



# PA-301

## User's Manual





©2014 RuggON Corporation. All rights reserved.

#### TRADEMARKS

RuggON logo is a trademark of RuggON Corporation, registered in the United States Patent and Trademark Office and in other countries. Microsoft and the Windows logo are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. Microsoft products are licensed to OEMs by Microsoft Licensing, Inc., a wholly owned subsidiary of Microsoft Corporation. The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. All other brand and product names are trademarks or registered trademarks of their respective owners.

Images shown in this document may vary slightly from actual products at time of shipping. Information in this manual is subject to change without notice.



# Table of Contents

## About This Manual

|                           |   |
|---------------------------|---|
| Related Information ..... | 1 |
| Conventions.....          | 1 |

## Basic Safety Guidelines

|  |   |
|--|---|
| Intended Use .....                       | 2 |
| Maintenance and Operation Overview ..... | 2 |
| Safety .....                             | 2 |
| Electrical Hazards.....                  | 3 |
| Safety Guidelines for Mounting .....     | 3 |
| Environmental.....                       | 3 |
| Radio Transmissions .....                | 4 |
| Cleaning and Servicing.....              | 4 |
| Regulatory and Certification .....       | 4 |
| Lithium Battery Safety Statement .....   | 5 |

## Chapter 1. Introduction

|                                |    |
|--------------------------------|----|
| About This Guide .....         | 7  |
| Unpacking the Device.....      | 7  |
| Parts List.....                | 8  |
| Technical Specifications ..... | 9  |
| Identifying the Device .....   | 11 |
| Dimensions.....                | 16 |
| Touch Screen.....              | 17 |

## Chapter 2. Getting Started

|   |    |
|---|----|
| Removing the Snap-on Module Connector Cover.....  | 18 |
| Replacing the Snap-on Module Connector Cover..... | 19 |
| Opening the I/O Cover.....                        | 21 |
| Closing an I/O Cover .....                        | 22 |
| Installing the Micro SIM Card .....               | 23 |

|   |    |
|---|----|
| Removing the Micro SIM Card .....                   | 25 |
| Installing the Micro SD Card.....                   | 27 |
| Removing the Micro SD Card.....                     | 28 |
| Connecting to External Cabling .....                | 29 |
| Handstrap, Carrying Handle and Shoulder Strap ..... | 32 |
| Charging the Battery.....                           | 37 |
| Installing the External Battery.....                | 39 |
| Removing the External Battery.....                  | 43 |
| Mag Strip Reader and Barcode Scanner.....           | 46 |
| Removing the Protective Film from the Display.....  | 48 |

### ***Chapter 3. Operation***

|                                      |    |
|--------------------------------------|----|
| First Time Use .....                 | 49 |
| Powering On and Off the Device ..... | 50 |
| Connecting to Network .....          | 51 |
| Pairing the NFC Device.....          | 52 |

### ***Chapter 4. Troubleshooting***

### ***Chapter 5. Maintenance***

|                            |    |
|----------------------------|----|
| Cleaning the Device .....  | 57 |
| Returning the Device ..... | 57 |
| Contacting RuggON .....    | 57 |

# About This Manual

The PA-301 User's Manual provides instruction for qualified personnel to follow when setting up a new PA-301 device.

This document is intended for use by qualified personnel to compliment the training and expertise, not to replace it.

## Related Information

Current information and manuals are available for download at the following website:

<http://www.ruggon.com>

## Conventions

Bolded or underlined text is used to emphasize the designated information.



A Note is used to provide additional information for the device or settings.



A Caution is used to warn against potential hazards or to caution against unsafe practices.



*A Warning is used to identify immediate hazards for property damage, injury or death.*

# Basic Safety Guidelines

The following safety guidelines are intended to help protect the user from injury and prevent damage to the hardware.

- Do not place anything on the AC adapters power cable and make sure the cable is not located where it can be tripped over or stepped on.
- Do not cover the AC adapter as it reduces the cooling
- Do not use the AC adapter while it is inside the carrying case.
- Use only the AC adapter, power cord, and batteries that are approved for use with the device. Use of another type of battery or AC adapter may cause risk of fire or explosion.
- If you use an extension cable with the AC adapter, ensure that the total ampere rating of all products plugged in to the extension cable does not exceed the ampere rating of the extension cable.
- If the device is moved between environments with very different temperature and/ or humidity ranges, condensation may form on or within the device. Avoid damaging the device by allowing sufficient time for the moisture to evaporate before using the device.
- When disconnecting cables, pull on the connector or on its strain relief loop, not on the cable itself. When pulling out or plugging in the connector, keep it evenly aligned to prevent bending the connector pins.

## Intended Use

The PA-301 rugged tablet is designed for mobile applications in industrial environments such as logistics, warehousing, fleet management, manufacturing and the automotive industry.

Read the safety guidelines thoroughly before starting any servicing on the device. Read the guidelines before powering up the device, and keep this document for later use.

The operator is solely responsible for any damage resulting from unauthorized modifications to the device.

### ***Unintended Application Use***

The device is not designed for use in life-support systems or critical safety/security systems where system malfunction can lead to the direct or indirect endangerment of human life. The operator is fully responsible for using the device in these situations.

## Maintenance and Operation Overview

The PA-301 is designed and manufactured according to strict controls and following the stated safety regulations. The following list identifies incorrect operating uses of the PA-301. Incorrect use of the PA-301 can lead to hardware damage, safety issues and possible risk to personnel health:

- The PA-301 is under operation by untrained personnel;
- The PA-301 is not maintained as recommended;
- The PA-301 is not used as intended.

## Safety

To prevent injury and damage, read the following safety guidelines prior to operating the



device. The manufacturer assumes no liability for any and all damages arising from misuse or noncompliance with these guidelines.

## Electrical Hazards

### ***Cleaning/Service: Power Off the PA-301***

- Disconnect the PA-301 from power before cleaning or servicing it.

### ***Power Adapter***

Contact an authorized service personnel for repairs to the power pack. In the event of a blown fuse after replacing the fuse, contact an authorized service personnel to avoid electrical shock.

### ***Use only Supplied Power Cables***

RuggON power cables meet industrial requirements for low-temperature flexibility, UV resistance, and oil resistance. Use only supplied power cables from RuggON.

If other power cables are used, the following may apply:

- The operator is solely responsible for the resulting damage;
- All RuggON warranties are void.

### ***Environmental Hazards***

Do not use the PA-301 in locations near/with flammable gases or vapor.

The use of electrical equipment in explosive environments can be dangerous.

- Turn off the device when near a gas station, fuel depot, chemical plant or a place where blasting operations take place.

## Safety Guidelines for Mounting

- If installing in a fixed location, it is advised to properly secure the device to prevent loss of the device.

## Environmental

### ***Ambient Temperature***

The PA-301 operates on the basis of a passive cooling concept which internal waste heat is released via the housing surface and requires fresh airflow in the environment.

- Operating the PA-301 with no fresh cooling air may cause overheating and damage to the device.
- The operating environment should not be enclosed to prevent the cool air being heated by the heat waste from the device.

### ***Connecting and Disconnecting External Devices***

To prevent the considerable damage, the PA-301 and the external device should be disconnected from power when connecting/disconnecting excluding USB devices.

### ***Only Use Authorized Accessories***

Only use the supplied cables, power packs and other accessories that have been tested and approved by RuggON. Contact your local distributor for further information.

# Radio Transmissions

## ***Permitted Transmission Power***

Follow the national regulations for the maximum permitted transmission power.

The operator is solely responsible for this type of operation.

## ***Radio Frequency Limited Locations***

Considering the radio frequency limitation in hospitals and aircraft, the PA-301 can only be installed with permission.

Industrial computers may affect the function of implanted medical devices such as pacemakers and may cause malfunction. Always keep a distance of at least 20cm between a pacemaker and an industrial computer to minimize the risk of interference.

# Cleaning and Servicing

- Disconnect the PA-301 from power before cleaning or servicing.
- Never clean the PA-301 with compressed air, a pressure washer or a vacuum cleaner.
- If necessary, clean the housing of the PA-301 with a damp cloth.
- Clean the touch-screen with a nonabrasive cloth.

# Regulatory and Certification

## ***FCC***

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 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. 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, 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 into 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.

## **Labeling requirements**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## **RF exposure warning**

This equipment must be installed and operated in accordance with provided instructions and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be providing with antenna installation instructions and transmitter operating

conditions for satisfying RF exposure compliance.

### **Europe – EU Declaration of Conformity**

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC and EMC directive 2004/108/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE Directive 1999/5/EC and EMC directive 2004/108/EC:

- EN 55022: 2010 +AC: 2011
- EN 61000-3-2: 2006 +A2: 2009
- EN 61000-3-3: 2008
- EN 55024: 2010
  - IEC 61000-4-2 ED 2.0 : 2008;
  - IEC 61000-4-3 ED 3.2 : 2010
  - IEC 61000-4-4 ED 3.0 : 2012
  - IEC 61000-4-5 ED 2.0: 2005;
  - IEC 61000-4-6 ED 3.0 : 2008;
  - IEC 61000-4-8 ED 2.0 : 2009;
  - IEC 61000-4-11 ED 2.0 : 2004
- IEC 60950-1: 2005 + A1

Safety of information technology equipment

- EN 302 291-1/-2
- EN 300 440-1/-2
- EN 300 328
- EN 301 893
- EN 301 489-1/-3/-17
- EN 62311

This device is a 2.4GHz wide band transmission system (transceiver), intended for use in all EU member states and EFTA countries under the following conditions and/or with the following restrictions:

- In Italy, the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying public access to telecommunications and/or network services.
- This device may not be used for setting up outdoor radio links in France and in some areas the RF output power may be limited to 10mW EIRP in the frequency range of 2454 – 2483.5MHz. For detailed information the end-user should contact the national spectrum authority in France.

### **Lithium Battery Safety Statement**



Lithium battery inside. Danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by battery manufacturer.



# Chapter 1 . Introduction

The PA-301 is a rugged tablet PC based on the TI® OMAP Platform (OMAP4470) processor core architecture. This high-performance tablet features a bright 7" LED-backlit LCD display and runs on Google® Android® operating system.

The PA-301 has been engineered and tested to meet Military Standards for Environmental Extremes (MIL- STD- 810G). The following features make it exceptionally rugged, durable and ideal for the rigors of field work:

- Android 4.0 ICS operating system
- Complies with the highest rugged standards in the market
  - IP65: water- and dust-proof
  - MIL-STD-810G: temperature, thermal shocks, relative humidity, vibration, drop, altitude, salt fog
  - 5-feet drop resistance

Fully integrated communication

- WLAN 802.11 a/b/g/n
- Bluetooth V4.0

Dual camera

- 1.2 MP front camera for HD video conferencing
- 5 MP AF rear camera with LED flash

## About This Guide

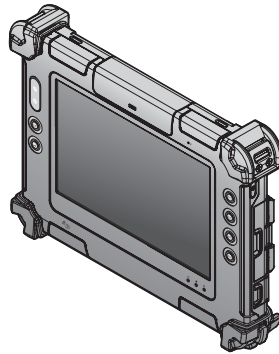
The PA-301 User Manual provides instruction for qualified personnel to use as a guide for setup of the device. This document is not intended to replace the training and expertise of the end-user.

## Unpacking the Device

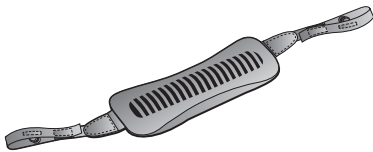
Before you begin the installation or configuration process make sure to inspect all components and accessories. Contact your representative if there are any missing or damaged items. See "*Contacting RuggON*" on page 57.

## Parts List

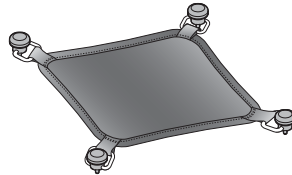
The PA-301 does not ship with any accessories. All accessories are sold and ordered separately. For help, contact your local RuggON sales representative. See “*Contacting RuggON*” on page 57.



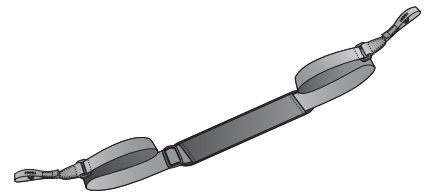
PA-301



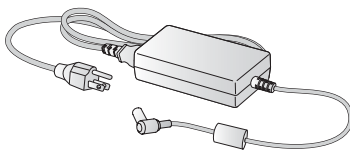
2-Point Carrying Handle



4-Point Handstrap



2-Point Shoulder Strap



Power Adapter

# Technical Specifications

Table 1. Technical Specifications

| Item                   | Description   |
|------------------------|---|
| Display                | 7-inch LED Backlight, 1280 (W) x 800 (H) WXGA   |
| Touch Screen           | Two-point capacitive touch screen   |
| Brightness             | 350nits   |
| CPU                    | TI® OMAP Platform (OMAP4470 dual-core, 1.5GHz)  |
| Operating System       | Android™ 4.0.4 (ICS)  |
| RAM                    | 2GB LPDDRII memory  |
| Storage                | 1 x 32GB Flash eMMC   |
| Battery                | <ul style="list-style-type: none"> <li>■ Internal unswappable battery: 7.5V 2900mAh Li-polymer</li> <li>■ External hot swappable battery: 7.4V 4200mAh Li-polymer (optional)</li> </ul> |
| Power supply           | AC 100V ~ 240V, 50~60Hz input; 19VDC@3.42A, 65W, 19DC-in  |
| Dimensions (W x H x L) | 225 mm (8.86") x 26.5 mm (1.04") x 168 mm (6.61")   |
| Weight                 | 950 kg (2094.39 lbs)  |
| Wireless               |   |
| WLAN                   | 1 x Wi-Fi IEEE 802.11 a/b/g/n   |
| Bluetooth              | 1 x Bluetooth 4.0   |
| WWAN (Optional)        |   |
| Sensor                 |   |
| Light sensor           | x1  |
| G sensor               | x1  |
| Gyroscope              | x1  |
| E-Compass              | x1  |
| I/O                    |   |
| Docking                | 32-pin  |
| DC-IN Jack             | x1  |
| SIM card Slot          | x1  |
| Micro SD Slot          | x1  |
| Micro USB              | x1  |
| RS-232                 | x1  |
| Audio Jack             | x1; Headphone / Microphone combo  |
| USB 2.0                | x1; Type A  |
| Ethernet               | x1; 10/100M   |

| Item                        | Description   |
|-----------------------------|---|
| Security                    |   |
| TPM                         |   |
| BIOS On/Off for I/Os        |   |
| Data Collection             |   |
| GPS                         | YES   |
| NFC                         | YES   |
| Camera                      | <ul style="list-style-type: none"> <li>■ Front: 1.2 Mega-Pixels camera</li> <li>■ Rear: 5.0 Mega-Pixels camera with LED auxiliary light and Auto-focus</li> </ul>   |
| Barcode Scanner             | Optional snap-on module   |
| Mag Stripe Reader           | Optional snap-on module   |
| Rugged Specifications       |   |
| Drop                        | 152 cm (59.8”), 26 drops on plywood   |
| MIL-STD 810G                | <ul style="list-style-type: none"> <li>■ Vibration (MIL-STD-810G Method 514.6 Category 4, Fig 514.6C-1, Fig 514.6C-2, Fig 514.6C-3)</li> <li>■ Drop (MIL-STD-810G Method 516.6 Procedure IV)</li> <li>■ Mechanical shock (MIL-STD-810G Method 516.6 Procedure I, Procedure V)</li> <li>■ Operation and storage temperature (MIL-STD-810G Method 501.5 and 502.5)</li> <li>■ Humidity (MIL-STD-810G Method 507.5 Humidity Procedure II Aggravated Cycles (Fig 507.5-7))</li> </ul> |
| IP rating                   | IP65  |
| Operating Temperature Range | -20°C (-4°F) to +50°C (122°F)   |
| Storage Temperature Range   | -30°C (-22°F) to +70°C (158°F)  |
| Humidity                    | 5-95% without condensation  |



# Identifying the Device

## Overview

Figure 1. Overview

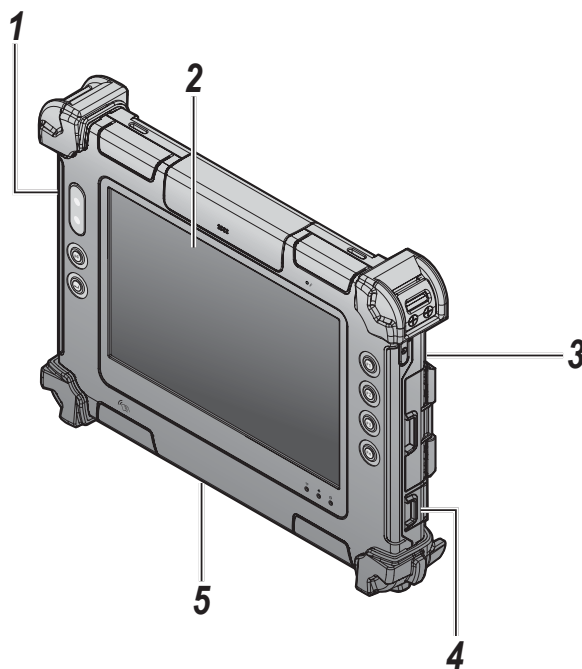


Table 2. Overview

| No | Item        | Description  |
|----|-------------|--|
| 1  | Left view   | See “ <i>Side View</i> ” on page 14 for further information.   |
| 2  | Front view  | See “ <i>Front View</i> ” on page 12 for further information.  |
| 3  | Rear view   | See “ <i>Rear View</i> ” on page 15 for further information.   |
| 4  | Right view  | See “ <i>Side View</i> ” on page 14 for further information.   |
| 5  | Bottom view | See “ <i>Bottom View</i> ” on page 13 for further information. |

## Front View

Figure 2. Front View

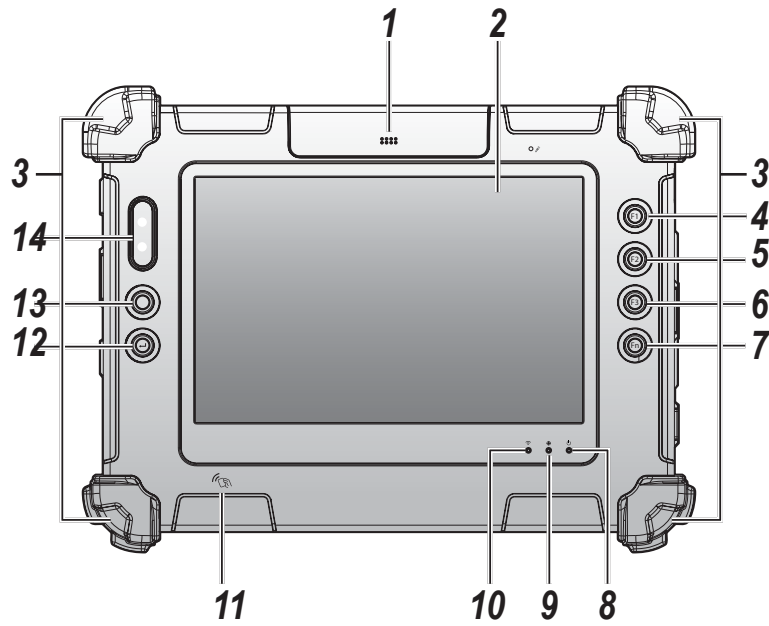


Table 3. Front View

| No | Item                           | Description  |
|----|--------------------------------|--|
| 1  | Snap-on module connector cover | Open to access snap-on module connector.   |
| 2  | Touch screen                   | Anti-glare tempered capacitive touch panel.  |
| 3  | Rubber bumpers                 | Easy to grip rubber bumpers enable the rugged tablet to withstand shocks and drop for use in demanding environments. |
| 4  | F1 key                         | Programmable function key.   |
| 5  | F2 key                         | Programmable function key.   |
| 6  | F3 key                         | Programmable function key.   |
| 7  | FN key                         | Programmable function key.   |
| 8  | Power LED                      | The Power LED lights when the device is on or when the battery is being charged.                                     |
| 9  | GPS LED                        | The GPS LED lights to indicate GPS is located.   |
| 10 | Wi-Fi LED                      | The Wi-Fi LED lights to indicate Wi-Fi is enabled.   |
| 11 | NFC sensor                     | Pairing with NFC devices.  |
| 12 | Enter key                      | Return to the home page.   |
| 13 | F4 key                         | Programmable function key.   |
| 14 | Front camera                   | 1.2 Mega-Pixels camera.  |

## LED Status

Table 4. LED Status

| Item  | Status          | Description             |
|-------|-----------------|-------------------------|
| Power | Green: On       | Power on / not charging |
|       | Green: Blinking | Battery charging        |
|       | Amber: On       | Low battery             |
| GPS   | Green: On       | GPS is located          |
|       | Green: Blinking | GPS is locating         |
| Wi-Fi | Green: On       | Wi-Fi is enabled        |
|       | Off             | Wi-Fi is disabled       |

## Bottom View

Figure 3. Bottom View

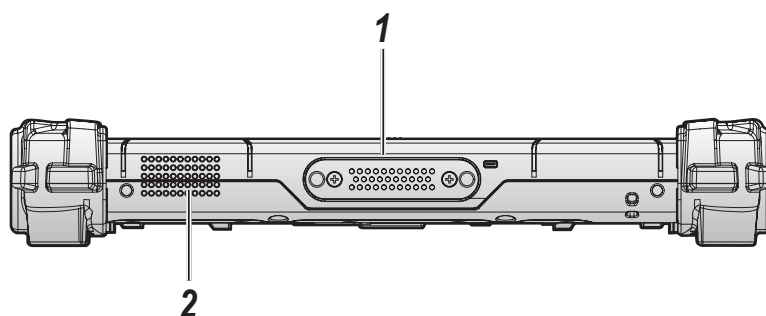


Table 5. Bottom View

| No | Item              | Description                                  |
|----|-------------------|--|
| 1  | Docking connector | 32 pin connector for docking onto a station. |
| 2  | Speaker           | 1 x 1W waterproof, front mounted speakers.   |

## Side View

Figure 4. Side Views

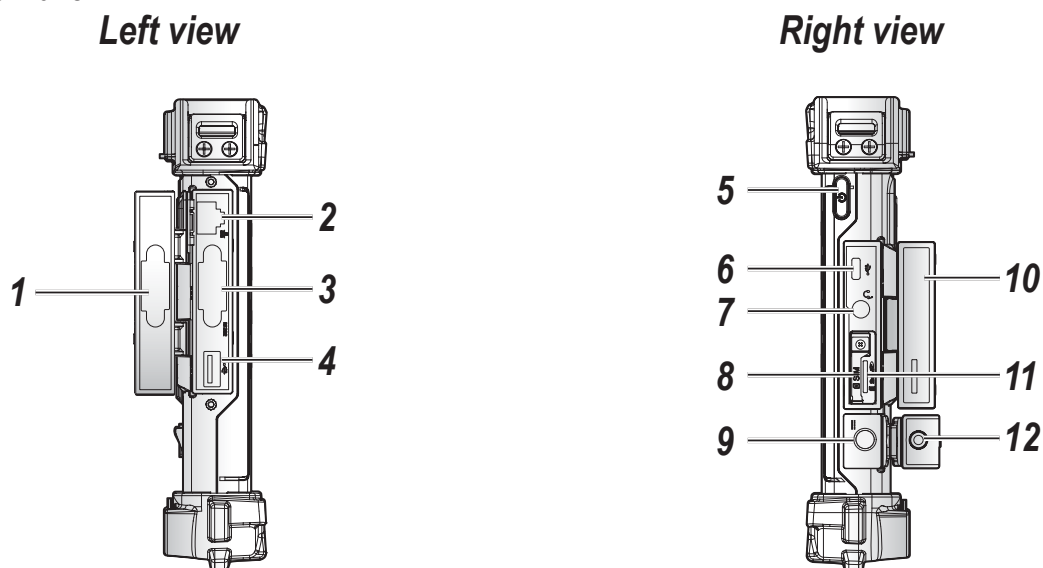


Table 6. Side View

| No | Item                        | Description  |
|----|-----------------------------|--|
| 1  | Left I/O compartment cover  | Open to access the left I/O ports.                   |
| 2  | LAN                         | Connect the PA-301 to an Ethernet interface.         |
| 3  | RS-232                      | Connect the PA-301 to a serial device.               |
| 4  | USB 2.0                     | Connect USB devices to the PA-301.                   |
| 5  | Power key                   | Turns the PA-301 on or off.                          |
| 6  | Micro USB                   | Connect USB devices to the PA-301.                   |
| 7  | Audio jack                  | Connect a headphones or external microphone.         |
| 8  | Micro SIM slot              | Insert micro SIM card for 3G communication function. |
| 9  | DC-IN jack                  | Insert power connector to charge battery.            |
| 10 | Right I/O compartment cover | Open to access the right I/O ports.                  |
| 11 | Micro SD slot               | Insert micro SD card in to slot.                     |
| 12 | DC-IN cover                 | Open to access the DC-IN jack.                       |

## Rear View

Figure 5. Rear View

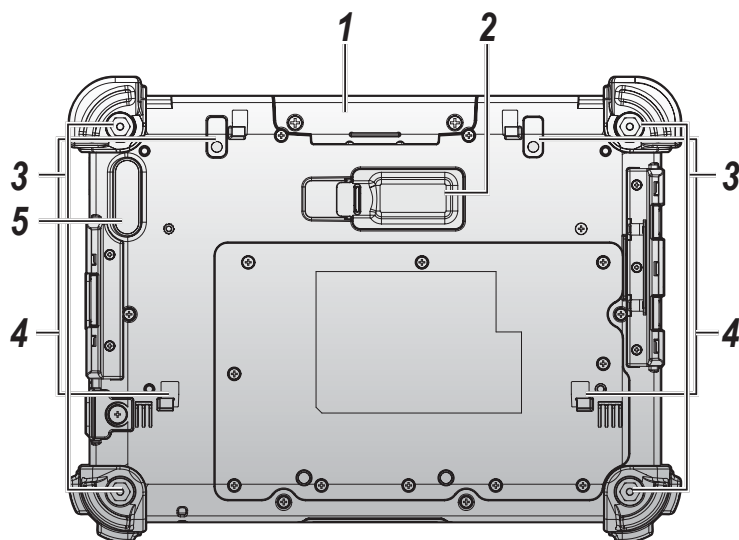


Table 7. Rear View

| No | Item                             | Description  |
|----|----------------------------------|--|
| 1  | Snap-on module connector cover   | Open to access snap-on module connector.                                     |
| 2  | External battery connector cover | Open to access external battery connector. The external battery is optional. |
| 3  | Securing holes                   | Location of holes to secure the handstrap.                                   |
| 4  | External battery bracket slots   | Align with the external battery bracket when installing.                     |
| 5  | Rear camera                      | 5.0 Mega-Pixels camera with LED auxiliary light.                             |

## Dimensions

The following image lists the device dimensions without add-ons (mm/inches)--bumpers are included.

Figure 6. Front View Dimensions

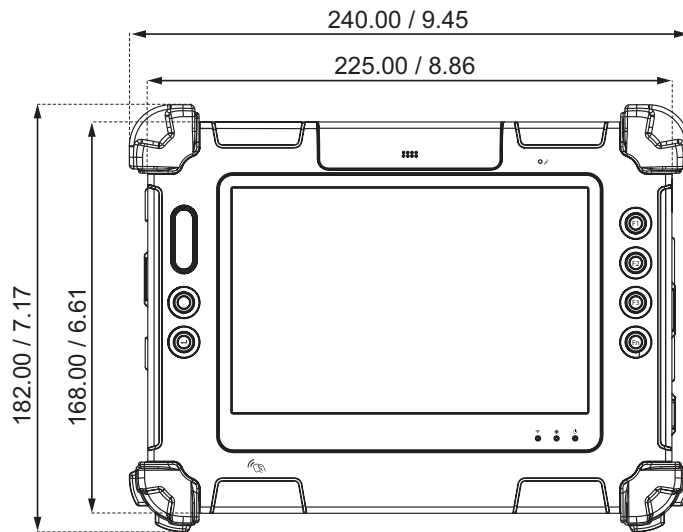
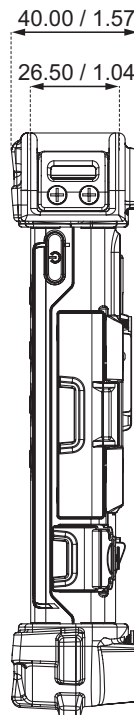


Figure 7. Side View Dimensions



## Touch Screen



Never use an actual pen, pencil, or sharp/abrasive object on the touch screen.

Touch the screen to perform an action or initiate a function.

The following actions are available through the the touch screen:

- Open applications
- Choose commands in menu
- Select options in dialog box or drop-down menu
- Drag the scroll bar
- Drag across the text to select content
- Place the cursor in a text box before typing

A right click is generated by tapping the mouse icon in the system tray. After tapping, the mouse icon highlights the right button of the icon in red. The next touch screen tap is treated as a right click. The mouse icon returns to the left button highlighted in red so subsequent taps are treated as left clicks.

# Chapter 2. Getting Started

This section provides an outline of the steps necessary to setup a PA-301. A detailed guide follows the listed items.

For additional technical assistance, contact your RuggON representative. See “*Contacting RuggON*” on page 57.



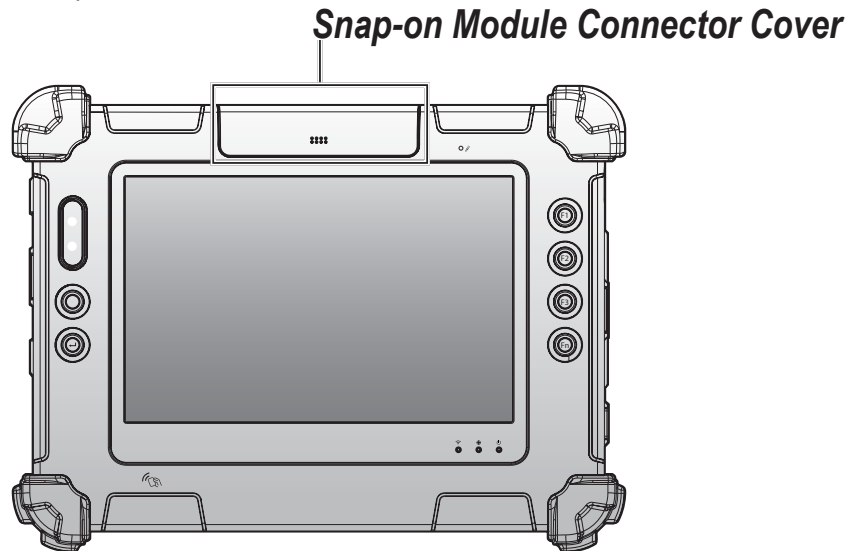
It is recommended to installing or remove accessories on a clean, well-lit work surface. To protect yourself and the device from electrostatic discharge, wear anti-static wrist straps or place the device on an anti-static mat.

## Removing the Snap-on Module Connector Cover

The snap-on module connector is located on the rear side of the device. For further information see “*Overview*” on page 11

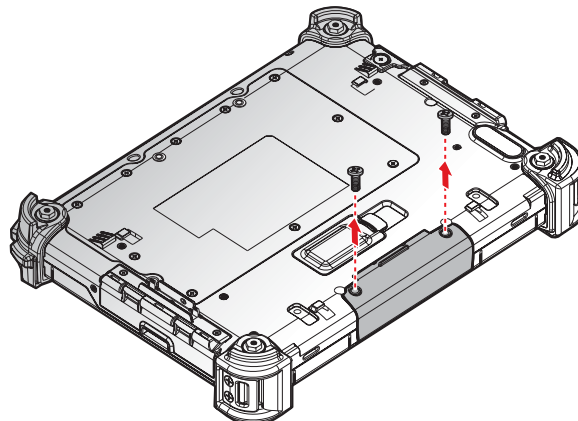
1. Locate the snap-on module connector cover.

Figure 8. Front View: Locating the Snap-on Module Connector Cover



2. Place the device display side down on a clean work surface.
3. Remove the screws securing the cover.

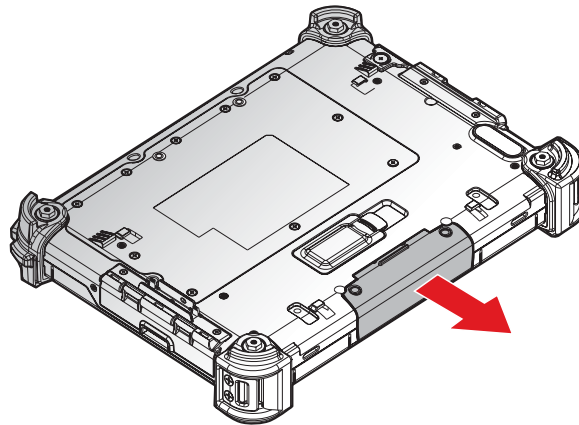
Figure 9. Removing the Screws





4. Remove the cover.

Figure 10. Removing the Snap-on Module Connector Cover

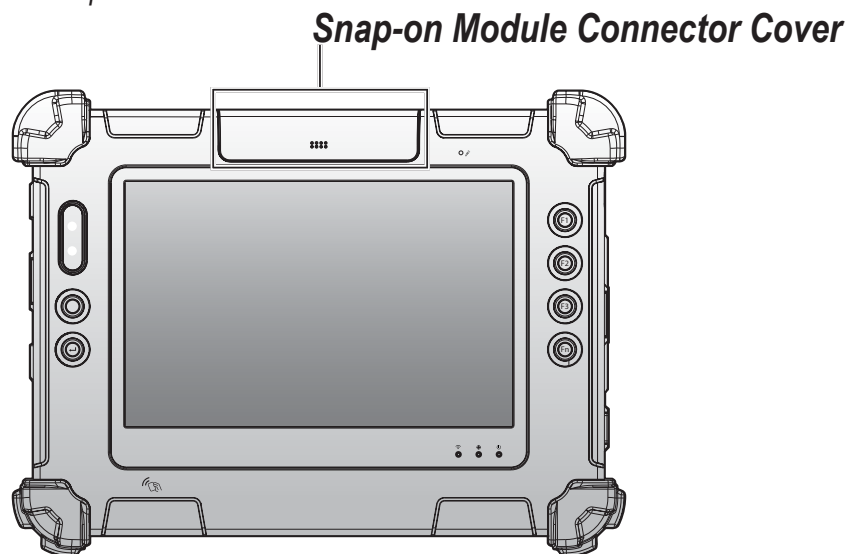


## Replacing the Snap-on Module Connector Cover

The snap-on module connector is located on the rear side of the device. For further information see “Overview” on page 11.

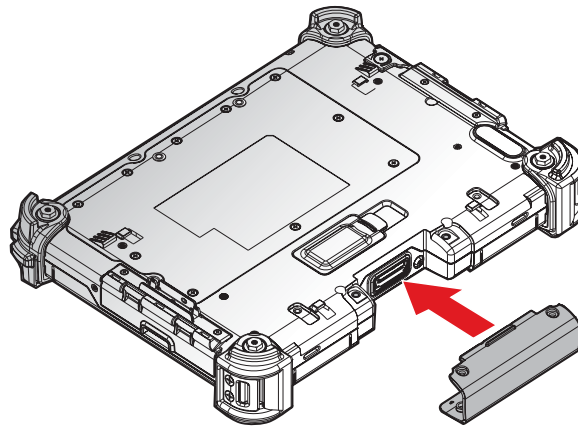
1. Locate the snap-on module connector cover.

Figure 11. Front View: Locating the Snap-on Module Connector Cover



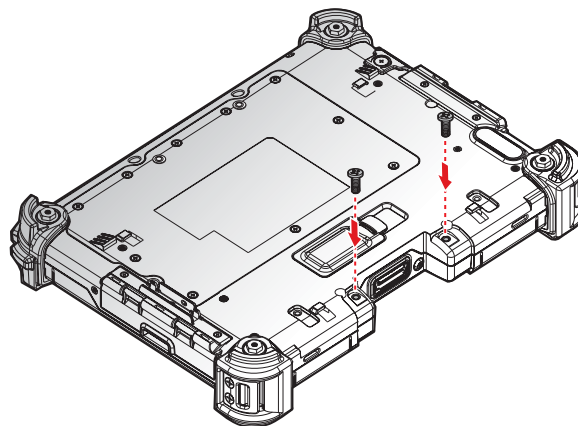
2. Align the holes on the bottom of the cover with the pins on the top of the housing and insert.
3. Place the device display side down on a clean work surface.

Figure 12. Installing the Snap-on Module Connector Cover



4. Secure the cover and the PA-301 with screws.

Figure 13. Securing the Screws



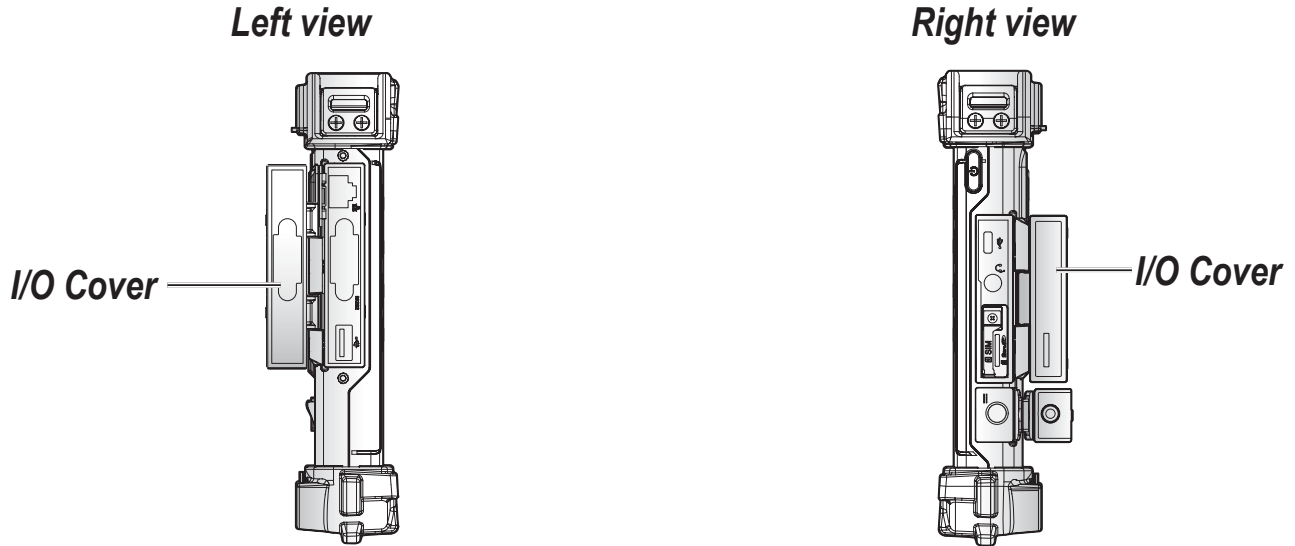
*Snap-on module connector cover is not be closed well may damage the PA-301.*

## Opening the I/O Cover

The PA-301 has two I/O covers. In the following example, the left I/O cover is used to demonstrate how to open and close a compartment cover.

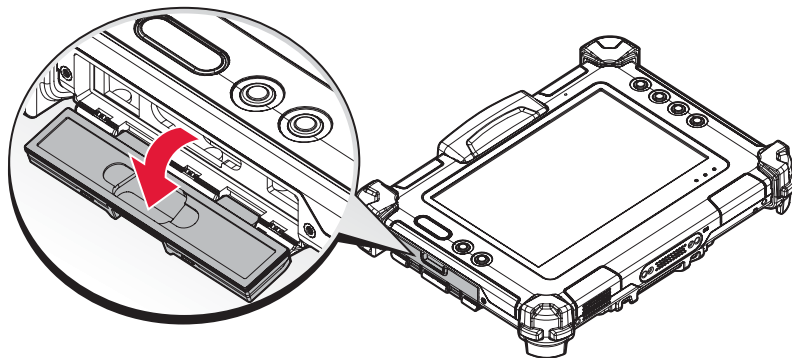
1. Locate the I/O covers.

Figure 14. Side View: Locating the I/O Covers



2. Flip the I/O cover open.

Figure 15. Opening the I/O Cover

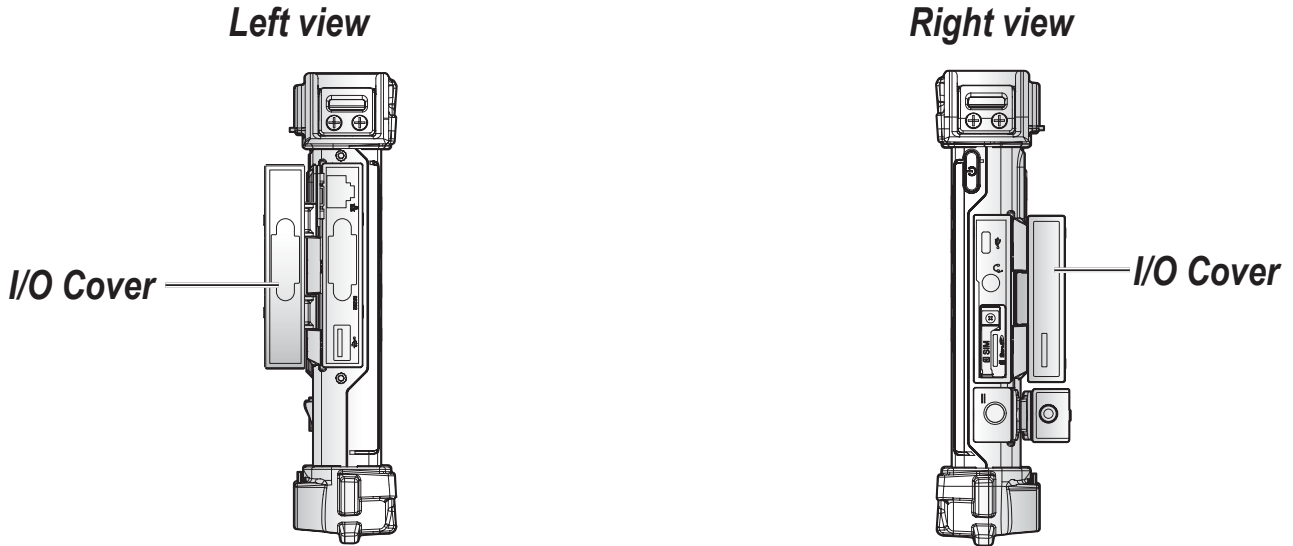


## Closing an I/O Cover

The PA-301 has two I/O covers. In the following example, the left I/O cover is used to demonstrate how to close a compartment cover.

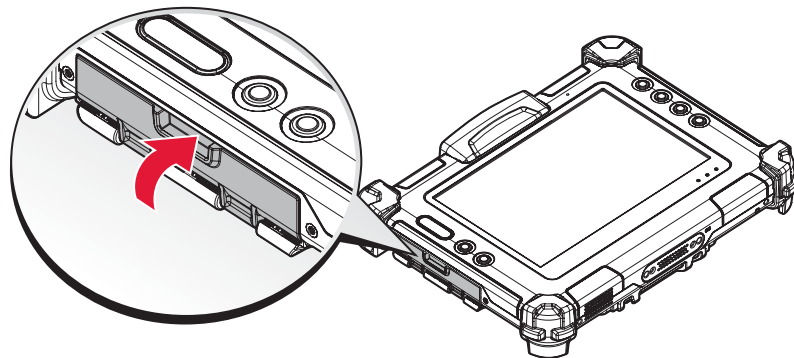
1. Locate the I/O cover.

Figure 16. Side View: Locating the I/O Covers



2. Flip the I/O cover and install.

Figure 17. Installing the I/O cover



The I/O covers must be inserted correctly to prevent internal damage to the device.

## Installing the Micro SIM Card

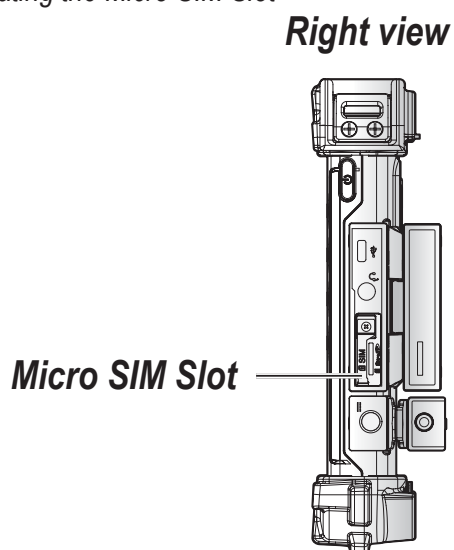
The device includes a micro SIM slot for cellular and wireless connection. Only a micro SIM card is supported in the slot.



Check with your network or cellular service provider for availability and cost rates.

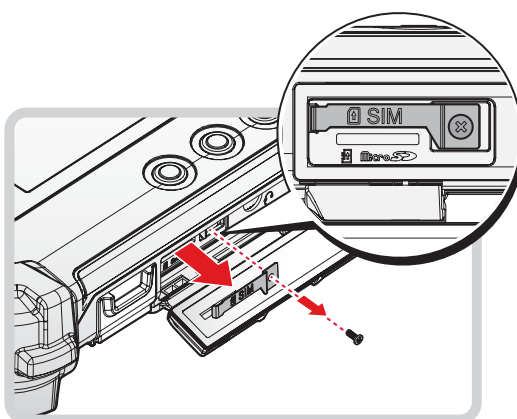
1. Power off the PA-301.
2. Open the right I/O cover. See “Opening the I/O Cover” on page 21.
3. Locate the micro SIM slot in the right I/O parts.

Figure 18. Right View: Locating the Micro SIM Slot



4. Remove the screw securing the SIM slot securing bracket.
5. Remove the securing bracket.

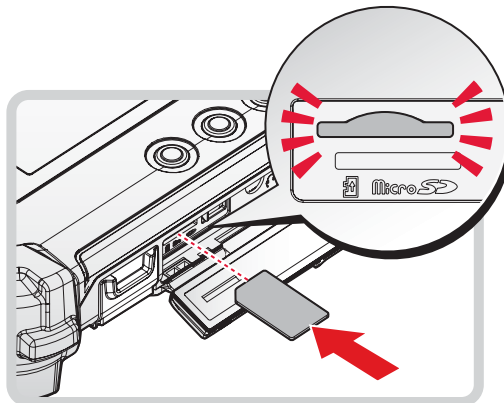
Figure 19. Removing the SIM Slot Securing Bracket



6. Take the new micro SIM card from its packaging.

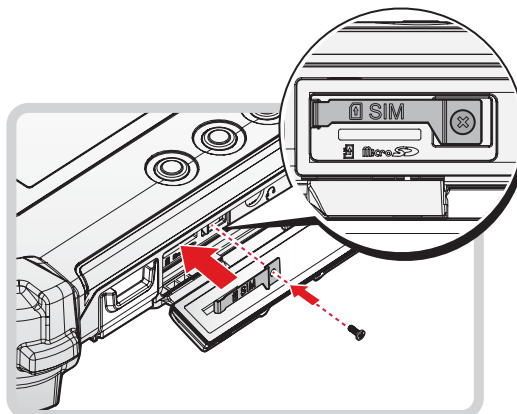
7. The micro SIM card has a corner missing. Align the micro SIM card with the slot making sure that the corners match.
8. Insert the micro SIM card and press it in until an audible click sounds.

Figure 20. Installing the Micro SIM Card



9. Install the securing bracket.
10. Secure the securing bracket with a screw.

Figure 21. Closing the SIM cover

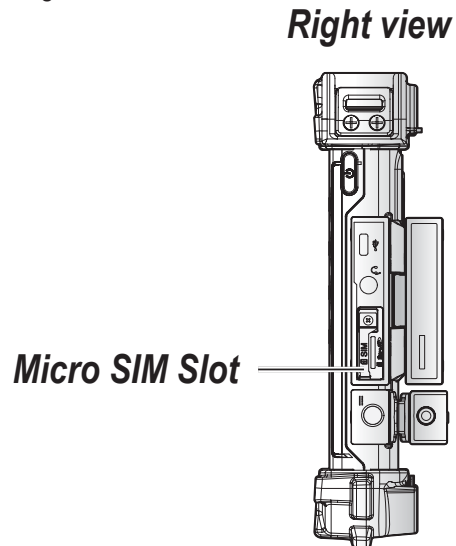


11. Close the right I/O cover. See “Replacing the I/O Cover” on page 22.

## Removing the Micro SIM Card

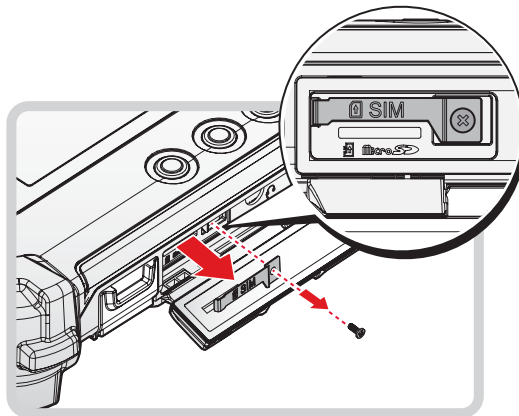
1. Power off the PA-301.
2. Open the right I/O cover. See “Removing the I/O Cover” on page 21.
3. Locate the micro SIM slot in the right I/O parts.

Figure 22. Right View: Locating the Micro SIM Slot



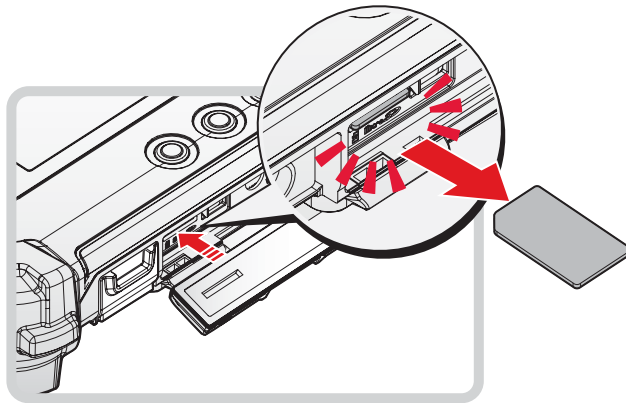
4. Remove the screw securing the SIM slot securing bracket.
5. Remove the securing bracket.

Figure 23. Removing the SIM Slot Securing Bracket



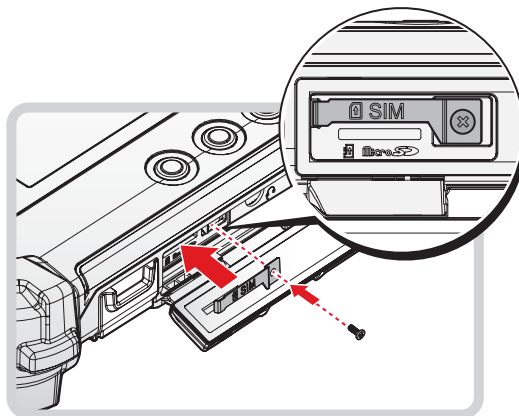
6. Press the micro SIM card in to release it. The card springs out.
7. Grasp the micro SIM card and remove it from the slot.

Figure 24. Removing the Micro SIM Card



8. Install the securing bracket.
9. Secure the securing bracket with a screw.

Figure 25. Replacing the SIM Slot Securing Bracket



10. Close the right I/O cover. See “Closing an I/O Cover” on page 22.



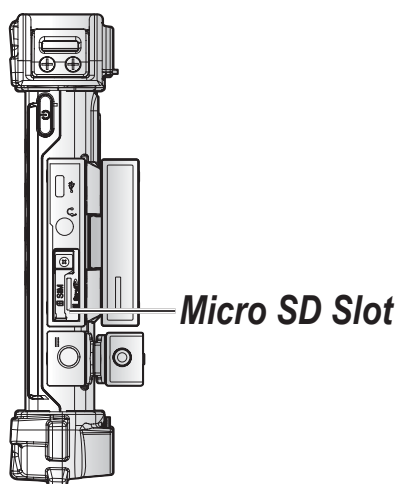
## Installing the Micro SD Card

The device supports micro SD card for easier data storage.

1. Power off the PA-301.
2. Open the right I/O cover. See “Opening the I/O Cover” on page 21.
3. Locate the micro SD slot in the right I/O parts.

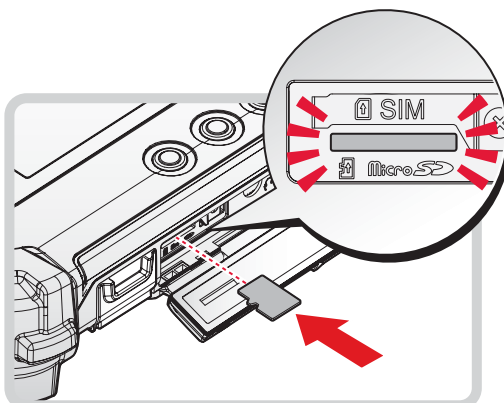
Figure 26. Right View: Locating the Micro SD Slot

**Right view**



4. The micro SD card has a corner missing. Align the micro SD card with the slot making sure that the corners match.
5. Insert the micro SD card and press it in until an audible click sounds.

Figure 27. Installing the Micro SD Card



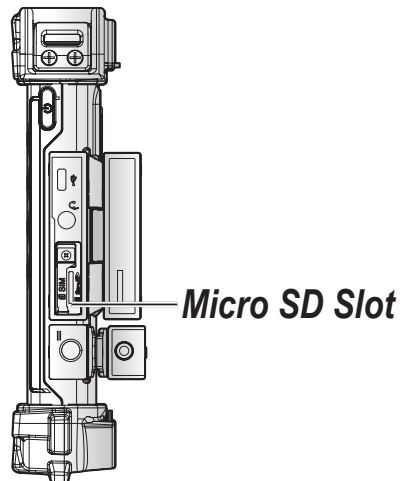
6. Close the right I/O cover. See “Replacing the I/O Cover” on page 22.

## Removing the Micro SD Card

1. Power off the PA-301.
2. Remove the right I/O cover. See “*Removing the I/O Cover*” on page 21.
3. Locate the micro SD slot in the right I/O parts.

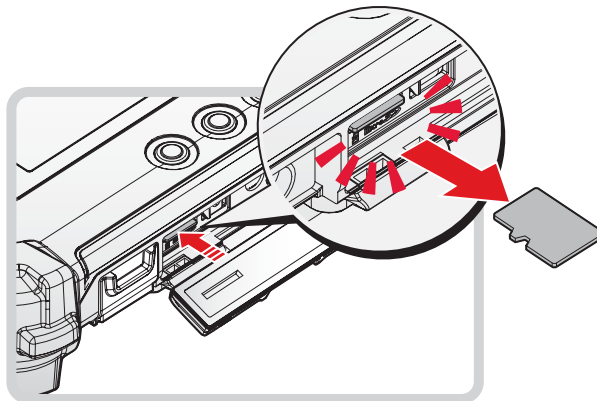
Figure 28. *Right View: Locating the Micro SD Slot*

**Right view**



4. Press the micro SD card in and release it. The card springs out.
5. Grasp the micro SD card and remove it from the slot.

Figure 29. *Removing the Micro SD Card*



6. Replace the right I/O cover. See “*Replacing the I/O Cover*” on page 22.

## Connecting to External Cabling



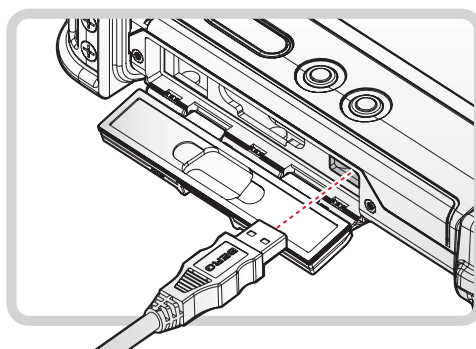
To prevent damage to the device, connect all cabling and accessories before powering up the device.

### **Connect USB Cabling**

The PA-301 have a USB Type A port for connecting USB devices, such as a digital camera, scanner, printer, modem, and mouse. The USB ports support USB 2.0 devices.

1. Open the left I/O cover. See “Closing an I/O Cover” on page 22.
2. Connect to USB device via USB cable.

Figure 30. Connect USB Cabling

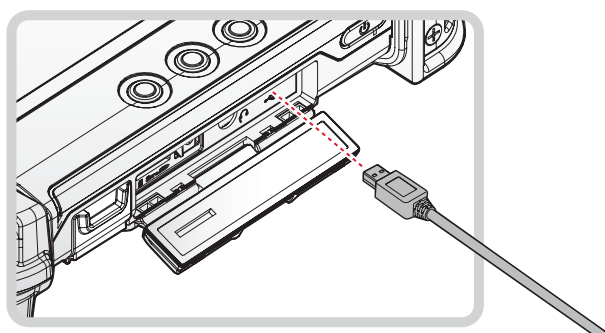


### **Connect Micro USB Cabling**

The PA-301 have a micro USB port for connecting USB devices.

1. Open the right I/O cover. See “Removing the I/O Cover” on page 21.
2. Connect to USB device via micro USB cable.

Figure 31. Connect Micro USB Cabling



## Connect Ethernet Cabling

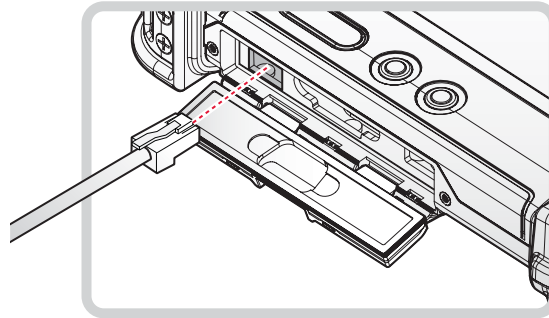
The PA-301 provide mini USB to RJ45 dougler for connecting Ethernet.



Use a shielded cable is required to maintain emissions and susceptibility compliance.

1. Open the left I/O cover. See “*Removing the I/O Cover*” on page 21.
2. Connect LAN cable to LAN port on the PA-301.

Figure 32. Connect LAN Cabling

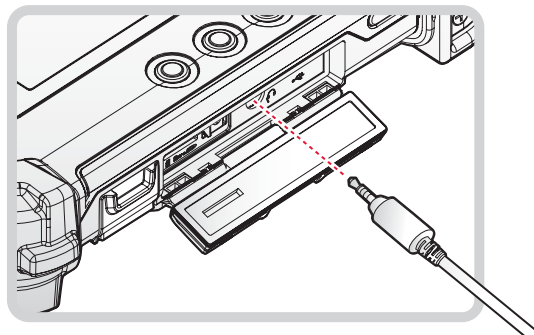


## Connect Audio Cabling

For higher audio quality, you can send sound through external audio devices such as speakers, headphones, or earphone using audio connector.

1. Open the right I/O cover. See “*Removing the I/O Cover*” on page 21.
2. Connect the audio cable.

Figure 33. Connect Audio Cabling

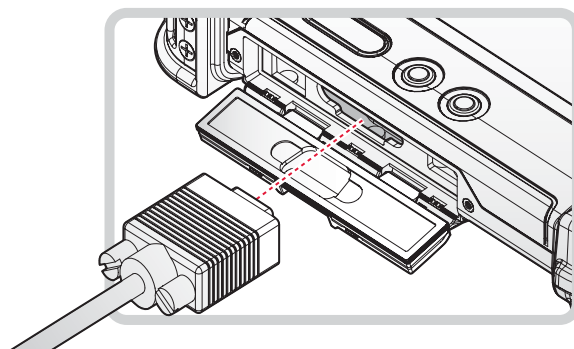


## Connect RS-232 Cabling

Connect to RS-232 devices via RS-232 cable.

1. Open the left I/O cover. See “Closing an I/O Cover” on page 22.
2. Align the RS-232 cable with the port in the device and connect it.

Figure 34. Connect RS-232 Cabling



## Handstrap, Carrying Handle and Shoulder Strap

The PA-301 comes with a handstrap, carrying handle and shoulder strap. All three accessories are not installed prior to packing.

The handstrap can be installed with either the shoulder strap or the carrying handle. However, the handle and strap can not be installed together due to space constraints.

For more information, see “Attaching the Handstrap” on page 32, “Attaching the Carrying Handle” on page 33 and “Attaching the Shoulder Strap” on page 35.

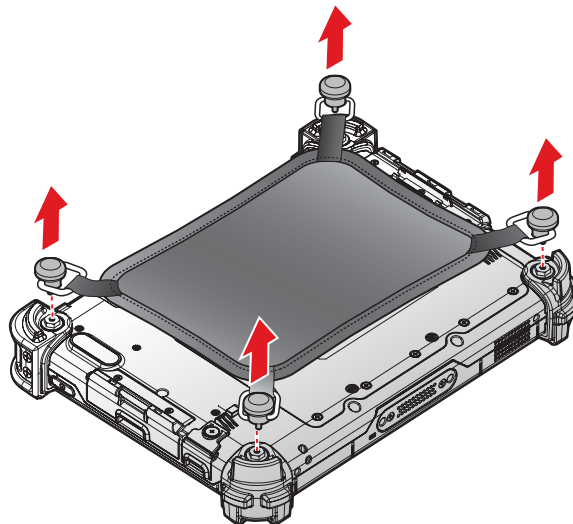
### **Attaching the Handstrap**

The handstrap makes it easy to carry the device with a single hand.

When attached, the handstrap blocks access to the external battery and connector. To install the external battery, you will need to remove the handstrap if it is previously installed.

1. Position the handstrap so that the inner strap is facing the device.
2. Place the D-rings over the upper and lower positions on the device.
3. Twist the D-rings (clockwise) to secure the handstrap.

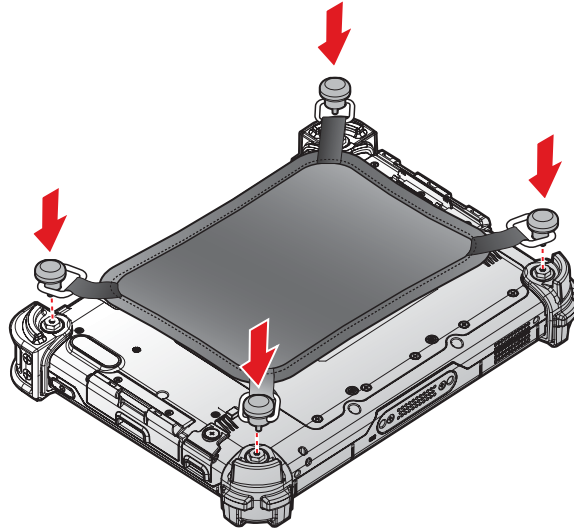
Figure 35. Securing the Handstrap



## Removing the Handstrap

1. Unscrew the D-rings securing the handstrap to the device.
2. Remove the handstrap from the PA-301.

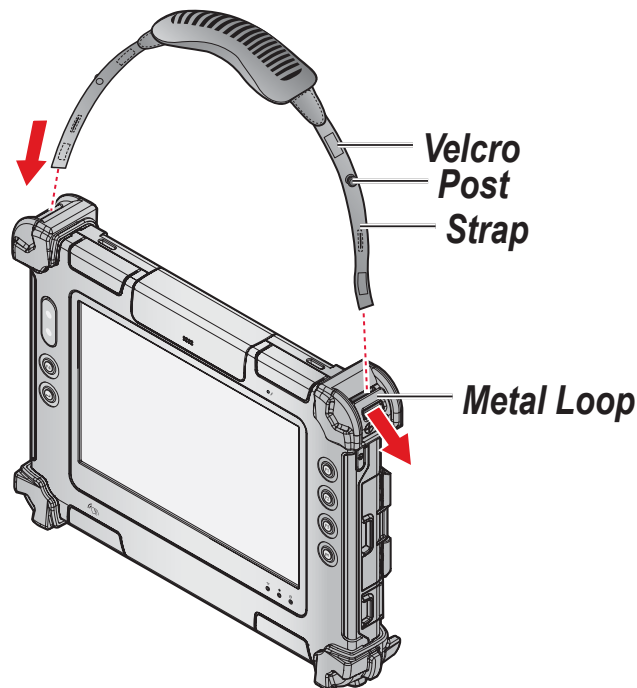
Figure 36. Removing the Handstrap



## Attaching the Carrying Handle

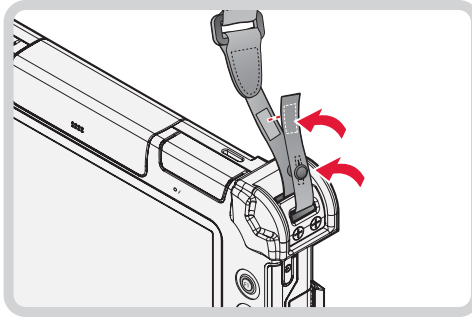
1. The handle must face the correct way. The securing post and velcro should be facing outward.
2. Thread one end of the strap through the metal loop on the bumper.

Figure 37. Inserting the Carrying Handle Through the Loop



3. Pull the strap end through the loop and insert the post through the slit on the strap.
4. Secure the strap by attaching the two velcro ends together.

Figure 38. Securing the Strap

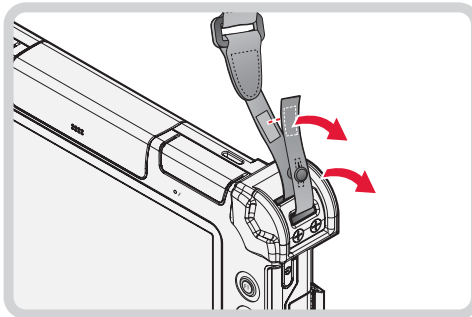


5. Repeat for the remaining strap end.

### **Removing the Carrying Handle**

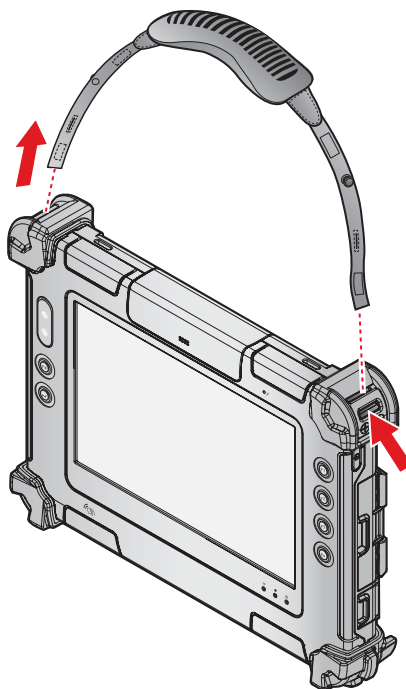
1. Remove the strap from the velcro and securing post.

Figure 39. Removing the Strap



2. Pull the strap through the metal loop on the bumper.

Figure 40. Removing the Carrying Handle



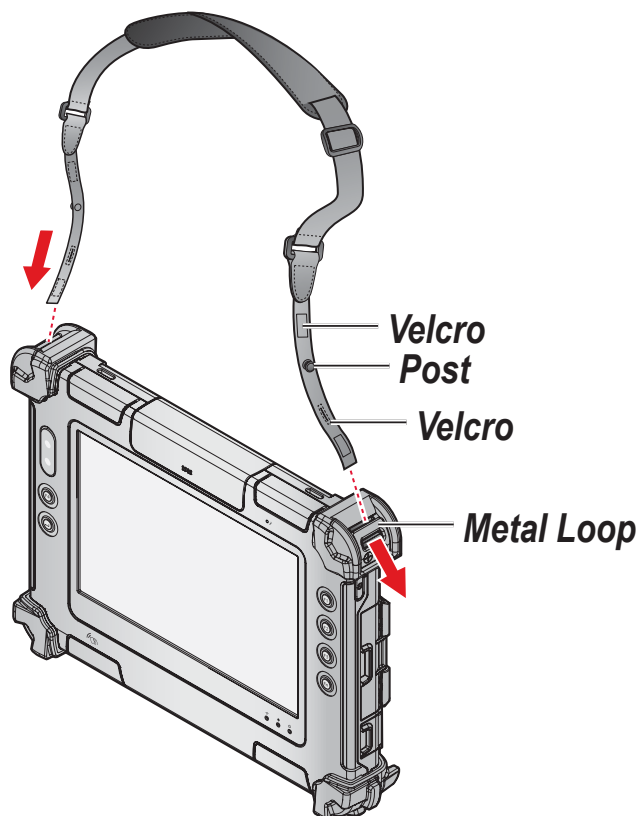


3. Repeat for the remaining side.
4. Remove the carrying handle.

### **Attaching the Shoulder Strap**

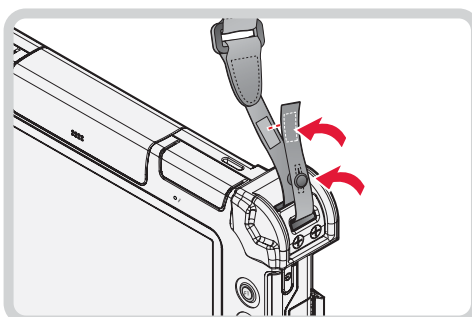
1. The shoulder strap must face the correct way. The securing post and velcro should be facing outward.
2. Thread one end of the strap through the metal loop on the bumper.

Figure 41. Inserting the Shoulder Strap Through the Loop



3. Pull the strap end through the loop and insert the post through the slit on the strap.
4. Secure the strap by attaching the two velcro ends together.

Figure 42. Securing the Shoulder Strap

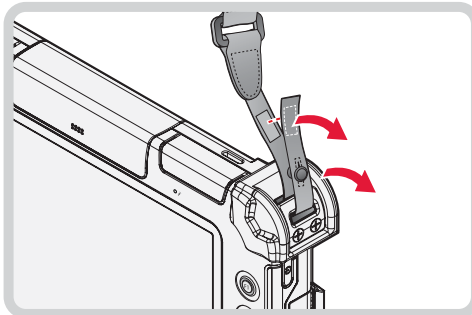


5. Repeat for the remaining strap end.

## **Removing the Shoulder Strap**

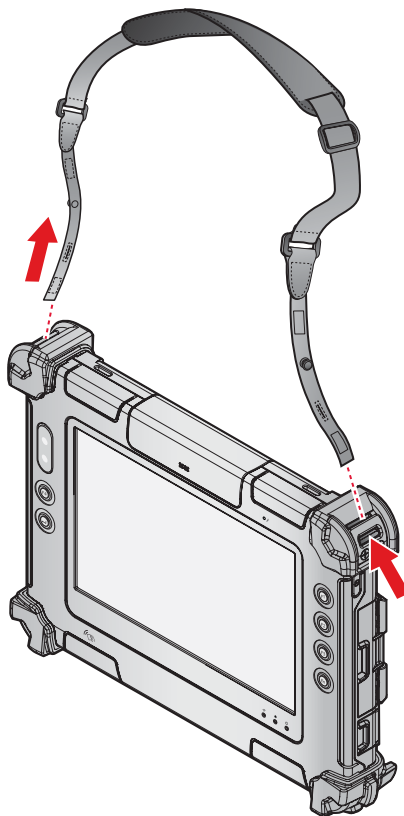
1. Remove the strap from the velcro and securing post.

Figure 43. Removing the Strap



2. Pull the strap through the metal loop on the bumper.

Figure 44. Removing the Shoulder Strap



3. Repeat for the remaining side.
4. Remove the shoulder strap.

## Charging the Battery

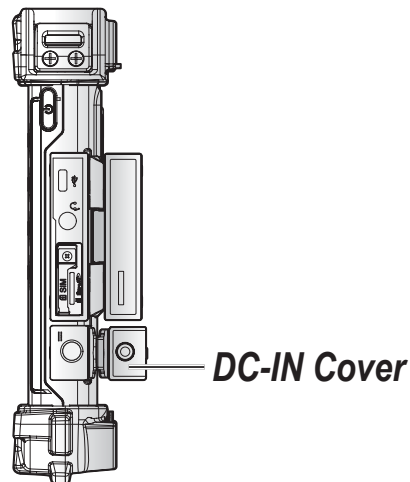
When you use the AC adapter to connect your PA-301 to a power outlet, the internal and external (optional) battery will automatically begin to recharge.

While the battery is charging, the Power LED will be active. When the battery is fully charged, the Power LED is lit a solid green.

1. Locate the DC-IN cover.

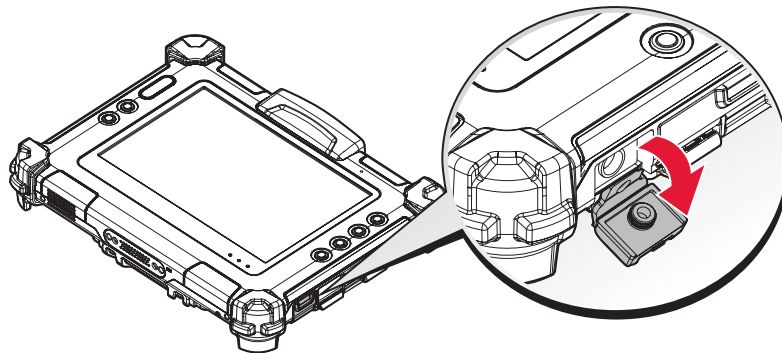
Figure 45. Right View: Locating the DC-IN Cover

**Right view**



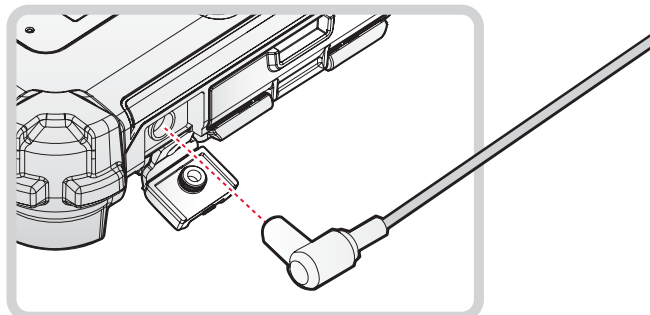
2. Flip open the DC-IN cover to expose the DC-IN jack.

Figure 46. Opening the DC-IN Cover



3. Connect the AC adapter to the DC-IN port.

Figure 47. Connecting the AC Adapter

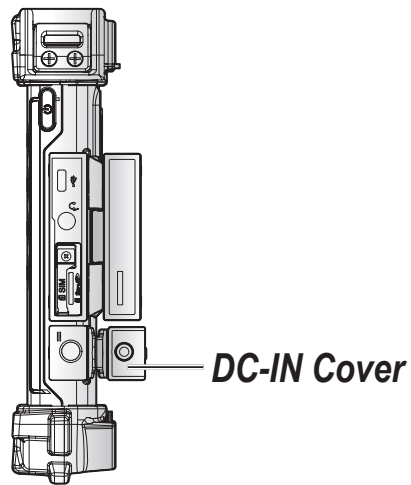


After charging the battery, disconnect the AC adapter and close the DC-IN cover.

1. Locate the DC-IN cover.

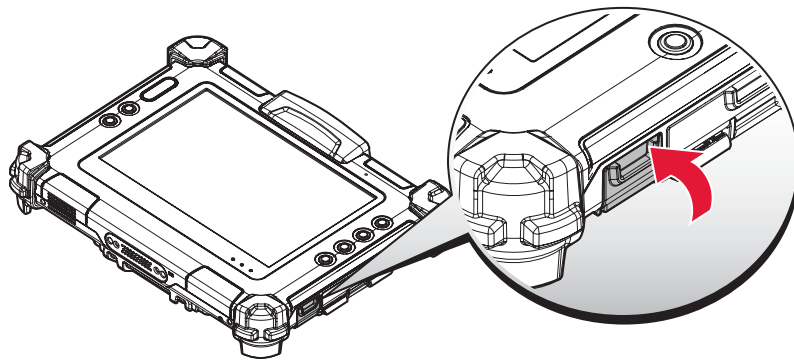
Figure 48. Right View: Locating the DC-IN Cover

**Right view**



2. Flip the DC-IN cover and install.

Figure 49. Installing the DC-IN Cover



*The DC-IN cover must be inserted correctly to prevent internal damage to the device.*

## Installing the External Battery

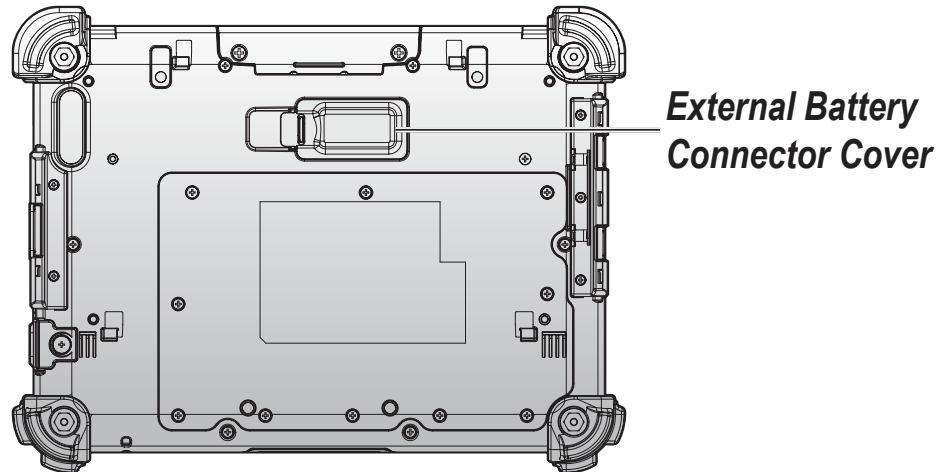
The external battery is an optional component. Only use components specifically designed for this device. Contact your local representative for ordering information.



Make sure the power switch is switched to ON before installing the external battery. See “*First Time Use*” on page 49.

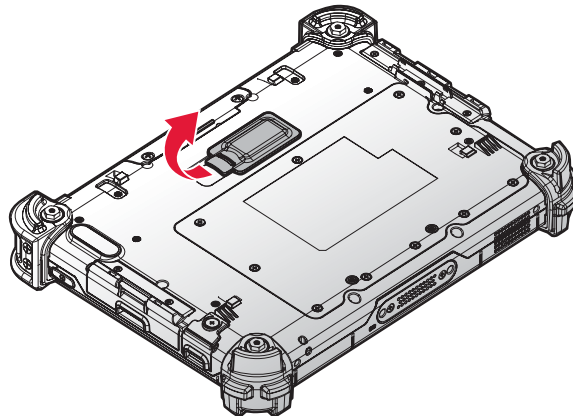
1. Place the device display side down on a clean work surface.
2. Locate the external battery connector cover.

Figure 50. Rear View: Locating the External Battery Connector Cover



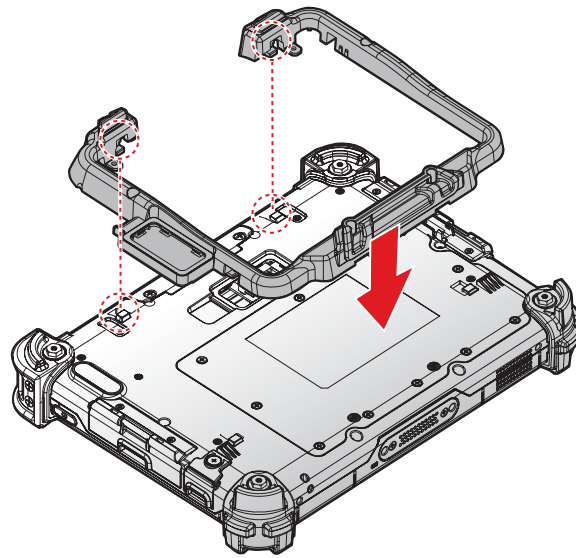
3. Flip the connector cover up to remove it from the compartment.

Figure 51. Removing the External Battery Connector Cover



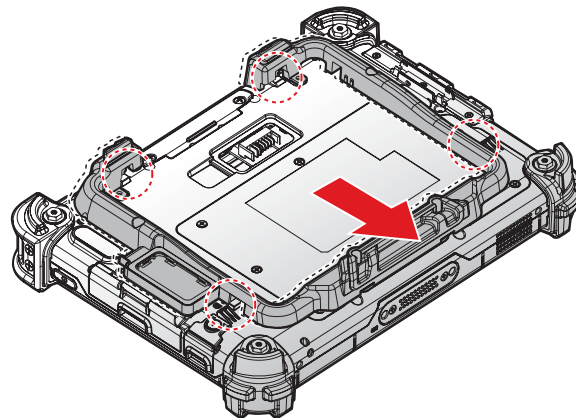
4. Align the tabs on the external battery bracket with the slots on the rear side of the PA-301 .

Figure 52. Aligning the External Battery Bracket



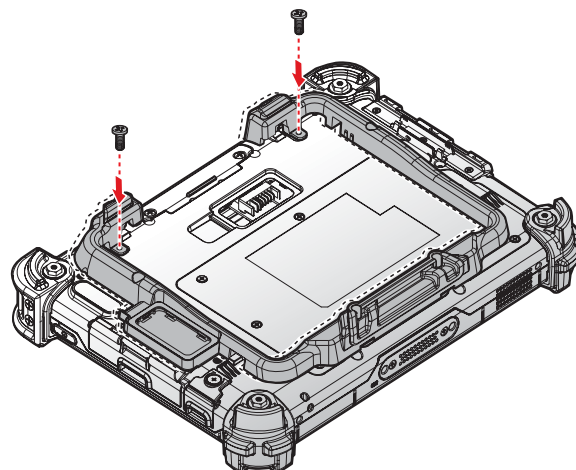
5. Push the external battery bracket toward to lock.

Figure 53. Installing the External Battery Bracket



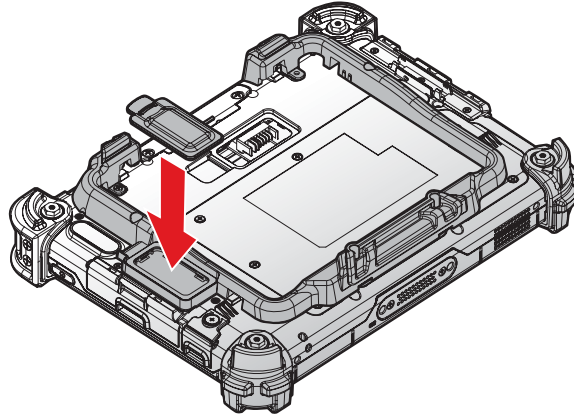
6. Securing the external battery bracket and the PA-301 with screws.

Figure 54. Securing the Screws



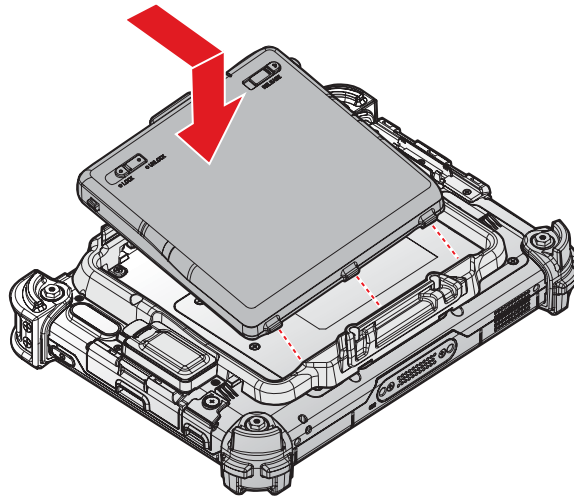
7. Install the connector cover in the cover placeholder.

Figure 55. Placing the External Battery Connector Cover in the Cover Placeholder



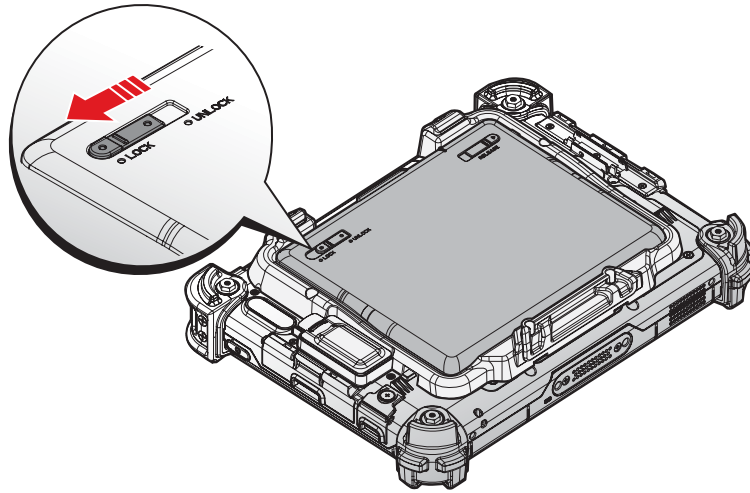
8. Align the tabs on the external battery with the slots on the external battery bracket.
9. Angle the battery in place and set the tabs in the bracket slots.
10. Lower the raised end of the external battery and press in place until an audible click is heard.

Figure 56. Installing the External Battery



11. Press the locking switch on the top-left side to lock the external battery.

Figure 57. Locking the External Battery

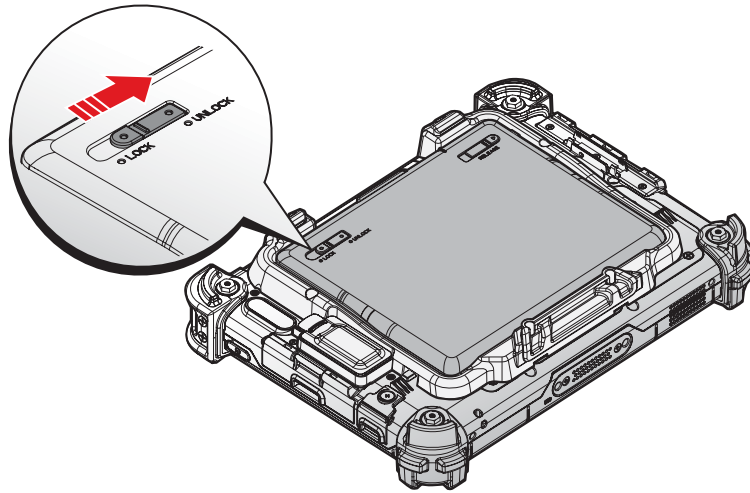




## Removing the External Battery

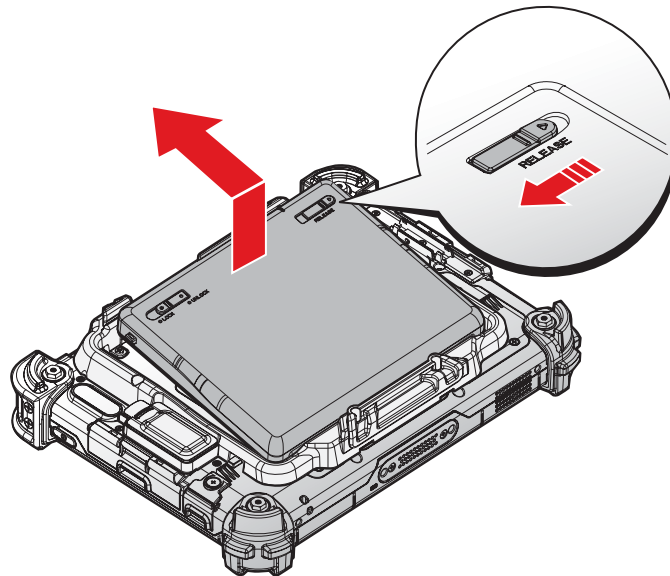
1. Press the locking switch on the top-left side to the unlock position.

Figure 58. Unlock the External Battery



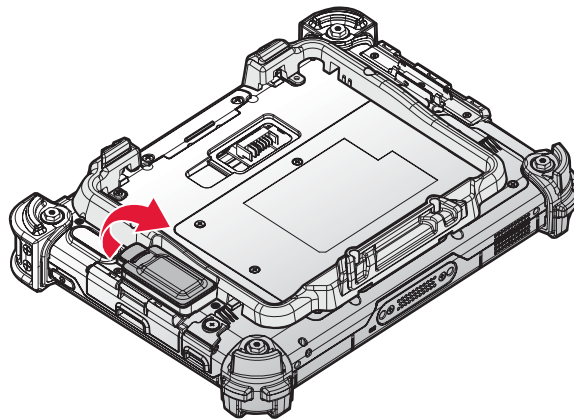
2. Press and hold the release button as shown in the image to release the battery.
3. Hold the battery and angle the top side up to remove.

Figure 59. Removing the External Battery



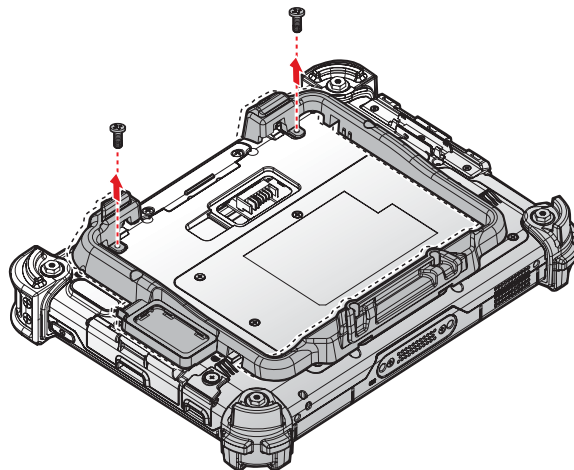
4. Flip the connector cover up to remove it from the cover placeholder.

Figure 60. Removing the External Battery Connector Cover



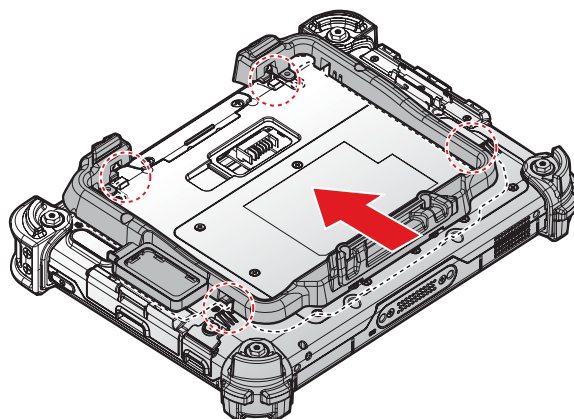
5. Remove the screws securing the external battery bracket.

Figure 61. Removing the Screws



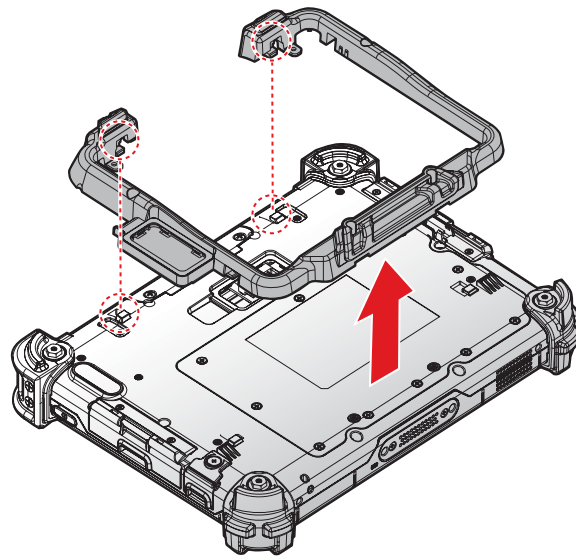
6. Push the external battery bracket forward the bottom of the PA-301 to release the bracket.

Figure 62. Releasing the External Battery Bracket



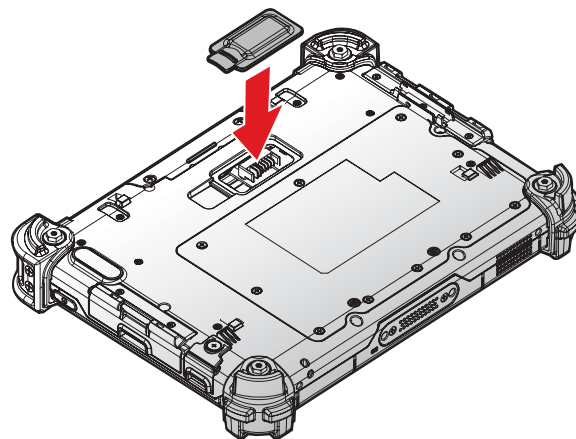
7. Remove the external battery bracket.

Figure 63. Removing the External Battery Bracket



8. Install the connector cover in the external battery compartment to protect the battery connector.

Figure 64. Installing the External Battery Connector Cover



## Mag Strip Reader and Barcode Scanner

The Mag Strip Reader (MSR) and Barcode Scanner modules are optional components. Contact your representative for ordering information.

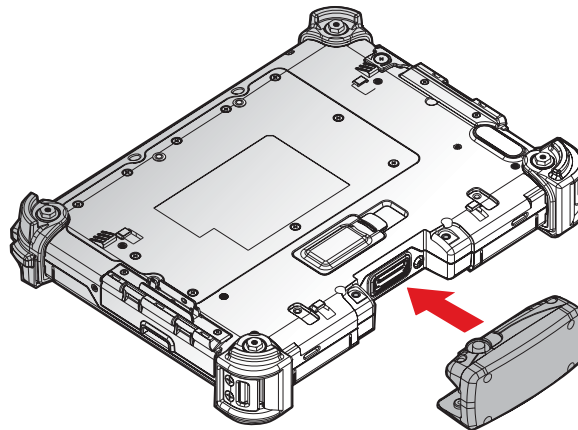
### **Installing the Module**



*Before install the external module, please remove the AC adapter and set the DIP switch to OFF.*

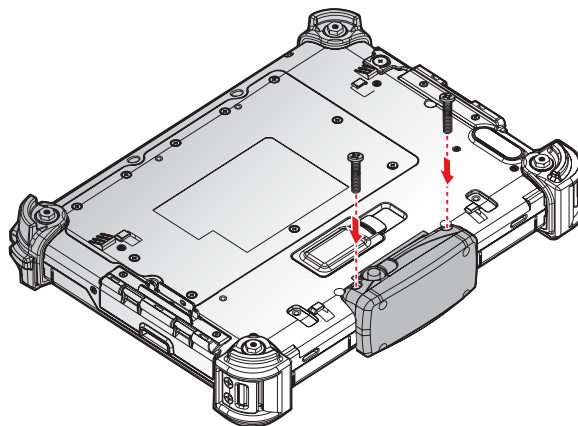
1. Align the module correctly. The barcode scanner sensor must be facing the rear of the device.
2. Remove the Add-on compartment cover. See “Removing the Snap-on Module Connector Cover” on page 18.
3. Align connectors on the module and the device.
4. Insert the device over the connector and press down. An audible click sounds when the module is installed correctly.

Figure 65. Installing the Module



5. Secure the module and the PA-301 with the provided screws.

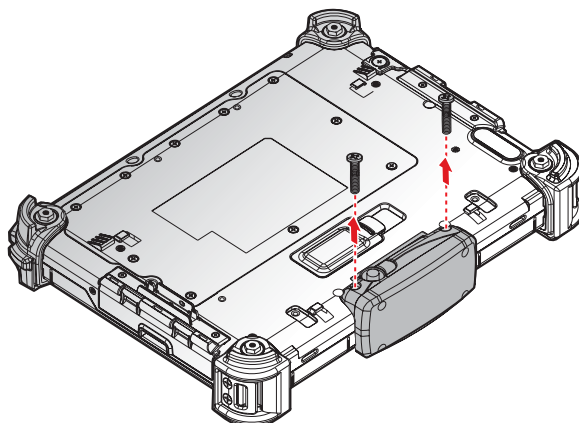
Figure 66. Installing the Screws



## Removing the Module

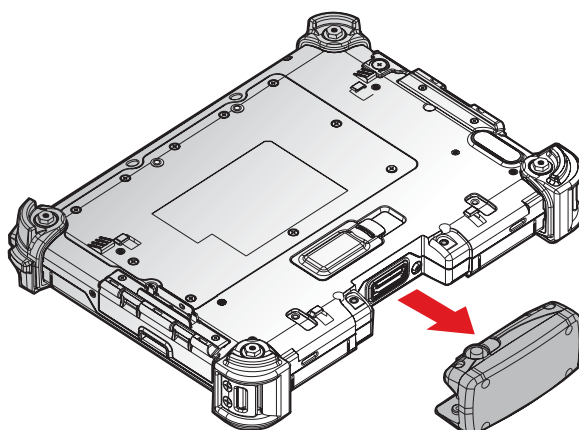
1. Remove the Add-on compartment cover. See “Removing the Snap-on Module Connector Cover” on page 18.
2. Remove the screws securing the module.

Figure 67. Removing the Screws



3. Grasp the module from both sides and gently pull the module off.
4. Remove the module.

Figure 68. Removing the Module



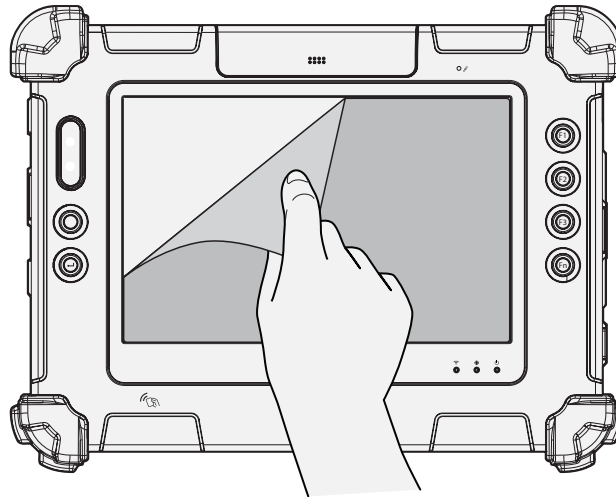
5. Replace the Add-on compartment cover. See “Replacing the Snap-on Module Connector Cover” on page 19.

## Removing the Protective Film from the Display

The screen on the PA-301 is protected during transport by a transparent film. Keep the protective film on the screen during the assembly to avoid damage to the screen's surface.

Only remove the film once all of the assembly work has been completed.

Figure 69. Removing the Protective Film

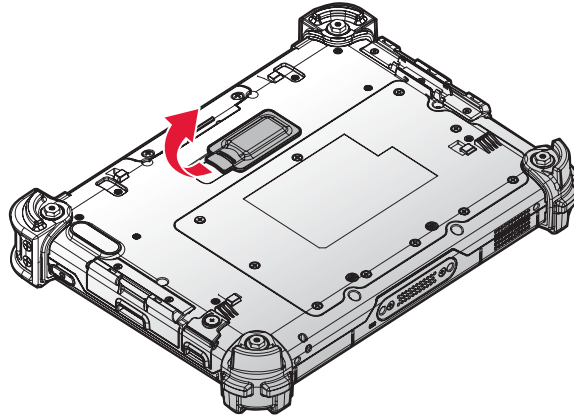


# Chapter 3. Operation

## First Time Use

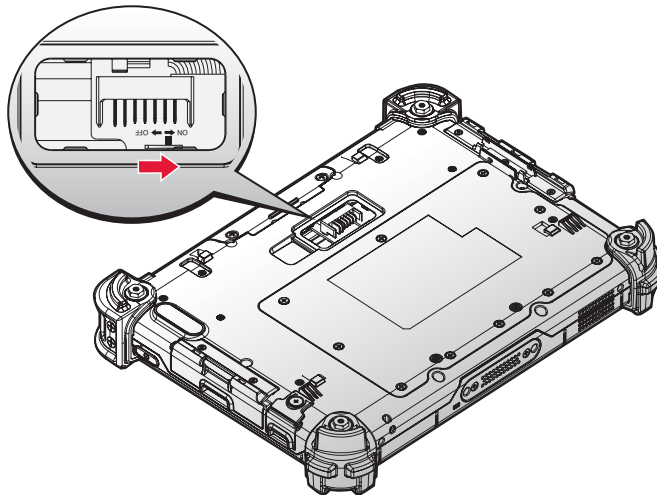
1. Turn the device over and place it on a clean surface.
2. Remove the external battery connector cover.

Figure 74. Removing the External Battery Connector Cover



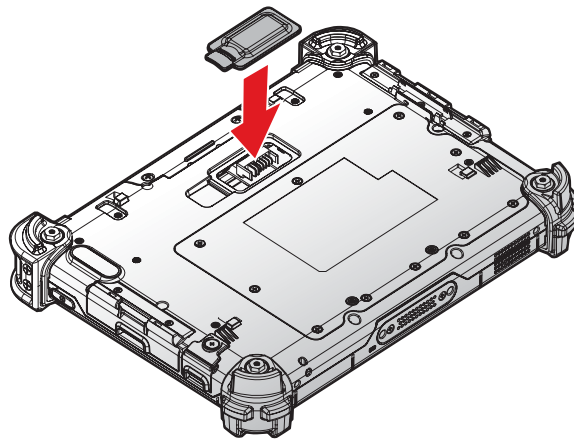
3. Find the DIP switch located in the connector compartment. Switch the DIP switch to ON.

Figure 75. Switching the DIP Switch



4. Replace the connector cover in the compartment.

Figure 76. Installing the External Battery Connector Cover



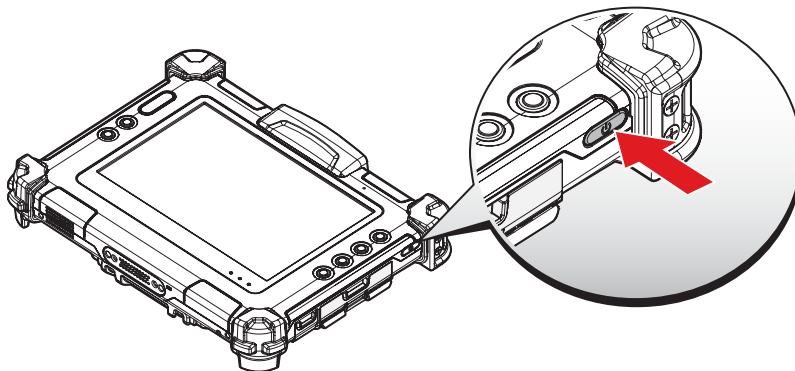
## Powering On and Off the Device

### **Powering On the Device**

Only power on the PA-301 after connecting all of the attachments.

1. Press and hold the power key for 1 second.

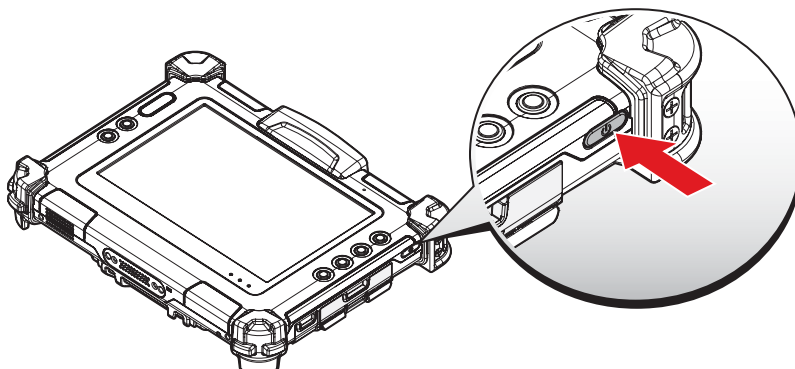
Figure 77. Power On the PA-301



### **Powering Off the Device**

1. Press and hold the power key for 5 seconds.

Figure 78. Power Off the PA-301





## Connecting to Network

PA-301 Supports two ways to connect to the internet by using LAN and Wireless.

### LAN



Before you setup the Ethernet, please connect to the RJ45 port.

To turn on the Ethernet, please follow the steps:

1. DHCP mode
  1. Tap **APPS > Setting > WIRELESS & NETWORKS.**
  2. Tap **Ethernet configuration > enable Ethernet.**
  3. Enter the Device name and tap **DHCP** mode.
  4. Tap **Save.**
2. Static IP mode
  1. Tap **APPS > Setting > WIRELESS & NETWORKS.**
  2. Tap **Ethernet configuration > enable Ethernet.**
  3. Enter the Device name and tap **Static IP** mode.
  4. Enter the IP address, Netmask, DNS address, Gateway address.
  5. Tap **Save.**

### Connecting to Wireless Network

Before you can make use of the PA-301 wireless functions, you will need to connect to a network. Wi-Fi communication requires access to an existing Wireless Access Point (WAP). WAPs can be Open (unsecured, as with most hotspots) or Secured (requiring you to provide login credentials). Your device supports Wi-Fi 802.11 a/b/g/n.

- Before beginning, make sure you are within range of a wireless network.

Use your device's Wi-Fi feature to:

- Access the internet for browsing or to send and receive email.
- Access your corporate network.
- Use hotspots provided by hotels or airports while traveling.

The following is a set of procedures for connecting to a wireless network:

1. Tap **APPS > Setting > WIRELESS & NETWORKS.**
2. Tap **Wi-Fi** to turn Wi-Fi on.
3. Tap a Wi-Fi to connect. If the Wi-Fi is open (unsecured), the PA-301 connects automatically. If the Wi-Fi is secured, enter the password at the prompt to connect.

### Add a Wi-Fi Network Manually

1. Tap **APPS > Setting > WIRELESS & NETWORKS.**
2. Tap **Wi-Fi** to turn Wi-Fi on.
3. Tap **ADD NETWORK** and enter the following:
  - Network SSID: Enter the name of the Wi-Fi Wireless Access Point (WAP).

- Security: Select the type of security used by the WAP.



Depending on the security protocol used by the WAP, additional network information may be required, such as a password.

- Password: If the WAP is secured, enter the password.

4. Tap **Save**.

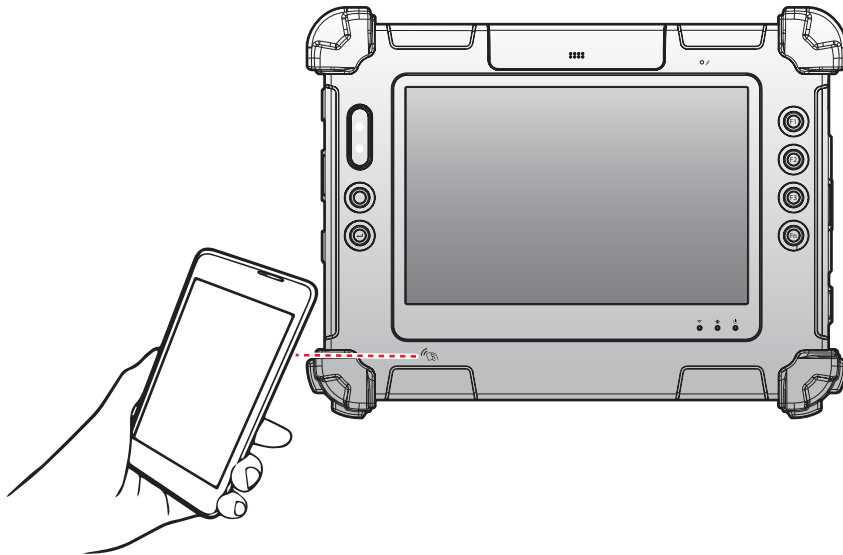
## Pairing the NFC Device

The NFC function allows the transfer of information between two NFC-equipped devices. Before beginning the procedure make sure your smart device has the NFC function enabled.

To enable and use the NFC function:

1. Tap **APPS > Setting > More....**
2. Tap **NFC** to turn the NFC function on.
3. Use your NFC-enabled device to touch to the PA-301.

Figure 79. Pairing the NFC Device



Once the two devices are paired, information sharing is available through the NFC connection.

## Chapter 4. Troubleshooting

Refer to this resource page for useful information about the Android 4.0 Ice Cream Sandwich (ICS) operating system loaded in your tablet.

You may also go to the Android ICS page ([android.com/about/ice-cream-sandwich/](http://android.com/about/ice-cream-sandwich/)) for more details.

**Q.** How do I change the home screen wallpaper?

**A.** To change the wallpaper, tap and hold your finger on the Home Screen to open your wallpaper options. Choose your wallpaper from the three options that may be available:

- Gallery – allows you to set one of your own pictures as the wallpaper. Tap **Gallery** and select your preferred picture. You can crop the part of the picture you want to use as the wallpaper. Then, tap **Crop** to set the picture as your background.
- Live Wallpapers – provides you with a set of animated backgrounds. Tap **Live Wallpapers** and select the live wallpaper you wish to use. Next, tap **Set wallpaper** to set the live wallpaper as your background.
- Wallpapers – a collection of pre-installed wallpapers. Tap **Wallpapers** and select the one you prefer. Next, tap **Set wallpaper** to set the picture as your background.

**Q.** How do I add and remove apps, widgets, shortcuts and folders to the home screen?

**A.** You can add and group your apps and shortcuts logically using home screen folders, just by dragging app icon onto a particular folder. Also, in **All Apps launcher**, you can simply drag an app to get information about it or immediately uninstall it, or disable a pre-installed application.

You can drag apps, shortcuts, folders, and other priority items in or out of the favorite's tray for instant access from any home screen. You can also remove them by dragging the item unto the **Remove** icon.

**Q.** How do I unlock the screen?

**A.** The security settings for your tablet must first be set. The settings include: None, Slide, Pattern, PIN, and Password. After the settings are configured, they must be entered as defined in the security screen at the display prompt to unlock your screen.

**Q.** What are other ways to lock the screen?

**A.** Use a PIN (Personal Identification Number) or screen lock pattern.

**Q.** What if I forget my screen lock pattern or password?

**A.** Contact your system administrator to reset your password.

**Q.** How can I access the Internet through my PC or someone else's mobile device?

**A.** By tethering to a smart phone, you can use its data service to connect to the internet.

To wireless tether your smart phone, first you will need to create the wireless hotspot the tablet will connect to. Please follow the method recommended by the manufacturer of your smart phone or wireless carrier.

Once the mobile hotspot has been created and your device Wi-Fi is enabled, tap **Wi-Fi settings** to search for the wireless hotspot you created previously.

Choose hotspot you created and, if necessary, enter the password if you have chosen to use one. After a few seconds, you should be able to access the internet through your smart phone's data connection.



This only works if your smart phone is capable of creating a wireless hotspot. Please check with your wireless carrier to see if tethering is an available option. Extra charges from your carrier may apply if you use this feature.

**Q.** How do I shut down applications running in the background on Android (Ice Cream Sandwich) PA-301?

**A.** You can dismiss individual apps running in the background from the Recent Apps list with a swipe of your finger. To dismiss or end apps running in the background follow the steps below:

1. Tap on the **Recent Apps** icon in the lower-left corner of the screen.
2. From the **Recent Apps** list, you can swipe your finger over the app or apps you wish to end. You can also tap and hold your finger over the app, then tap **Remove from list**.
3. To exit from the Recent Apps list you can tap the **down arrow** in the lower-left corner or tap your screen outside of the apps list.

**Q.** How do I remove the browser history on my PA-301?

**A.** Internet browsers store a list of all the sites you visit called history. If you wish to delete browser history on your Android tablet, use the following steps:

1. Open the internet browser and tap the menu button in the upper-right corner of the screen.
2. Tap **Settings > Apps > All tag > Browser**. On this page you can select which information to delete:

Clear Cache – removes temporary stored files, such as images.

Clear form data – removes information you entered in web forms.

**Q.** How can I explore files on my PA-301 Android tablet?

**A.** Although the Android operating system does not come with a native file managing application, Open Manager is available to better manage the space on your tablet's internal memory or SD card.

To install additional APKs, save the files onto your micro SD or USB storage device and install them by connecting your storage media to the device.

**Q.** Can I transfer files from a micro SD card to a PC?

**A.** To transfer files from an SD card to a PC, remove the micro SD card from your tablet and insert the micro SD card in a card reader or USB adapter to access the files on the SD card from your computer.

**Q.** How do I improve a weak signal to my wireless network?

**A.** When the signal strength is low, your wireless connection may become unreliable, slow or erratic. Wireless networks can be hindered by objects in between the antenna of the router or access point, and the wireless adapter in your computer.

To improve the signal strength, reduce the distance between the devices, and have a minimal amount of physical objects such as walls or ceilings, in between.

You may also correct the interference by re-orienting or relocating the receiving antenna. Another way is to connect the equipment into an outlet on a circuit different from that of the connected receiver.

**Q.** Can I connect my PA-301 to a Windows PC via a USB cable?

**A.** Yes, just open the multimedia cover, then plug-in a micro USB cable at the micro USB On The Go (OTG) port of PA-301 to connect it to a Windows PC.

Make sure that the other end of the cable is properly connected to your PC.



The PA-301 does not come with a micro USB cable.

**Q.** How do I reset the hardware and software to factory defaults of PA-301?

**A.** You can reset the hardware software back to factory default configurations and have a fresh start. To do this, you can use the following method:

1. Power off the device.
2. Press and hold the **F4** key and **Power** key simultaneously.
3. Wait until the **Android System Recovery** Screen is displayed.
4. Press the **F1** or **F2** button to select wipe data/factory reset.
5. To confirm, press **Enter** key.



This process will erase all of your personal information, all stored contacts, configurations and any programs you have installed on your tablet. Make sure to perform a backup before proceeding.

**Q.** My PA-301 does not display correct time and date even after adjusting the settings. How can I fix this?

**A.** Replace the 3V lithium battery with a new one. The device uses a battery to retain system information.

**Q.** How do I transfer files to another device using Bluetooth?

**A.** You may transfer files using by ensuring Bluetooth is on/enabled for both devices and that these devices are properly paired if they have Bluetooth connection passwords set. After that follow these steps:

1. Locate the file you wish to transfer.
2. Tap on the **Share** icon and choose **Bluetooth** transfer.
3. Choose the device name from the list of Bluetooth devices.
4. Tap the **Next** button.
5. The devices may signal a notification alert, which lets you know that a file transfer is taking place.
6. Tap the **Accept** button.
7. The device will prompt a message once transfer is complete.



You won't see the device list if Bluetooth is off.

**Q.** What can I do if my tablet does not power on?

**A.** If your PA-301 does not power on, try the following to resolve the issue:

- Ensure that the power cord and/or AC adapter are plugged into the computer and that the connection is solid and not loose fitting.
- Verify that the power cord is plugged into the AC adapter completely.
- If the power cord or AC adapter is plugged into a surge protector, verify that the surge protector is powered on.
- Attempt to use a different electrical outlet.

**Q.** How do I change the language on my PA-301?

**A.** Your Android tablet has the option to change the display language. Follow the steps below to change your display language:

1. Locate and tap the **Settings** icon.
2. Tap the **Language & Input** option.
3. Locate and choose the language you would like to use.

# Chapter 5. Maintenance

## Cleaning the Device



*Danger to electric shock when cleaning or maintaining the PA-301.*

*To avoid electric shock, turn the PA-301 off and disconnect it from the power supply before cleaning or maintaining it.*

### **Housing**

- The housing of the PA-301 is best cleaned with a damp cloth.
- Using compressed air, a high-pressure cleaner or vacuum cleaner may damage the surface.
- There is additional risk of water entering the PA-301 and damage the electronics or touch screen Using a high-pressure cleaner

### **Touch Screen**

- Use neutral detergent or isopropyl alcohol on a clean soft cloth to clean the panel surface.
- Do not use any kinds of chemical solvents, acidic or alkali solutions to clean the panel surface.

## Returning the Device

Package the contents in the original packaging in the event that you need to return it for servicing.

## Contacting RuggON

For technical support, contact your distributor or the technical services department through the following website: [www.ruggon.com](http://www.ruggon.com)

