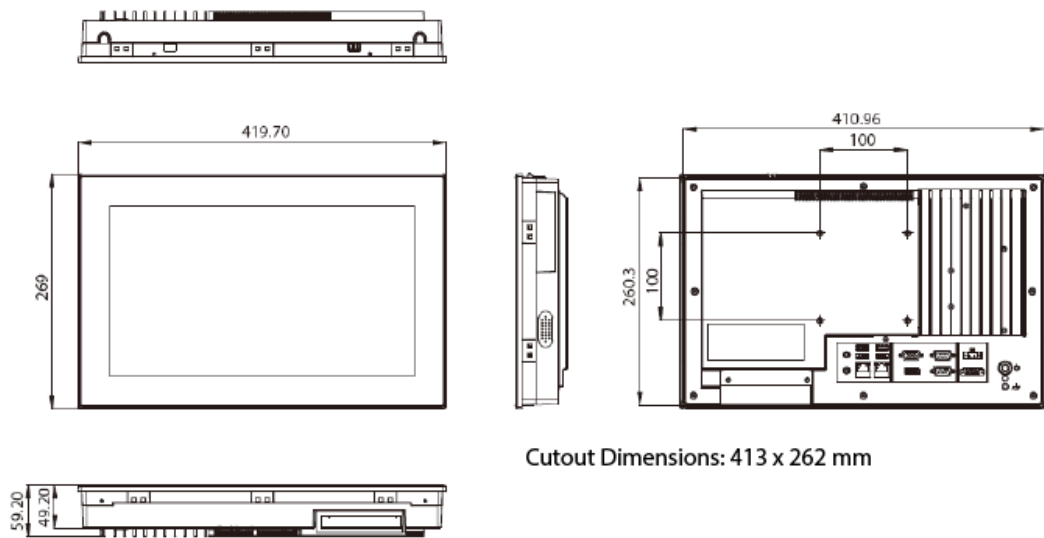


Figure 1.4 PPC-3151W Dimensions

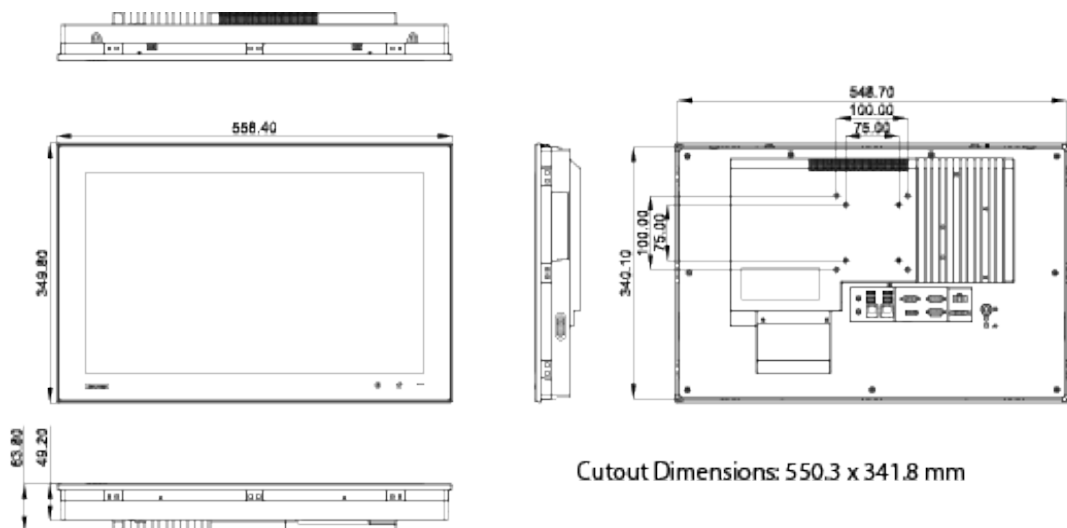


Figure 1.5 PPC-3211W Dimensions

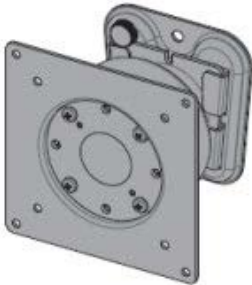
Note! Both PPC-3151W and PPC-3211W support VESA 100 x 100 mm or 75 x 75 mm. For mounting, use M4 screws at an 8 mm max. depth and suitable mounting apparatus to avoid injury.



1.6 Specifications

	PPC-3151W	PPC-3211W
LCD Panel	15.6"	21.5"
Display Type	TFT LCD (LED backlight)	TFT LCD (LED backlight)
Max. Resolution	1920 x 1080	1920 x 1080
Brightness	450	300
Color	16.7M	16.7M
Pixel Pitch	0.17925 x 0.17925 mm	0.24825 x 0.24825 mm
Viewing Angle	85 (Left), 85 (Right), 85 (Up), 85 (Bottom)	89 (Left), 89 (Right), 89 (Up), 89 (Bottom)
Contrast	800	5000
Backlight Lifetime	50,000 hrs (min.)	50,000 hrs (min.)
Touchscreen Type	Multi-touch projected capacitive	
Light Transmission	88% ± 2%	
Controller	USB interface	
Durability (Touches)	Greater than 35 million touches in one location without failure	
Processor	Intel® Core™ i5-7300U dual-core (default); i7-7600U/i3-7100U (optional)	
Memory	1 x SODIMM, DDR4 1866/2133, max. 16GB (1.2V)	
Storage	1 x 2.5" SATA bay; 1 x M.2 bay (22 x 42 mm, socket 2 B key, for storage only)	2 x 2.5" SATA bay (supports Intel RAID); 1 x M.2 bay (22 x 42 mm, socket 2 B key, for storage only)
Network (LAN)	2 x 10/100/1000 Mbps Ethernet (Intel® I211-AT; Intel® I219LM)	
I/O Ports	2 x RS-232, 1 x RS-422/485 with 1K VDC isolation 2 x RS-232 or 1 x RS-232 + 1 x GPIO (TTL, 8 pin programmable) 1 x Line-out, 1 x Mic-in 1 x DB15 VGA, 1 x Display Port (1.2), 4 x USB 3.0 1 x TPM 2.0 internal (optional)	
Expansion	1 x Mini PCIe 1 x PCIe x4 (default); 1 x PCI (in the accessory box)	
Speaker	2 x 1W	
Operating System	Microsoft® Windows 10 (64 bit); Linux	
Power Supply	9 ~ 32 VDC	
Power Consumption	65W	75W
Operating Temperature	0 ~ 50 °C/32 ~ 122 °F with SSD; 0 ~ 40 °C/32 ~ 113 °F with HDD	0 ~ 50 °C/32 ~ 122 °F
Storage Temperature	-20 ~ 60 °C/-4 ~ 140 °F	
Relative Humidity	10 ~ 95% @ 40 °C/104 °F (non-condensing)	
Shock	Operating 10G peak acceleration (11 ms duration) in accordance with IEC 60068-2-27	
Vibration	Operating random vibration test, 5 ~ 500Hz, 1Grms with HDD; 2Grms with SSD, in accordance with IEC 60068-2-64	
Certifications	Safety: CB, UL, CCC, BSMI EMC: CE, FCC Class B, BSMI	
Dimensions	419.7 x 269 x 59 mm/ 16.5 x 10.6 x 2.3 in	558.4 x 349.8 x 63.8 mm/ 22.0 x 13.7 x 2.5 in
Weight	5.4 kg/11.9 lb	7.7 kg/17.1 lb

1.7 Ordering Information

Part Number	Description	Image
PPC-3151W-P75A PPC-3211W-P75A	15.6"/21.5" Fanless widescreen panel PC with Intel® Core™ i5-7300U processor	
96PSA-A90W19OT-3	Power adapter 100 ~ 240 Vdc, 90 W, 19V with PFC	
PPC-WLAN-C1E	Wi-Fi module with antenna	
PPC-ARM-A03	VESA standard arm mount	
PPC-174T-WL-MTE	Wall mount kit	

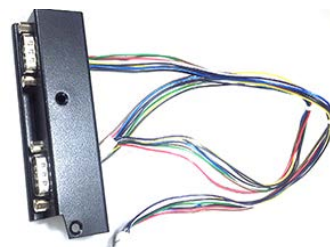
PPC-Stand-A1E

Stand kit



98R3P321100

Optional module (right side installation) 2 x RS-232 or 1 x RS-232 + 1 x GPIO (TTL, 8 pin programmable)



98R3P321110

TPM 2.0 module



Chapter 2

System Installation & Setup

- Quick Installation Guide
- Installation Procedures
- Memory Installation
- HDD Installation
- M.2 Installation
- Wireless LAN Installation
- COM/GPIO Installation
- TPM Installation
- Expansion Card Installation
- AT/ATX Switch
- Grounding Installation
- Hook Installation
- Wall Mounting

2.1 Quick Installation Guide

Before setting up the panel PC, take a moment to familiarize yourself with the locations and functions of the controls, drives, connectors, and ports (shown in the figures below). When placed upright on a desk, the panel PC front panel should appear as shown in Figure 2.1.



Figure 2.1 Front Panel

1. Power status indicator - Off (S5): orange; On (S0): blue



Figure 2.2 Side View

1. 2 x Quick installation clips
2. 2 x Antenna holes
3. 12 x Panel Mount Bracket holes
4. 2 x RS-232 (optional)
5. 1 x CPU cooler
6. 2 x Speakers

2.1.1 I/O Interfaces

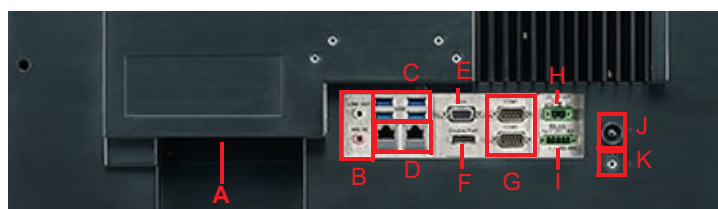


Figure 2.3 I/O Locations

- A: 1 x PCI/PCIe x4 expansion slot
- B: 1 x Line-out/Mic-in
- C: 4 x USB 3.0
- D: 2 x Gigabit Ethernet
- E: 1 x VGA
- F: 1 x DP
- G: 2 x COM RS-232
- H: 1 x DC power input (9 ~ 32 V)
- I: 1 x COM RS-422/485
- J: 1 x Power button
- K: 1 x Grounding screw

2.2 Installation Procedures

2.2.1 Power Cable

The panel PC has DC power socket (9 ~ 32 V). Follow the procedures below to connect the power cable. When connecting the power cable, hold the cable at the plug end.

1. Connect the female end of the power cable to the DC input socket of the panel PC.
2. Connect the male end of the power cable to the power outlet.



Figure 2.4 Connecting the Power Cable

2.2.2 Keyboard and Mouse

Connect the keyboard and mouse to the I/O ports of the panel PC.

2.2.3 Activate Power

The power button is located at the bottom right side of the panel PC.

Note! The power cable and adapter are not included with the product.
Customers must purchase the items separately.



2.3 Memory Card Installation

The following instructions are provided using the PPC-3211W model for reference:

1. Remove the screws circled in Figure 2.5.
2. Push the tabs circled in red in Figures 2.6 and 2.7 to open the rear cover (Figure 2.8).

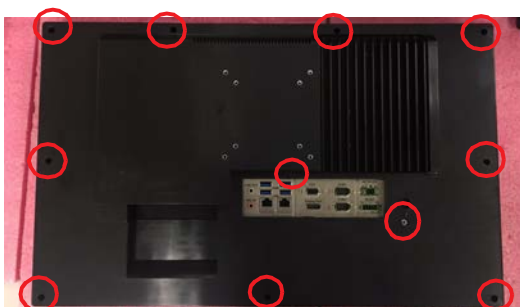


Figure 2.5



Figure 2.6



Figure 2.7

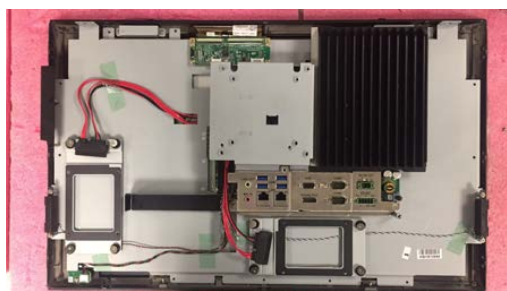


Figure 2.8

3. First remove the yellow warning tag, then remove the screws circled in red in Figure 2.9, and take out the reinforcement plate and CPU heat sink.

Note! Retrieve the black and blue thermal grease (shown in Figure 2.10) from the accessory box. Attach the CPU heat sink and reinforcement plate after the grease is applied.

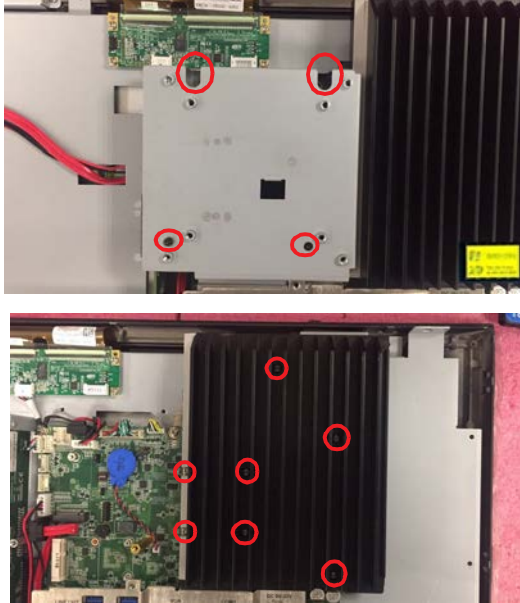


Figure 2.9

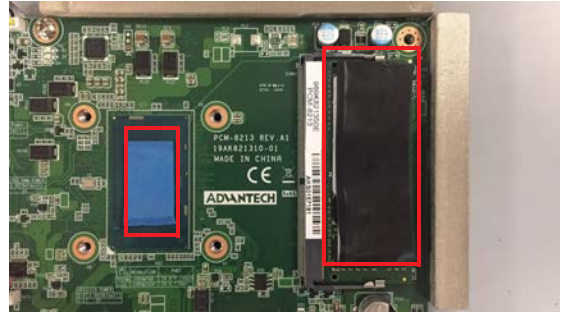


Figure 2.10

Note! The CPU cooler pad surface is isolated via anodization treatment to avoid static electricity (excluding the CPU contact side).



2.4 HDD/SSD Installation

2.4.1 For PPC-3211W

1. Follow the procedures in Section 2.3 to open the rear cover. Remove the screws circled in red in Figure 2.11 to retrieve the HDD bracket(s).
2. Attach the HDD to the HDD bracket using four screws from the accessory box (eight screws if installing two HDDs) (see Figure 2.12 for reference).
3. Replace the HDD bracket and tighten screws to affix in place. Connect the HDD cable to the mainboard (Figure 2.13).

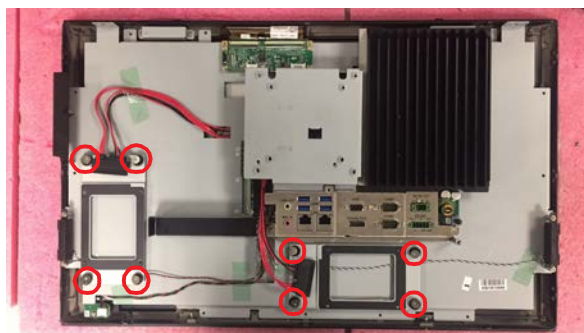


Figure 2.11



Figure 2.12



Figure 2.13

2.4.2 For PPC-3151W

1. Follow the procedures in Section 2.3 to open the rear cover and remove the screws circled in red in Figure 2.14 to retrieve the reinforcement plate.

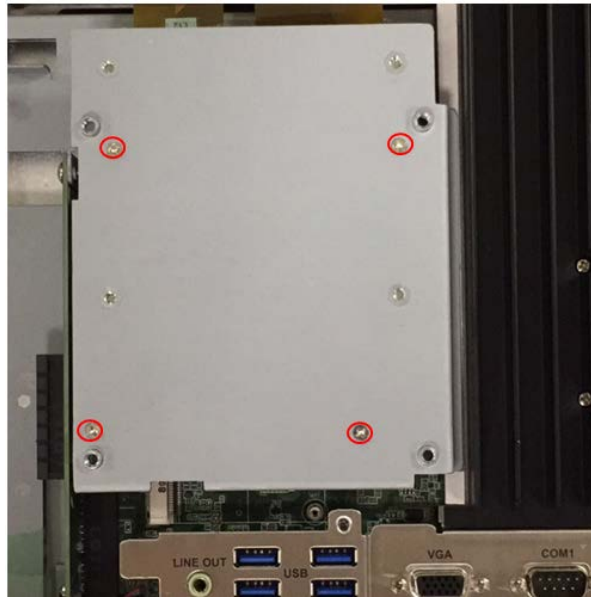


Figure 2.14

2. Using four screws from the accessory box, attach the HDD/SSD bracket with HDD/SSD onto the reinforcement plate (Figure 2.15).



Figure 2.15

3. If the HDD/SSD temperature specifications are below 65 °C/149 °F, you will need to install a thermal pad (see Figure 2.16).



Figure 2.16

4. Replace the HDD/SSD bracket and reinforcement plate and use screws to affix it in place. Connect the HDD/SSD cable to the mainboard (Figure 2.17).



Figure 2.17

2.5 M.2 Installation

The following instructions are provided using the PPC-3211W model for reference:

1. Follow the procedures in Section 2.3 to open the rear cover and remove the reinforcement plate (Figure 2.18).
2. Plug the M.2 drive into the mainboard interface. Retrieve the two (M2.5x4) screws from the accessory box to affix the drive in place (Figure 2.19).
3. Replace the rear cover and reinforcement plate.

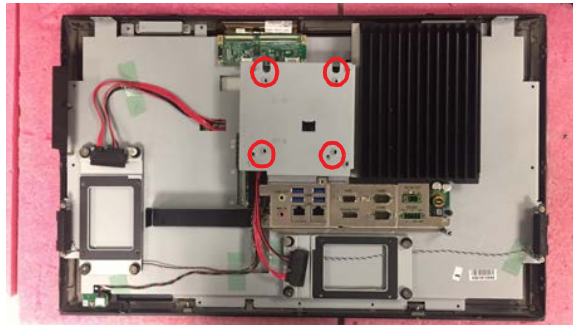


Figure 2.18

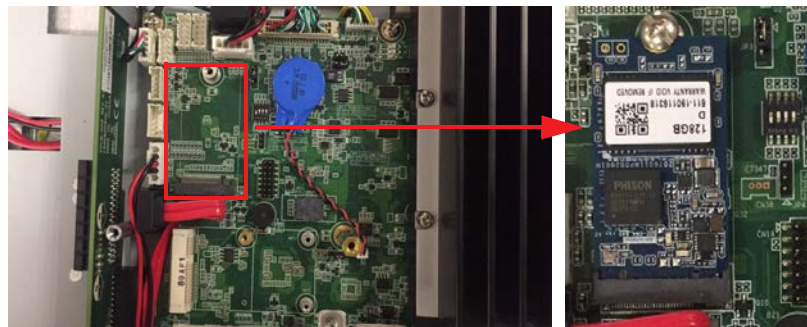


Figure 2.19

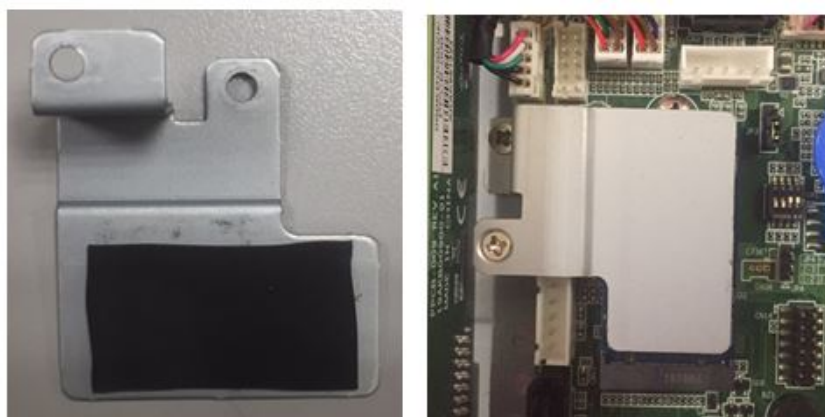


Figure 2.20 PPC-3151W Reinforcement Plate

2.6 Wireless LAN Installation

The following instructions are provided using the PPC-3211W model for reference:

1. Follow the procedures in Section 2.3 to open the rear cover and remove the reinforcement plate. Wireless LAN cards can be installed in the location shown in Figure 2.21. For wireless short cards, retrieve one hexagonal screw from the accessory box to affix it in place (Note: If a half-size PCIe is used, the hexagonal screw circled in red in Figure 2.22 must be tightened).



Figure 2.21

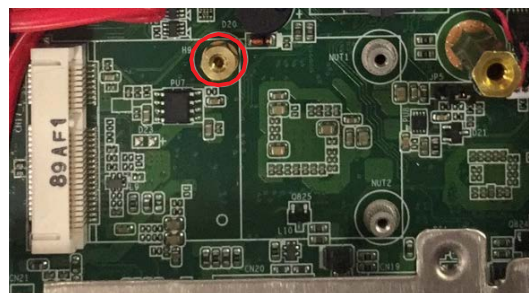


Figure 2.22

2. Connect the wireless LAN card module cable to the antenna bracket (Figure 2.23). Take note of the installation direction of the cable ends and screws/cushions.
3. Remove the two plugs on the left and right sides of the rear cover (Figure 2.24).
4. Replace the rear cover and install the antenna of the wireless LAN card module (Figure 2.25).

Note! For these panel PCs, we recommend the Advantech wireless LAN card module (Part number: PPC-WLAN-C1E).

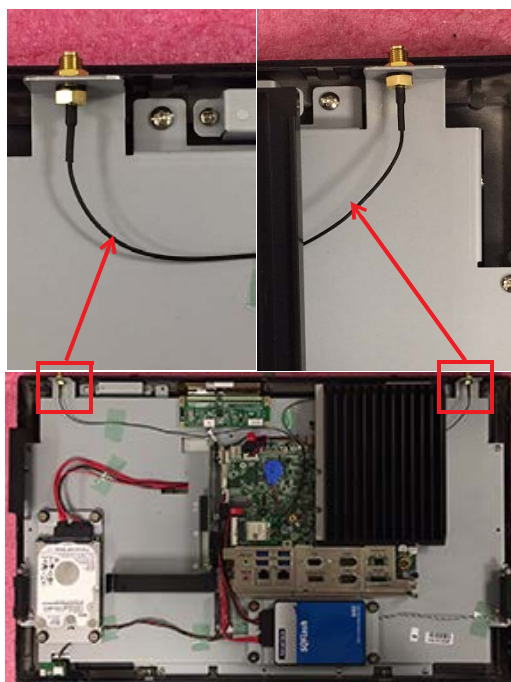


Figure 2.23

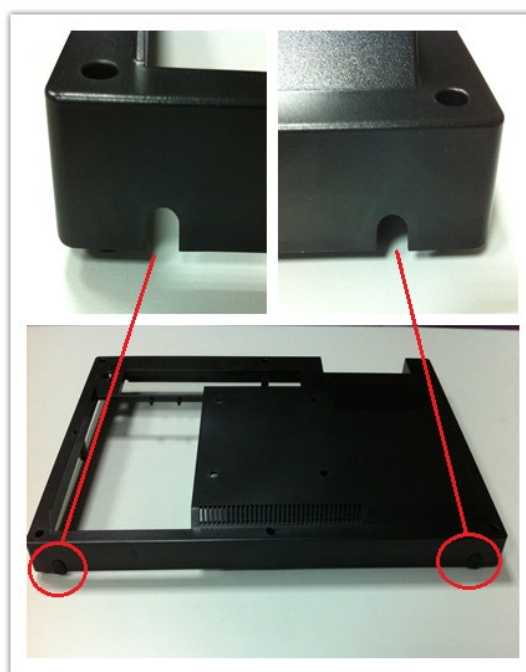


Figure 2.24

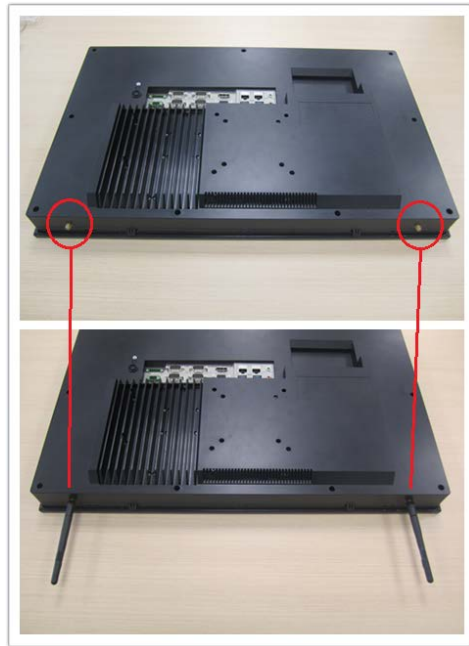


Figure 2.25

2.7 COM/GPIO Installation

The following instructions are provided using the PPC-3211W model for reference:

1. Refer to Section 2.3 to open the rear cover and remove the reinforcing plate. Remove the side COM flap by removing the two affixing screws.

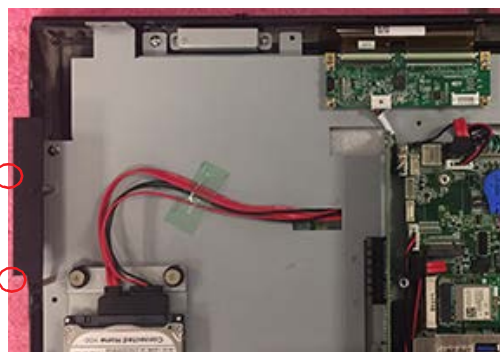


Figure 2.26

2. Retrieve the serial port module and assemble it as shown in Figure 2.27.



Figure 2.27

3. Install the assembled serial module in the system (the two screws circled in red in Figure 2.28 are fixed). Connect the COM4 cable to CN16 and the COM5 cable to CN13 as shown in Figure 2.28. Then replace the reinforcing plate and the rear cover. (If the COM5 cable is connected to CN12, COM5 will support GPIO.)

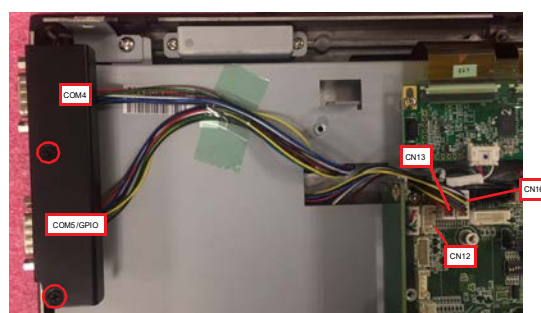


Figure 2.28

2.8 TPM Installation

(The current mechanism supports only 98R3P321110.)

1. Refer to Section 2.3 to open the rear cover and remove the reinforcement plate. Remove the TPM card (96923260J0E) from the TPM module and affix it to the back of the reinforcement plate (see Figure 2.29).



Figure 2.29

2. For PPC-3151W: Connect the cable to the TPM interface. The white label shown in Figure 2.30 corresponds to Pin 1 of the TPM board. The direction of the line is shown below.

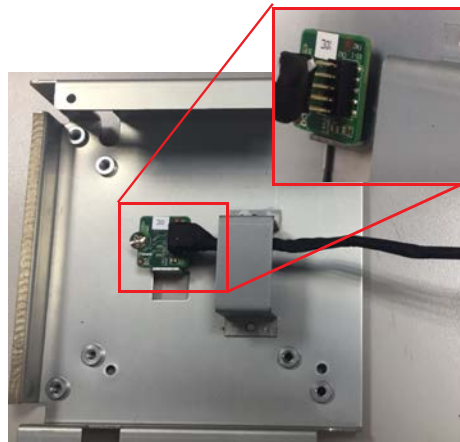


Figure 2.30

3. Align Pin 1 of the TPM board with CN14 on the motherboard.
4. Use screws to attach the TPM board to the reinforcing plate.

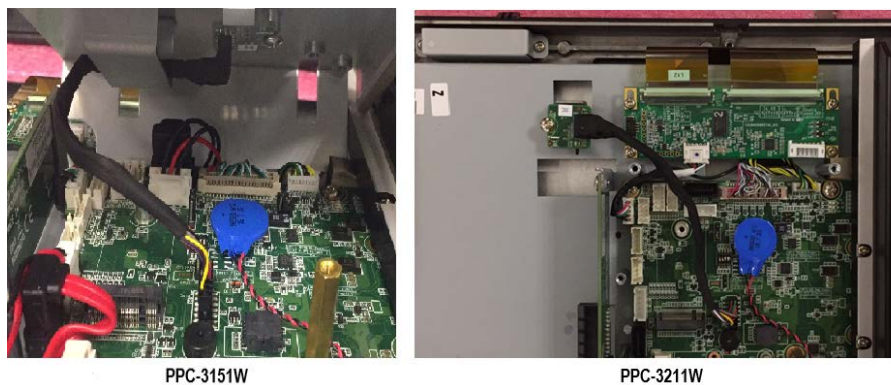


Figure 2.31

2.9 Riser Card Installation

1. Refer to Section 2.3 to open the rear cover and remove the reinforcement plate. Remove the screws and shield circled in red in Figure 2.32.
2. Install the expansion card.
3. The device is equipped with a PCIe x4 riser card (PCM-939) as a default (see Figures 2.32 and 2.33).
4. An expansion PCI riser card can be easily installed as shown in Figures 2.34 and 2.35.

Note! The maximum dimensions supported for expansion cards is 175 x 106.7 mm/6.88 x 4.2 in.

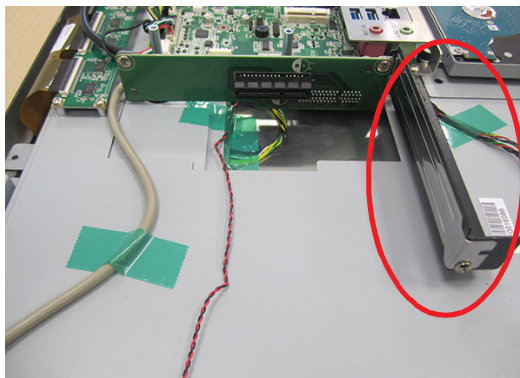


Figure 2.32

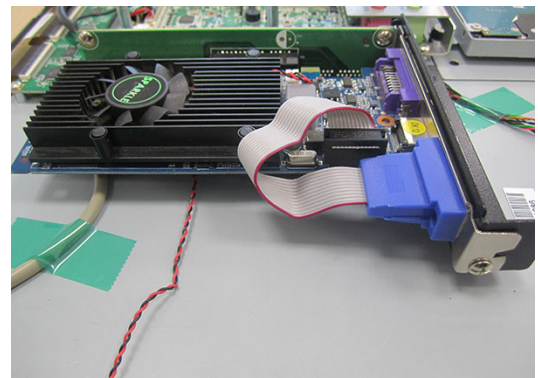


Figure 2.33



Figure 2.34



Figure 2.35

2.10 AT/ATX Switch

The PPC-3151W/3211W panel PC is equipped with a built-in AT/ATX switch for switching between AT and ATX functions without needing to remove the rear cover.

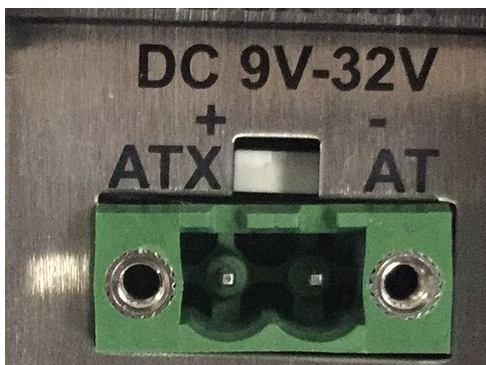


Figure 2.36 ATX Mode



Figure 2.37 AT Mode

2.11 Grounding Installation

1. Remove the plastic cover of the grounding screw.
2. Connect the grounding cable to the grounding screw.
3. Tighten the screw to secure the connection.



Figure 2.38



Figure 2.39



Figure 2.40

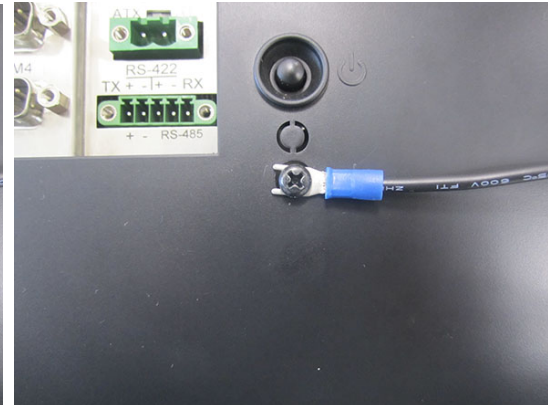


Figure 2.41

Note! A grounding cable is not provided with the product. Customers will need to purchase this cable separately.



2.12 Hook Installation

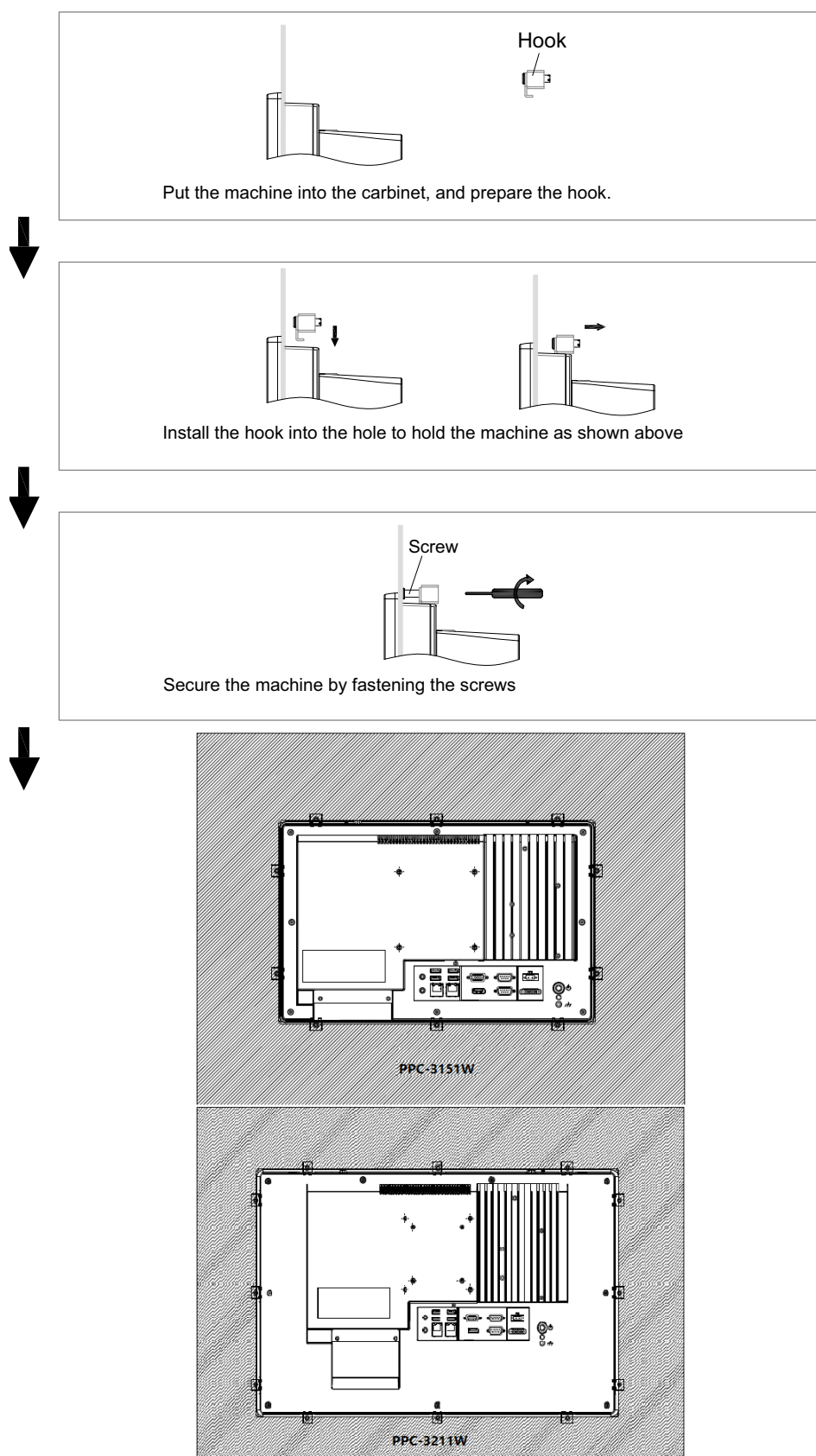


Figure 2.42 Hook Installation

2.13 Wall Mounting

The PPC-3151W/3211W panel PC is designed to be easily wall mounted by a single person. To mount the panel PC onto a wall, simply follow the procedures below.

1. Loosen the two screws at the base of the panel PC, as shown in Figure 2.43.

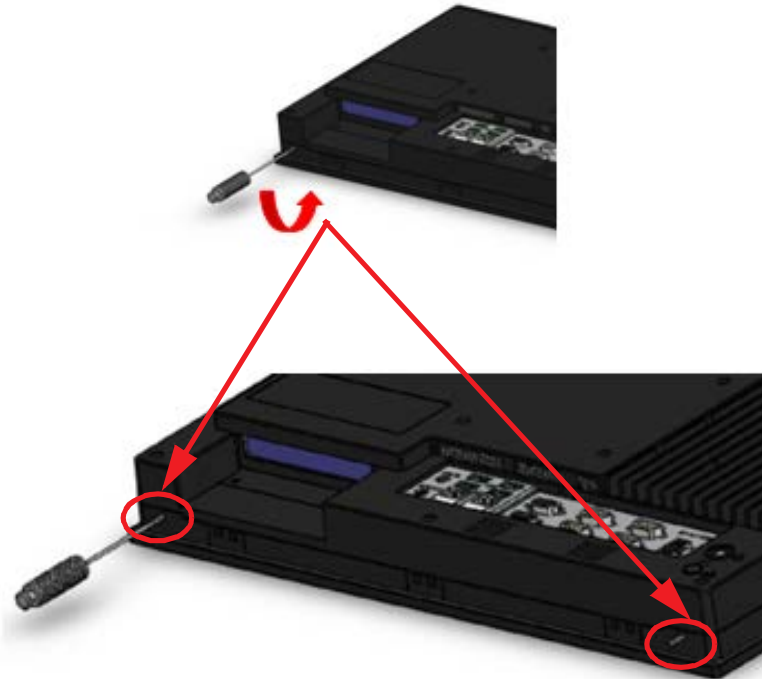
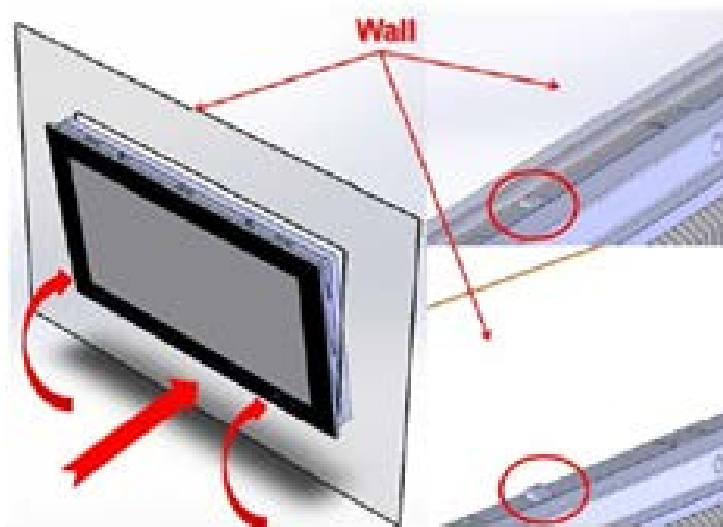


Figure 2.43 Panel PC Underside View

2. Insert the panel PC into the prepared panel cutout. Push gently until the spring hooks click into place, affixing the machine to the wall.



3. Tighten the two screws at the base of the panel PC to complete the installation.



Note! For rapid installation, the recommend mount thickness is less than 2 mm/0.079 in. For other situations, the recommended thickness can be a maximum of 6 mm/0.236 in.



Chapter 3

Jumper Configuration

- Jumpers & Connectors
- External COM Pin Definitions

3.1 Jumpers & Connectors

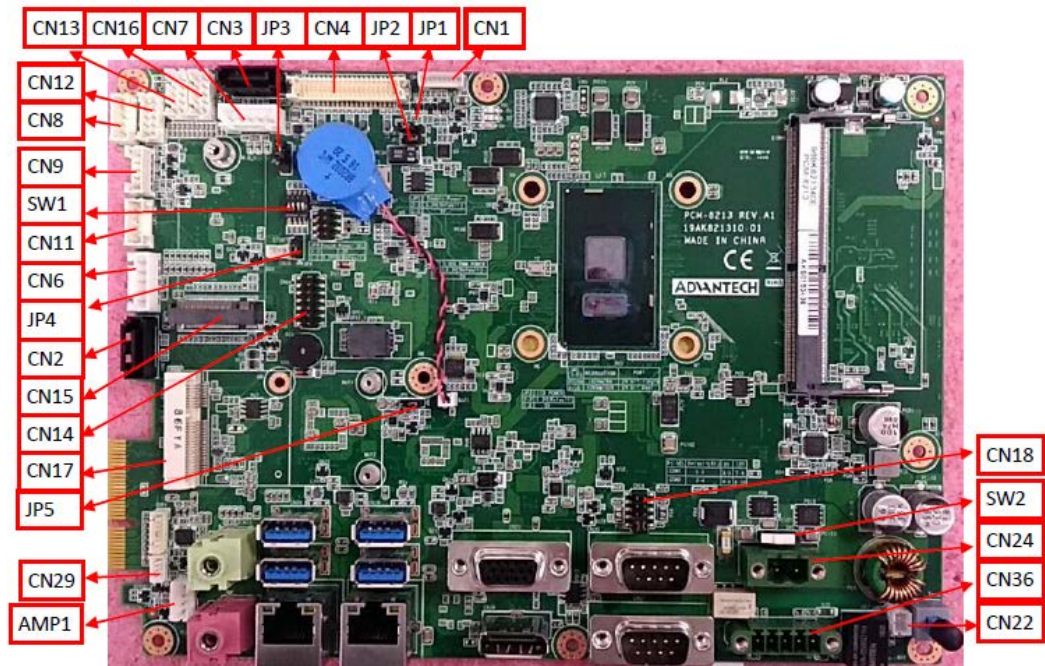
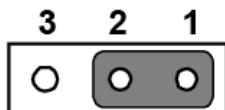


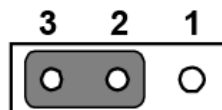
Figure 3.1 PCM-8213 Front View

Connectors	Functions
CN1	Inverter
CN2/CN3	SATA1/SATA2
CN4	LVDS
CN6/CN7	SATA Power
CN8/CN9	Internal USB
CN11	Resistive Touch
CN12	GPIO
CN16/CN13	COM4/COM5
CN14	LPC Connector
CN15	M.2 Connector
CN17	Mini PCIe Connector
CN18	COM Pin9 Power Select (COM1 & COM2)
CN22	Power Button
CN24	Power Input
CN29	Front LED
CN36	COM3 (RS-422/485)
AMP1	Amplifier Connector
JP1/JP2	Invert Enable/PWM Power Select
JP3	Panel Power Select
JP4	Touch Power Select
JP5	RTC Reset
SW1	Panel Resolution
SW2	AT/ATX Select

JP1	Picture	Invert Enable Power Select
(1-2)	P1	5V
(2-3)	P2	3.3V Default*

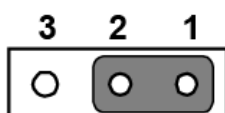


P1

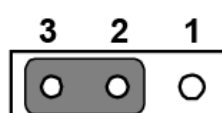


P2

JP2	Picture	Invert PWM Power Select
(1-2)	P3	5V
(2-3)	P4	3.3V Default*

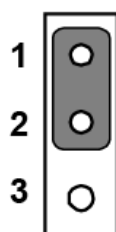


P3

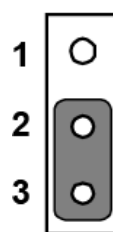


P4

JP3	Picture	Panel Power Select
(1-2)	P5	5V
(2-3)	P6	3.3V Default*

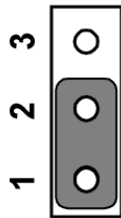


P5

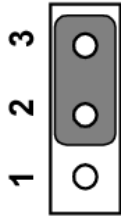


P6

JP4	Picture	Resistive Touch Power Select	
(1-2)	P7	3.3VSB	Default*
(2-3)	P8	3.3V	

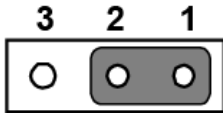


P7

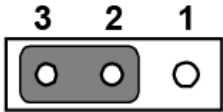


P8

JP5	Picture	RTC Reset	
(1-2)	P9	Normal*	Default*
(2-3)	P10	CMOS Clear	

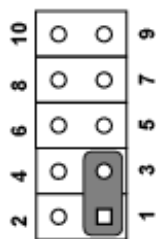


P9

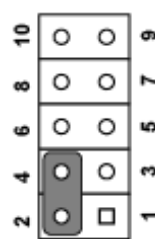


P10

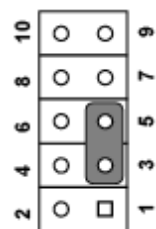
CN18	Picture	COM1/2 RING and Power Select	
(1-3)/(2-4)	P11/P12	COM1/COM2 RI	Default*
(3-5)/(4-6)	P13/P14	COM1/COM2 5V	
(7-9)/(8-10)	P15/P16	COM1/COM2 12V	



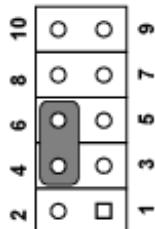
P11



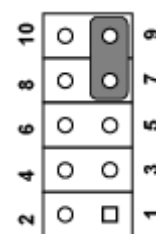
P12



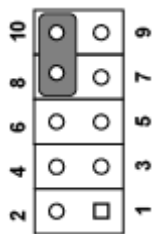
P13



P14

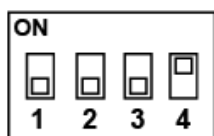


P15



P16

SW1	AT/ATX Select		
1,2,3 off; 4 on	P17	1920 x 1080 (48 bit)	PPC-3211W
1,2 off; 3, 4 on	P18	1920 x 1080 (48 bit)	PPC-3151W

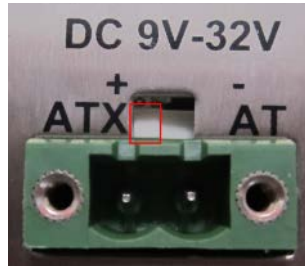


P17

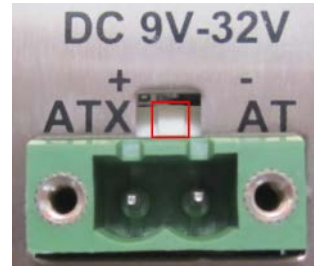


P18

SW2		AT/ATX Select	
1-3	P19	ATX Power	Default*
2-3	P20	AT Power	



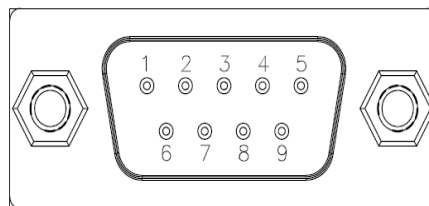
P19



P20

CN12 GPIO

Pin	Name
1	GND
2	GPIO4
3	GPIO0
4	GPIO5
5	GPIO1
6	GPIO6
7	GPIO2
8	GPIO7
9	GPIO3



3.2 External COM Pin Definitions

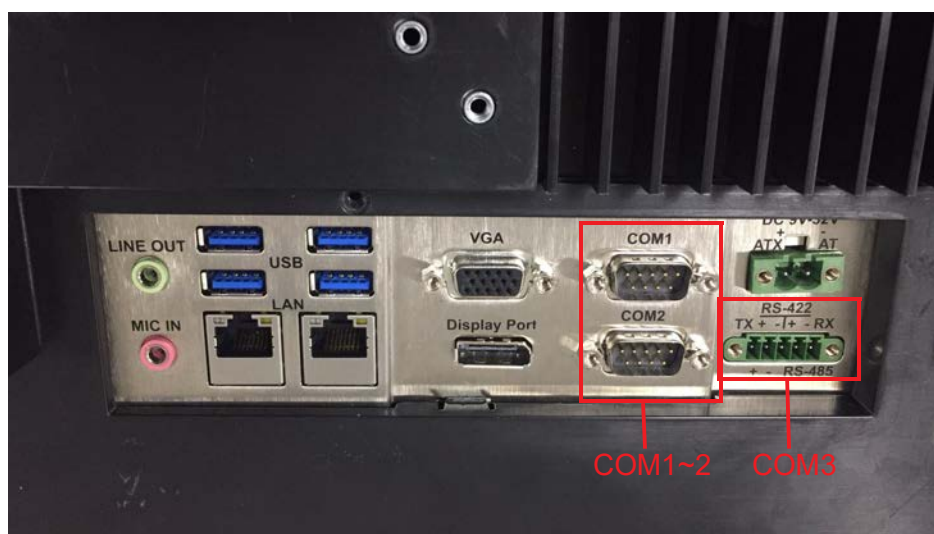


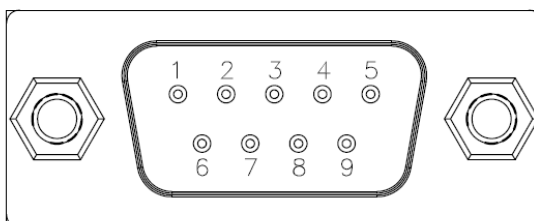
Figure 3.2 COM Ports

COM 1 and COM 2: RS-232 (pin 9 supports 5V/12V output)

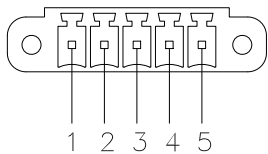
COM 3: RS-422/485

Pin	COM1/COM2
1	DCD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RING or 5V/12V output

Pin 9 is configured for RI signals by default. However, it can be configured for 5V/12V output via a jumper.



COM3: RS-422/485 with 1000 V_{DC} isolation, selectable via BIOS



Pin	1	2	3	4	5
RS422	TX+	TX-	RX+	RX-	GND
RS485	D+	D-			GND

3.3 UART RS-485 Auto-Flow Control

COM5 supports the RS-485 auto-flow control function for all UART. Enabling the RS485 auto-flow control function will automatically drive the RTS# pin to a logic level of high or low for flow control.

To enable RS-485 auto-flow control, the parity and stop-bit settings must follow one of the configurations below.

- (1) 8 data bits + 1 parity bit + 1stop bit
- (2) 8 data bits + 1 parity bit + 2 stop bits
- (3) 8 data bits + 2 stop bits

Chapter 4

Software Configuration

- Driver Installation
- BIOS Setup Utility

4.1 Driver Installation

Before installing software on the panel PC, the corresponding drivers must be installed for full functionality.

All drivers can be downloaded from the Advantech website:

<http://www.advantech.com>

4.2 BIOS Setup Utility

4.2.1 Entering the BIOS

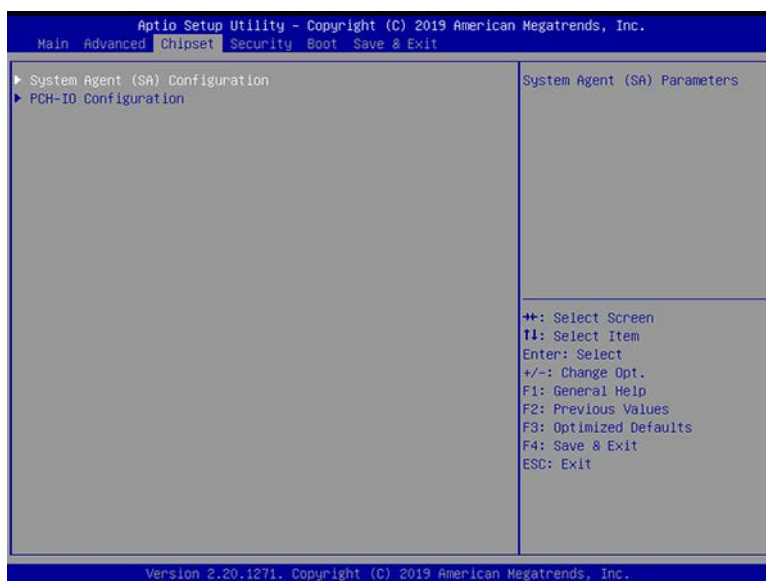
When the power is turned on, press to enter the BIOS setup utility.

Whenever a setting configuration is changed, press <F4> to save and exit; otherwise the changes will not be saved in the BIOS.

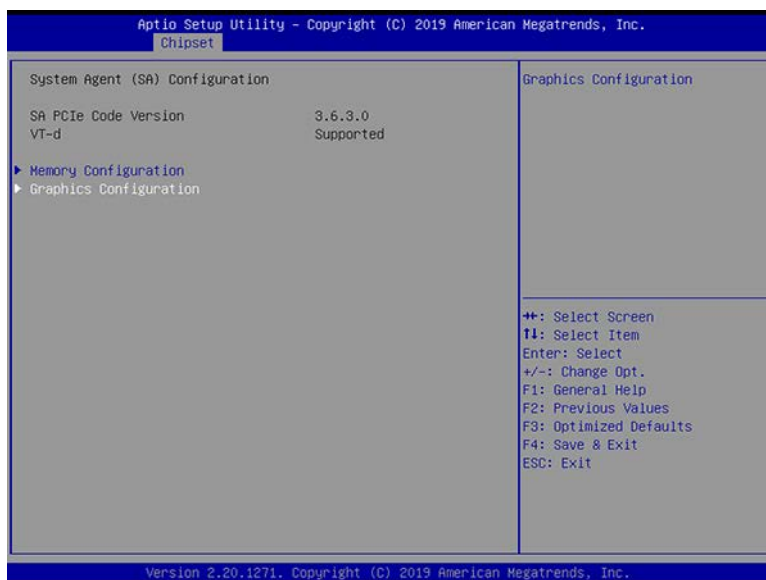


4.2.2 LCD Brightness Adjustment

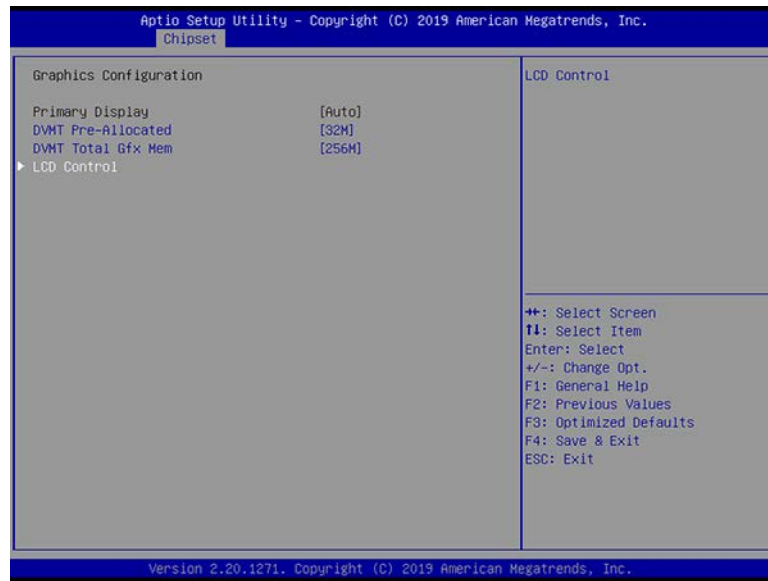
1. Select **System Agent (SA) Configuration** in the Chipset tab.



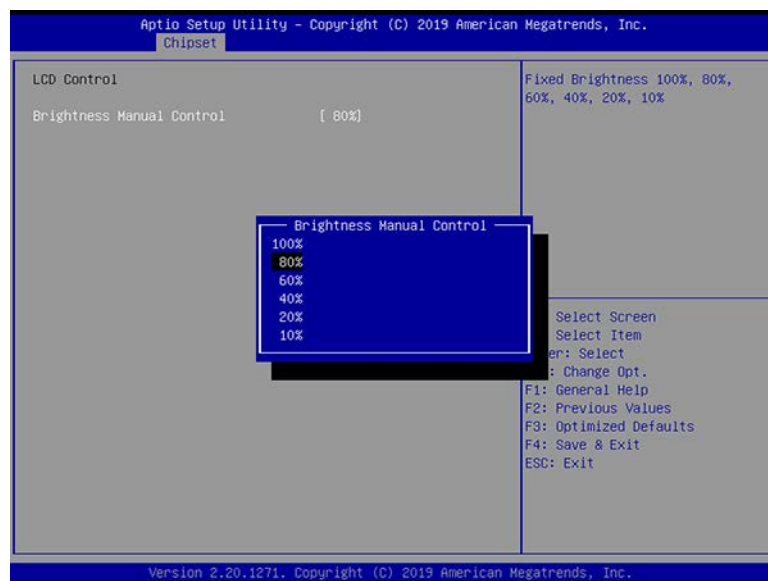
2. Then select **Graphics Configuration**.



3. Select **LCD Control**.

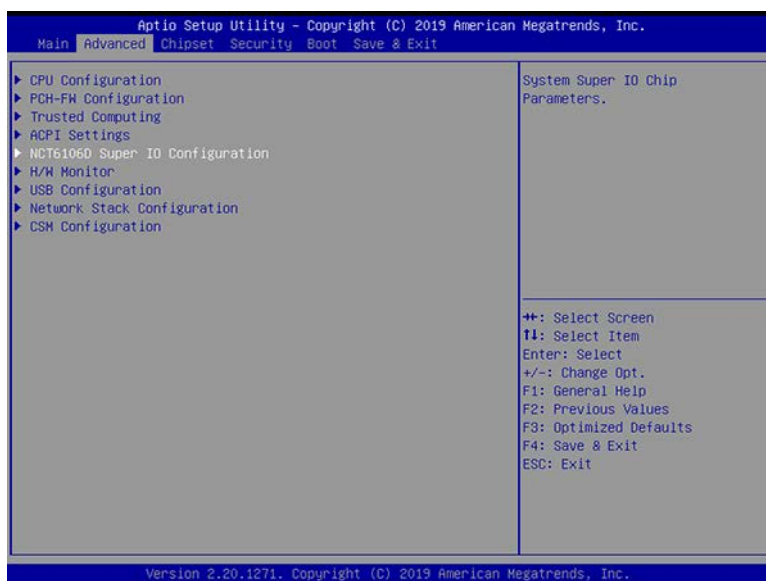


4. Click **Brightness Manual Control** to choose between the six brightness levels.



4.2.3 COM3 Mode Selection (RS422/RS485)

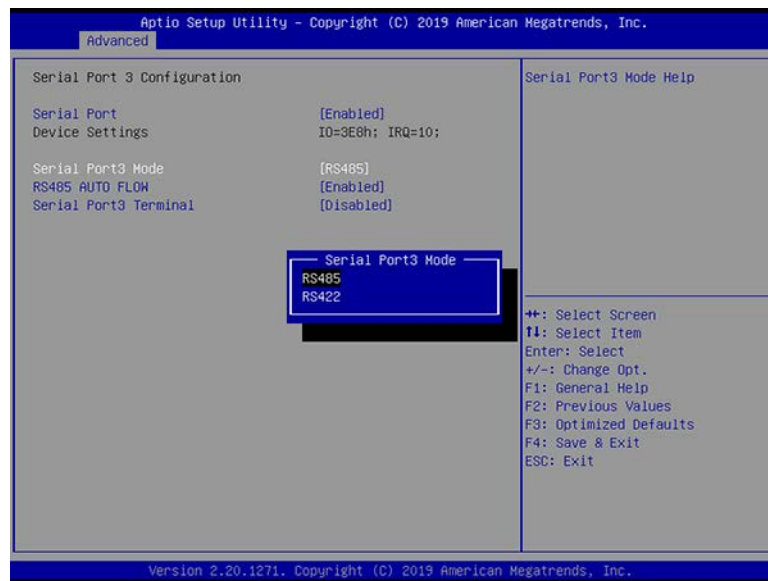
1. Select **NCT6106D Super IO Configuration** in the Advanced tab.



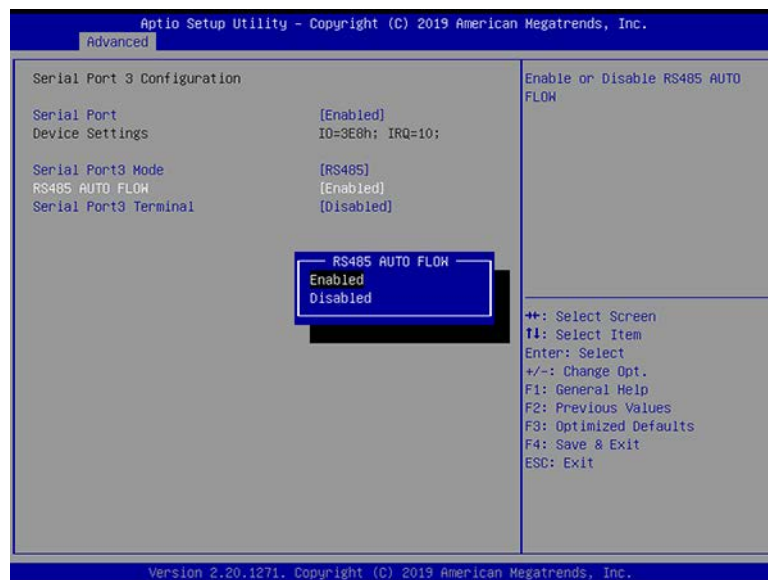
2. Select **Serial Port 3 Configuration**.



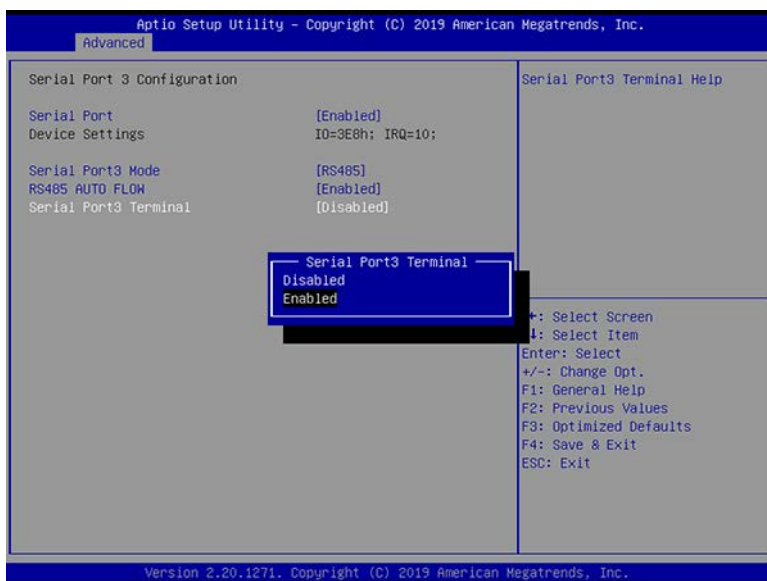
3. Select **Serial Port 3 Mode** and then choose between RS422 or RS485 to set the COM3 operation mode.



4. When the COM3 mode is set as RS485, **RS485 Auto Flow** can be Enabled/Disabled.



When the COM3 mode is set as RS422/RS485, **Serial Port 3 Terminal** can be Enabled/Disabled.

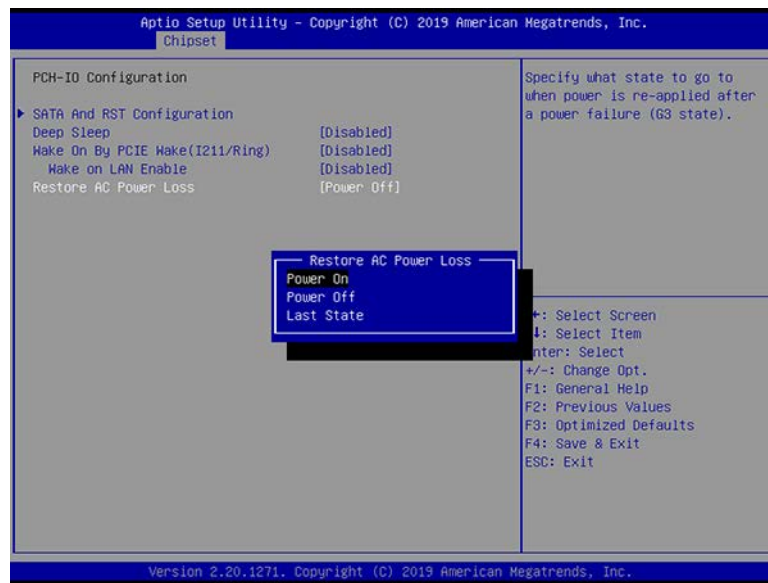


4.2.4 BIOS AT & ATX Setup

1. Select **PCH-IO Configuration** in the Chipset tab.



2. Select **Restore AC Power Loss** then set **Power On** as AT Mode and **Power Off** as ATX Mode.

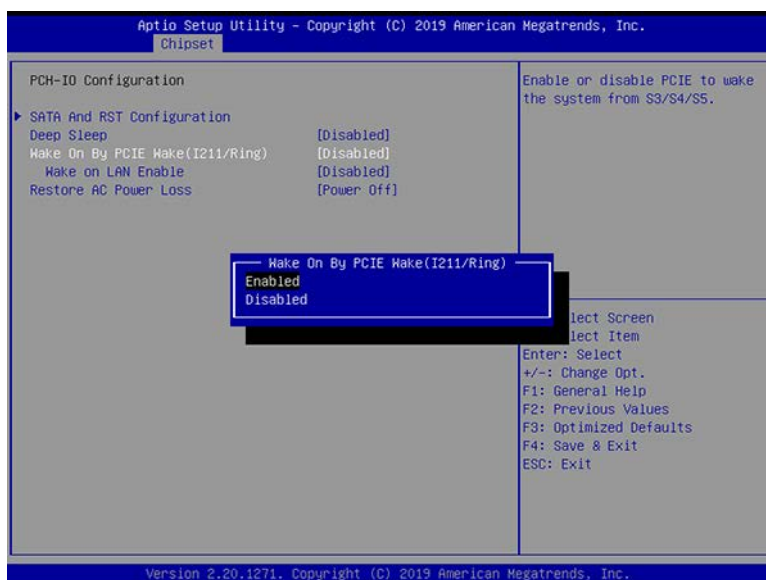


4.2.5 Wake-on-LAN or Ring

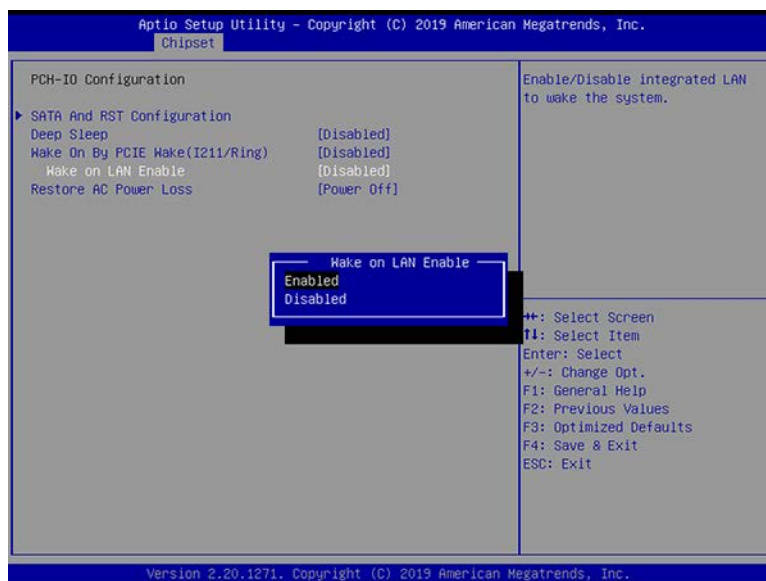
1. Select **PCH-IO Configuration** in the Chipset tab.



2. Set **Wake on By PCIE Wake** as Enabled if wake up is via I211 or Ring.



3. Set **Wake on LAN Enable** as Enabled if wake up is via I219.



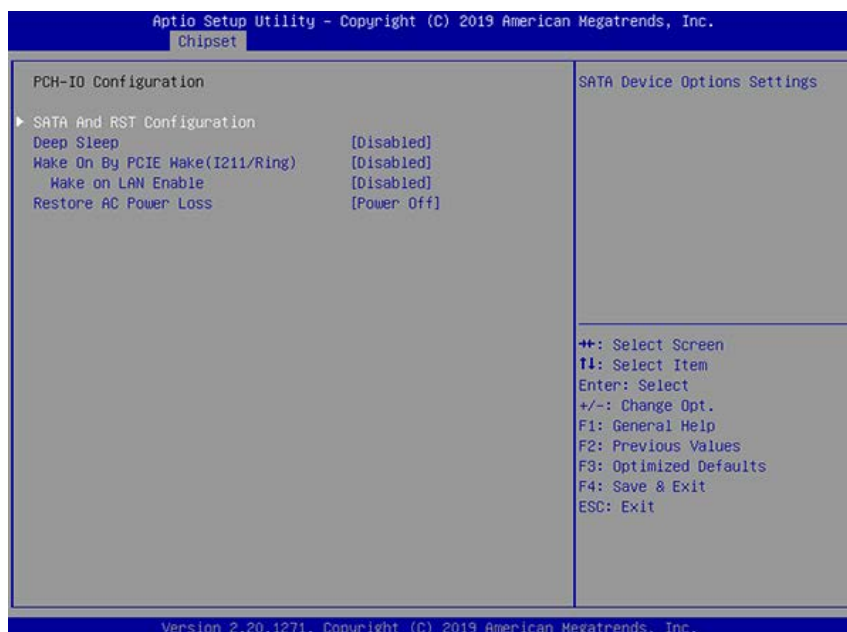
4.2.6 RAID Installation

(This is only available for PPC-3211W.)

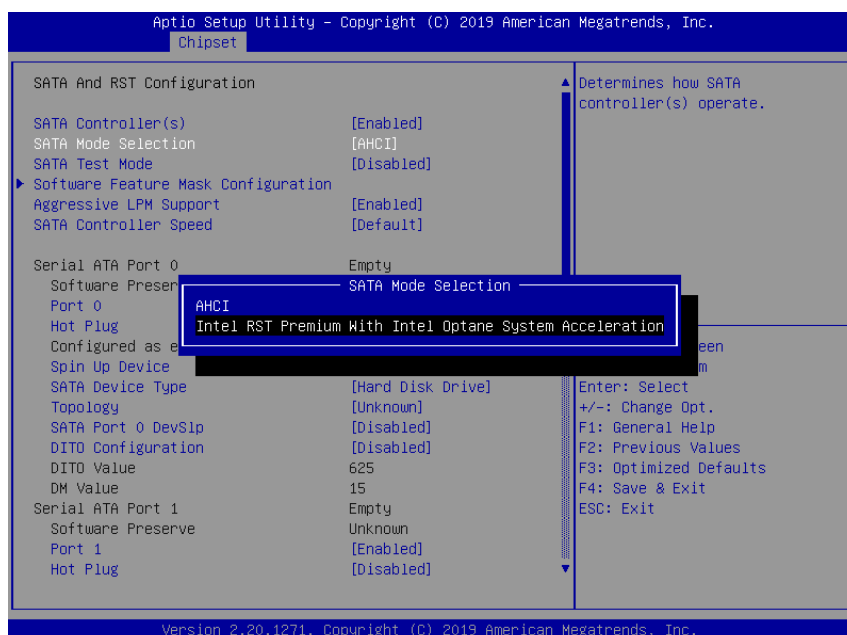
1. Select **PCH-IO Configuration** in the Chipset tab.



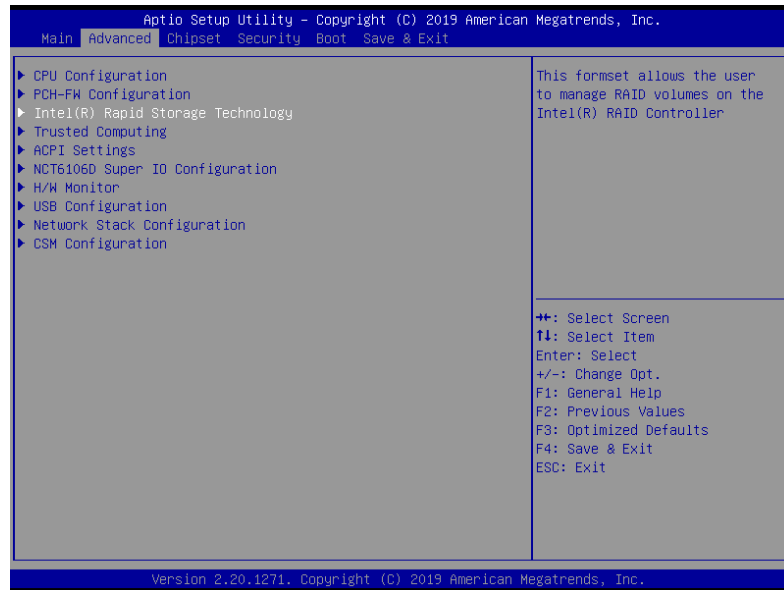
2. Select **SATA AND RST Configuration**.



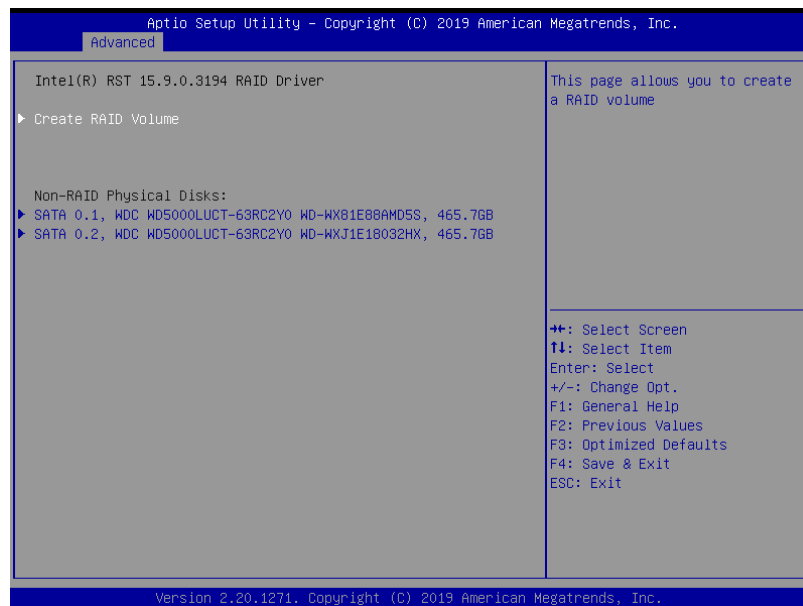
3. Select **SATA Mode Selection -> Intel RST Premium with Intel Optane System Acceleration**. Save and restart the BIOS setup utility.



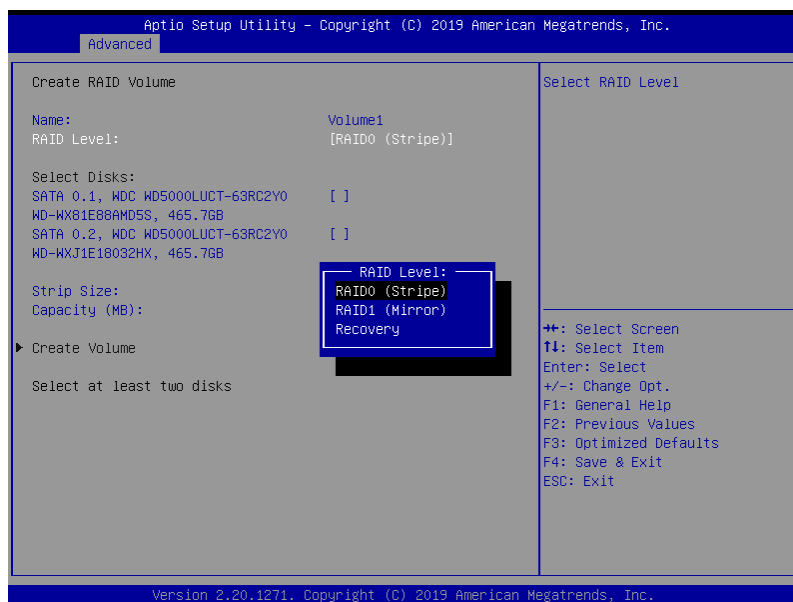
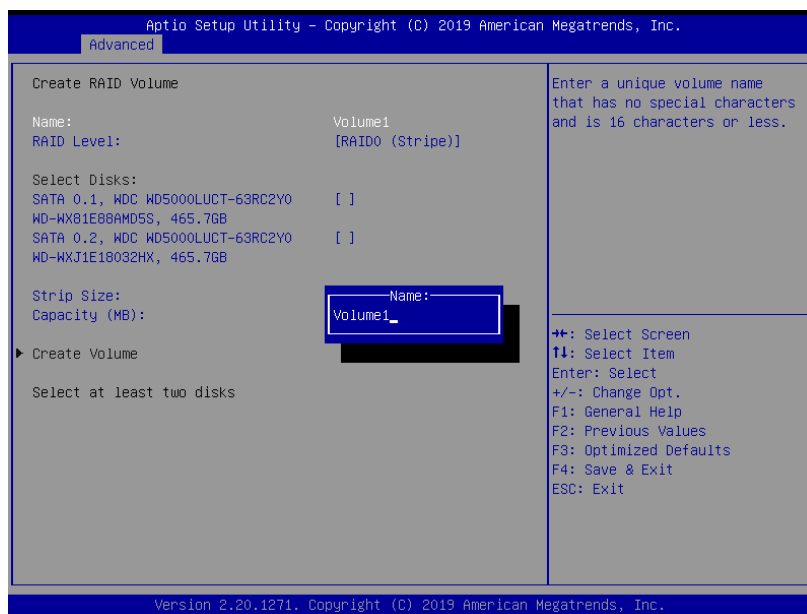
4. Select **Intel(R) Rapid Storage Technology** in the Advanced tab.

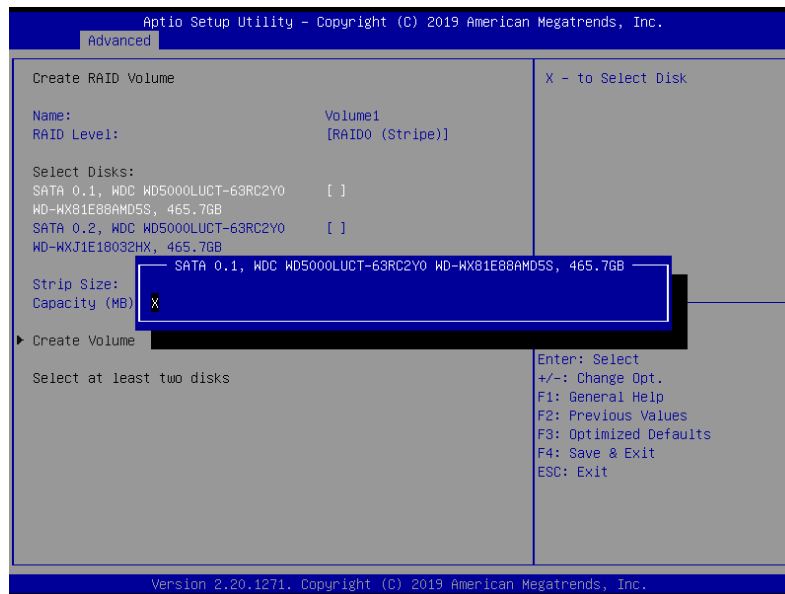


5. Select **Create RAID Volume** to enter the RAID settings page.

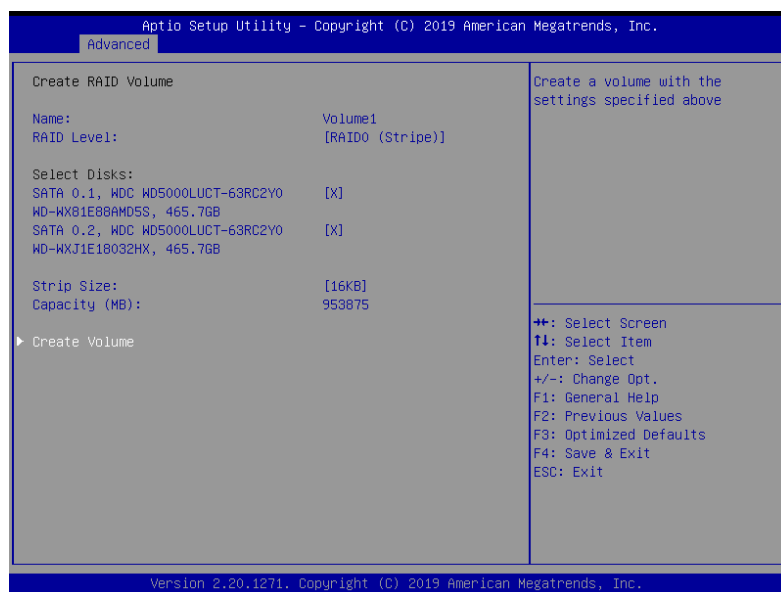


6. Configure **Name** and **RAID Level** and select the corresponding storage device.



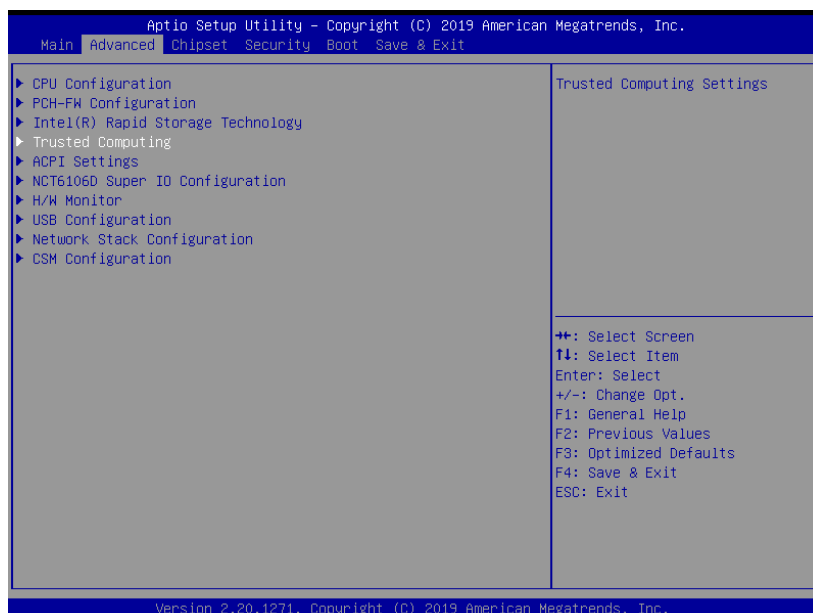


7. Select **Create Volume**. Save and exit the BIOS setup utility. Allow the system to boot from the installation device to initiate standard installation procedures.

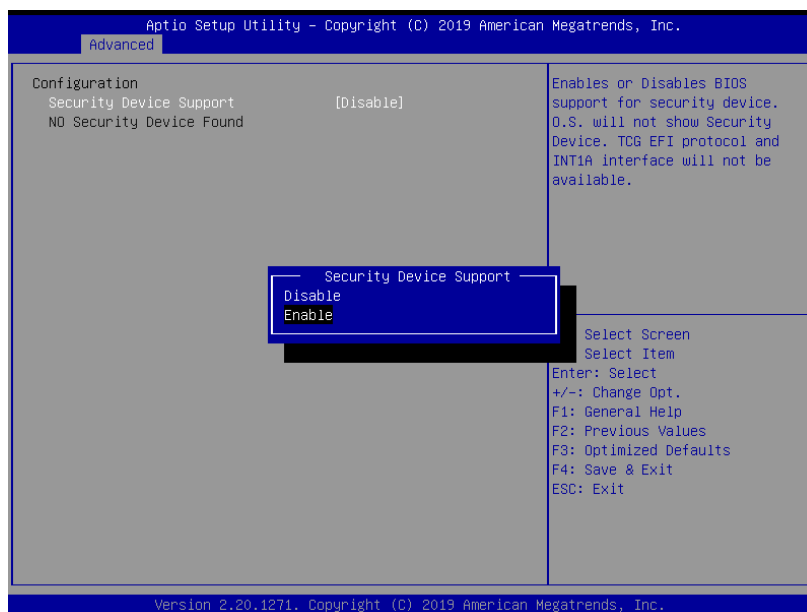


4.2.7 TPM Settings

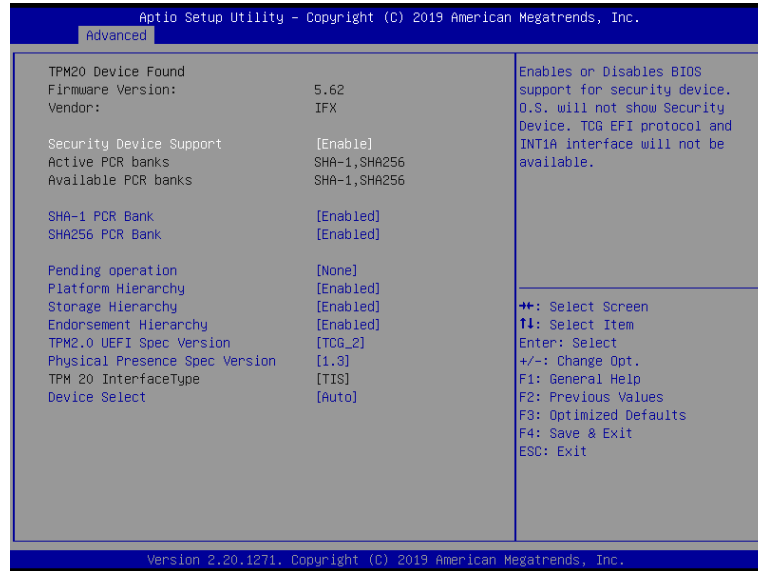
1. Select **Trusted Computing** in the Advanced tab.



2. Change **Security Device Support** to Enabled. Save and restart the BIOS setup utility.



3. Upon reentering the BIOS setup utility, the device will be listed and operational.



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Please verify specifications before quoting. This guide is intended for reference purposes only.

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