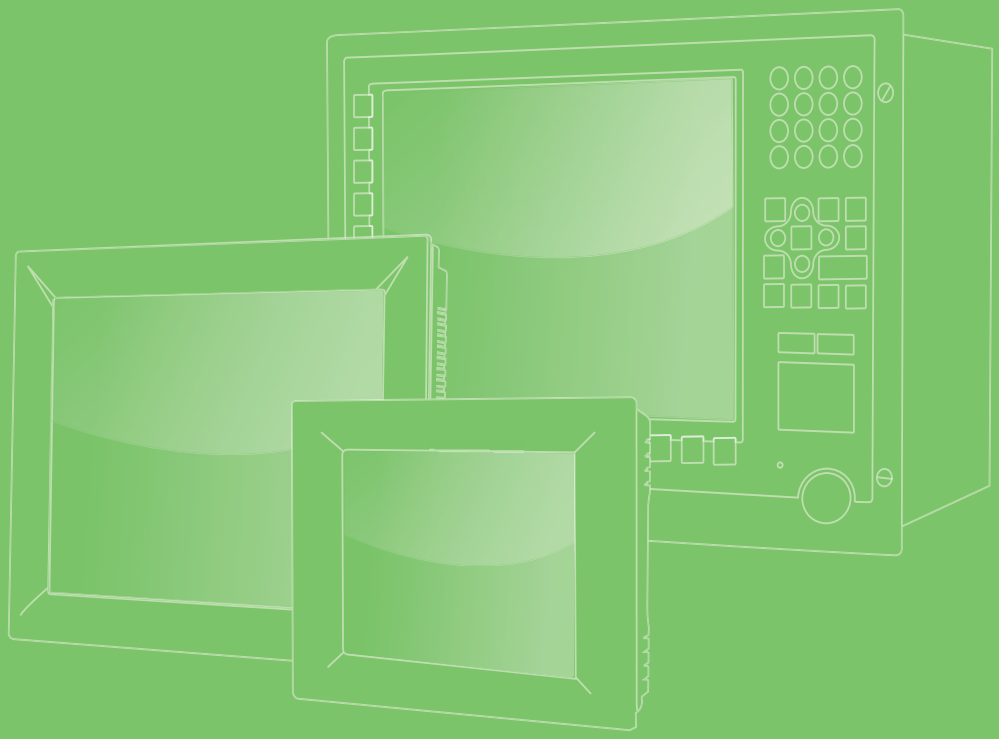

User Manual

PPC-612

12.1" Configurable Panel PC Chassis (for PPC-MB Series Motherboards)

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 at no charge during the warranty period. For out-of-warranty repairs, customers will be billed according to the cost of replacement materials, service time, and freight. Please consult your dealer for more details.

If you think you have a defective product, follow the steps outline below:

1. Collect all the information about the problem encountered (for example, CPU speed, Advantech products used, other hardware and software used, etc.). Note anything abnormal and list any onscreen messages received when the problem occurs.
2. Call your dealer and describe the problem. Please 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 a 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, then ship the package prepaid to your dealer.

Part No. 2004061200 Edition 1

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Declaration of Conformity

CE

This product has passed the CE test for environmental specifications. Test conditions for passing included the equipment being operated within an industrial enclosure. To protect the product from damage due to electrostatic discharge (ESD) or EMI leakage, we strongly recommend the use of CE-compliant industrial enclosure products.

FCC Class A

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

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 need additional assistance. Please have the following information at hand before calling:
   - Product name and serial number
   - Description of your peripheral attachments
   - Description of your software (operating system, version, application software, etc.)
   - Comprehensive 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. Keep this startup 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. Ensure to connect the power cord to a socket-outlet with earthing connection.
   Pour les appareils enfichables, la prise de courant doit être placée près de l'appareil et facilement accessible. Veillez à cordon d'alimentation connecté à un socle de prises de courant avec connexion à la terre.
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 a grounded 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 over-voltage.
    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 a qualified skilled person.
    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 instru tions.
- The equipment has been dropped and damaged.
  L'appareil a été aba donné 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 postion should 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. 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.
19. Warning message for using the product in an ITE environment:
    Suitable for installation in Information Technology Rooms in accordance with Article 645 of the National Electrical Code and NFPA 75.
    Peut être installé dans des salles de matériel de traitement de l'information conformément à l'article 645 du National Electrical Code et à la NFPA 75.
20. Do not expose the equipment to direct sunlight, or install the equipment in an environment with direct sunlight, as this may cause damage.
    N'exposez pas l'appareil à la lumière directe du soleil ou ne l'installez pas dans un environnement exposé à la lumière directe du soleil, car cela pourrait causer des dommages.

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 the PC chassis before manual handling. Do not touch any components on the CPU card or other cards while the PC is switched on.
- Disconnect all power before making any configuration changes. A sudden rush of power when connecting a jumper or installing a card may damage sensitive electronic components.

Battery Information

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

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Chapter 1

Introduction

- Overview
- Features
- Chassis Comparison
- Specifications
- External View
- System View
- Dimensions

1.1 Overview

The PPC-612 is a panel PC chassis developed for Mini-ITX motherboards. These chassis are equipped with a 12.1" TFT LED panel. PPC-612 supports a selection of Mini-iTX motherboards to satisfy diverse customer requirements regarding price and functionality.

PPC-612 also features a true flat bezel to meet market demands for a stylish design, as well as an additional reservation port and expansion slot to accommodate various applications. The series devices were developed using two design concepts — optimization and compatibility.

Features:

- 12.1" true-flat PPC with resistive touch
- Supports certified Mini-ITX motherboards, up to 35 W TDP processor
- Supports PCI/PCIe expansion slots
- Front-facing LED indicators for power status
- Front panel is IP66 compliant

1.2 Specifications

1.2.1 Specification Comparison

Table 1.1: Specification Comparison

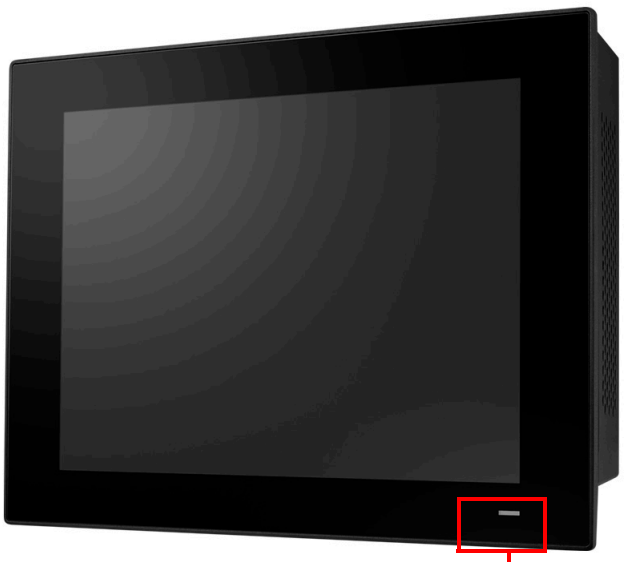
Product	PPC-612
LCD	12.1" LCD
Display Type	12.1" TFT LCD (with LED backlight)
Max. Resolution	1024 x 768
Viewing Angle	89° (left), 89° (right), 89° (top), 89° (bottom)
Brightness	600 cd/m^2
Contrast	1000
Weight	3.98 kg (8.76 lb)
Dimensions	317 x 246 x 83.2 mm (12.48 x 9.68 x 3.27 in)

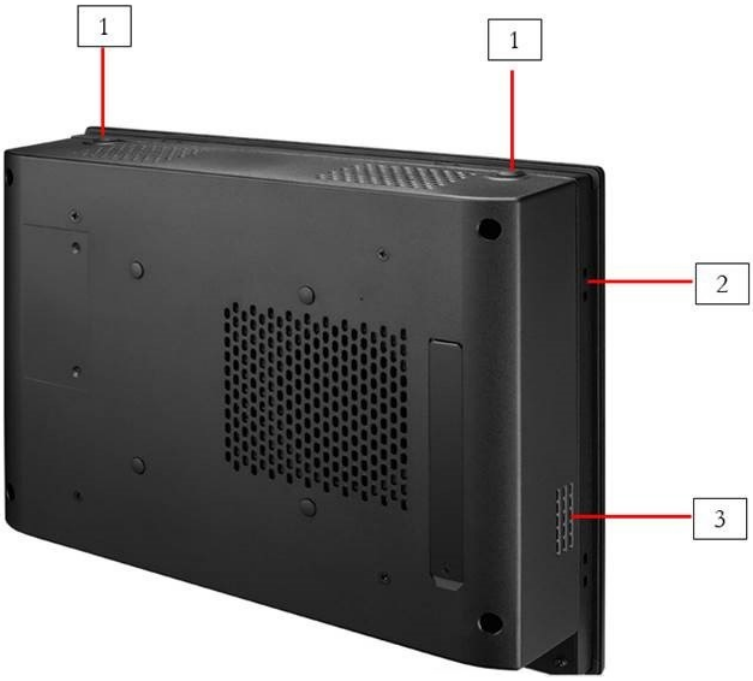
1.2.2 General Specifications

Table 1.2: General Specifications		
Chassis Features		**PPC-612**
	Storage	1 x 2.5" SATA bay
	I/O	2 x WLAN antenna ports, 4 x Reserved ports (DB9)
		1 x DC inlet; 1 x Power switch; Reserved opening: According to the PPC-MB series motherboard specifications
	Expansion	1 x PCI (optional) 1 x PCIe x4 (optional) 1 x PCIe x16 (optional, only for PPC-MB-6X0)
	Speaker	2 x 1W
	Fan	2 x 12 V (50 x 50 x 20 mm)
OS Support	OS Support	Based on motherboard specifications
Power Consumption	Input Voltage	24Vdc +/- 20%
LCD	Backlight Lifetime	50,000 hours minimum
Touchscreen	Touch Type	Analog resistive 5-wire/projected capacitive (optional)
	Light Transmission	80+/-5%
	Controller	USB interface
	Durability	35 million touches
Environment	Operating Temperature	0 ~ 50°C (32 ~ 122°F)
	Storage Temperature	-40 ~ 60°C (-40 ~ 140°F)
	Relative Humidity	10 ~ 95% @ 40°C (non-condensing)
	Shock	Operates at 10 G peak acceleration (11 ms duration), following IEC 60068-2-27
	Vibration	Operating random vibration test 5 ~ 500Hz, 1Grms with HDD, follows IEC 60068-2-64
	EMC	CE, FCC Class A
	Front Panel Protection	IP66 compliant

1.3 External View

The front of the PPC-612 is a flat panel LCD screen enclosed in an aluminum frame. (When placed upright on a desk, the PPC-612 front panel appears as shown below.)





1. Antenna holes
2. Panel mount bracket holes
3. Speakers

1.4 Dimensions

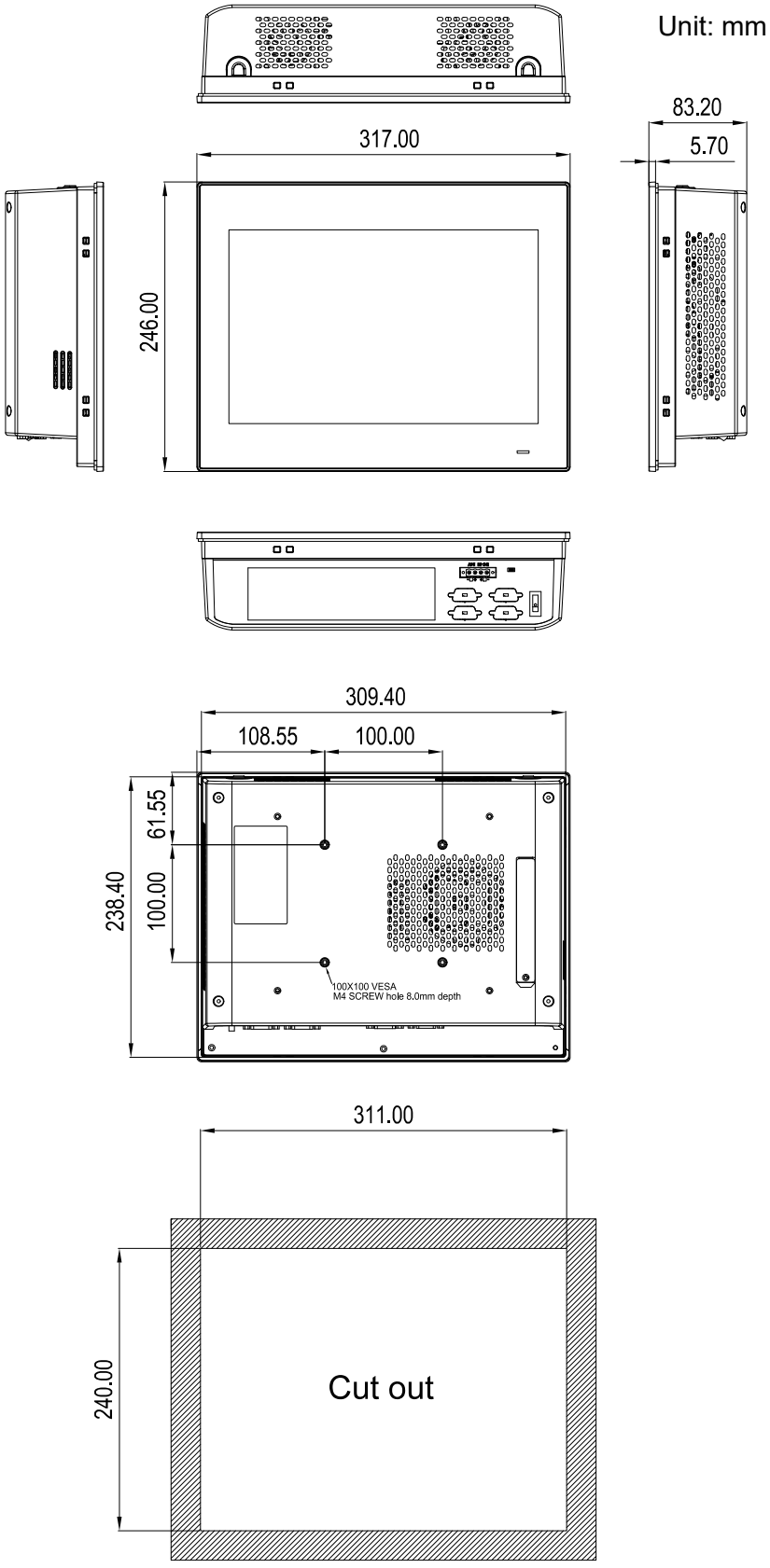


Figure 1.1 PPC-612 Dimensions

Chapter 2

System Installation and Setup

Note! *For PPC-MB series motherboard installation, please refer to the PPC-612+ PPC-MB Series System Installation User Guide.*

2.1 Mounting the System

Warning! *When mounting the panel PC, more than one person should perform the installation to prevent accidental damage to the panel or personal injury.*

Le comité constate qu'el-nasr "mounting, Plus d'une personne installation to prevent the cadre accidental damage to the personal injury.

The panel PC supports various mounting options, as listed below:

- Wall mounting
- Arm mounting
- Stand mounting
- Panel mounting

2.1.1 Wall Mounting

To mount the panel PC onto a wall, follow the instructions below.

1. Select the location on the wall for the wall mount plate.
2. Mark the locations of the two plate screw holes on the wall.
3. Drill two pilot holes at the marked locations on the wall.
4. Align the wall mount plate screw holes with the pilot holes.
5. Secure the mount plate to the wall by inserting screws into the two pilot holes and tightening them.

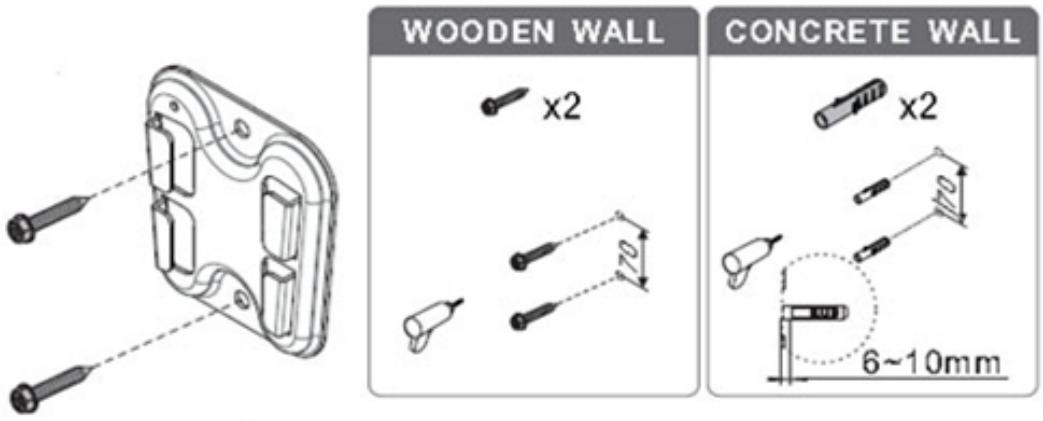


Figure 2.1 Wall Mount Plate

6. Insert four M4 screws into the holes on the panel PC and tighten them to secure the bracket to the rear panel.

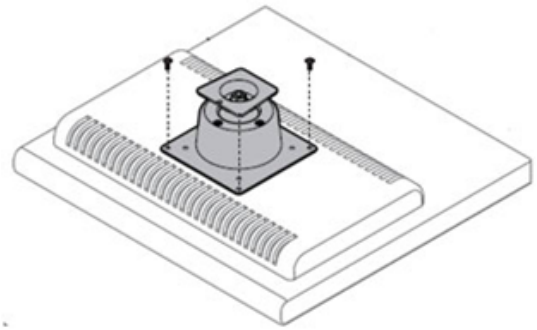
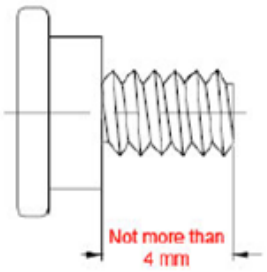


Figure 2.2 Screw Locations on the Rear Panel

Warning! *Ensure that the thread depth of the screws on the rear panel does not exceed 4 mm (0.15 in).*

Assurez-vous que la profondeur du filetage des vis sur le panneau arrière ne dépasse pas 4 mm (0.15 in).



7. To mount the panel PC on the wall, align the wall mount bracket attached to the panel PC with the wall mount plate on the wall and slide the panel PC downward to hang the bracket on the mount plate.

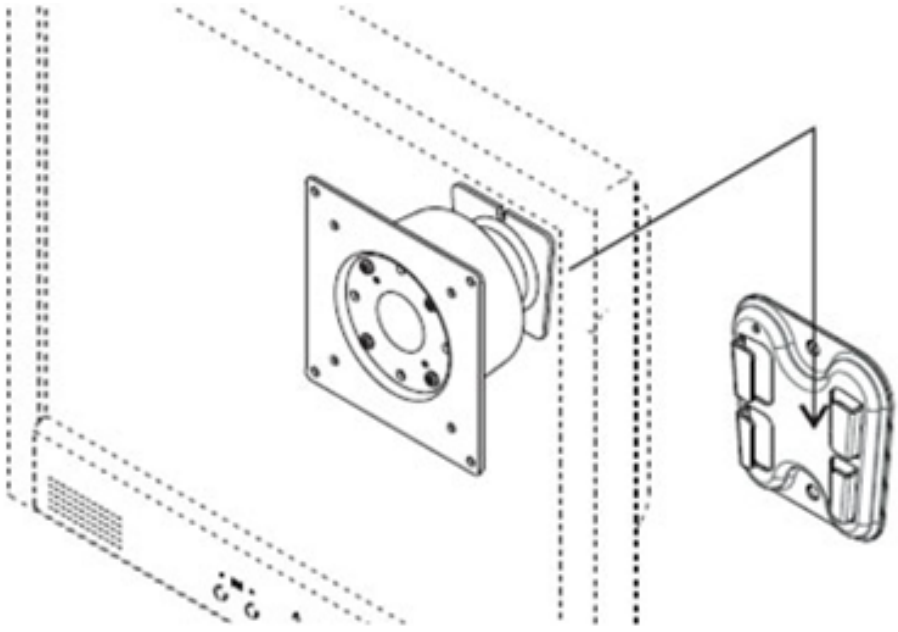


Figure 2.3 Mounting the Panel PC on a Wall

8. Secure the panel PC in place by tightening the screws in the wall mount bracket.

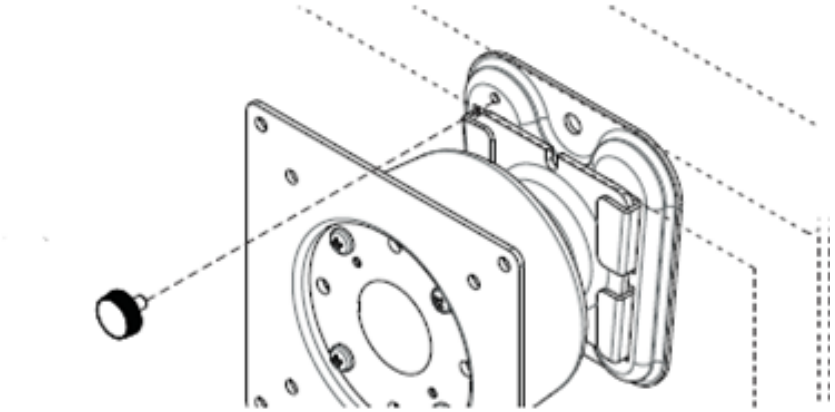


Figure 2.4 Securing the Panel PC

2.1.2 Arm Mounting

PPC-612 can be mounted on a VESA-compliant arm mount with a 100 mm (3.93 in) interface pad. To affix the panel PC to an arm mount, follow the steps below.

1. Refer to the mounting arm installation instructions to correctly mount the arm onto the surface as a base.
2. Align the retention screw holes on the mounting arm interface with VESA holes in the panel PC, and secure the panel PC with the four M4 retention screws.

Figure 2.5 Arm Mount for Panel PCs

Warning! *Ensure that the thread depth of the screws on the rear panel does not exceed 4 mm (0.15 in).*

Assurez-vous que la profondeur de filetage des vis sur le panneau arrière ne dépasse pas 4 mm.

2.1.3 Stand Mounting

Before mounting on a stand, check that the product was shipped with the following items:

Packing List

No.	Name	Qty.	Pic.	No.	Name	Qty.	Pic.
A	Screw (M4x8L)	12 (4 x spare)		B	Screw (M4x6L)	6 (2 x spare)	
C	Screw (M4x5L)	2 (1 x spare)		1	Hinge	1	
2	VESA Bracket	1		3	Hinge Cover	1	
4	Base Plate	1					

To mount the panel PC onto the stand, follow the steps below:

1. Use four M4x8L screws to affix the VESA bracket to the panel PC. Users can choose between a 75 x 75 mm (2.95 x 2.95 in) or 100 x 100 mm (3.93 x 3.93 in) VESA mount according to their requirements.

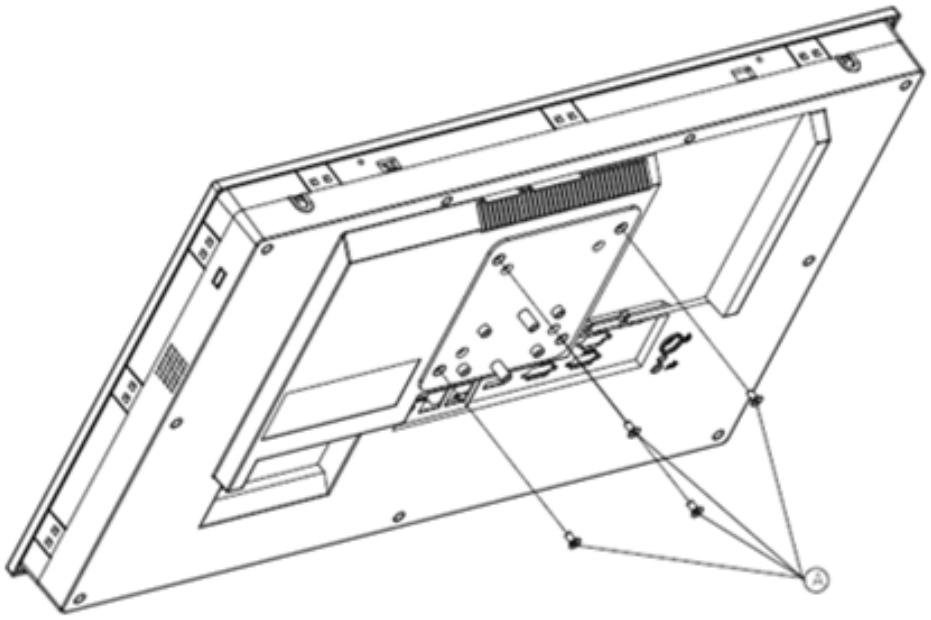


Figure 2.6 VESA Mount Screw Holes

2. Use the four M4x8L screws to secure the base plate to the mount stand.

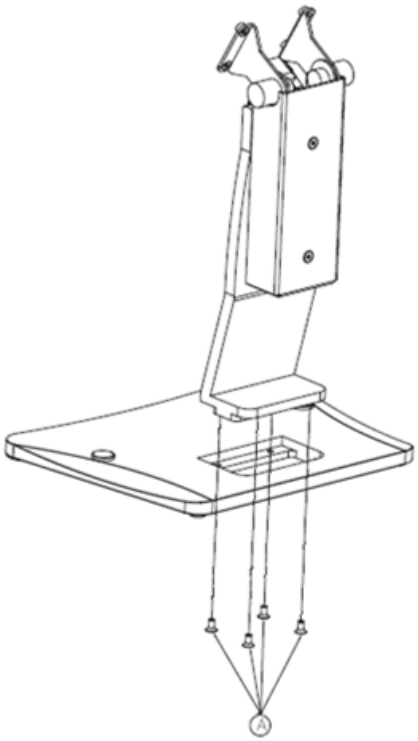


Figure 2.7 Securing the VESA Mount Base

3. Use four M4x6L screws to secure the mount stand to the VESA mount bracket.

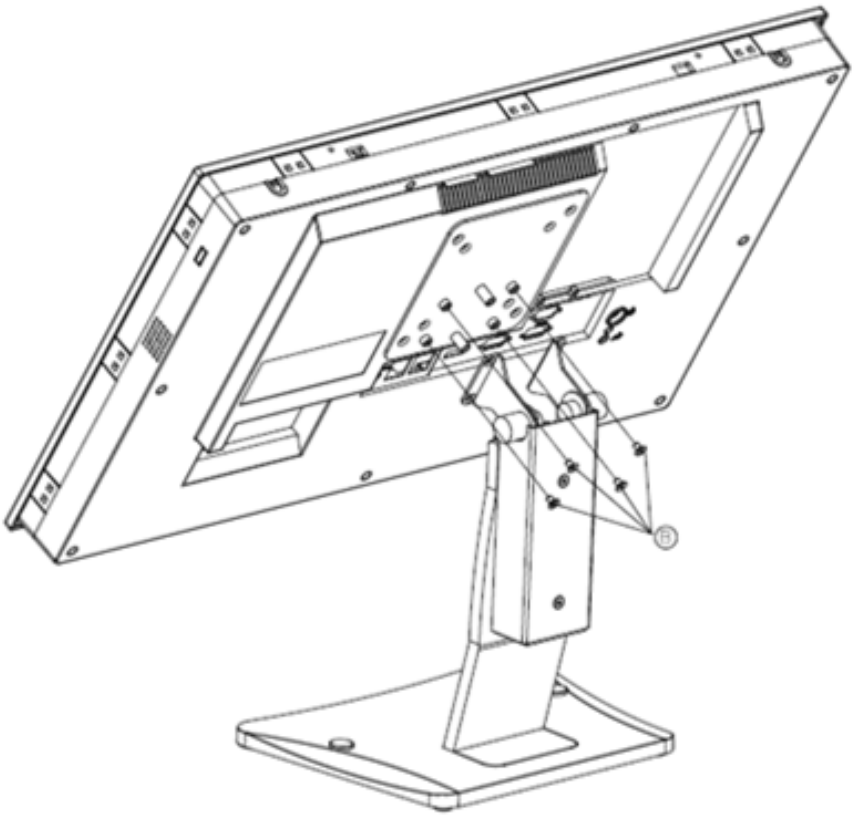


Figure 2.8 Securing the VESA Mount Bracket

4. Use one M4x5L screw to secure the stand mount hinge cover.

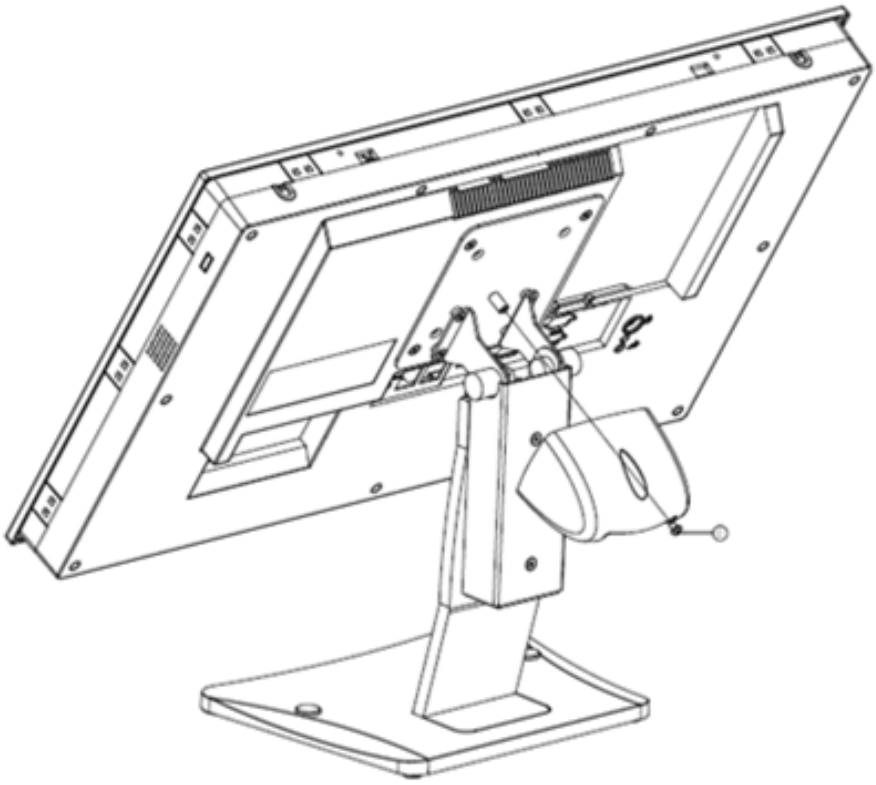


Figure 2.9 Securing the Stand Mount Hinge Cover

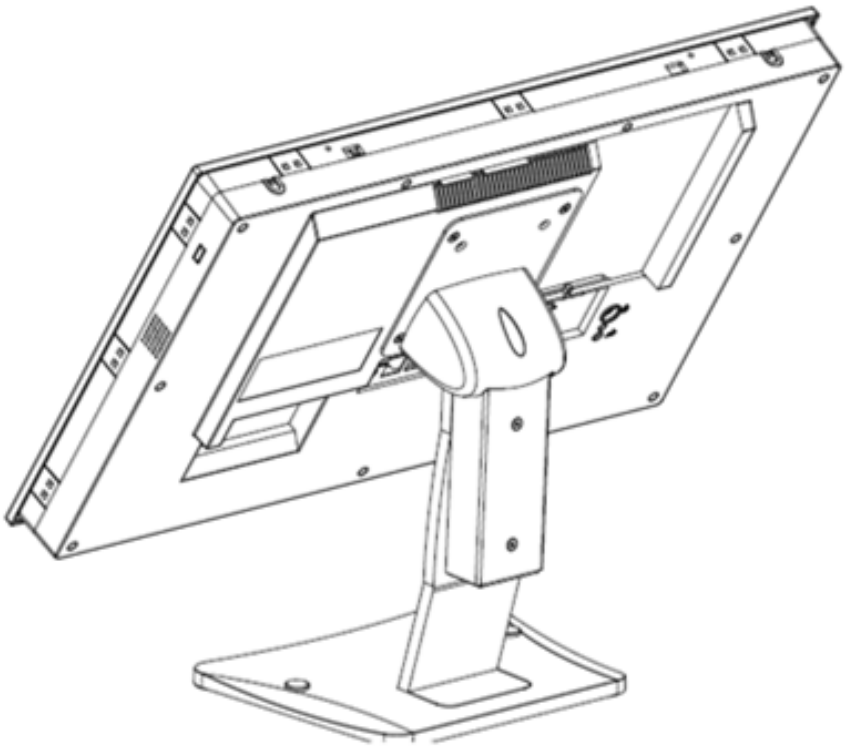
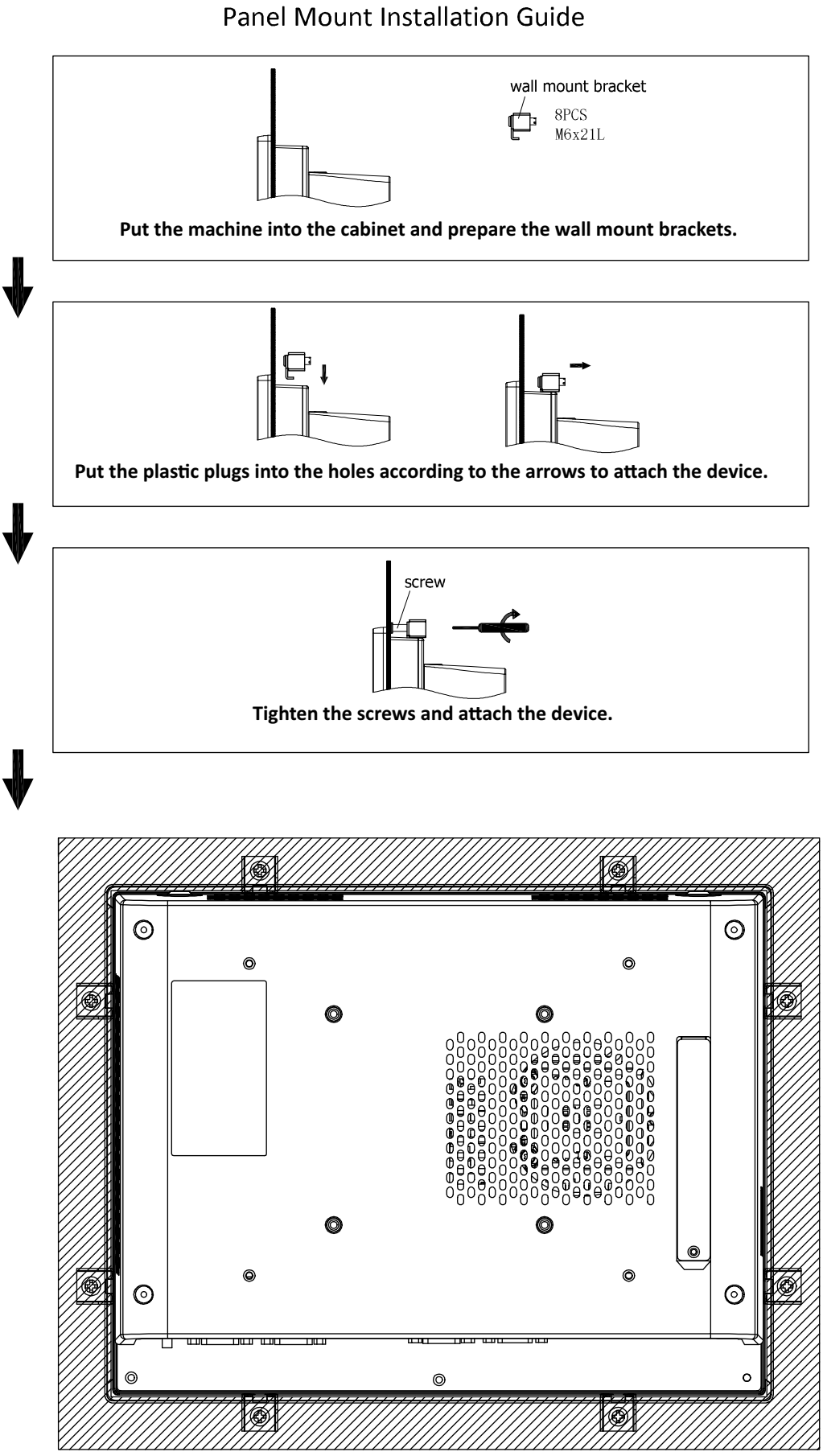


Figure 2.10 Completed Stand Mount

2.1.4 Panel Mounting



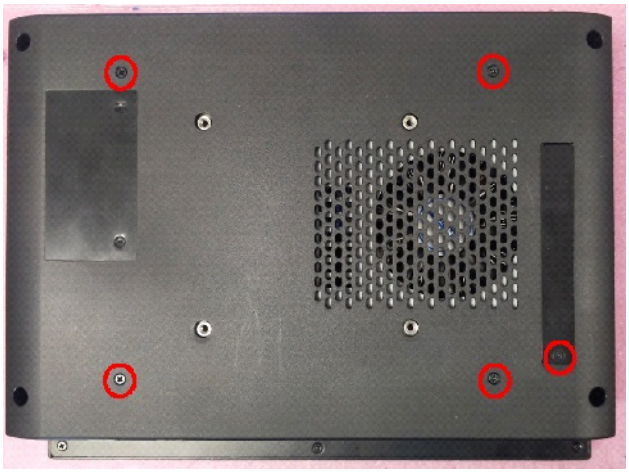
Appendix A

PCI/PCIe Riser Card

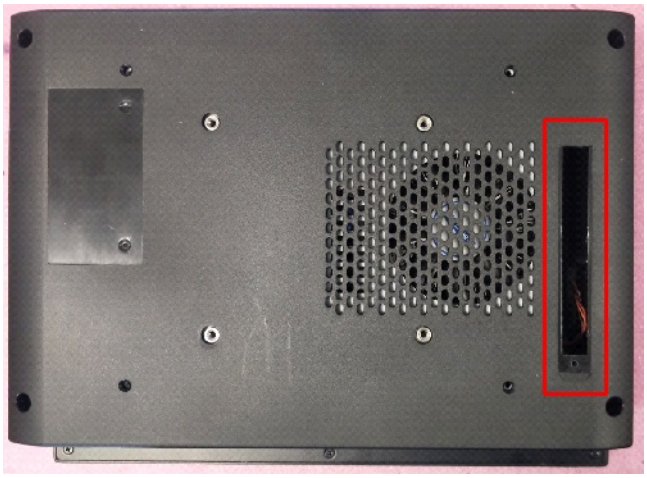
A.1 Riser Card

A.1.1 Riser Card Installation

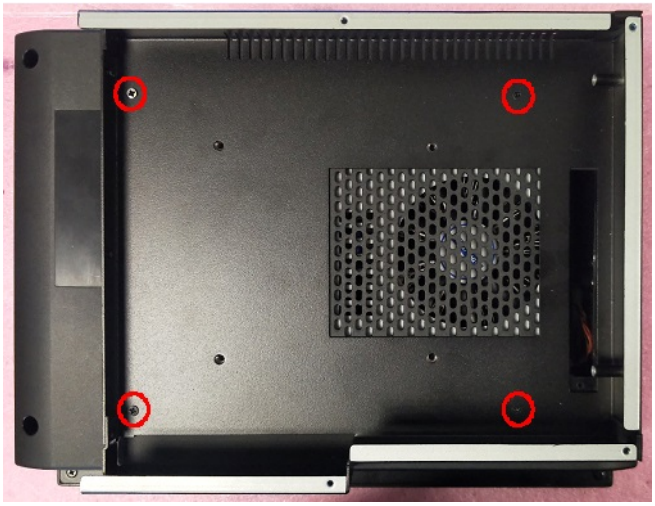
1. Remove 4 screws on the back cover and 1 screw on the cover of the riser card.



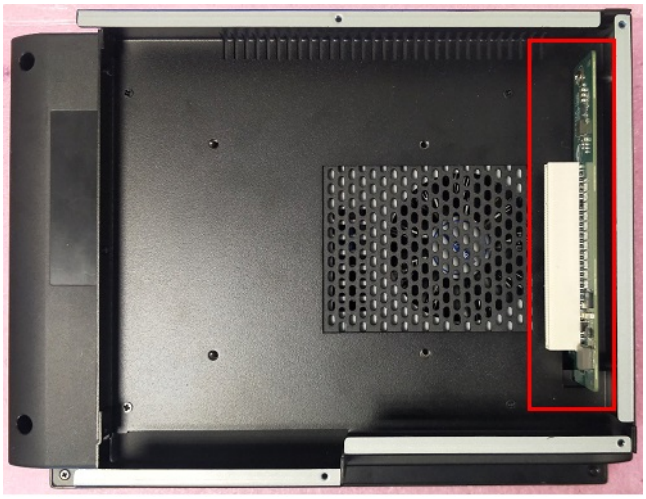
2. Remove the cover of the riser card.



3. Affix the riser card module with 4 screws.

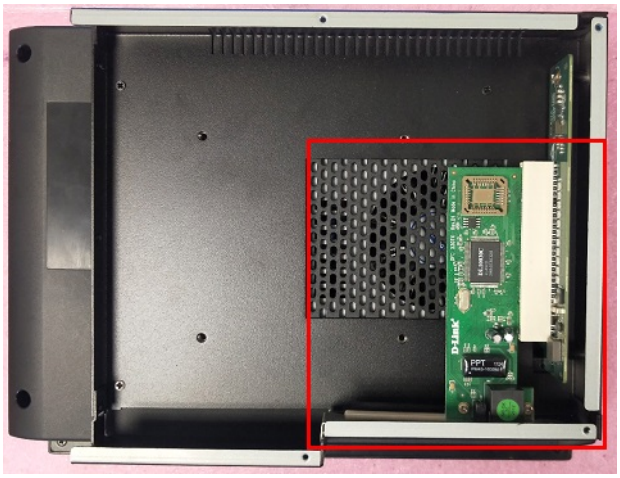


4. Insert the riser card (eg. EAMB-BE22).

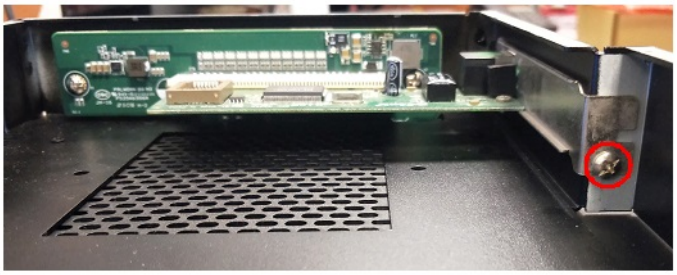


5. Affix the riser card with 2 screws.

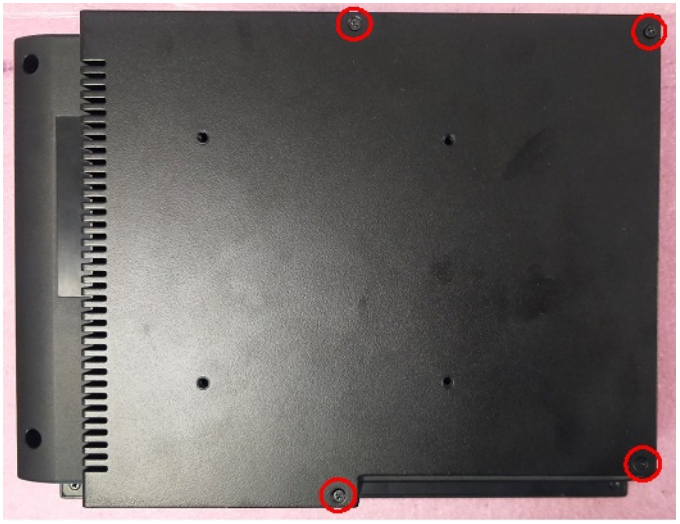
6. Insert the PCI card.



7. Affix the PCI card with 1 screw.



8. Re-attach the riser card module cover with 4 screws.



To install the expansion module, please order the following:

Table A.1: Add-On Box	
98R46120000	Add-on box for PCIe x4 expansion
98R46120010	Add-on box for PCI expansion
98R46120020	Add-on box for PCIe x16 expansion

A.1.2 EAMB-BE21 PCIe x4 Riser Card

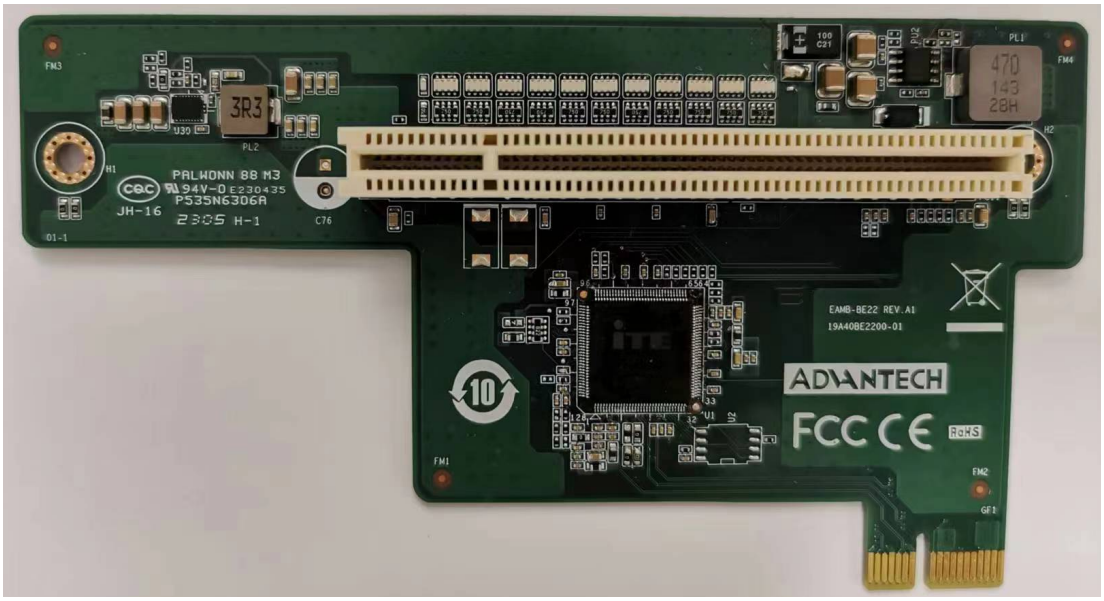
The total current load provided by the PPC-612 PCI slot does not exceed 25 W. Additional details are provided below.

Table A.2: EAMB-BE21 PCIe x4 Riser Card	
+12 V	2.1A
+3.3 V	3A
+3.3 VSB	0.375A

A.1.3 EAMB-BE22 PCI Riser Card

The total current load provided by the PPC-612 PCI slot does not exceed 15 W. Additional details are provided below.

Table A.3: AMB-BE22 PCI Riser Card	
-12 V	0.1A
+12 V	0.5A
+5 V	2A
+3.3 V	2.5A
+3.3 VSB	0.25A



A.1.4 EAMB-BE23 PCIe x16 Riser Card (for PPC-MB-6X0 only)

The total current load provided by the PPC-612 PCIe slot does not exceed 25 W. Additional details are provided below.

Table A.4: EAMB-BE23 PCIe x16 Riser Card	
+12V	2.1A
+3.3V	3.0A
+3.3VSB	0.375A

Note! *The dimensions of the PCI and PCIe cards can not exceed 180 x 100 x 30 mm.*

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

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