RUGGON

PX-501

User's Manual

RUGGPAD

©2015 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 3
Electrical Hazards 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
Technical Specifications 7
PX-501 Configuration Options 9
Parts List 10
Identifying the Device 11
Identifying the Digitizer 15
Dimensions 16
Touch Screen Features 17

Chapter 2. Getting Started

First Time Use 18
Charging the Battery 18
Powering the Device On and Off 19
Installing the Micro SIM Card 20
Removing the Micro SIM Card 21
Installing the MicroSD Card 22
Removing the MicroSD Card 23

Using the Digitizer 24
Removing the Protective Film from the Display.....25

Chapter 3. Operation

Opening the I/O Compartment Cover.....26
Closing the I/O Compartment Cover 27
Connecting to External Cabling.....28
Handstrap, Carrying Handle and Shoulder Strap.....30
Installing the Standard Battery 34
Removing the Standard Battery 35
Connecting to a Wireless Network 36

Chapter 4. Using BIOS Setup Utility

When to Use the BIOS Setup Utility.....38
Accessing the BIOS Setup Utility 38
Installation an Operating System.....39
BIOS Passwords 42
EC and BIOS.....44

Chapter 5. Using the DashON Utility

Overview.....49

Chapter 6. Troubleshooting

Troubleshoot the Wi-Fi Connection 62
Troubleshoot Operating the Computer 63
Call Product Support 63

Chapter 7. Maintenance

Cleaning the Device 64
Returning the Device.....64
Contacting RuggON 64

About This Manual

The PX-501 User's Manual provides instruction for qualified personnel to follow when setting up a new PX-501 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 adaptor 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 PX-501 rugged tablet is equipped with multi-functional terminals for stationary and 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 PX-501 is designed and manufactured according to strict controls and following the stated safety regulations. The following list identifies incorrect operating uses of the PX-501. Incorrect use of the PX-501 can lead to hardware damage, safety issues and possible risk to personnel health:

- The PX-501 is under operation by untrained personnel;
- The PX-501 is not maintained as recommended;
- The PX-501 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/Servicing: Power Off the PX-501

- Disconnect the PX-501 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 PX-501 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.

Environmental

Ambient Temperature

The PX-501 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 PX-501 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 PX-501 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 PX-501 can only be installed with permission.

Industrial computers may affect the function of implanted medical devices such as pacemakers and may cause malfunction.

Cleaning and Servicing

- Disconnect the PX-501 from power before cleaning or servicing.
- Never clean the PX-501 with compressed air, a pressure washer or a vacuum cleaner.
- If necessary, clean the housing of the PX-501 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. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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.

Any changes or modifications not expressly approved by the grantee of this device could void the user¡s authority to operate the equipment.

This device is operation in 5.15 - 5.25GHz frequency range, then restricted in indoor use only, Outdoor operations in the 5.15 - 5.25GHz is prohibit.

This device is slave equipment; the device is not radar detection and not ad-hoc operation in the DFS band.

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 Information (SAR)

This device meets the government¡s requirements for exposure to radio waves. This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government.

The exposure standard employs a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit set by the FCC is 1.6 W/kg. Tests for SAR are conducted using standard operating positions accepted by the FCC with the EUT transmitting at the specified power level in different channels.

The highest SAR value for the device as reported to the FCC is **1.18** W/kg when placed next to the body.

CE Marking

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. Please contact your local representative for ordering information.

This product has passed the CE test for environmental specifications. Test conditions for passing included the equipment being operated within an industrial enclosure. In order to protect the product from being damaged by ESD (Electrostatic Discharge) and EMI leakage, we strongly recommend the use of CE-compliant industrial enclosure products.

R&TTE

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC.
This device is classified as class 2 in Article 1(2) of Decision 2000/299/EC due to its capability of operating WLAN in the band 5.15 to 5.35 GHz.

CB

This device complies with

IEC 60950-1:2005+A1:2009+A2:2013

EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013

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 PX-501 is a rugged device equipped with 802.11, Bluetooth and GNSS for wireless data communications.

The PX-501 is a rugged 10.1” tablet computer capable of 1920 x 1200 resolution.

The PX-501 supports the following operating systems:

- Windows® Embedded 8.1 Industry 64bits
- Windows® Embedded Standard 7 64bits
- Windows® 7 Professional 64bits
- Windows® Embedded Standard 8 64bits

About This Guide

The PX-501 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 64.

Technical Specifications

Table 1. Technical Specifications

Item	Description
Display	10.1-inch LED Backlight, 1920 (W) x 1200 (H) WUXGA
Touch screen	10-point capacitive touch screen with digitizer
Brightness	1000 nits
CPU	Intel Core i5-4300U vPro 1.9 GHz
Operating System (Optional)	■ Windows® Embedded 8.1 Industry 64bits ■ Windows® Embedded Standard 7 64bits ■ Windows® 7 Professional 64bits ■ Windows® Embedded Standard 8 64bits
RAM	DDR3L@1600 MHz 4 GB RAM (optional: 8 GB)
Storage	mSATA SSD 120 GB (optional: 240 GB)
Battery	■ Standard hot swappable battery: 10.8V, 4500mAh, Li-polymer ■ Extended hot swappable battery: 10.8V, 9000 mAh, Li-polymer (optional)
Power Supply	AC 100V ~ 240V, 50~60Hz input; 19VDC@3.42A, 65W
Dimensions (W x H x L)	280 mm (11”) x 23 mm (0.9”) x 195 mm (7.7”)
Weight	1.36 kg (3 lbs)

Item	Description
Wireless	
WLAN	Wi-Fi IEEE 802.11 a/b/g/n/ac
Bluetooth	Bluetooth V4.0
WWAN (Optional)	Option for 3.5G or 4G LTE
Sensor	
Sensor	Gyroscope, G Sensor, E-compass, Light Sensor
I/O	
Docking Connector	12-pin
DC-IN Jack	x1
Micro SIM Card Slot	x1
MicroSD Slot	x1
Audio Jack	x1; headphone / microphone combo
USB 3.0	x1; type A
RS-232	x1
Micro HDMI	x1
Ethernet	x1
Security	
TPM	TPM 1.2
BIOS On/Off for I/Os	YES
Data Collection	
Camera	■ Front: 2.0 Mega-Pixels camera ■ Rear: 5.0 Mega-Pixels camera with LED auxiliary light and Auto-focus
GNSS	YES
NFC	Optional
Barcode Reader	Optional
Magnetic Stripe Reader	Optional
Smart Card Reader	Optional

Item	Description
Rugged Specifications	
Drop	153 cm (5 feet), 26 drops on plywood
MIL-STD 810G	■ Vibration (MIL-STD-810G Method 514.6 Category 4, Fig 514.6C-1, Fig 514.6C-2, Fig 514.6C-3) ■ Drop (MIL-STD-810G Method 516.6 Procedure IV) ■ Mechanical shock (MIL-STD-810G Method 516.6 Procedure I, Procedure V) ■ Operation and storage temperature (MIL-STD-810G Method 501.5 and 502.5) ■ Humidity MIL-STD-810G Method 507.5 Humidity Procedure II Aggravated Cycles (Fig 507.5-7)
IP rating	IP65
Operating Temperature Range	-20°C (-4°F) to 60°C (140°F)
Storage Temperature Range	-30°C (-22°F) to 70°C (158°F)
Humidity	5-95% without condensation

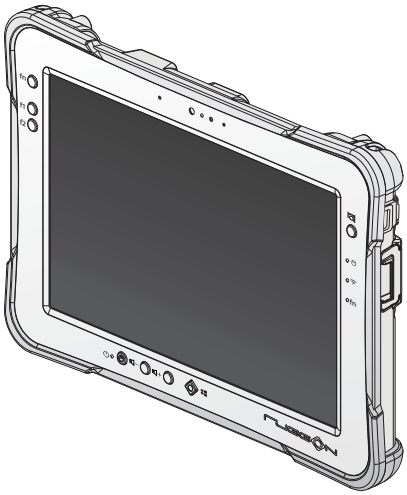
PX-501 Configuration Options

The following options are available for the PX-501:

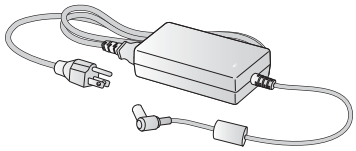
- NFC module
- Barcode reader
- Smart card reader
- High capacity battery
- 3.5G or 4G LTE

Parts List

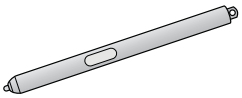
The PX-501 is shipped with the following items. All other accessories are sold and ordered separately. For help, contact your local RuggON sales representative. See *“Contacting RuggON”* on page 64.



PX-501

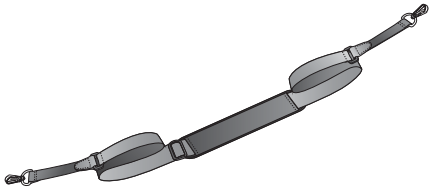


Power Adapter

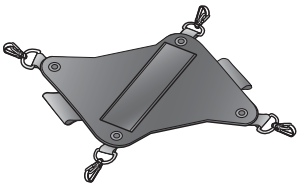


Digitizer

2-Point Carrying Handle



2-Point Shoulder Strap



4-Point Handstrap

Hitch D-rings
(Attaching straps)

Identifying the Device

Overview

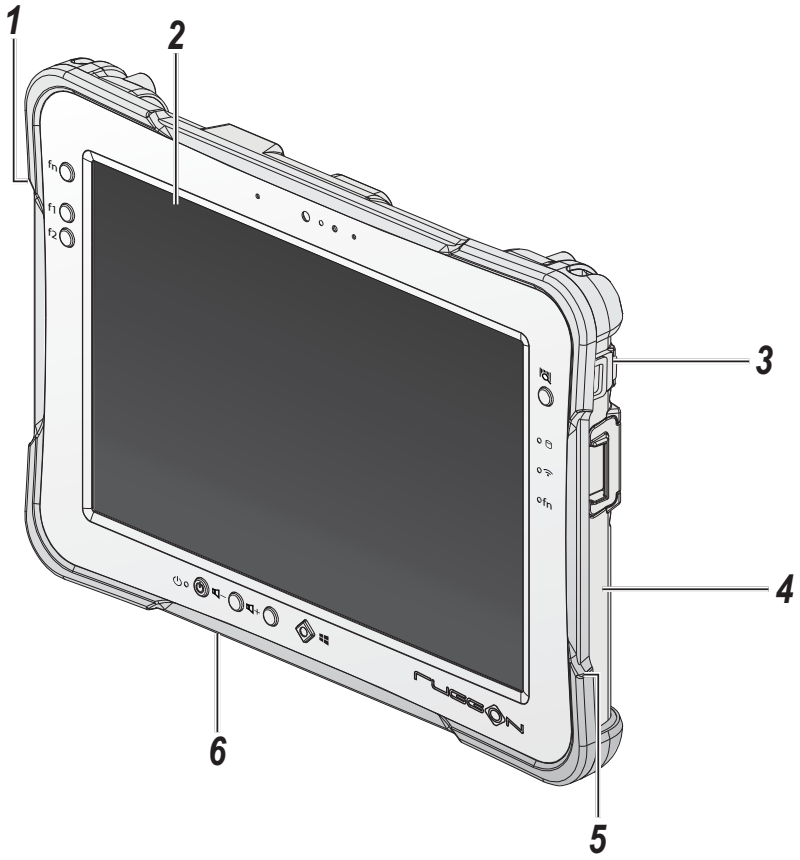


Figure 1. Overview

Table 2. Overview

No	Item	Description
1	Left view	See *"Side View"* on page 14 for further information.
2	Front view	See *"Front View"* on page 12 for further information.
3	Rear view	See *"Rear View"* on page 15 for further information.
4	Right view	See *"Side View"* on page 14 for further information.
5	Rubber bumpers	Easy to grip rubber bumpers enable the rugged tablet to withstand shocks and drop for use in demanding environments.
6	Bottom view	See *"Bottom View"* on page 13 for further information.

Front View

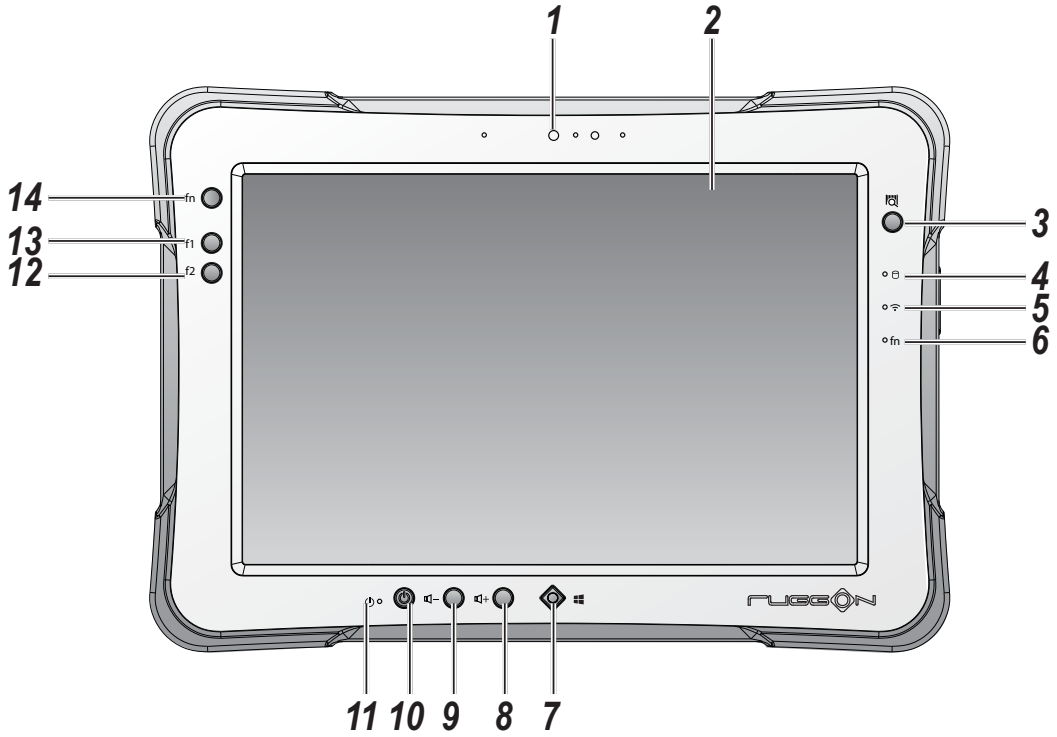


Figure 2. Front View

Table 3. Front View

No	Item	Description
1	Front camera	2.0 Mega-Pixels camera.
2	Touch screen	5-point capacitive touch.
3	Barcode trigger	If barcode scanner is installed, press to scan.
4	Battery LED	Display battery status, see *"LED Status"* on page 13.
5	Wi-Fi LED	The Wi-Fi LED lights to indicate Wi-Fi is enabled.
6	FN LED	The FN LED lights when the function switch on.
7	Home key	Windows® 8 home key.
8	Volume +	Volume increase.
9	Volume -	Volume decrease.
10	Power key	Turns the PX-501 on or off.
11	Power LED	The power LED lights when the device is on.
12	F2 key	Programmable function key.
13	F1 key	Programmable function key.
14	FN key	Programmable function key.

LED Status

Table 4. LED Status

Item	Status	Description
Power	Green: On	Power on
	Off	Power off
Battery	Green: On	Fully charged
	Amber: On	Charging
	Amber: Blinking	Low power < 15%
	Off	Not charging / no battery
FN	Blue: On	FN function switch on
	Blue: Off	FN function switch off
Wi-Fi	Blue: On	Wi-Fi on
	Blue: Off	Wi-Fi off

Bottom View

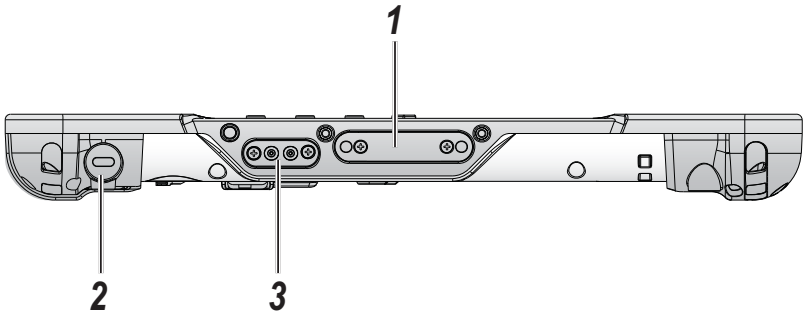


Figure 3. Bottom View

Table 5. Bottom View

No	Item	Description
1	Docking connector	12 pin connector for docking onto a station.
2	Kensington lock	Lock the PX-501 to a stationary object for security.
3	Pass-through	Dual pass-through for WLAN, GNSS and WWAN.

Side View

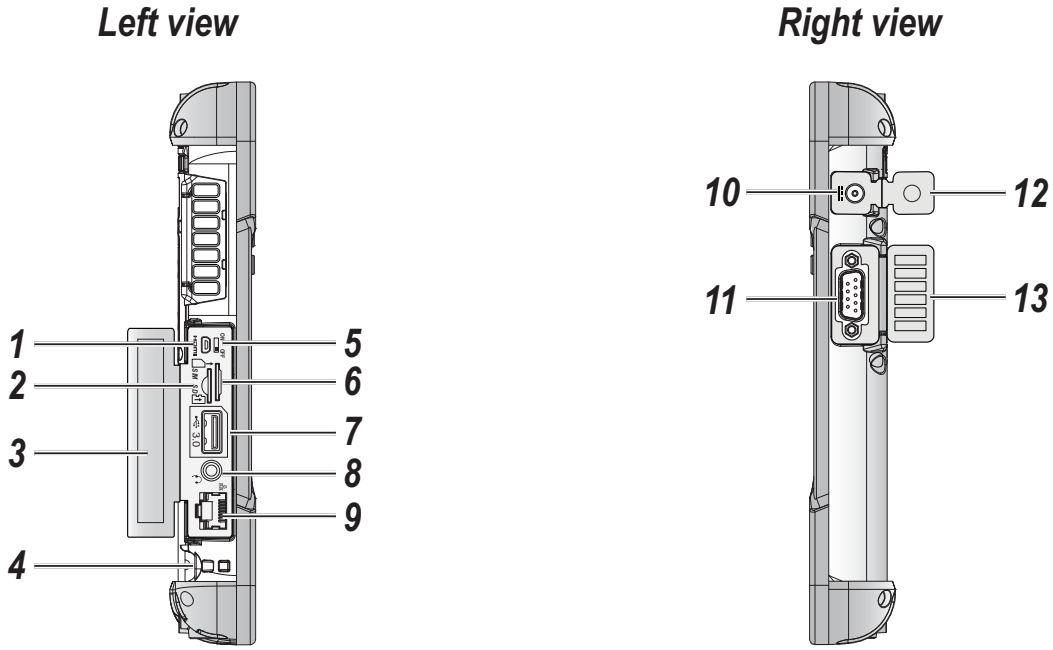


Figure 4. Side Views

Table 6. Side View

No	Item	Description
1	Micro HDMI	Connect HDMI devices to the PX-501.
2	MicroSD slot	Insert microSD card in to the slot.
3	Left I/O compartment cover	Open to access the left I/O ports.
4	Tether hole	Digitizer can be tethered to it.
5	Battery switch	Switch to ON to provide power from the backup battery.
6	Micro SIM slot	Insert micro SIM card for 3G or 4G LTE communication function.
7	USB 3.0	Connect USB devices to the PX-501.
8	Audio jack	Connect a 3.5 mm jack for a headphone or external speakers.
9	Ethernet	Connect the PX-501 to an Ethernet (RJ-45) cable.
10	DC-IN jack	Insert power connector to charge battery.
11	RS-232	Connect the PX-501 to a serial device.
12	DC-IN cover	Open to access the DC-IN jack.
13	Right I/O compartment cover	Open to access the right I/O port.

Rear View

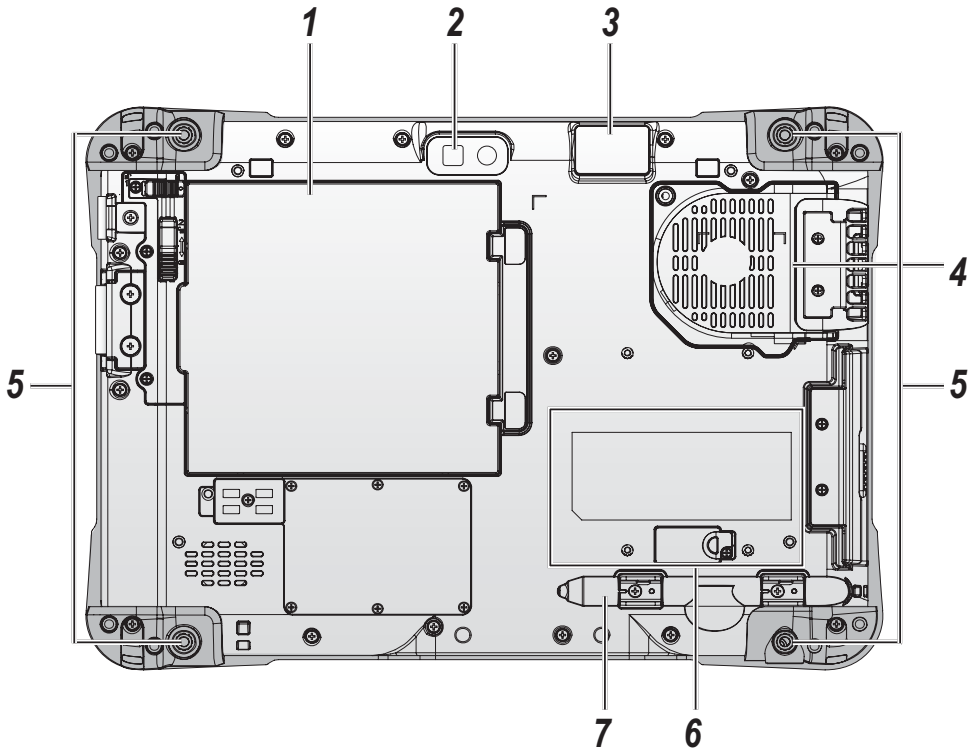


Figure 5. Rear View

Table 7. Rear View

No	Item	Description
1	Battery	To install a battery, an external battery is optional.
2	Rear camera	5.0 Mega-Pixels camera with LED auxiliary light.
3	Barcode reader	For installing a barcode reader. (Optional)
4	Fan	Embedded fan for cooling.
5	Securing holes	Secure the bumpers and the D-rings for the handstrap and shoulder strap.
6	Expansion bay	Remove the cover to find the expansion accessory connector.
7	Digitizer holder	Place digitizer here.

Identifying the Digitizer

You can use the digitizer to control your PX-501 as with a mouse or keyboard.

The digitizer is not waterproof. Take care not to soak it or dip it in water.

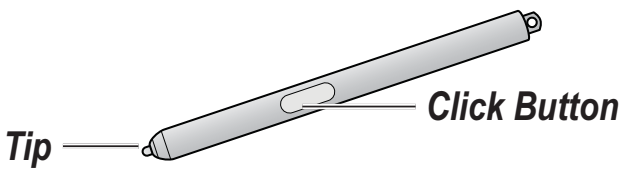


Figure 6. Digitizer View

Dimensions

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

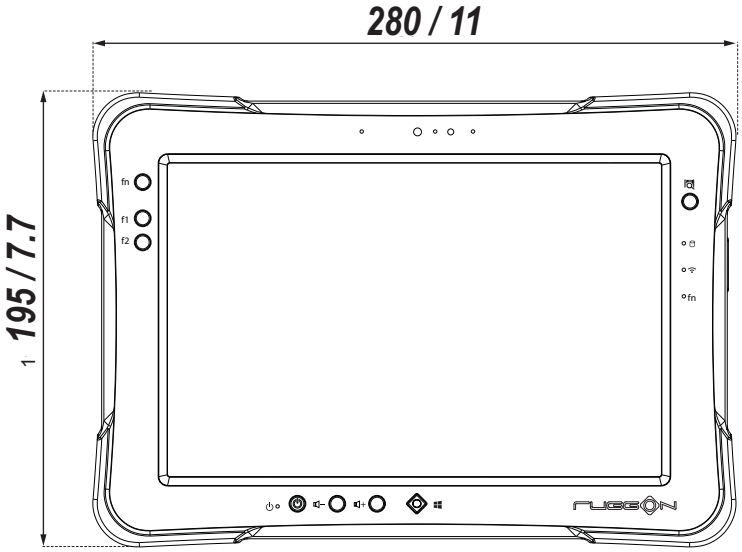


Figure 7. Front View Dimensions

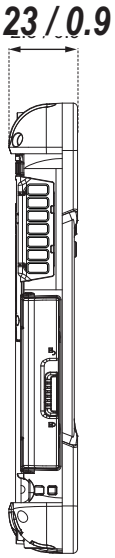


Figure 8. Side View Dimensions

Touch Screen Features

Always use the point of the digitizer for clicking or making strokes on the touch screen.

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

The digitizer is used as if it were a pen or pencil. Touch the screen with the tip of the digitizer then remove the digitizer from the screen.

After each use, replace the digitizer in the digitizer holder for proper care and to preserve the life of the digitizer.

Using a digitizer is similar to moving the mouse pointer then left-clicking icons on a desktop computer screen.

The following actions are available through the use of the digitizer:

- 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.

A digitizer replacement kit is available.

To prevent damage or malfunction, always dry the touch screen when wet.

Chapter 2. Getting Started

This section provides an outline of the steps necessary to setup a new PX-501. A detailed guide follows the listed items, see as follows.

For additional technical assistance, contact your RuggON representative. See *"Contacting RuggON"* on page 64.

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.

First Time Use

1. Open the left I/O compartment cover. See *"Opening the I/O Compartment Cover"* on page 26.
2. Switch the switch to the ON position.

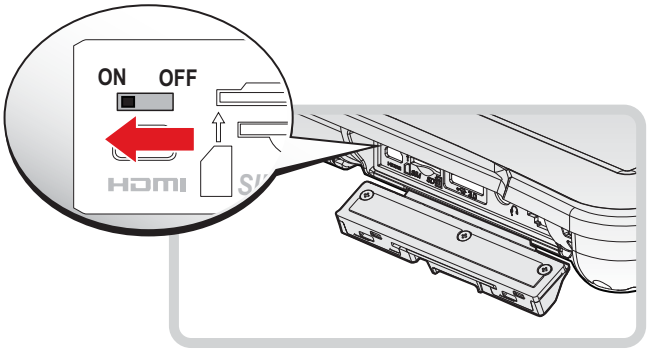


Figure 9. Switching the Battery Switch

3. Close the left I/O compartment cover. See *"Closing the I/O Compartment Cover"* on page 27.

Charging the Battery

When you use the AC adapter to connect your PX-501 to a power outlet, the standard 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. Flip open the DC-IN cover to expose the DC-IN jack.

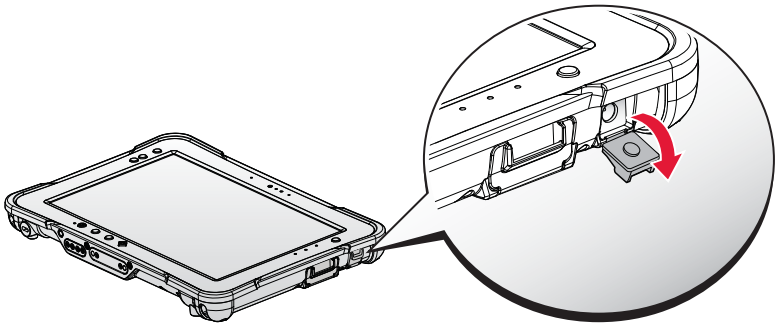


Figure 10. Opening the DC-IN Cover

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

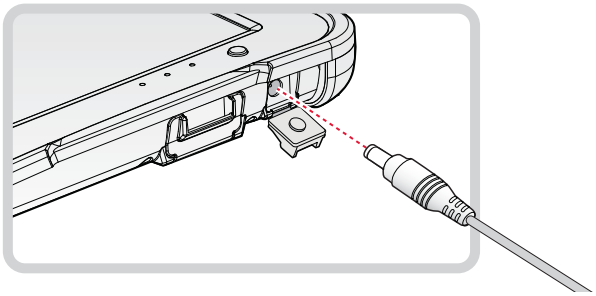


Figure 11. Connecting the AC Adapter

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

1. Insert one end of the cover first and angle the cover to seat it in place.
2. Push in the cover to seal the DC-IN compartment.

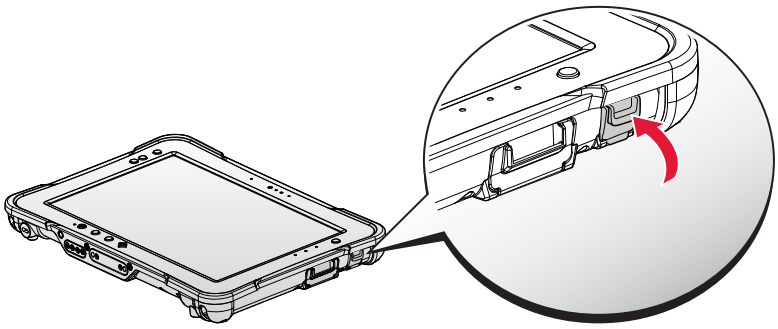


Figure 12. Closing the DC-IN Cover

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

Powering the Device On and Off

Powering On the Device

Only power on the PX-501 after connecting all of the peripherals and cabling.

1. Press and hold the power button until the screen lights. The device runs through the start up sequence and powers up.

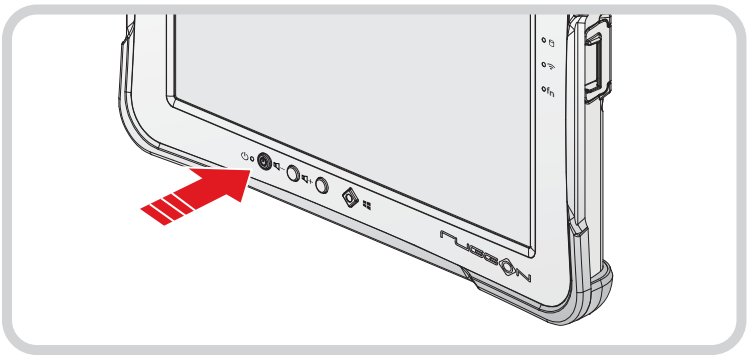


Figure 13. Power On the PX-501

Powering Off the Device

- Start screen:

  Tap ⏻ > **Shut down**.

- Desktop screen:

  1. Tap and hold ⊞ at the bottom left corner of the Desktop screen.
  2. Tap **Shut down or sign out** > **Shut down**.

- Both Start screen and Desktop screen:

  1. Display charm bar and tap **Settings**.
  2. Tap **Power** > **Shut down**.

Installing the Micro SIM Card

The device includes a micro SIM card 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 PX-501. See *"Powering Off the Device"* on page 20.
2. Open the left I/O compartment cover. See *"Opening the I/O Compartment Cover"* on page 26.
3. Locate the micro SIM slot in the left I/O parts.

Left view

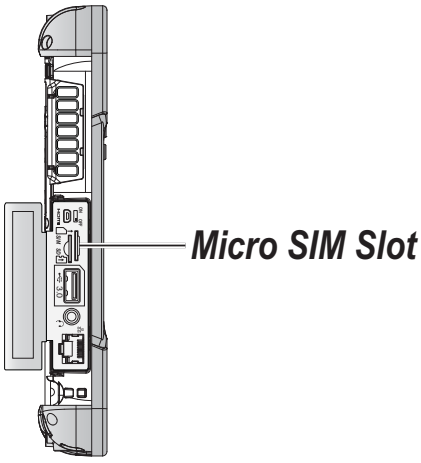


Figure 14. Left View: Locating the Micro SIM Slot

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

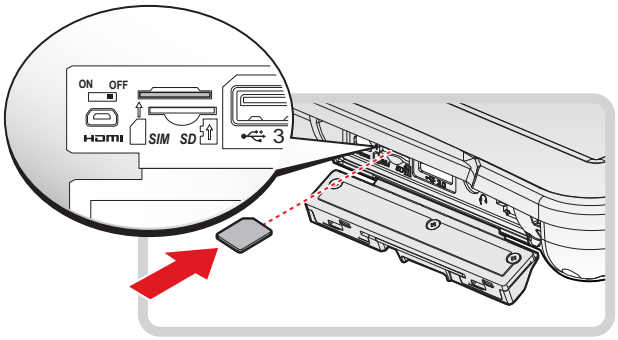


Figure 15. Installing the Micro SIM Card

7. Close the left I/O compartment cover. See *"Closing the I/O Compartment Cover"* on page 27.

Removing the Micro SIM Card

1. Power off the PX-501. See *"Powering Off the Device"* on page 20.
2. Open the left I/O compartment cover. See *"Opening the I/O Compartment Cover"* on page 26.
3. Locate the micro SIM slot in the left I/O parts.

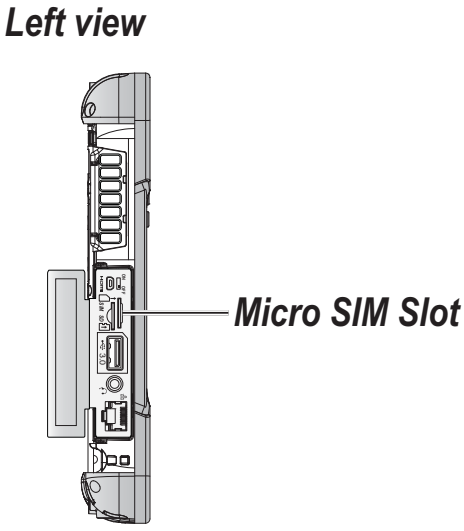


Figure 16. Left View: Locating the Micro SIM Slot

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

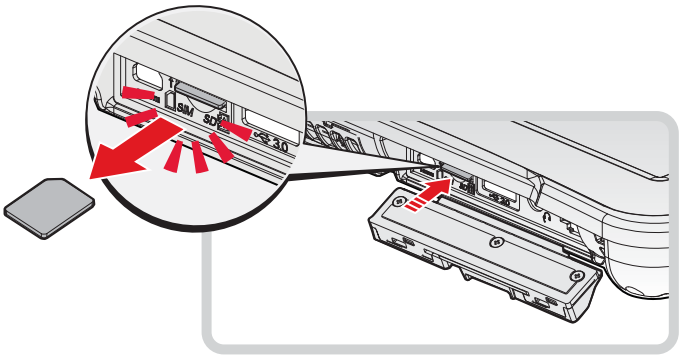


Figure 17. Removing the Micro SIM Card

6. Close the left I/O compartment cover. See *"Closing the I/O Compartment Cover"* on page 27.

Installing the MicroSD Card

The device supports microSD card for easier data storage.

1. Open the left I/O compartment cover. See *"Opening the I/O Compartment Cover"* on page 26.
2. Locate the microSD slot in the left I/O parts.

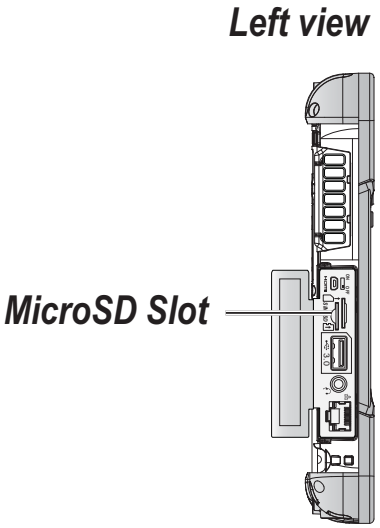


Figure 18. Left View: Locating the MicroSD Slot

3. The microSD card has a beveled edge. Align the microSD card with the slot making sure that the corners match.
4. Insert the microSD card and press it in until an audible click sounds.

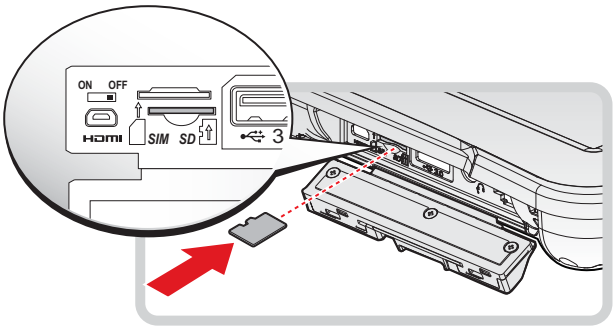


Figure 19. Installing the MicroSD Card

5. Close the left I/O compartment cover. See *"Closing the I/O Compartment Cover"* on page 27.

Removing the MicroSD Card

1. Open the left I/O compartment cover. See *"Opening the I/O Compartment Cover"* on page 26.
2. Locate the microSD slot in the left I/O parts.

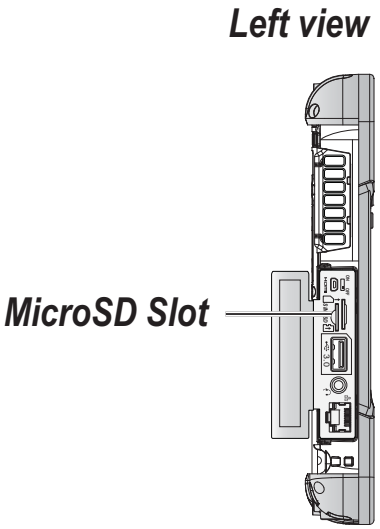


Figure 20. Left View: Locating the MicroSD Slot

3. Press the microSD card in and release it. The card springs out.
4. Grasp the microSD card and remove it from the slot.

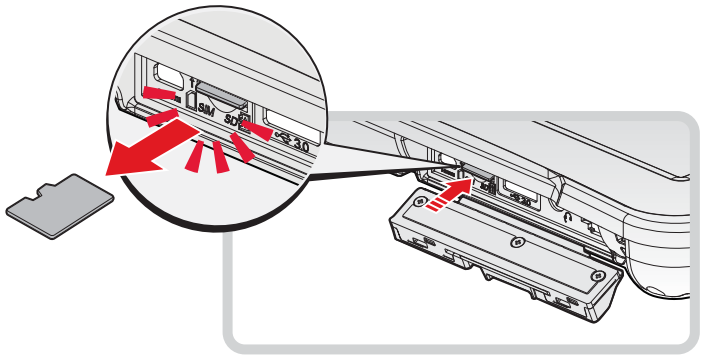


Figure 21. Removing the MicroSD Card

5. Close the left I/O compartment cover. See *"Closing the I/O Compartment Cover"* on page 27.

Using the Digitizer

Following the information below when using a digitizer:

- Use only the included digitizer to touch the screen. Do not place any objects on its surface and do not press down strongly with sharp-pointed or hard objects that may leave marks (e.g., nails, pencils and ball point pens).
- Use the digitizer only for touching the screen. Using it for any other purpose may damage the digitizer and result in scratches on the screen.
- The digitizer uses electromagnetic induction and may not work properly near strong electrical field or magnetic field such as:
  - Near AM radio base stations or relay station antennas
  - Near CRT displays that generate strong electromagnetic field noise

  Move the digitizer away from such locations so it works properly.
- The pointer cannot follow the digitizer movement if you move the digitizer too quickly.

To make a selection, tap the screen once with the digitizer. To double-click, tap twice without pausing. To do a right-click, tap the screen once and hold the tip of the digitizer on the screen, the right-click icon appears. Press the click button is the same as a right click.

Removing the Protective Film from the Display

The front display of the PX-501 is protected during transport by a transparent film. This film should remain on the front display during assembly to avoid damage to the front display surface.

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

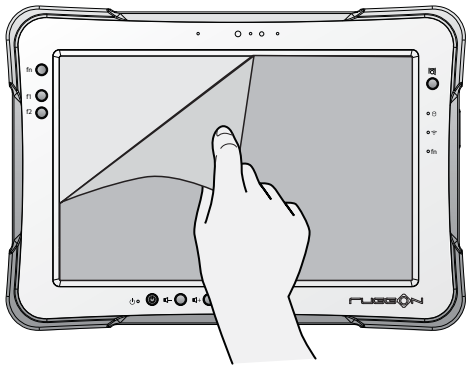


Figure 22. Removing the Protective Film

Chapter 3. Operation

Opening the I/O Compartment Cover

1. Place the device display side down on a clean work surface.
2. Locate the I/O compartment cover.

Figure 23. Side View: Locating the I/O Compartment Cover

3. Unlock the latch. (Only available for the left I/O compartment cover)

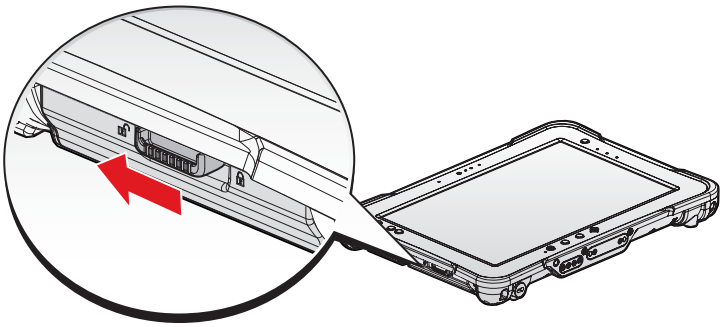


Figure 24. Unlocking the Latch

4. Pull out the I/O compartment cover.

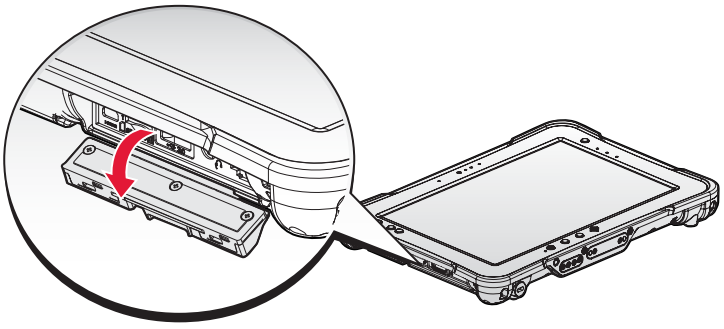


Figure 25. Openin the I/O Compartment Cover

Closing the I/O Compartment Cover

1. Place the device display side down on a clean work surface.
2. Locate the I/O compartment cover.

Figure 26. Side View: Locating the I/O Compartment Cover

3. Flip the I/O compartment cover and install.

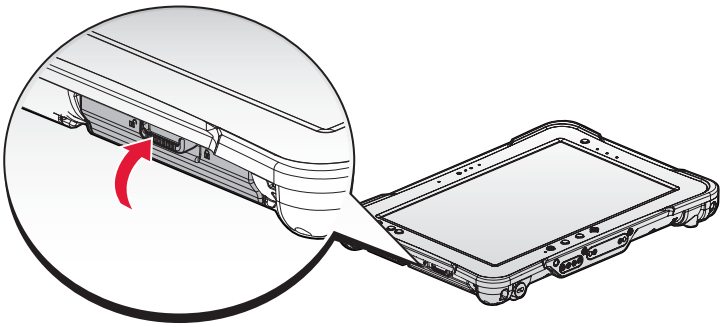


Figure 27. Installing the I/O Compartment Cover

4. Lock the latch. (Only available for the left I/O compartment cover)

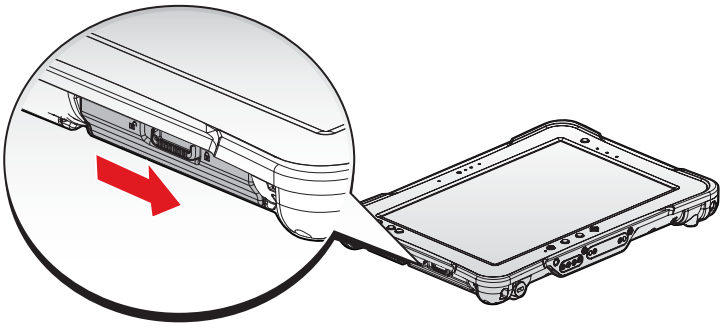


Figure 28. Locking the Latch

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

Connecting to External Cabling

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

Connect USB Cabling

The PX-501 have one USB port for connecting USB devices, such as a digital camera, scanner, printer, modem, and mouse. The USB port support USB 2.0 or USB 3.0 devices.

1. Open the left I/O compartment cover. See *"Opening the I/O Compartment Cover"* on page 26.
2. Connect to USB device via USB cable.

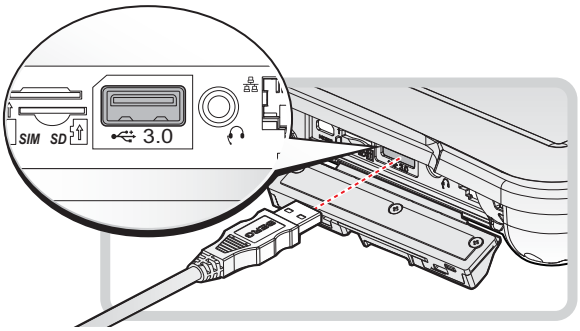


Figure 29. Connect USB Cabling

Connect Ethernet Cabling

The PX-501 provide have a Ethernet port for connecting Ethernet.

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

1. Open the left I/O compartment cover. See *"Opening the I/O Compartment Cover"* on page 26.
2. Connect LAN cable to Ethernet port on the PX-501.

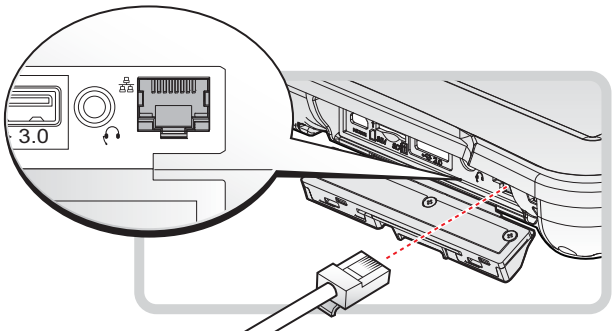


Figure 30. Connect Ethernet cabling

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 left I/O compartment cover. See *"Opening the I/O Compartment Cover"* on page 26.
2. Connect the audio cable.

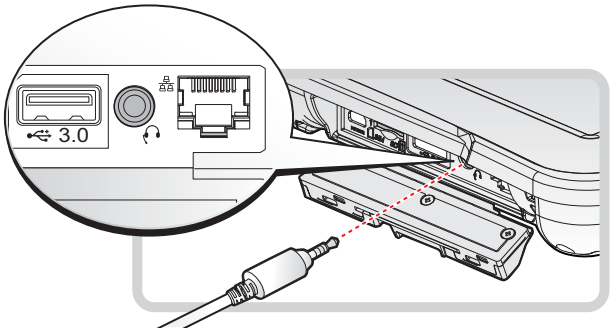


Figure 31. Connect Audio Cabling

Connect Micro HDMI Cabling

Connect to HDMI devices via micro HDMI cable.

1. Open the left I/O compartment cover. See *"Opening the I/O Compartment Cover"* on page 26.
2. Connect micro HDMI cable to micro HDMI port on the PX-501.

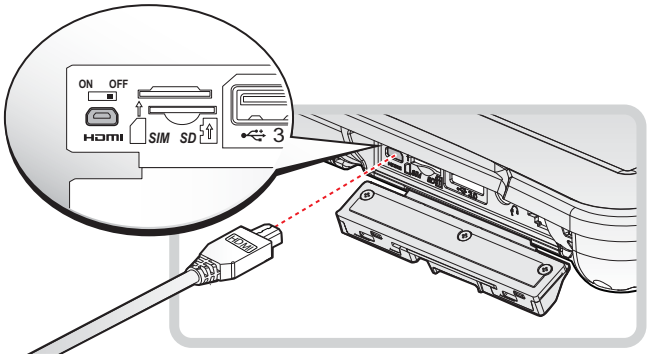


Figure 32. Connect Micro HDMI Cabling

Connect RS-232 Cabling

Connect to RS-232 devices with an RS-232 cable.

1. Open the right I/O compartment cover. See *"Opening the I/O Compartment Cover"* on page 26.
2. Align the RS-232 cable with the port in the device and connect it.
3. Turn the locking screws on the cable to secure it to the device.

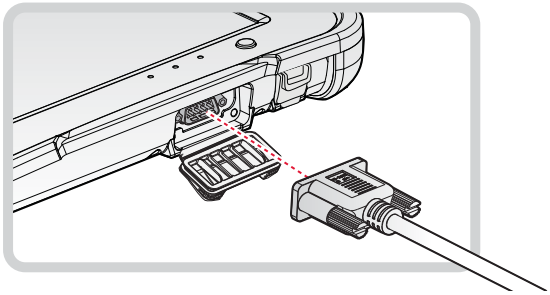


Figure 33. Connect RS-232 Cabling

Handstrap, Carrying Handle and Shoulder Strap

The PX-501 is equipped with a handstrap, a carrying handle and a shoulder strap for convenience and choice. Select the accessory that is right for your needs.

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

For more information, see *"Connecting the Handstrap"* on page 30, *"Connecting the Carrying Handle"* on page 33 and *"Connecting the Shoulder Strap"* on page 33.

Connecting the Handstrap

1. Remove the screws securing the bumpers.

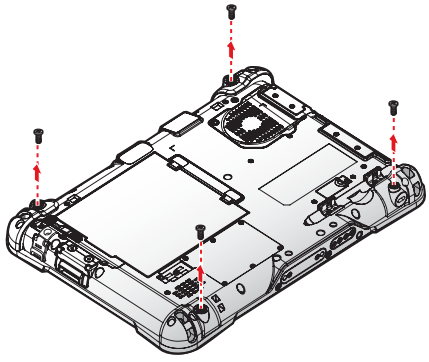


Figure 34. Removing the Screws

2. Install the D-rings.

Make sure the D-rings are tightly secured before installing the handstrap.

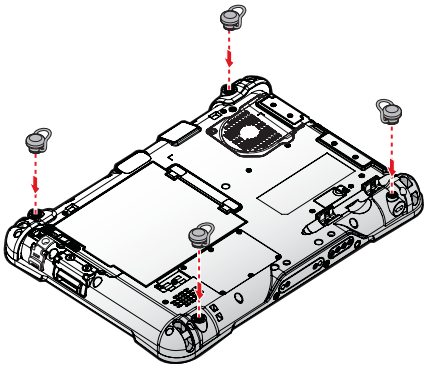


Figure 35. Installing the D-rings

3. Connect the handstrap on the D-rings.

When the handstrap is installed, the digitizer can be placed under the strap.

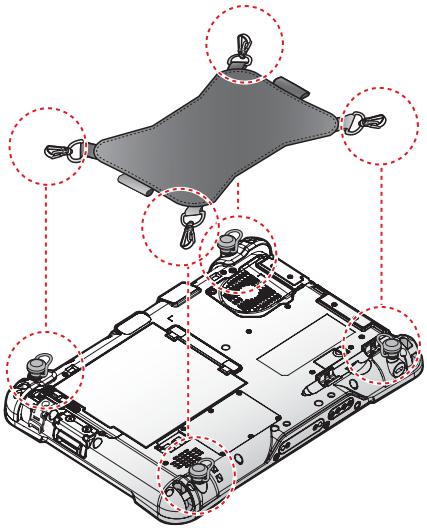


Figure 36. Connecting the Handstrap

Removing the Handstrap

1. Unlock the handstrap from the D-rings.

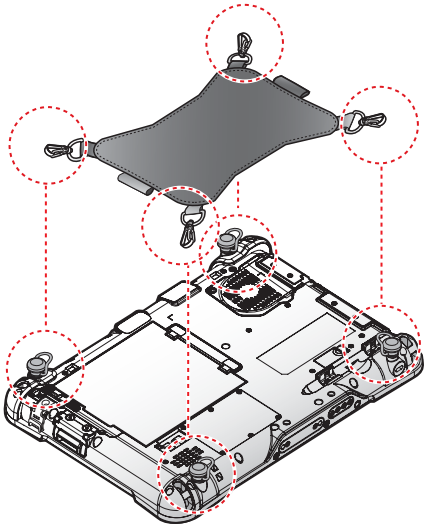


Figure 37. Removing the Handstrap

2. Remove the D-rings.

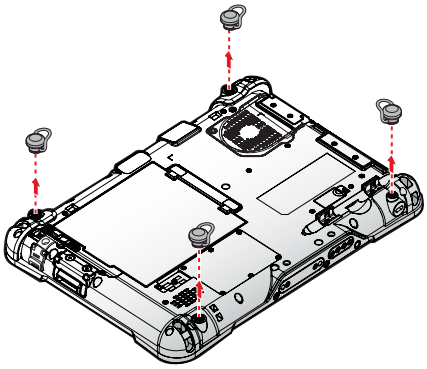


Figure 38. Removing the D-rings

3. Secure the bumper and the PX-501 with screws.

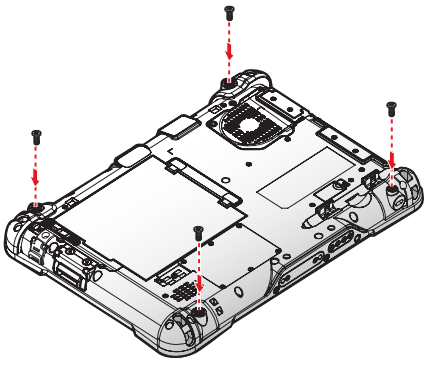


Figure 39. Securing the Screws

Connecting the Carrying Handle

1. Attach the clips to the metal loop on the bumper.

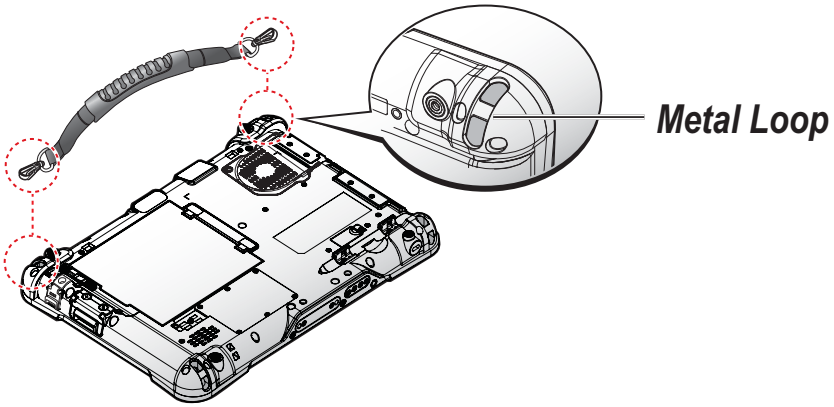


Figure 40. Connecting the Carrying Handle

Removing the Carrying Handle

1. Press in the clips to release them from the metal loop.
2. Remove the clips.

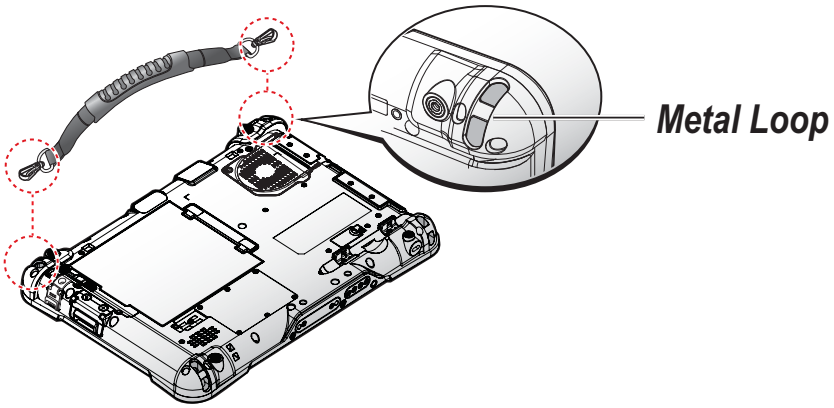


Figure 41. Removing the Carrying Handle

Connecting the Shoulder Strap

1. Attach the clips to the metal loop on the bumper.

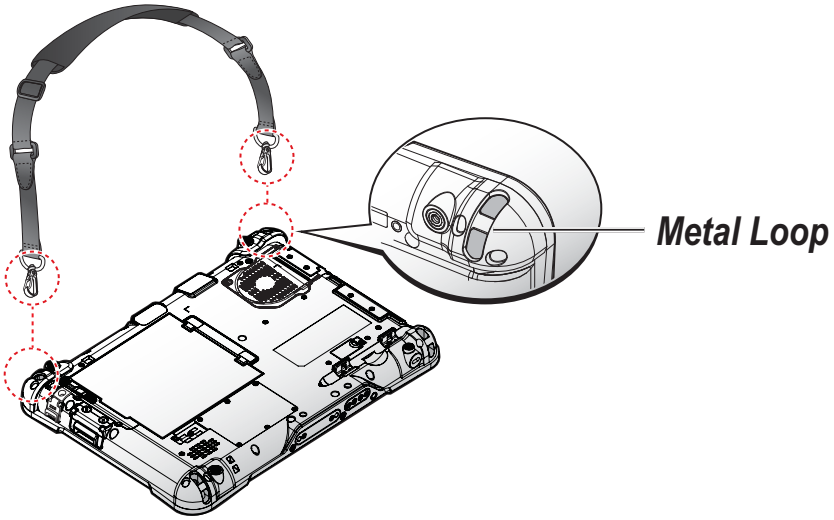


Figure 42. Connecting the Shoulder Strap