



PM-522

User's Manual



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About This Manual

The PM-522 User's Manual provides instruction for qualified personnel to follow when setting up a new PM-522 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 PM-522 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 throughoughly 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 PM-522 is designed and manufactured according to strict controls and following the stated safety regulations. The following list identifies incorrect operating uses of the PM-522. Incorrect use of the PM-522 can lead to hardware damage, safety issues and possible risk to personnel health:

- The PM-522 is improperly or incorrectly installed;
- The PM-522 is under operation by untrained personnel;
- The PM-522 is not maintained as recommended;
- The PM-522 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

Installing Easy-access Separators

The PM-522 is not equipped with separators (switches) that are accessible from the outside. To quickly disconnect the device from the power supply in emergencies:

Install an easy-access separator such as a switch or circuit breaker close to the device;

Ensure that the separator separates all power cables.

Only connect to SELV Circuits

The PM-522 should only be connected to Safety Extra Low Voltage (SELV) circuits.

- Do not connect/disconnect any cables during thunderstorms;
- Do not connect/disconnect the PM-522 cables during thunderstorms.

Cleaning/Service: Power Off the PM-522

- Disconnect the PM-522 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.

Laying Cables

- Cables must be laid in accordance with local and state regulations.
- Ensure that the power cable is laid properly and properly secured.

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 PM-522 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 the PM-522 is installed on a mounting bracket, make sure all mounting equipment meets with safety and regulatory standards to prevent damage to the hardware or injury.
- If installing in a fixed location, it is advised to properly secure the device to prevent loss of the device.

Environmental

Ambient Temperature

The PM-522 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 PM-522 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 PM-522 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 PM-522 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 PM-522 from power before cleaning or servicing.
- Never clean the PM-522 with compressed air, a pressure washer or a vacuum cleaner.
- If necessary, clean the housing of the PM-522 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 **0.57** 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.

CB

This device complies with the IEC 60950-1:2005+A1.

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 PM-522 is a rugged. The device is equipped with 802.11, Bluetooth, GPS and GLONASS for wireless data communications.

The PM-522 is a rugged 10.4” tablet computer capable of 1024 x 768 resolution.

The PM-522 supports the following operating systems:

- Windows® 8.1 Industry Professional
- Windows® 7 Professional
- Windows® Embedded Standard 8
- Windows® Embedded Standard 7 Professional
- Linux (by project support)

About This Guide

The PM-522 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.

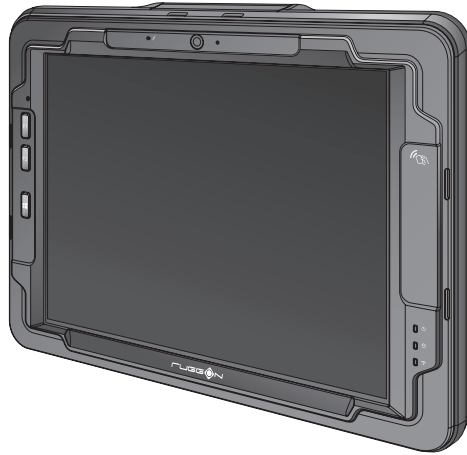
Unpacking the Device

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 72.

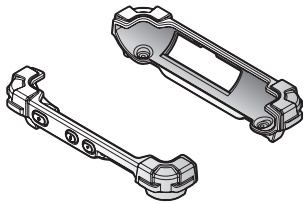
Parts List

The standard items is as following.

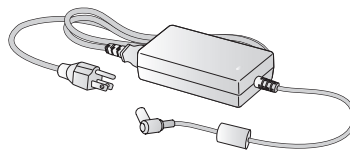
The PM-522 does not ship with any accessories. All accessories are sold and ordered separately. For help, contact your local RuggON sales representative. See “*Contacting RuggON*” on page 72.



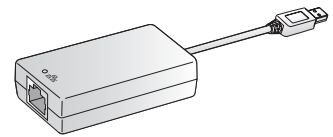
PM-522



Rubber Bumpers



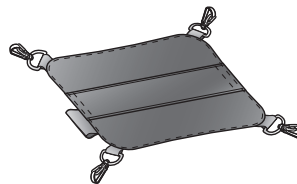
Power Adapter



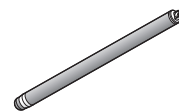
Mini USB to RJ45 Dongle



2-Point Shoulder Strap



4-Point Handstrap



Stylus



Hitch D-rings
(Attaching straps)

Technical Specifications

Table 1. Technical Specifications

Item	Description
Display	10.4-inch LED Backlight, 1024 (W) x 768 (H) XGA
Touch screen	10-finger Capacitive Touch Screen
Brightness	700nits
CPU	Intel® Atom™ Bay Trail-I E3827; 1.75GHz (8W)
Operating System	Windows® 8.1 Embedded Pro 64bits
RAM	DDR3L@1333MHz 4GB RAM
Storage	mSATA SSD 64GB (option for 128GB/256GB)
Battery	<ul style="list-style-type: none"> ■ Internal unswappable battery: 7.4V 3800mAh Li-polymer ■ External hot swappable battery: 7.4V 4200mAh Li-polymer (optional)
Power Supply	AC 100V ~ 240V, 50~60Hz input; 19VDC@3.42A, 65W, 19DC-in
Dimensions (W x H x L)	203.6 mm (8") x 26.5 mm (1.04") x 275.4 mm (10.84")
Weight	1.1 kg (2.43 lbs)
Wireless	
WLAN	Wi-Fi IEEE 802.11 a/b/g/n/ac
Bluetooth	Bluetooth Bluetooth 2.1EDR, 3.0+HS, 4.0
WWAN (Optional)	<ul style="list-style-type: none"> ■ Sierra MC9090 (3G NA SKU) ■ Sierra MC7304 (LTE EU SKU)/MC7354 (LTE NA SKU) ■ Dual Antenna Design support both 3.5G & LTE
Sensor	
Light Sensor	x1
G Sensor	x1
I/O	
Docking Connector	32-pin
DC-IN Jack	x1
Micro SIM Card Slot	x1
Audio Jack	x1; Headphone / Microphone combo
USB 2.0	x1; Type A
USB 3.0	x1; Type A
Ethernet	x1; Mini USB to RJ45 dongle
Security	
TPM	TPM 1.2
BIOS On/Off for I/Os	Yes

Item	Description
Data Collection	
GPS	YES
NFC	YES
Camera	<ul style="list-style-type: none"> ■ Front: 2.0 Mega-Pixels camera ■ Rear: 5.0 Mega-Pixels camera with LED auxiliary light and Auto-focus
Barcode Scanner	Optional snap-on module
Mag Stripe Reader	Optional snap-on module
Smart Card Reader	Optional snap-on module
Rugged Specifications	
Drop	183 cm (6 feet), 26 drops on plywood
MIL-STD 810G	<ul style="list-style-type: none"> ■ 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 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

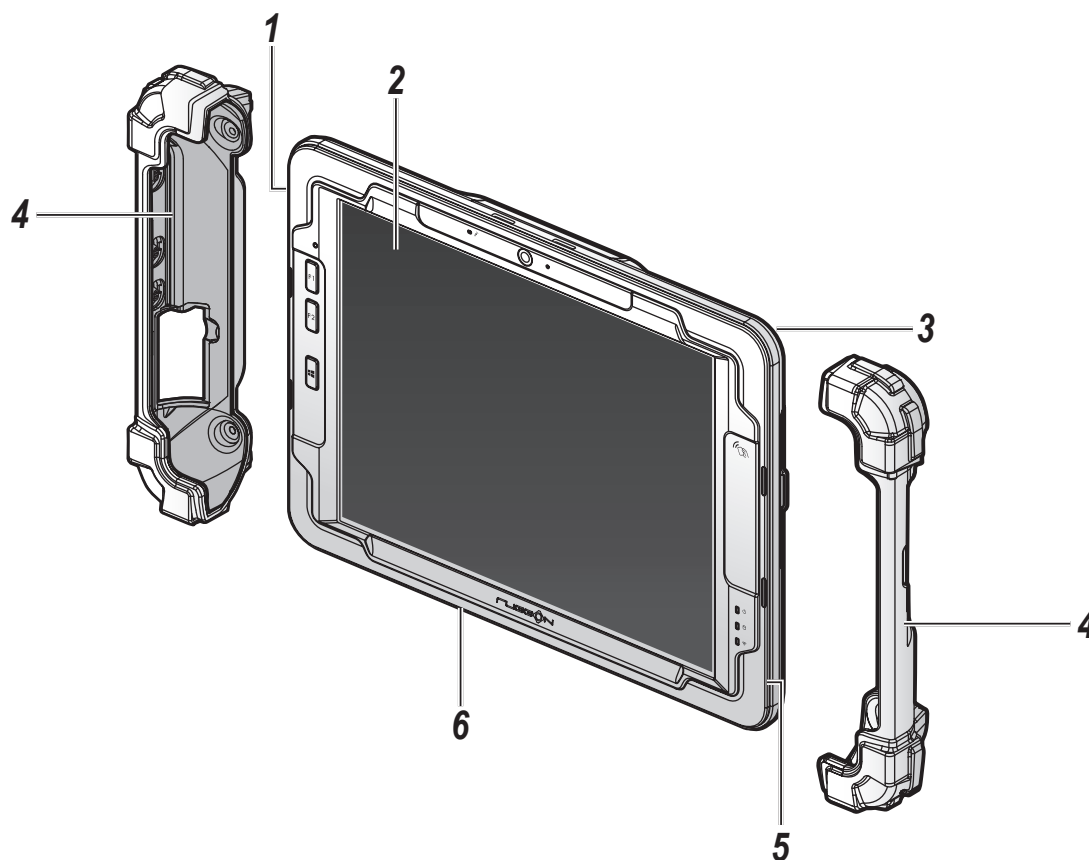


Table 2. Overview

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	Rubber bumpers	Easy to grip rubber bumpers enable the rugged tablet to withstand shocks and drop for use in demanding environments.
5	Right view	See “ <i>Side View</i> ” on page 14 for further information.
6	Bottom view	See “ <i>Bottom View</i> ” on page 13 for further information.

Front View

Figure 2. Front View

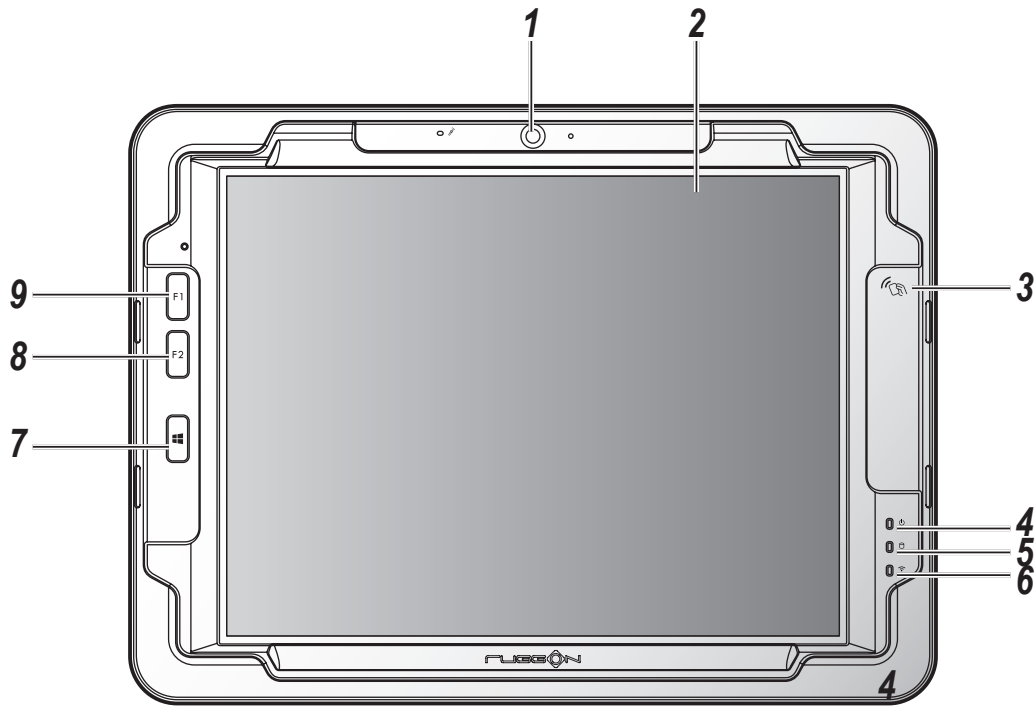


Table 3. Front View

No	Item	Description
1	Front camera	2.0 Mega-Pixels camera.
2	Touch screen	10 finger capacitive touch.
3	NFC sensing area	For detecting NFC devices.
4	Power LED	The Power LED lights when the device is on or when the battery is being charged.
5	Storage LED	The Storage LED lights when the device is working.
6	Wi-Fi LED	The Wi-Fi LED lights to indicate Wi-Fi is enabled.
7	Home key	Windows® 8 home key.
8	F2 key	Programmable function key.
9	F1 key	Programmable function key. Note: If Barcode Scanner is installed, press F1 key to scan.

LED Status

Table 4. LED Status

Item	Status	Description
Power	Green: On	Power on / not charging
	Green: Blinking	Sleep mode / not charging
	Green: Off	Power off
	Amber: On	Power on / charging
	Amber: Blinking	Sleep mode or power off but charging
Storage	White: On	Accessing SSD
	White: Off	No activity
Wi-Fi	White: On	Wi-Fi on
	White: Off	Wi-Fi off

Bottom View

Figure 3. Bottom View

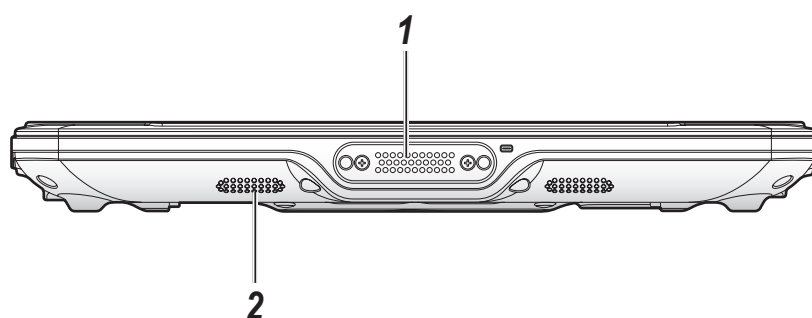


Table 5. Bottom View

No	Item	Description
1	Docking connector	32 pin connector for docking onto a station.
2	Speakers	1 x 2W waterproof speakers.

Side View

Figure 4. Side Views

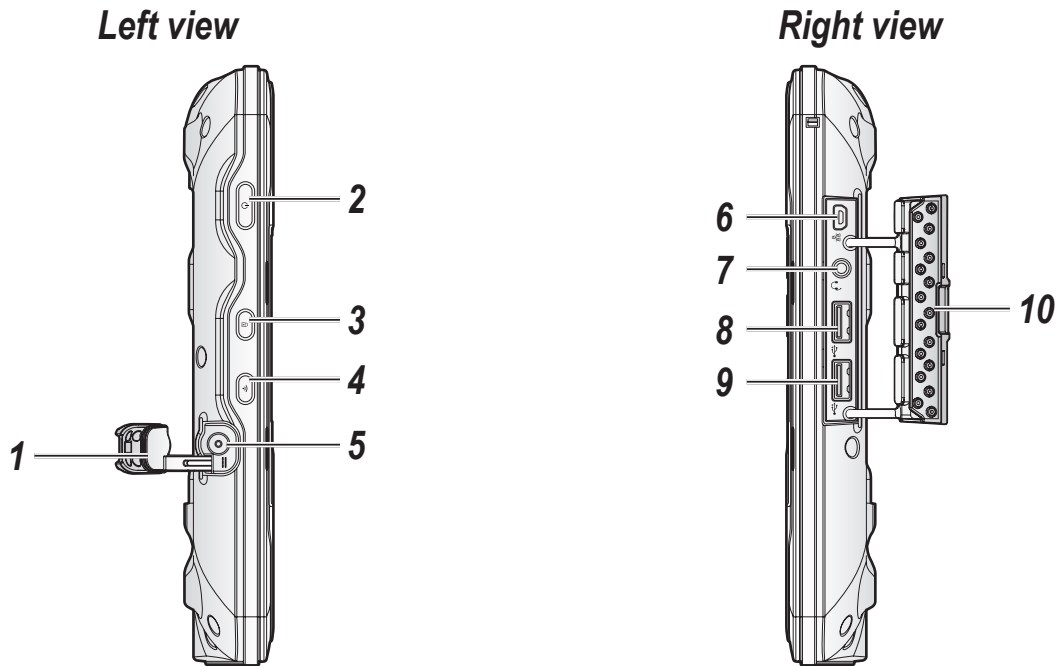


Table 6. Side View

No	Item	Description
1	DC-IN cover	Open to access the DC-IN jack.
2	Power key	Turns the PM-522 on or off.
3	Lock key	Lock all the keys except for the Power and Lock keys.
4	RF setting key	Show Windows 8 Charm Bar.
5	DC-IN jack	Insert power connector to charge battery.
6	Mini USB	Connect to Ethernet via mini USB to RJ45 dongle.
7	Audio jack	Connect a headphones or external speakers.
8	USB 3.0	Connect USB devices to the PM-522.
9	USB 2.0	Connect USB devices to the PM-522.
10	I/O compartment cover	Open to access the I/O ports.

Rear View

Figure 5. Rear View

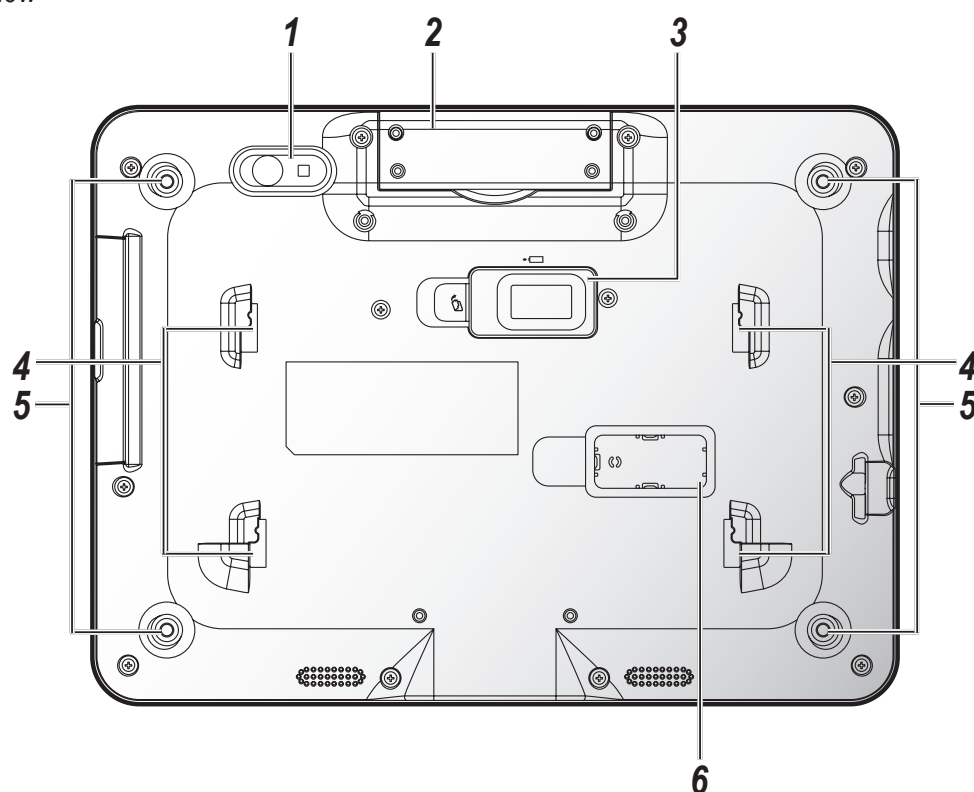


Table 7. Rear View

No	Item	Description
1	Rear camera	5.0 Mega-Pixels camera with LED auxiliary light.
2	Add-on cover	Open to access SIM port and access connectors for optional snap-on modules.
3	External battery connector cover	Open to access external battery connector. The external battery is optional.
4	External battery bracket slots	Align with the external battery bracket when installing.
5	Securing holes	Secure the bumpers and the D-rings for the handstrap and shoulder strap.
6	Battery connector cover placeholder	Place cover here when installing an external battery.

Dimensions

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

Figure 6. Front View Dimensions

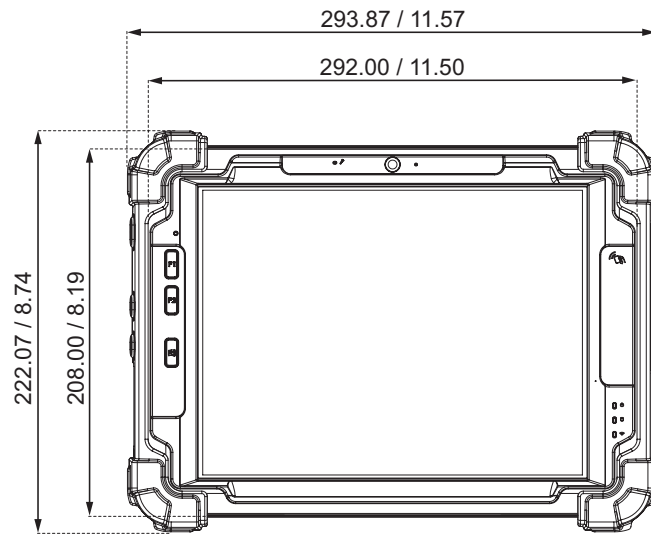
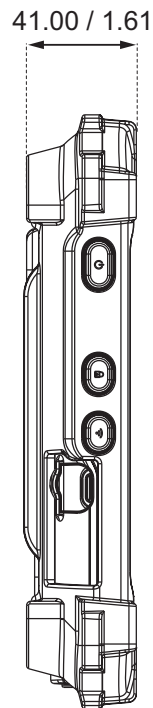


Figure 7. Side View Dimensions



Touch Screen



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

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

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

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

Using a stylus 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 stylus:

- 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 stylus replacement kit is available.

Chapter 2. Getting Started

This section provides an outline of the steps necessary to setup a new PM-522. A detailed guide follows the listed items, see as follows.

For additional technical assistance, contact your RuggON representative. See “*Contacting RuggON*” on page 72.



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.

PM-522 Configuration Options

Date and Time

Use the Windows interface to set date, time, and timezone.

- Category view: **RF key > Control Panel > Clock, Language and Region > Date and Time**
- Classic view: **RF key > Control Panel > Date and Time**

Power Management

Use the Windows interface to set power management options.

- Category view: **RF key > Control Panel > Hardware and Sound > Power Options**
- Classic view: **RF key > Control Panel > Power Options**

Speaker Volume

Use the Windows interface to control speaker volume.

- Category view: **RF key > Control Panel > Hardware and Sound > Sound**
- Classic view: **RF key > Control Panel > Sound**

Restart/Shutdown

Use the Windows interface to restart or shut down the PM-522.

- Restart: **RF key > Power > Restart**
- Shut down: **RF key > Power > Shut down**

Installing the Bumpers

The bumpers provide the PM-522 protection from minor damage with easy access to all keys and ports.



Warranty is void if rubber bumpers are not properly installed.

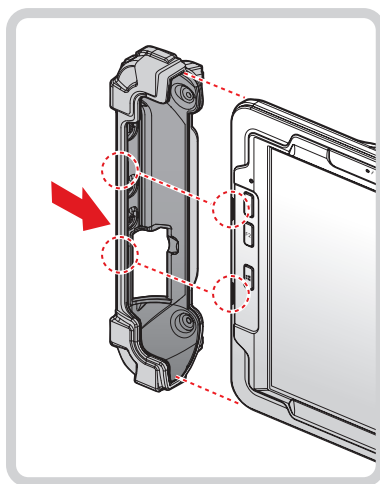
1. Align the screw holes on the left bumper with the screw holes on the PM-522.



The left bumper fits over three keys (left side panel) and the DC-IN compartment.

2. Install the left bumper to the PM-522. If the display's protective film is in the way, lift it up slightly to allow for proper installation.

Figure 8. Installing the Left Bumper



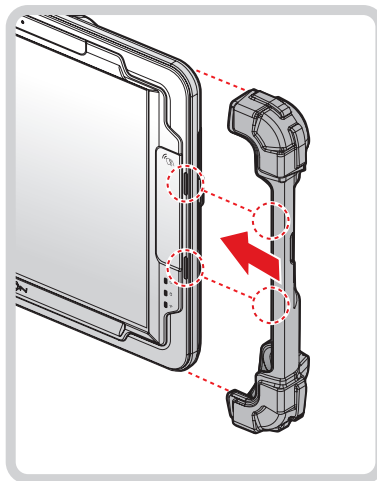
3. Align the screw holes on the right bumper with the screw holes on the PM-522.



The right bumper fits over the I/O port compartment.

4. Install the right bumper to the PM-522. (Flip up a little protective film if necessary)

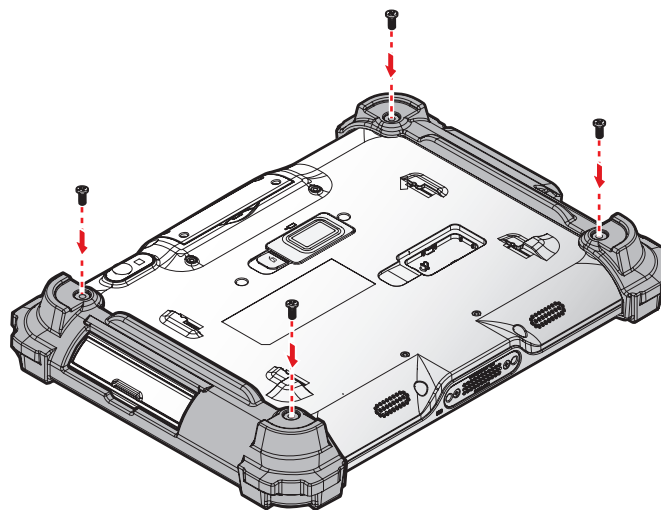
Figure 9. Installing the Right Bumper



Once the rubber bumpers are installed, it is recommended to not remove them.

5. Secure the bumpers and the PM-522 with screws.

Figure 10. Securing the Screws

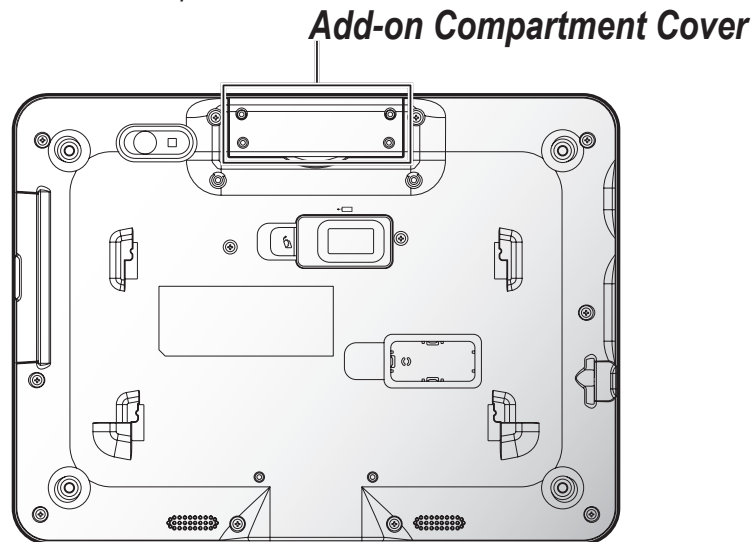


Removing the Add-on Compartment Cover

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

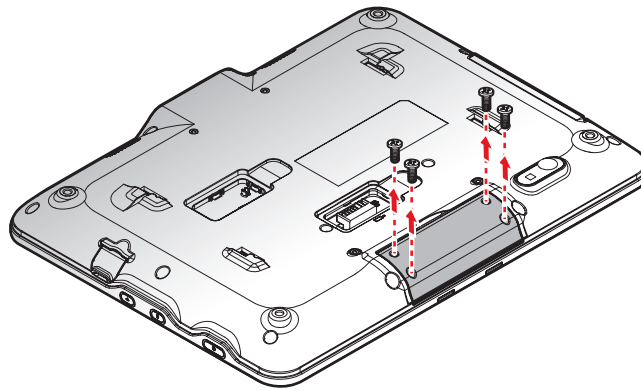
1. Place the device display side down on a clean work surface.
2. Locate the add-on compartment cover.

Figure 11. Rear View: Locating the Add-on Compartment Cover



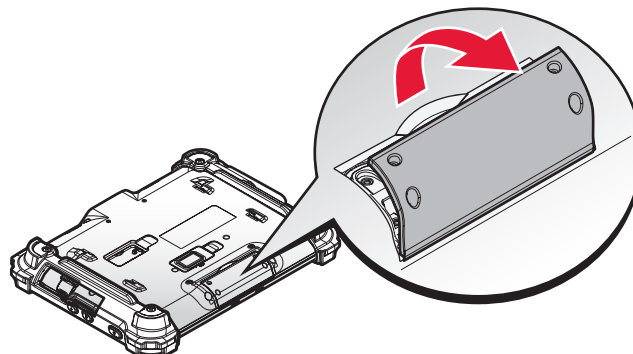
3. Remove the screws securing the add-on compartment cover.

Figure 12. Removing the Screws



4. Flip the add-on compartment cover over to remove it.

Figure 13. Removing the Add-on Compartment Cover

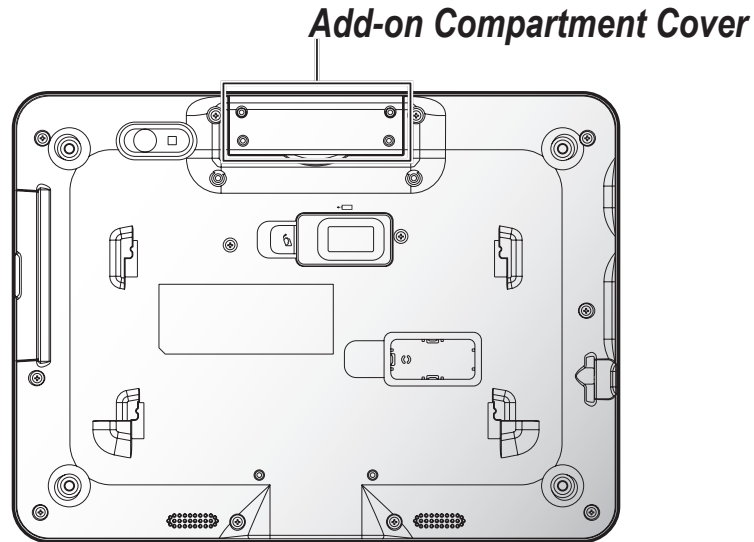


Replacing the Add-on Compartment Cover

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

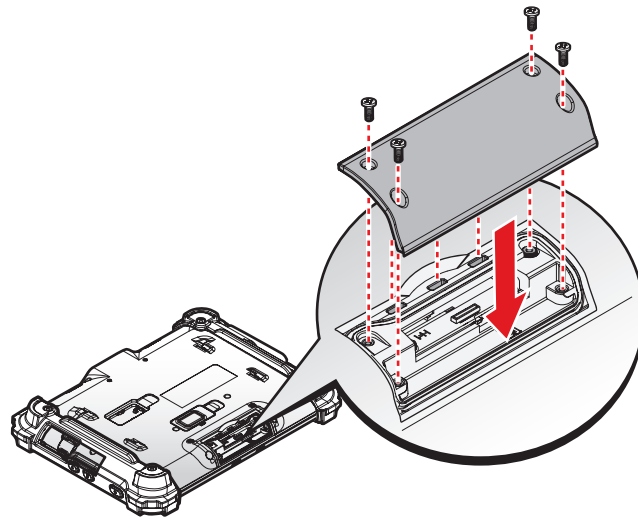
1. Place the device display side down on a clean work surface.
2. Locate the add-on compartment cover.

Figure 14. Rear View: Locating the Add-on Compartment Cover



3. Align the plastic tabs on the bottom of the cover with the housing and insert.
4. Secure the add-on compartment cover and the PM-522 with screws.

Figure 15. Installing the Add-on Compartment Cover



The add-on compartment cover must be inserted correctly to prevent internal damage to the device.

Installing the Micro SIM Card

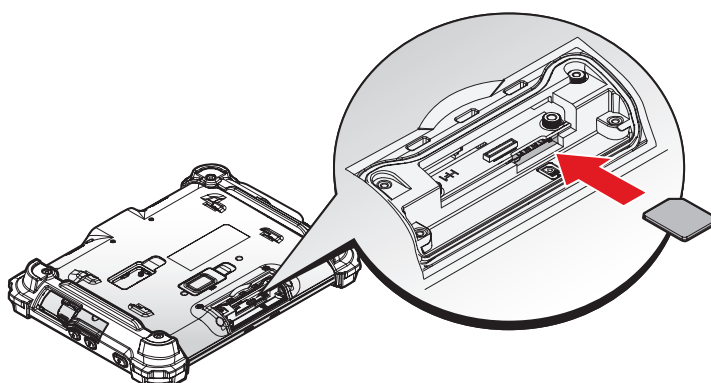
The device includes a micro SIM card slot for cellular and wireless connection. Only a micro SIM card is supported in the slot.



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

1. Power down the device.
2. Remove the add-on compartment cover. See *“Removing the Add-on Compartment Cover”* on page 21.
3. Locate the micro SIM slot in the communications compartment.
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 16. *Installing the Micro SIM Card*

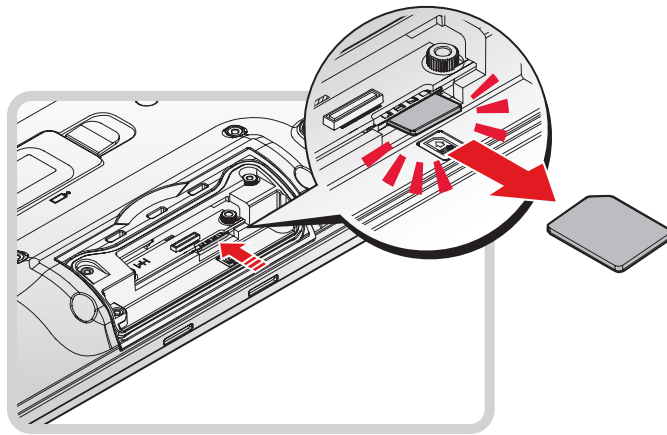


7. Replace the add-on cover. See *“Replacing the Add-on Compartment Cover”* on page 22.

Removing the Micro SIM Card

1. Power down the device.
2. Remove the add-on compartment cover. See *“Removing the Add-on Compartment Cover”* on page 21.
3. Press the micro SIM card in and release it. The card springs out.
4. Grasp the micro SIM card and remove it from the slot.

Figure 17. Removing the Micro SIM Card

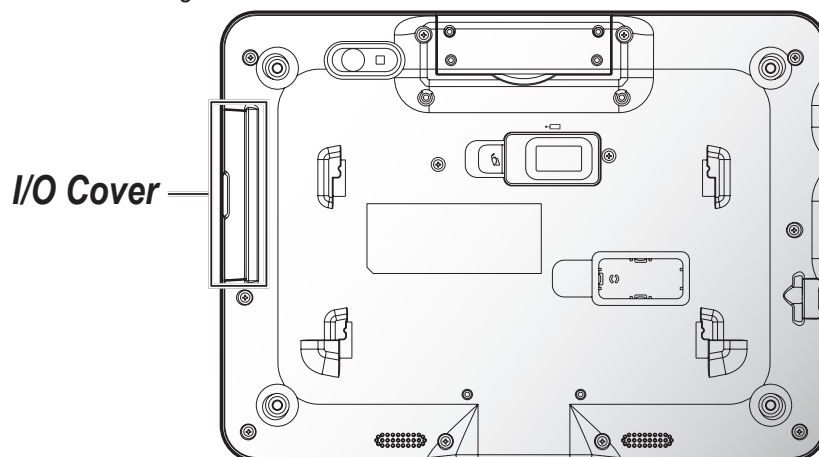


5. Replace the add-on compartment cover. See *“Replacing the Add-on Compartment Cover”* on page 22.

Removing the I/O Cover

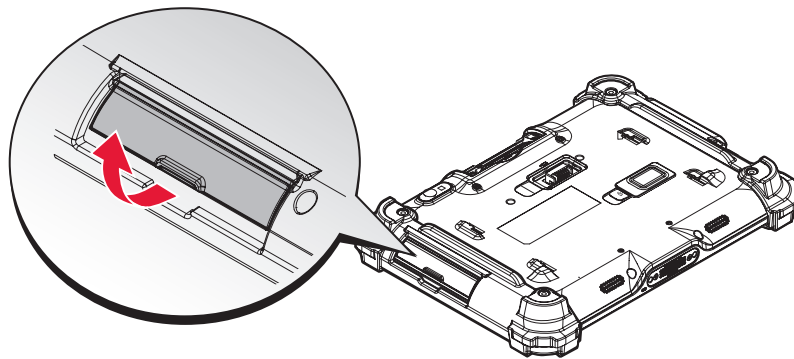
1. Place the device display side down on a clean work surface.
2. Locate the I/O cover.

Figure 18. Rear View: Locating the I/O Cover



3. Flip the I/O cover and pull out the I/O cover.

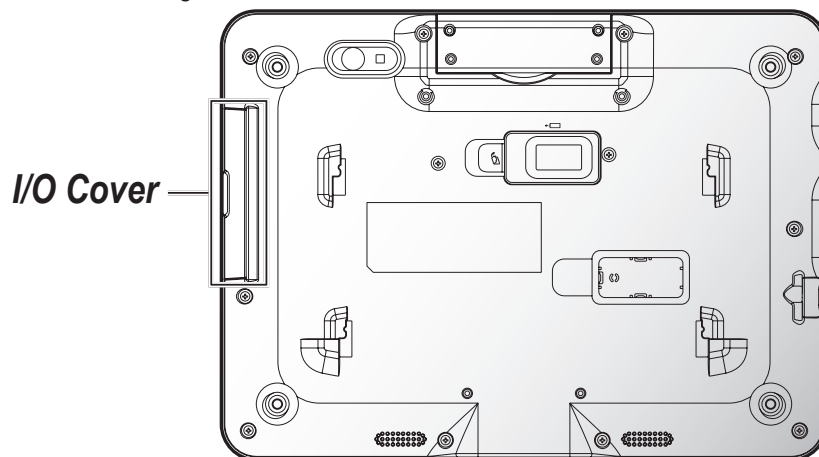
Figure 19. Removing the I/O Cover



Replacing the I/O Cover

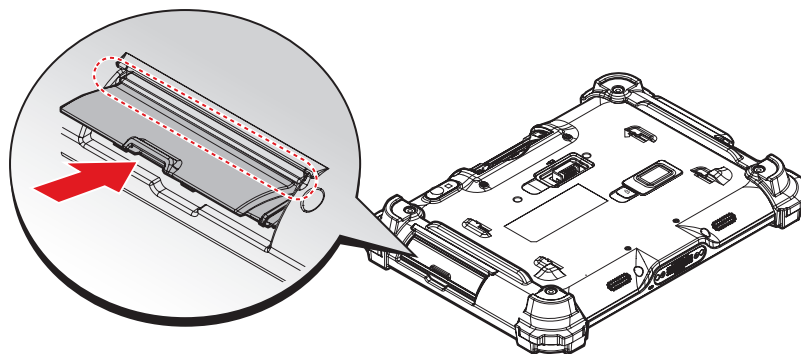
1. Place the device display side down on a clean work surface.
2. Locate the I/O cover.

Figure 20. Rear View: Locating the I/O Cover



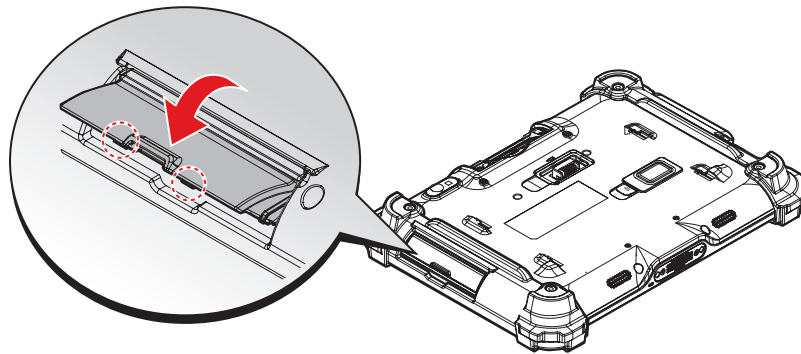
3. Align the plastic tab on the I/O cover with the PM-522.

Figure 21. Align the Plastic Tab



4. Flip the I/O cover and install.

Figure 22. Installing the I/O cover



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

Connecting to External Cabling



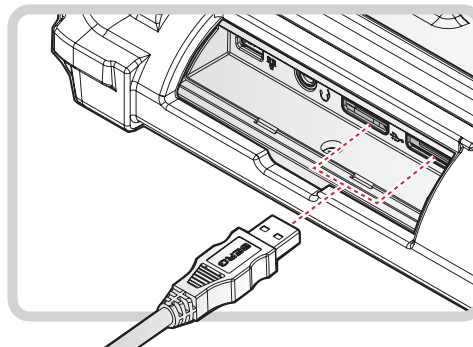
To prevent damage to the device, connect all cabling and accessories before powering up the device.

Connect USB Cabling

The PM-522 have two USB ports for connecting USB devices, such as a digital camera, scanner, printer, modem, and mouse. The USB ports support USB 2.0 or USB 3.0 devices.

1. Open the I/O cover. See “*Removing the I/O Cover*” on page 24.
2. Connect to USB device via USB cable.

Figure 23. Connect USB Cabling



Connect Ethernet Cabling

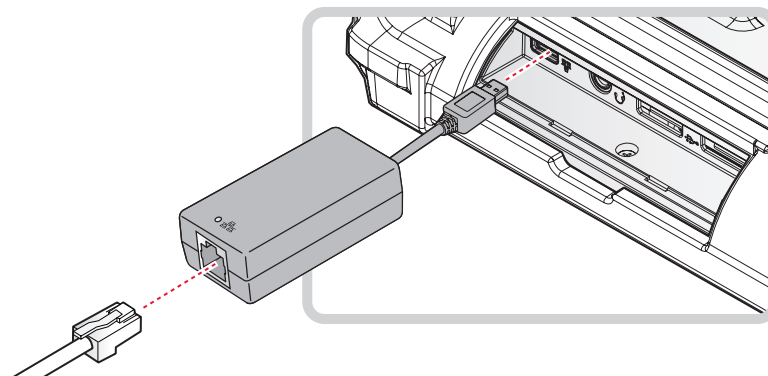
The PM-522 provide mini USB to RJ45 dongle for connecting Ethernet.



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

1. Open the I/O cover. See “*Removing the I/O Cover*” on page 24.
2. Connect the mini USB to RJ45 dongle to mini USB port on the PM-522.
3. Connect LAN cable to mini USB to RJ45 dongle.

Figure 24. Connect Mini USB to RJ45 Dongle

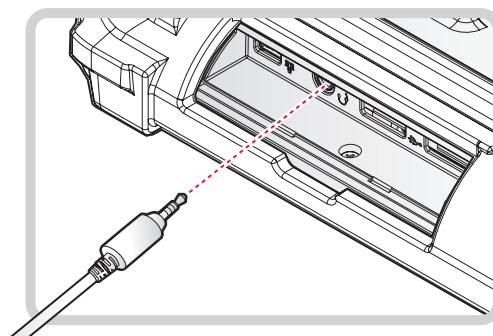


Connect Audio Cabling

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

1. Open the I/O cover. See “*Removing the I/O Cover*” on page 24.
2. Connect the audio cable.

Figure 25. Connect Audio Cabling



Handstrap and Shoulder Strap

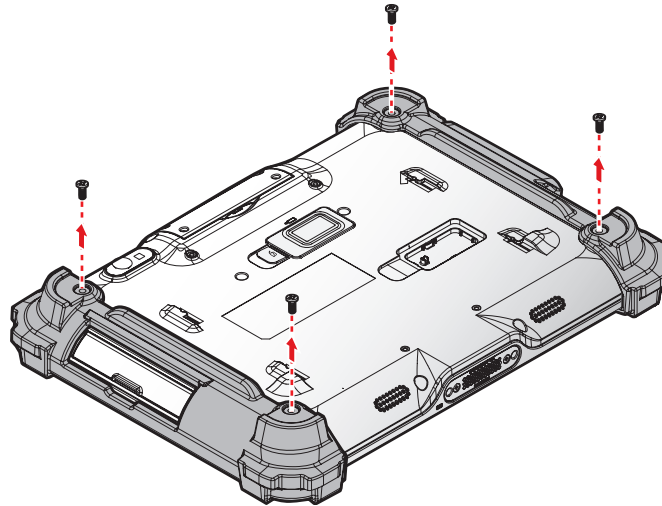
The PM-522 is equipped with a handstrap and a shoulder strap to provide users safety use.

For more information, see “*Connecting the Handstrap*” on page 28 and “*Connecting the Shoulder Strap*” on page 31.

Connecting the Handstrap

1. Remove the screws securing the bumpers.

Figure 26. Removing the Screws

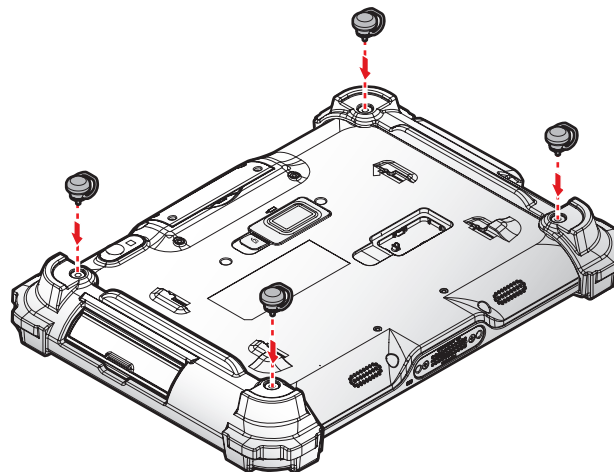


2. Install the D-rings.



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

Figure 27. Installing the D-rings

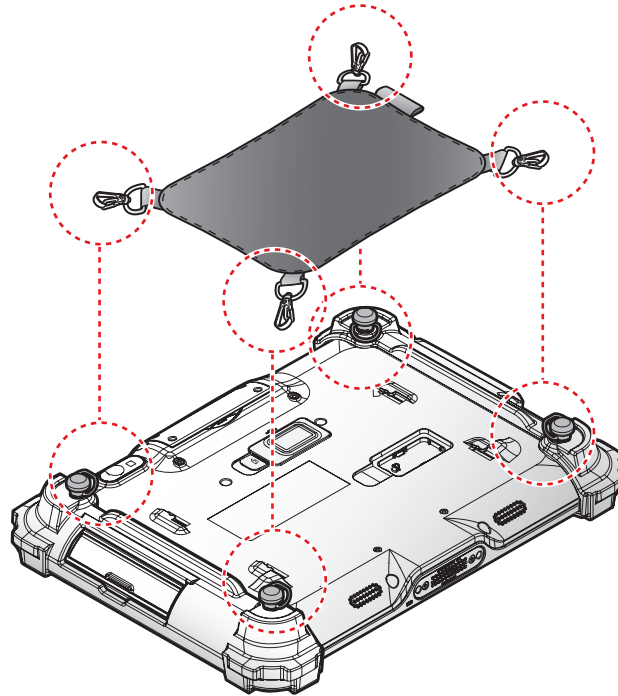


4. Connect to lock the handstrap on the D-rings.



When handstrap is installed, the stylus can place with handstrap.

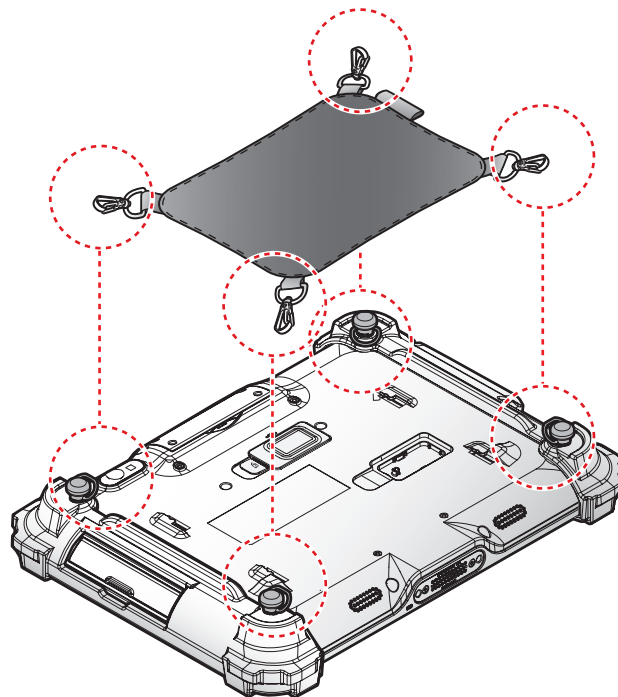
Figure 28. Connecting the Handstrap



Removing the Handstrap

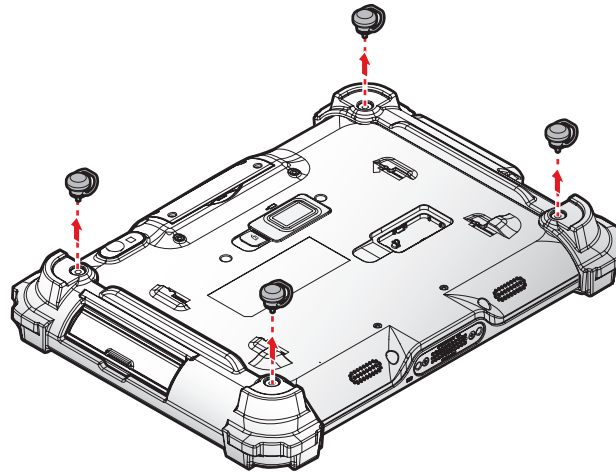
1. Unlock the handstrap from the D-rings.

Figure 29. Removing the Handstrap



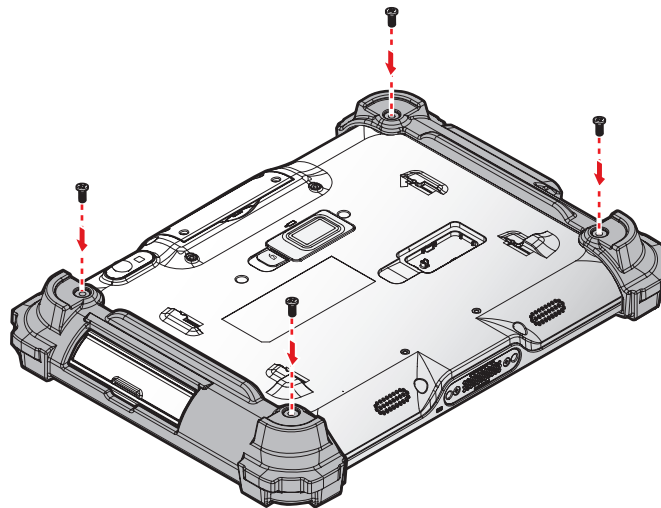
2. Remove the D-rings.

Figure 30. Removing the D-rings



3. Secure the bumper and the PM-522 with screws.

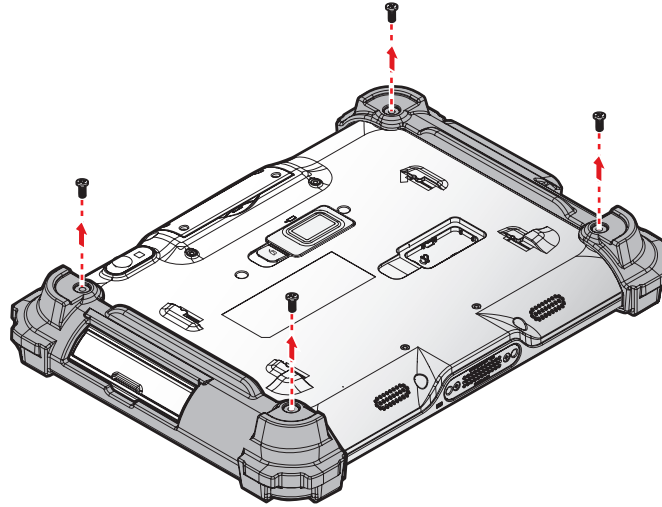
Figure 31. Securing the Screws



Connecting the Shoulder Strap

1. Remove the screws securing the bumpers.

Figure 32. Removing the Screws

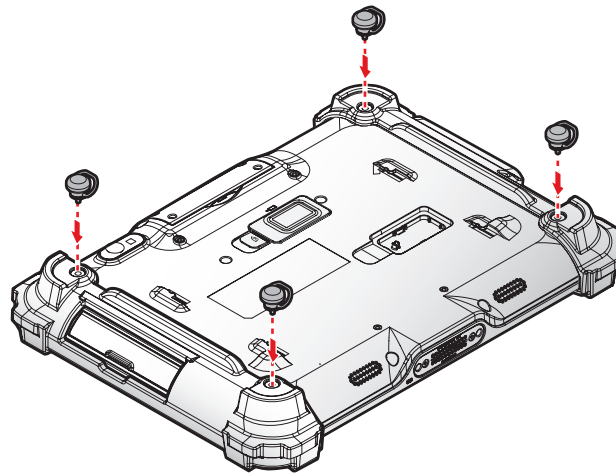


2. Install the D-rings.



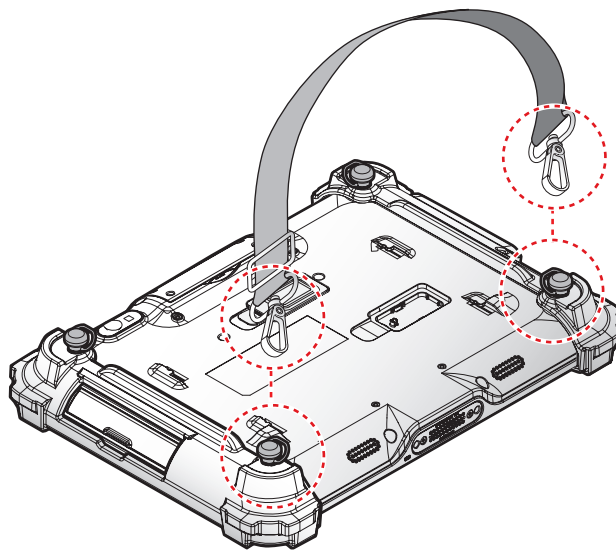
Make sure the D-rings are tightly secured before attaching the shoulder strap.

Figure 33. Installing the D-rings



3. Attach the clips to the D-rings to attach the shoulder strap.

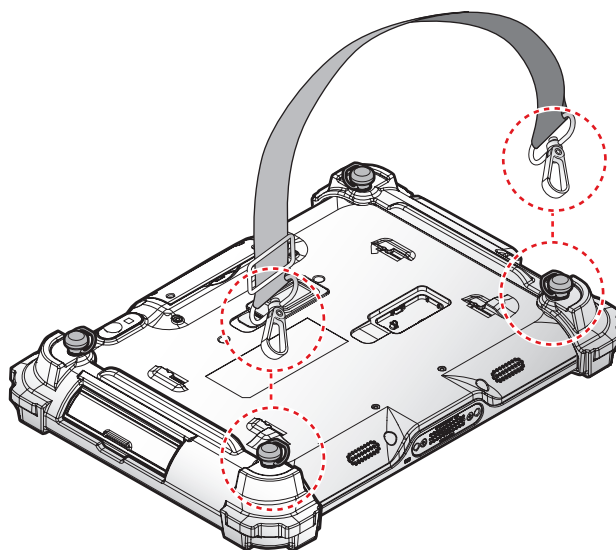
Figure 34. Connecting the Shoulder Strap



Removing the Shoulder Strap

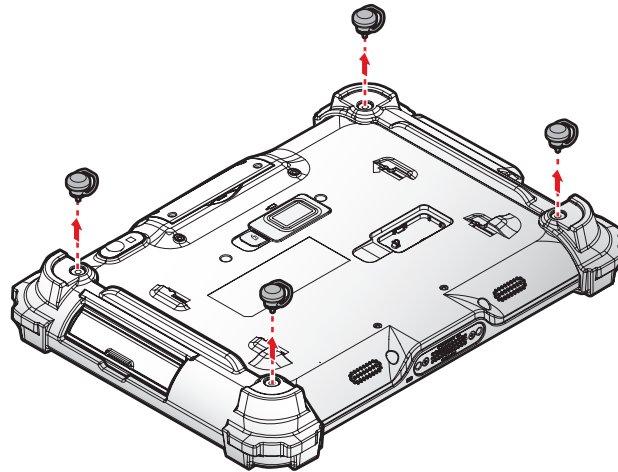
1. Press in the clips to release them from the D-rings.
2. Remove the clips.

Figure 35. Removing the Shoulder Strap



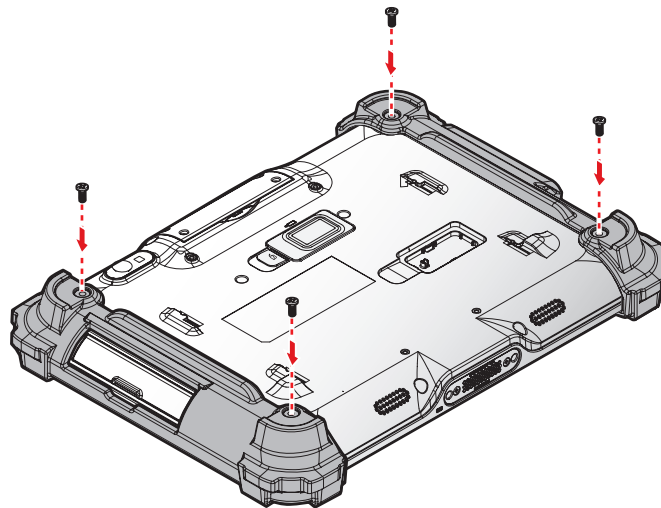
3. Remove the D-rings.

Figure 36. Removing the D-rings



4. Secure the bumper and the PM-522 with screws.

Figure 37. Securing the Screws



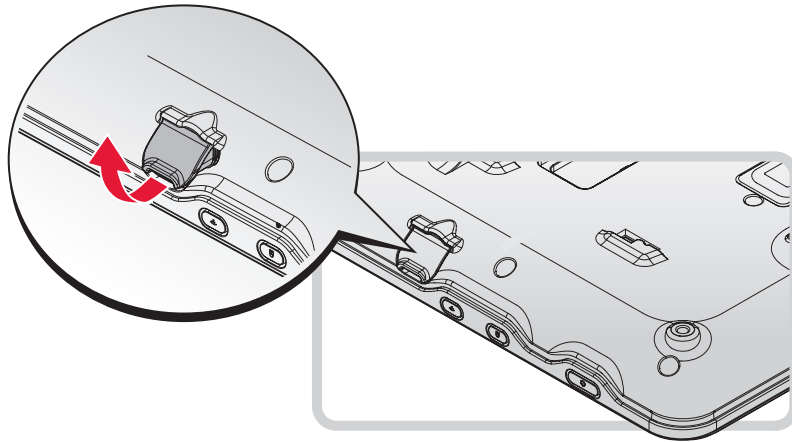
Charging the Battery

When you use the AC adapter to connect your PM-522 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.

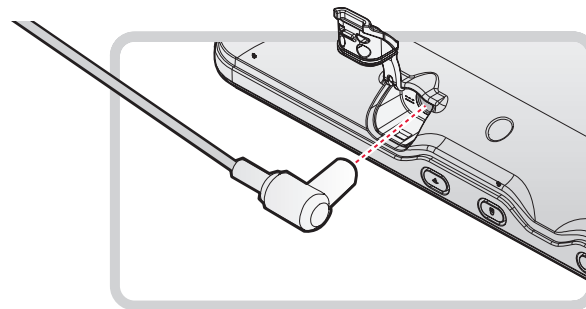
1. Flip open the DC-IN cover to expose the DC-IN jack.

Figure 38. Opening the DC-IN Cover



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

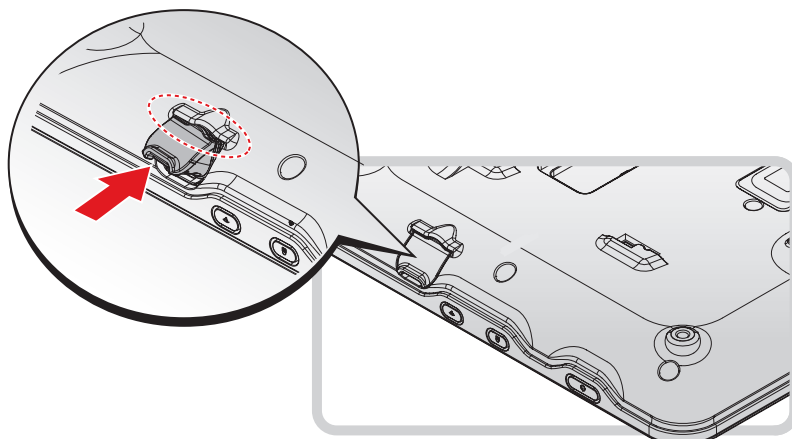
Figure 39. Connecting the AC Adapter



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

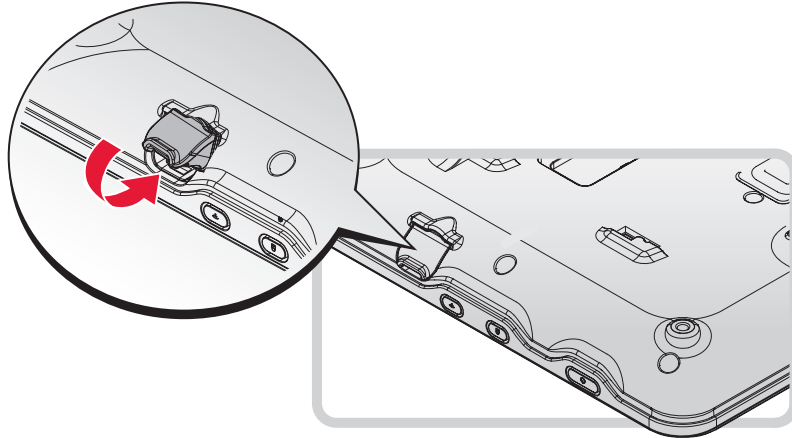
1. Align the plastic tab on the DC-IN cover with the compartment.

Figure 40. Align the Plastic Tab



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

Figure 41. Installing the DC-IN Cover



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

Installing the External Battery

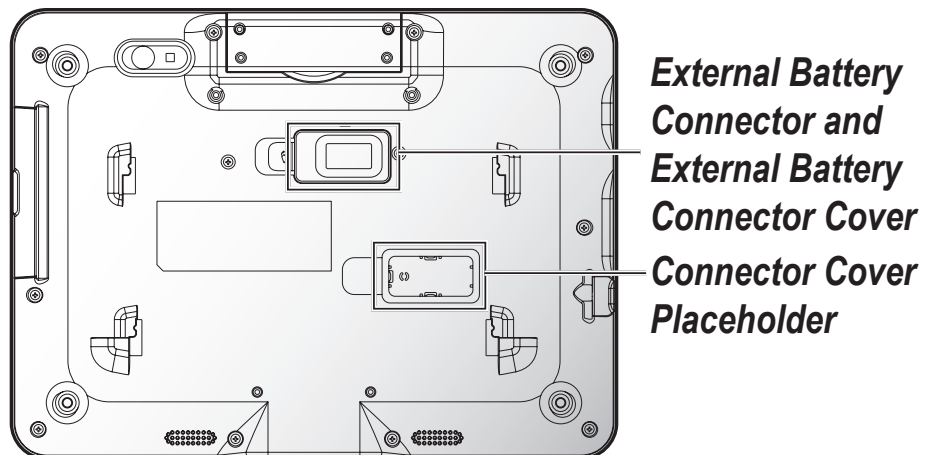
The external battery is an optional component. Only use components specifically designed for this device. Contact your local representative for ordering information.



Make sure the power switch is switched to ON before installing the external battery. See “First Time Use” on page 55.

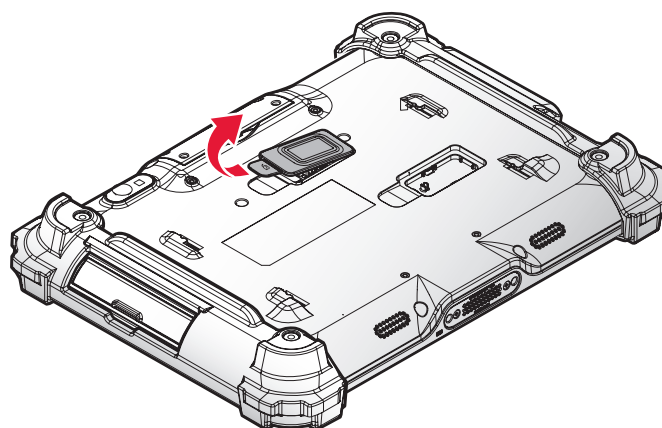
1. Place the device display side down on a clean work surface.
2. Locate the external battery connector cover and cover placeholder.

Figure 42. Rear View: Locating the External Battery Connector Cover and Cover Placeholder



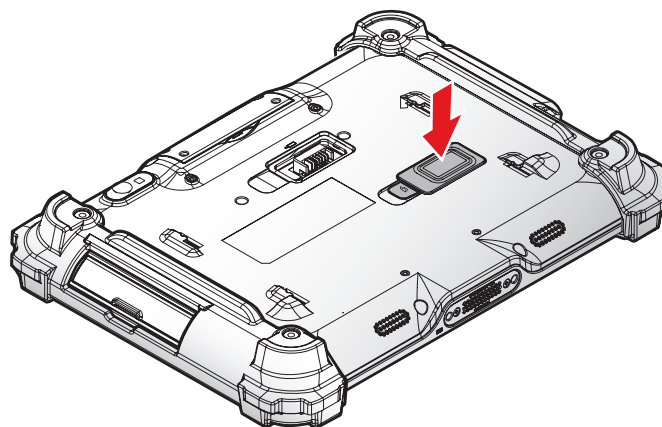
3. Flip the connector cover up to remove it from the compartment.

Figure 43. Removing the Connector Cover



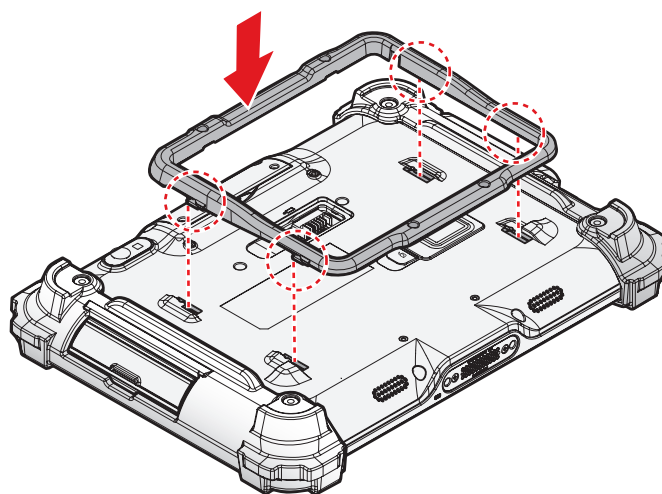
4. Install the connector cover in the placeholder.

Figure 44. Placing the Connector Cover in the Placeholder



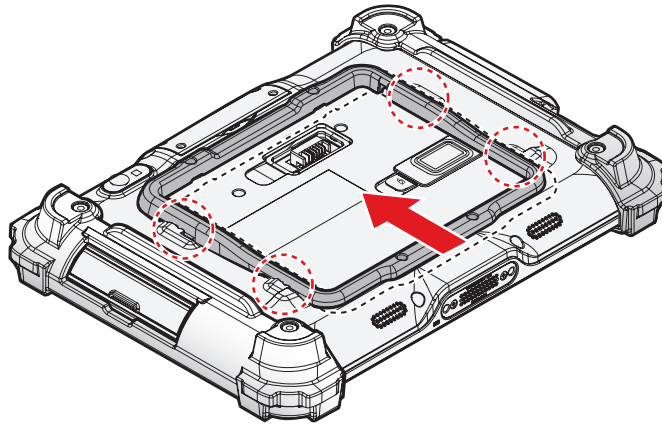
5. Align the tabs on the external battery bracket with the slots on the rear side of the PM-522 .

Figure 45. Aligning the External Battery Bracket



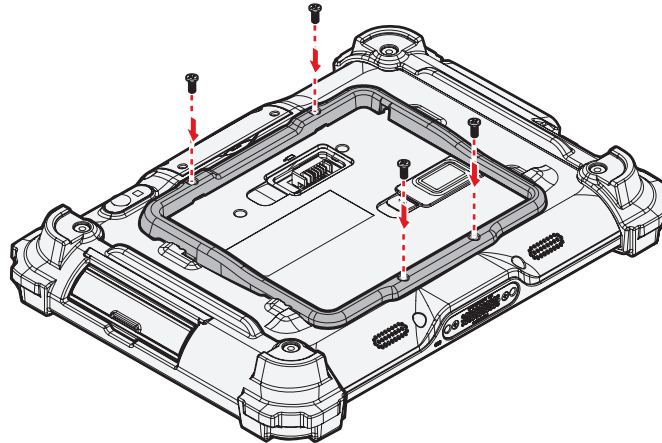
6. Push the external battery bracket forward to lock.

Figure 46. Installing the External Battery Bracket



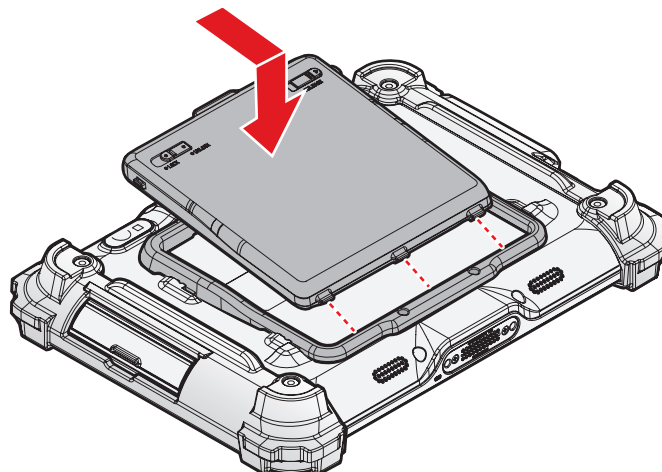
7. Securing the external battery bracket and the PM-522 with screws.

Figure 47. Securing the Screws



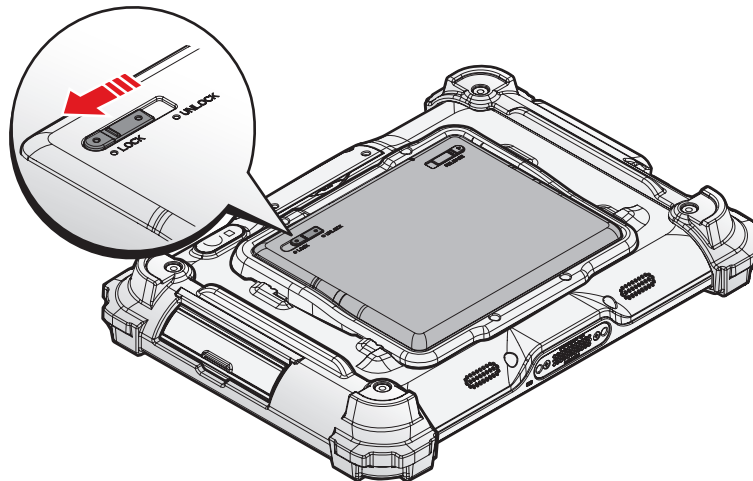
8. Align the tabs on the external battery with the slots on the external battery bracket.
9. Angle the battery in place and set the tabs in the bracket slots.
10. Lower the raised end of the external battery and press in place until an audible click is heard.

Figure 48. Installing the External Battery



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

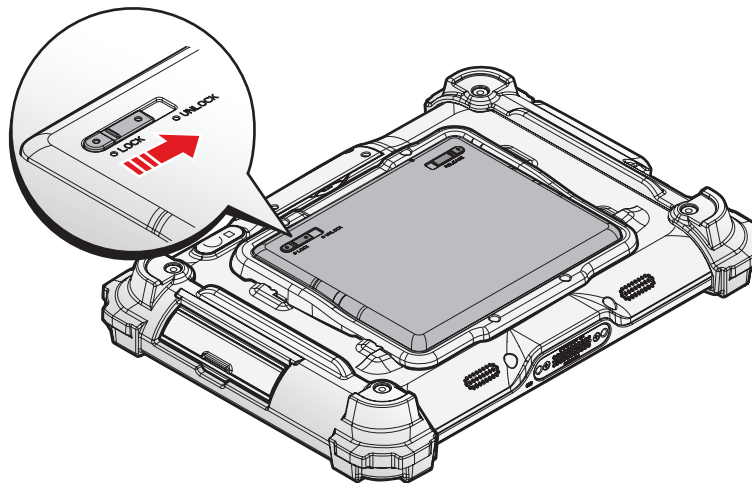
Figure 49. Locking the External Battery



Removing the External Battery

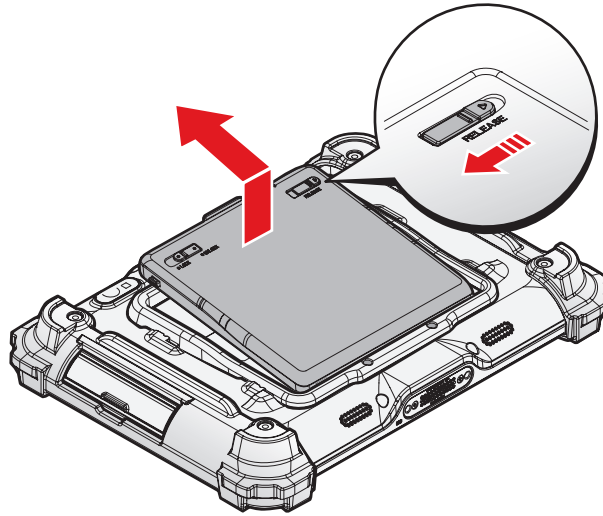
1. Press the locking switch on the top-left side to the unlock position.

Figure 50. Unlock the External Battery



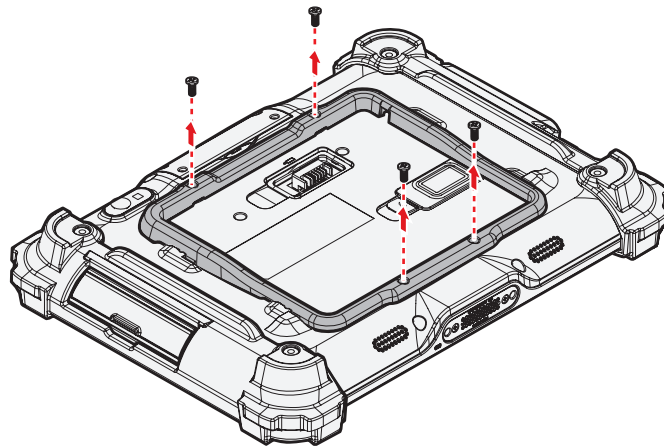
2. Press and hold the release button as shown in the image to release the battery.
3. Hold the battery and angle the top side up to remove. .

Figure 51. Removing the External Battery



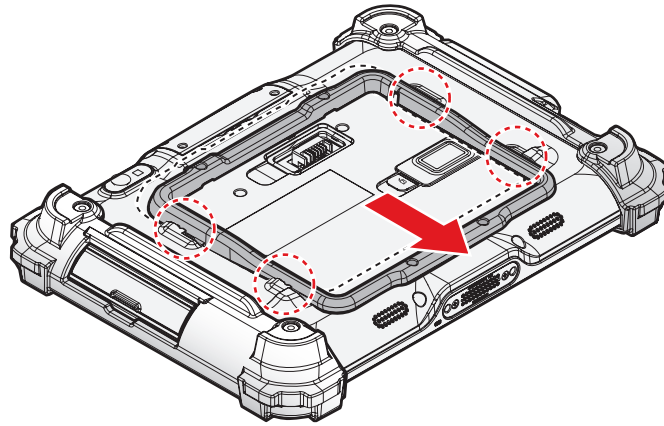
4. Remove the screws securing the external battery bracket.

Figure 52. Removing the Screws



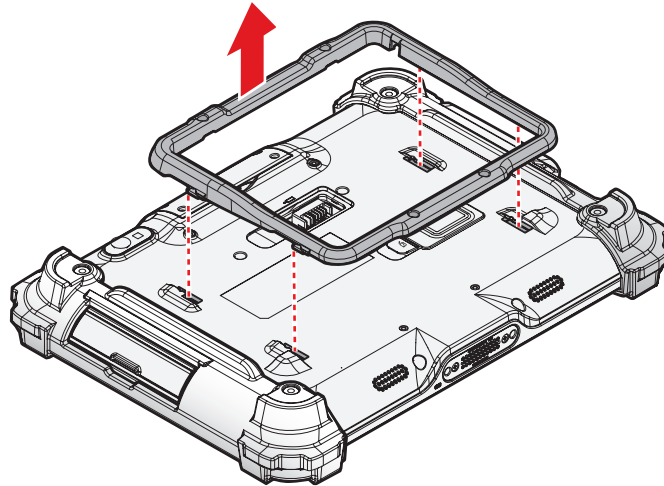
5. Push the external battery bracket toward the bottom of the PM-522 to release the bracket.

Figure 53. Releasing the External Battery Bracket



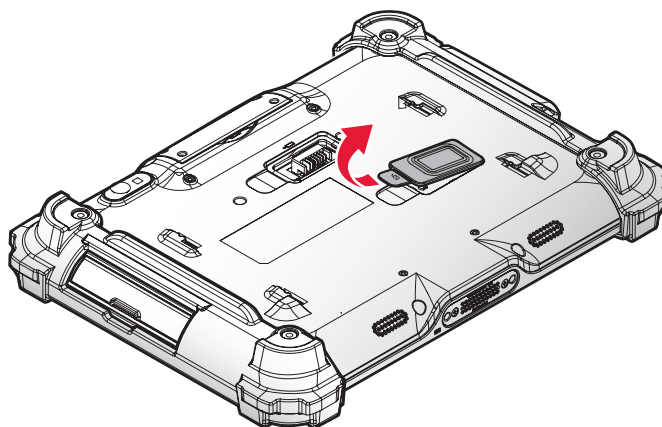
6. Remove the external battery bracket.

Figure 54. Removing the External Battery Bracket



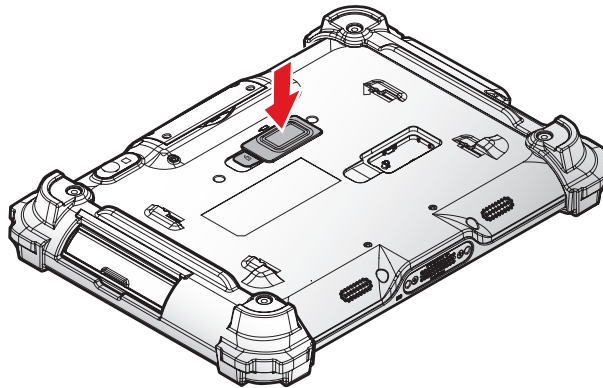
7. Remove the connector cover from the placeholder.

Figure 55. Removing the Connector Cover



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

Figure 56. Installing the Connector Cover



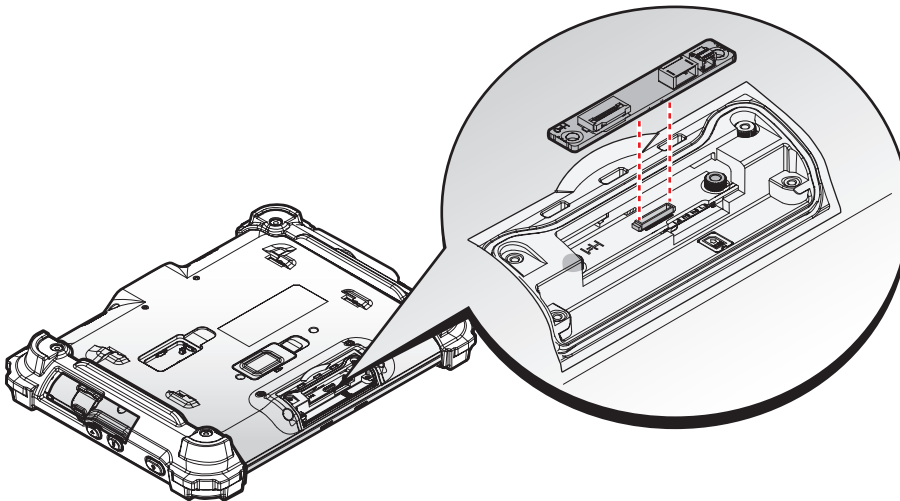
Installing the Barcode Scanner (Optional)



Before installing an add-on module, disconnect the AC adapter and set the DIP switch to OFF.

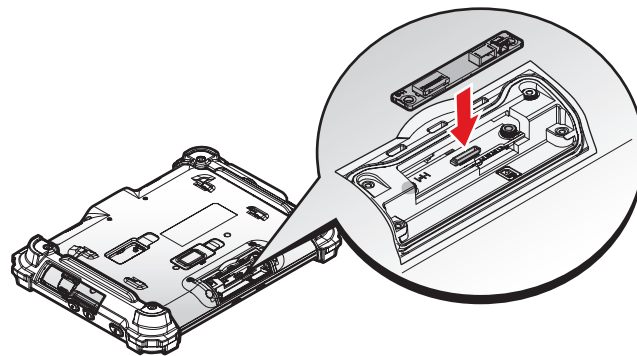
1. Remove the add-on compartment cover. See “Removing the Add-on Compartment Cover” on page 21.
2. Align the connector on the barcode scanner board with the connector on the PM-522.

Figure 57. Align the Barcode Scanner Board



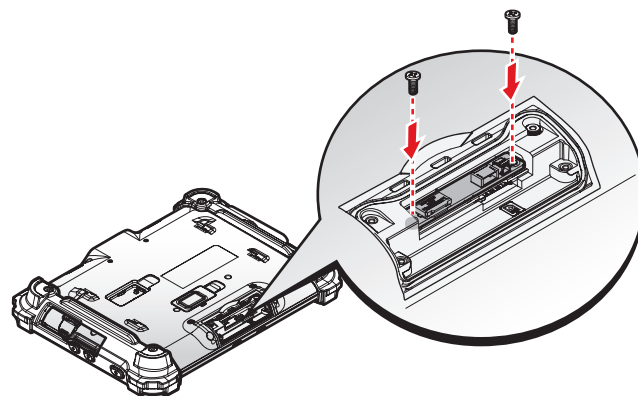
3. Press the barcode scanner board to install until a “click” sound.

Figure 58. Installing the Barcode Scanner Board



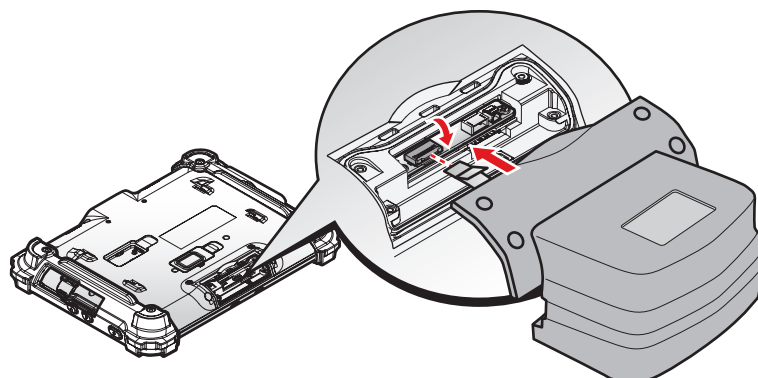
4. Secure the barcode scanner board and the PM-522 with screws.

Figure 59. Securing the Barcode Scanner Board



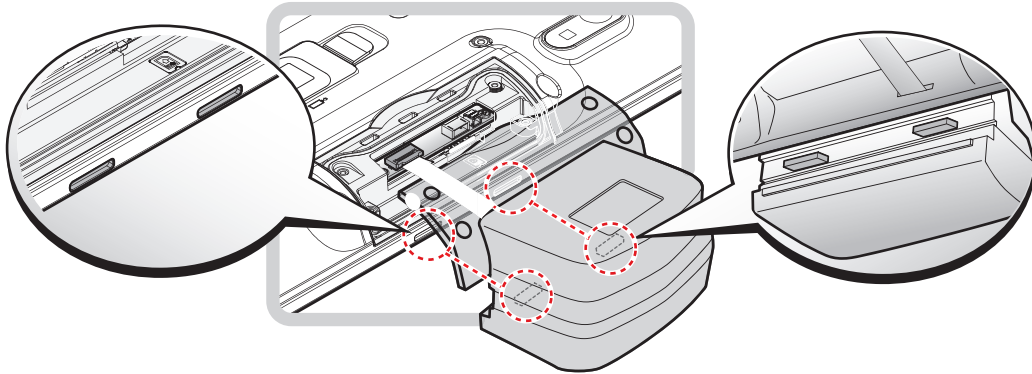
5. Connect the FFC and lock the connector.

Figure 60. Connecting the FFC



- Align the pins on the barcode scanner with the pins on the top side of the PM-522.

Figure 61. Align the Barcode Scanner with the PM-522

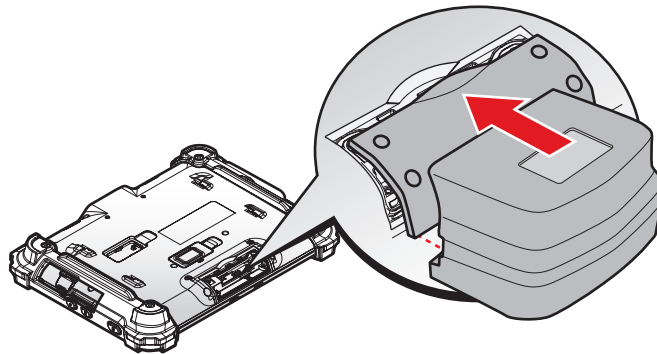


- Slide down the barcode scanner until it's in place.



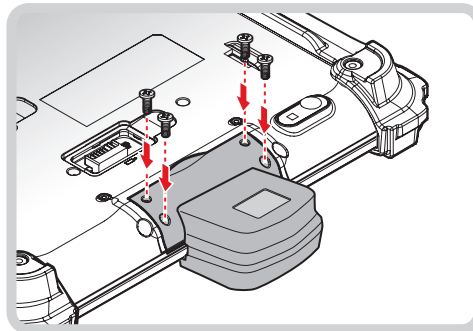
Before you slide down the barcode scanner, please make sure the FFC will not be covered by the module.

Figure 62. Installing the Barcode Scanner



- Secure the barcode scanner and the PM-522 with provided screws.

Figure 63. Installing the Screws



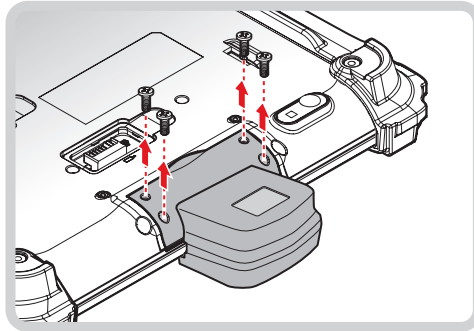
Removing the Barcode Scanner (Optional)



Before installing an add-on module, disconnect the AC adapter and set the DIP switch to OFF.

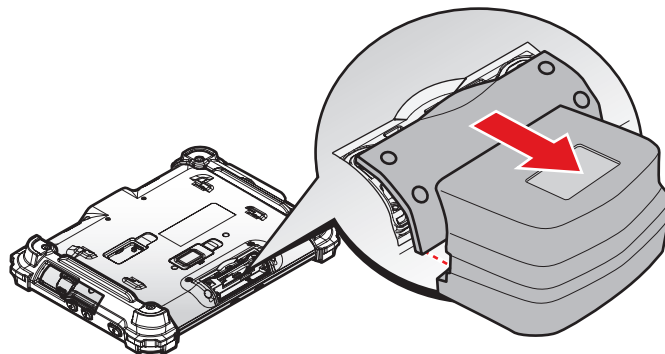
1. Remove the screws securing the barcode scanner.

Figure 64. Removing the Screws



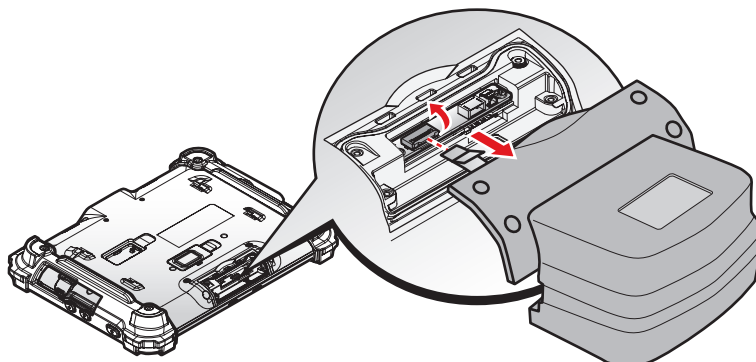
2. Slide up the barcode scanner to remove.

Figure 65. Removing the Barcode Scanner



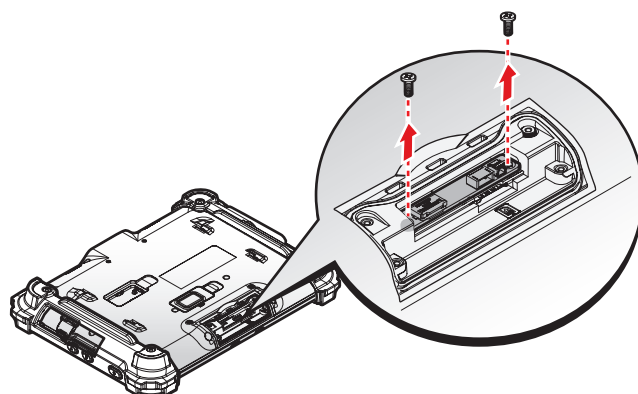
3. Unlock the connector and disconnect the FFC.

Figure 66. Disconnecting the FFC



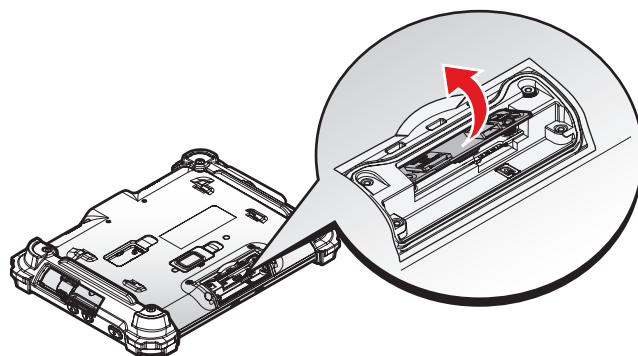
4. Remove the screws securing the barcode scanner board.

Figure 67. Removing the Screws



5. Flip up the barcode scanner board to remove.

Figure 68. Removing the Barcode Scanner Board



6. Replace the **add-on** compartment cover. See “Replacing the Add-on Compartment Cover” on page 22.

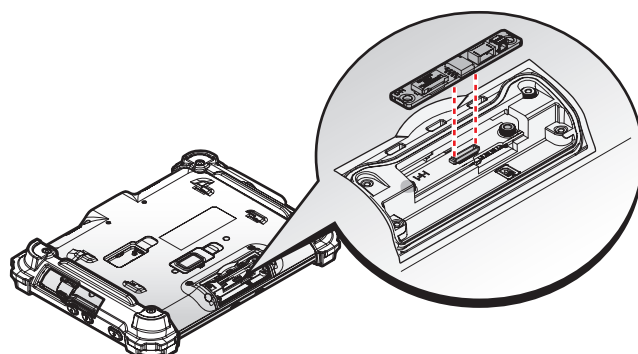
Installing the Mag Strip Reader (Optional)



Before installing an add-on module, disconnect the AC adapter and set the DIP switch to OFF.

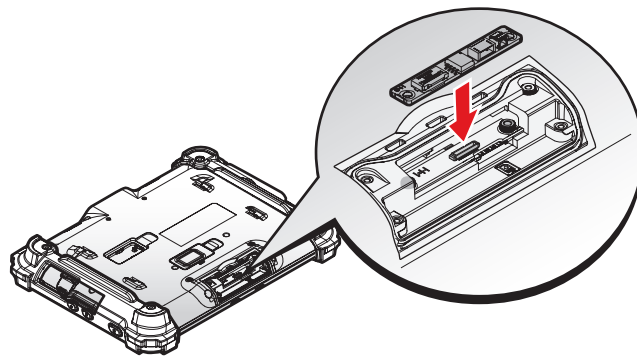
1. Remove the add-on compartment cover. See “Removing the Add-on Compartment Cover” on page 21.
2. Align the connector on the mag strip reader board with the connector on the PM-522.

Figure 69. Align the Mag Strip Reader Board



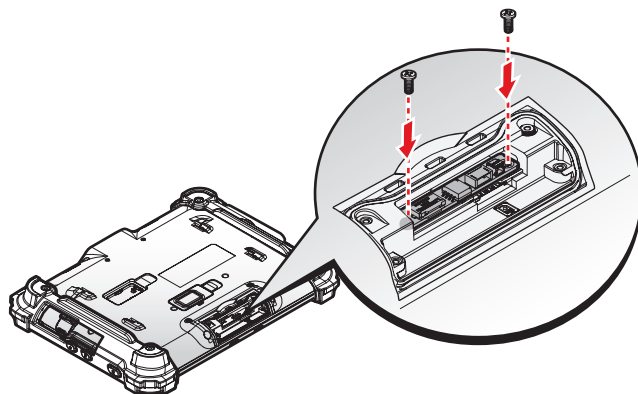
3. Press the mag strip reader board to install until a “click” sound.

Figure 70. Installing the Mag Strip Reader Board



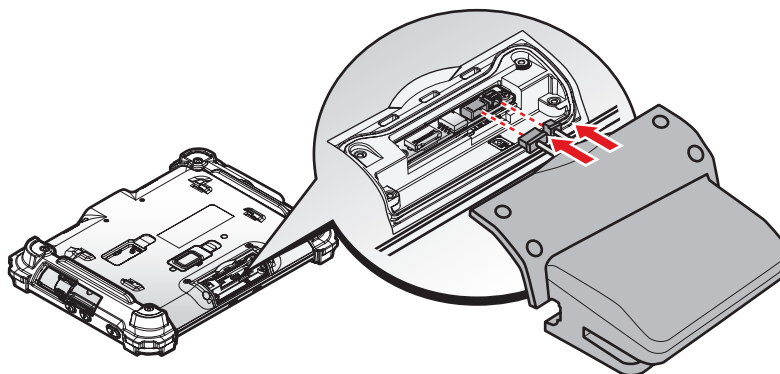
4. Secure the mag strip reader board and the PM-522 with screws.

Figure 71. Securing the Mag Strip Reader Board



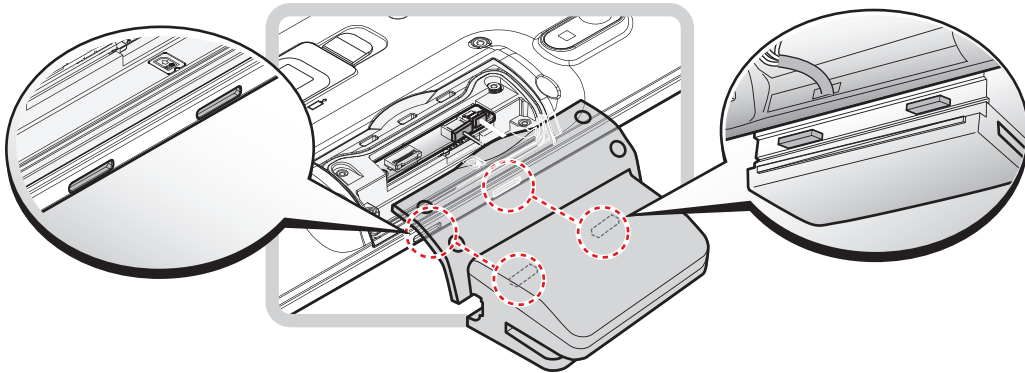
5. Connect the cables.

Figure 72. Connecting the Cables



6. Align the pins on the mag strip reader with the pins on the top side of the PM-522.

Figure 73. Align the Mag Strip Reader with the PM-522

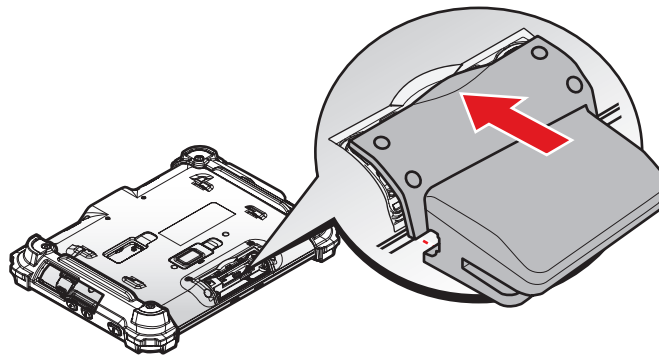


7. Slide down the mag strip reader until it's in place.



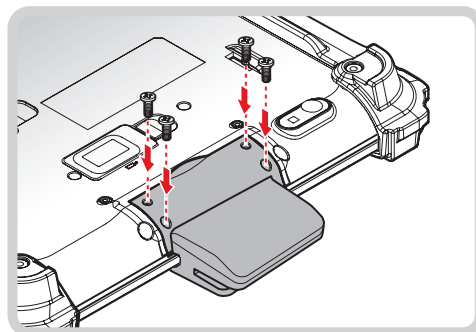
Before you slide down the mag strip reader, please make sure the cable will not be covered by the module.

Figure 74. Installing the Mag Strip Reader



8. Secure the mag strip reader and the PM-522 with provided screws.

Figure 75. Installing the Screws



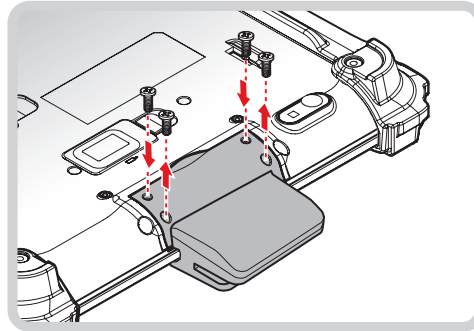
Removing the Mag Strip Reader (Optional)



Before installing an add-on module, disconnect the AC adapter and set the DIP switch to OFF.

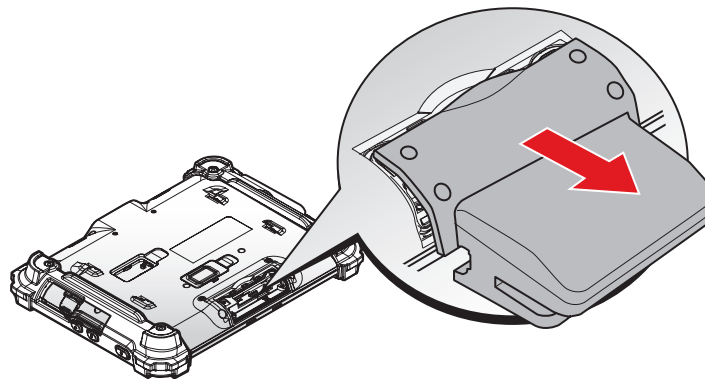
1. Remove the screws securing the mag strip reader.

Figure 76. Removing the Screws



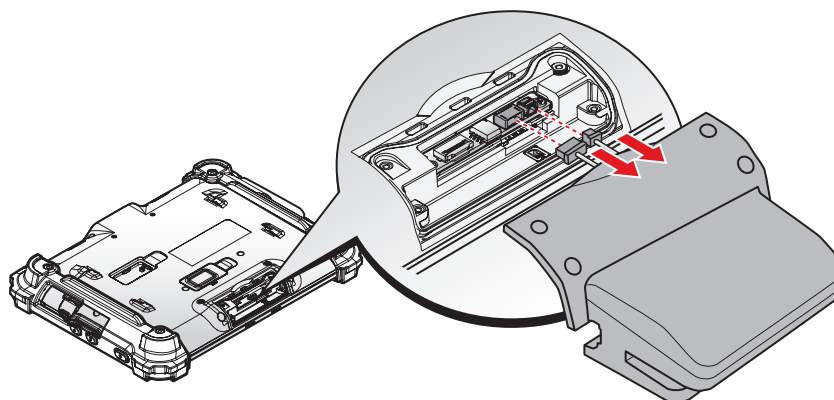
2. Slide up the mag strip reader to remove.

Figure 77. Removing the Mag Strip Reader



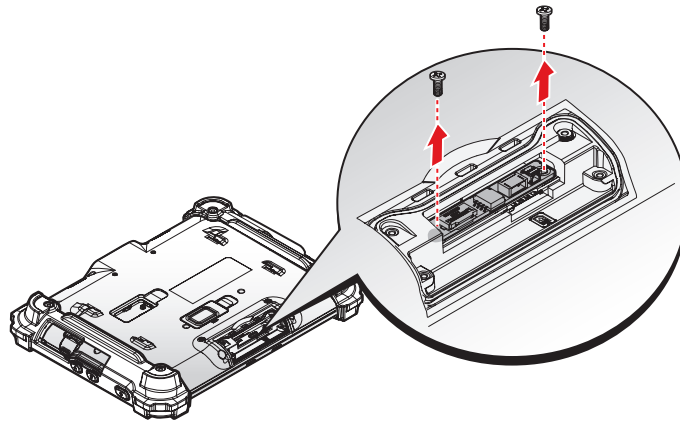
3. Disconnect the cables.

Figure 78. Disconnecting the Cables



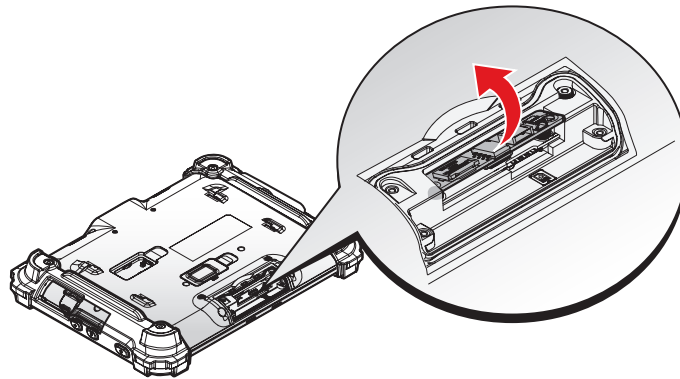
4. Remove the screws securing the mag strip reader board.

Figure 79. Removing the Screws



5. Flip up the mag strip reader board to remove.

Figure 80. Removing the Mag Strip Reader Board



6. Replace the add-on compartment cover. See “Replacing the Add-on Compartment Cover” on page 22.

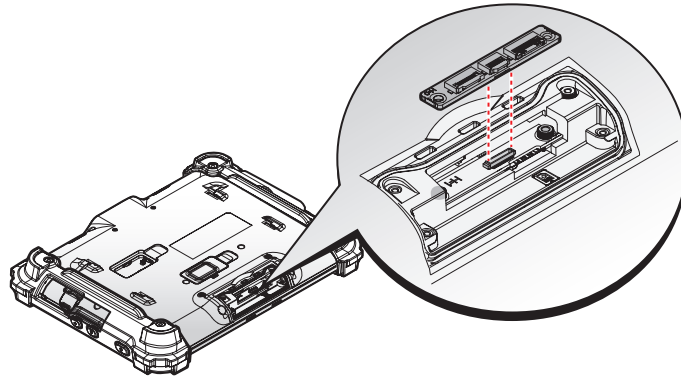
Installing the Smart Card Reader (Optional)



Before installing an add-on module, disconnect the AC adapter and set the DIP switch to OFF.

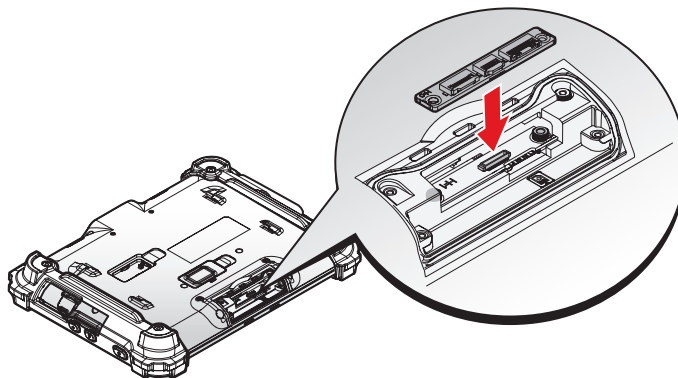
1. Remove the add-on compartment cover. See “Removing the Add-on Compartment Cover” on page 21.
2. Align the connector on the smart card reader board with the connector on the PM-522.

Figure 81. Align the Smart Card Reader Board



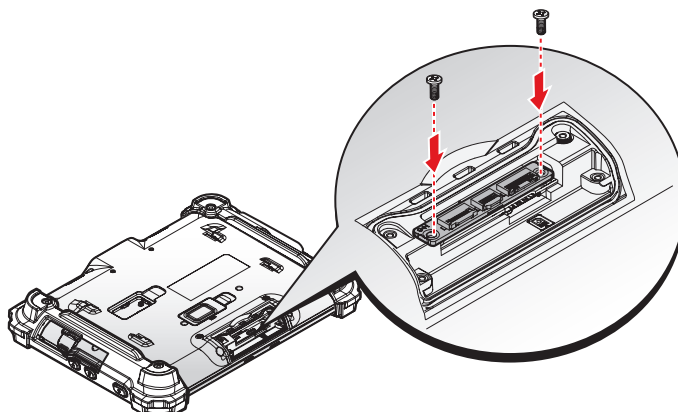
3. Press the smart card reader board to install until a “click” sound.

Figure 82. Installing the Smart Card Reader Board



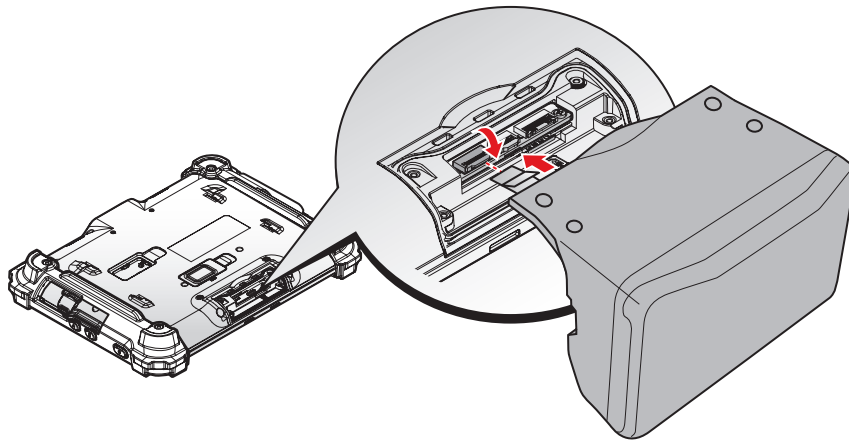
4. Secure the smart card reader board and the PM-522 with screws.

Figure 83. Securing the Smart Card Reader Board



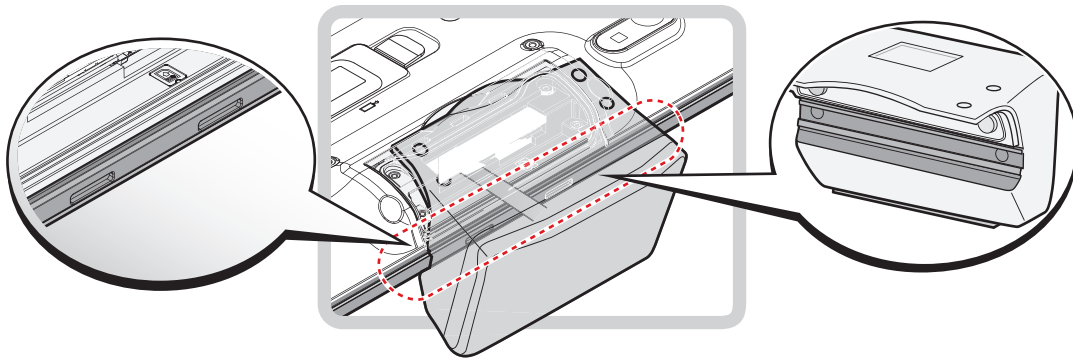
5. Connect the FFC and lock the connector.

Figure 84. Connecting the FFC



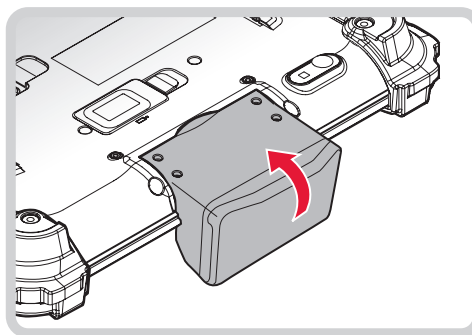
6. Align the smart card reader with the top side of the PM-522.

Figure 85. Align the Smart Card Reader with the PM-522



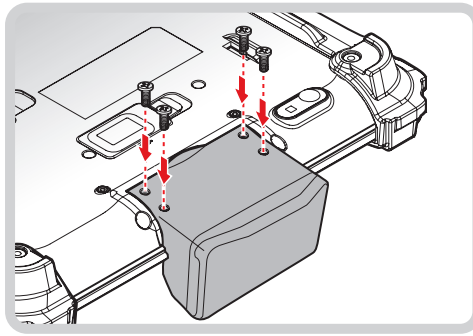
7. Flip down the smart card reader until it's in place.

Figure 86. Installing the Smart Card Reader



8. Secure the smart card reader and the PM-522 with provided screws.

Figure 87. Installing the Screws



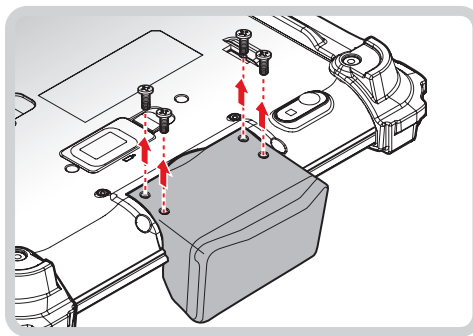
Removing the Smart Card Reader (Optional)



Before installing an add-on module, disconnect the AC adapter and set the DIP switch to OFF.

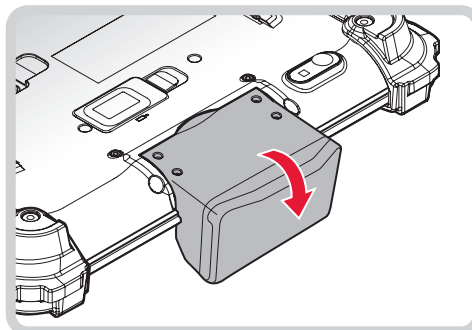
1. Remove the screws securing the smart card reader.

Figure 88. Removing the Screws



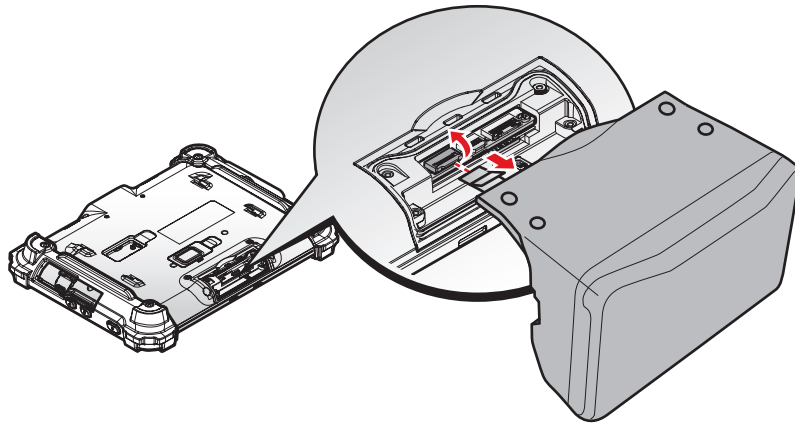
2. Flip up the smart card reader to remove.

Figure 89. Removing the Smart Card Reader



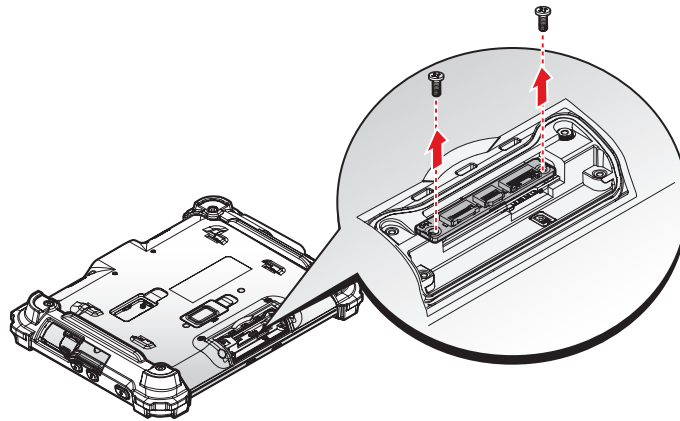
3. Unlock the connector and disconnect the FFC.

Figure 90. Disconnecting the FFC



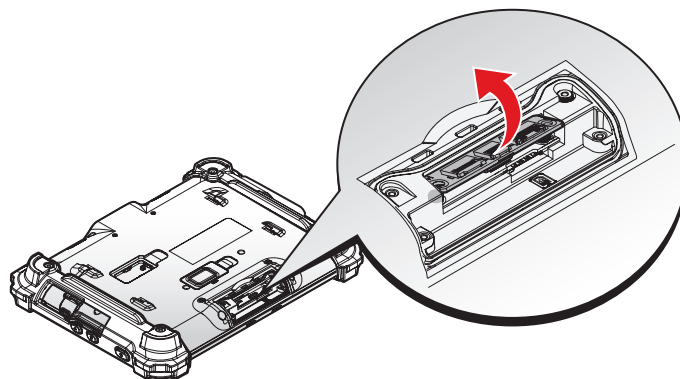
4. Remove the screws securing the smart card reader board.

Figure 91. Removing the Screws



5. Flip up the smart card reader board to remove.

Figure 92. Removing the Smart Card Reader Board



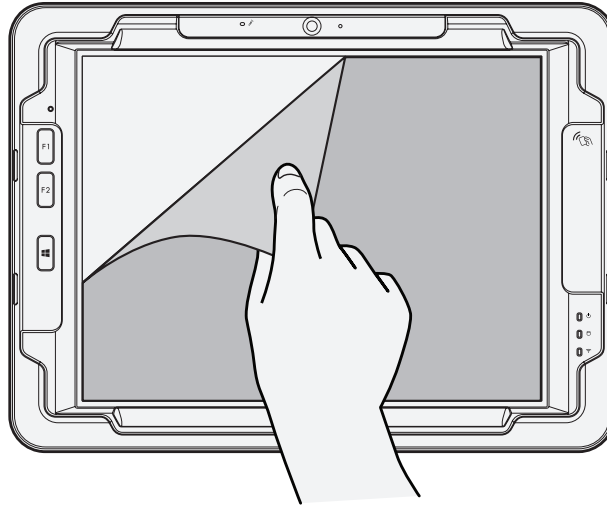
6. Replace the add-on compartment cover. See “Replacing the Add-on Compartment Cover” on page 22.

Removing the Protective Film from the Display

The front display of the PM-522 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 93. Removing the Protective Film

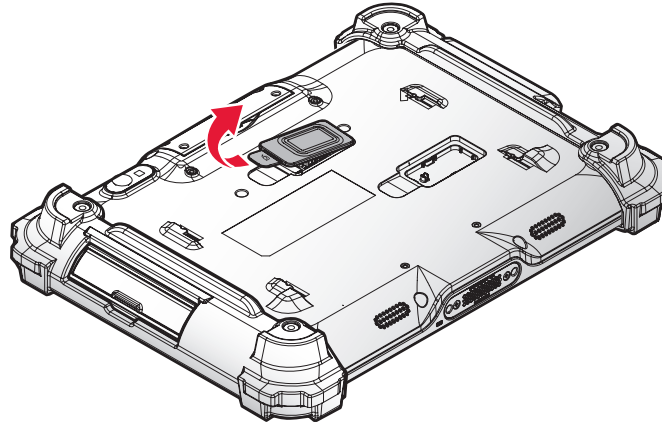


Chapter 3. Operation

First Time Use

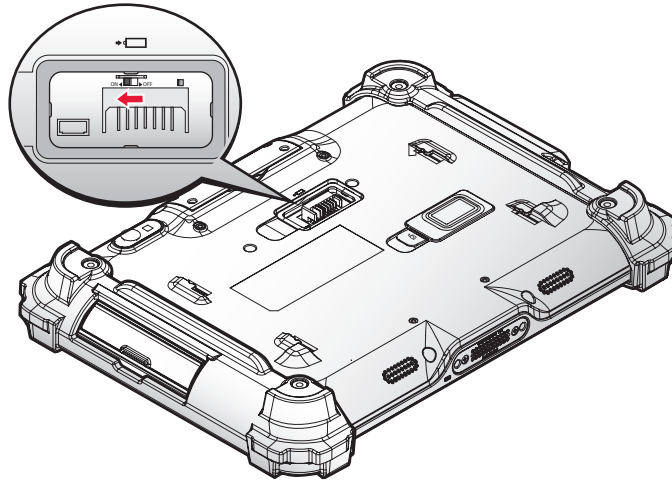
1. Flip up the external battery connector cover and lift it up.

Figure 94. Removing the External Battery Cover



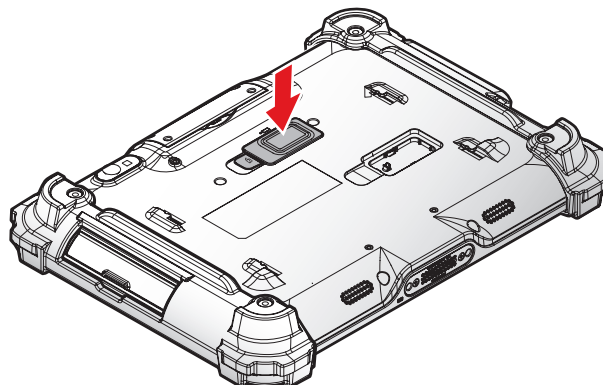
2. Switch the DIP switch to the ON position.

Figure 95. Switching the DIP Switch



3. Install the external battery cover over the battery connector.

Figure 96. Installing the External Battery Cover



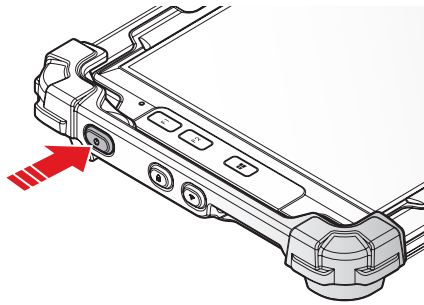
Powering the Device On and Off

Powering On the Device

Only power on the PM-522 after connecting all of the peripherals and cabling.

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

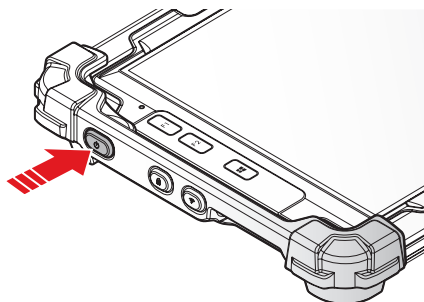
Figure 97. Power On the PM-522



Powering Off the Device

1. Locate the power button.
2. Press and hold the power button until the device starts a shutdown sequence.

Figure 98. Power Off the PM-522



Connecting to a Wireless Network

Before you can make use of the PM-522 wireless functions, you will need to connect to a network. The following is a set of procedures for connecting to a wireless network.

1. Before beginning, make sure you are within range of a wireless network. If your Wi-Fi setting is enabled verify that you are within range of a wireless network, see the following. If your Wi-Fi setting is disabled, proceed to step 2.
 - Look at the Network icon located at the right side of the taskbar. If the icon displays an X in a red circle, you are not within range of a wireless network. Move to a different spot until a wireless network is available.
2. From any screen, open the Charms bar by sliding your finger inward from the screen's right edge. The Charms bar displays along the screen's right side.
3. In the Charms bar, tap Settings to open the Settings menu.
4. In Settings, tap the Network icon to display the Networks connection settings.

5. The Wi-Fi menu displays. By the default, the Wi-Fi menu is set to Off. Tap the bar next to Off to toggle Wi-Fi to On. This enables the Wi-Fi option.
6. Once W-Fi is enabled a listing of all available wireless networks displays. The wireless networks with the strongest signal are atop the list.
7. Select the network you want to connect to, and tap the **Connect** button. You can tap the **Connect Automatically** check box if you connect to this network frequently. If you connect to the network, you are finished with the process. The network is considered an Open unsecured network, no password is required.
8. If a password is required, type the password in the **Enter the network security key** field. Alternatively, you can also push the WPS button on your router to begin the security handshake.
9. Tap **Next** to finish the connection process.

You have successfully connected to a wireless network.

Chapter 4. Using BIOS Setup Utility

Your ruggedized tablet has a BIOS setup utility which allows you to configure important system settings, including settings for the Boot and AP menus as well as the device's basic settings--the system reads the basic settings during initialization in order to boot correctly

When to Use the BIOS Setup Utility

You need to run the BIOS Setup utility when:

- Restoring to BIOS settings to factory default
- Modifying specific hardware settings
- Modifying specific settings to optimize system performance
- Installing Windows 7 operating system

Accessing the BIOS Setup Utility



The BIOS Setup Utility screens shown in this chapter are for your reference only. The actual images or settings on your tablet computer may differ.

The BIOS Setup Utility program may have been updated after the publication of this manual.

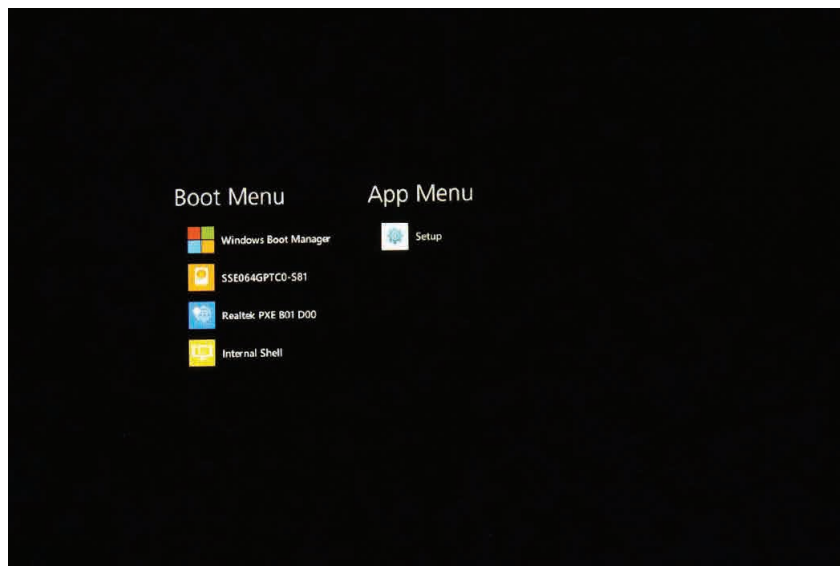
To run the BIOS Setup Utility, use the following procedures:

1. Perform one of the following:
 - If the PM-522 is powered off
Press the Power button to start up the device. The power LED lights.
Quickly press and hold the Windows Home key until the BIOS Post screen displays.
 - If the PM-522 is powered on
Press the Power button to shut down the device.
Quickly press and hold the Windows Home Key until the BIOS Post screen displays.

The BIOS POST screen appears as shown.

2. From the BIOS POST screen select **App Menu** to open the BIOS Setup Utility.

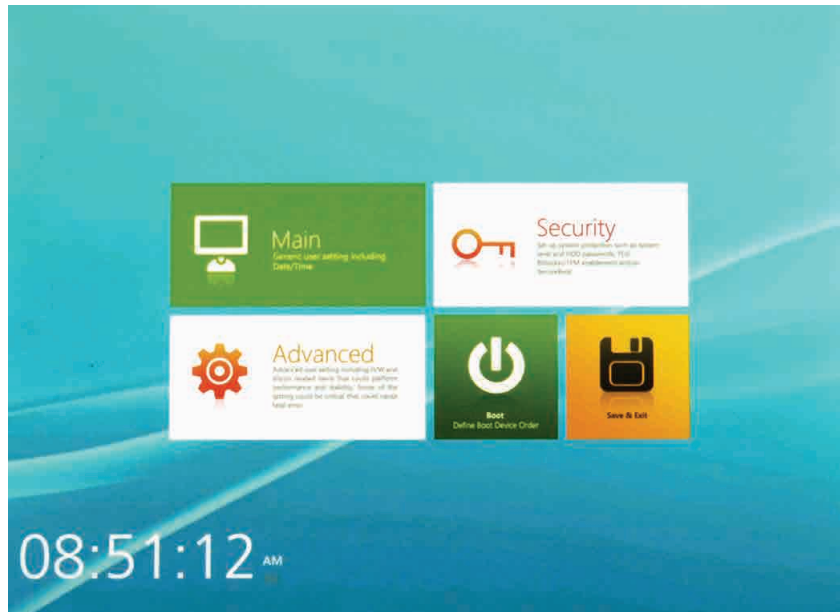
Figure 99. BIOS POST Screen



Due to the device's fast boot up and boot down time, there is only a small time frame of a few seconds between the release of the Power button and the opportunity to press the Windows Home key.

The App Menu displays.

Figure 100. BIOS Setup Utility: App Menu Screen



Installation an Operating System

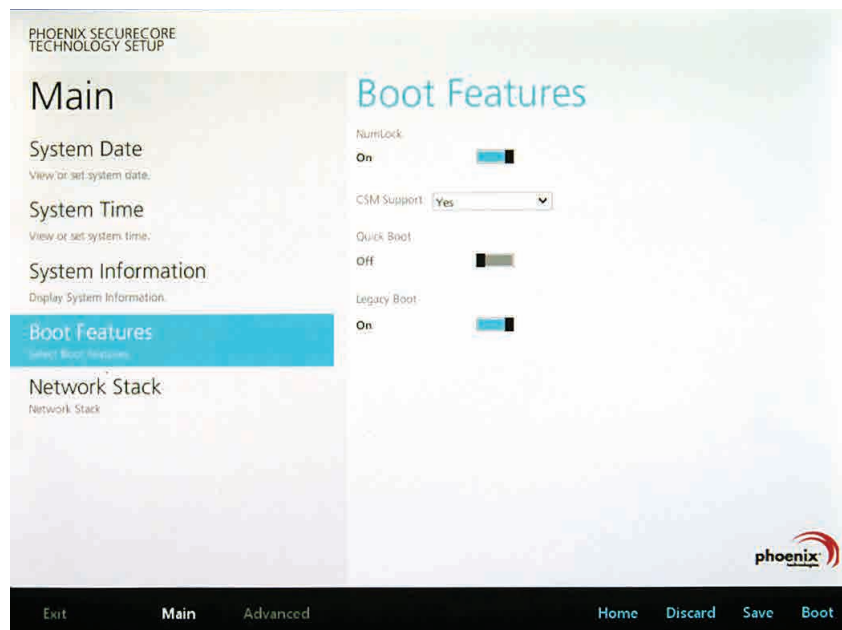
Setting Up a Windows 7 Installation Environment

There are several settings in BIOS that must be modified before you can install a Windows 7 operating system.

Use the following guidelines to prepare the BIOS environment:

- Step 1: Enable CSM Support
 1. Access the BIOS Setup Utility, see “*Accessing the BIOS Setup Utility*” on page 58.
 2. Navigate to **APP Menu > Main > Boot Features**.
 3. Locate the **CSM Support** setting and tap the drop-down menu to display the options.
 4. Tap **Yes** to enable CSM support.

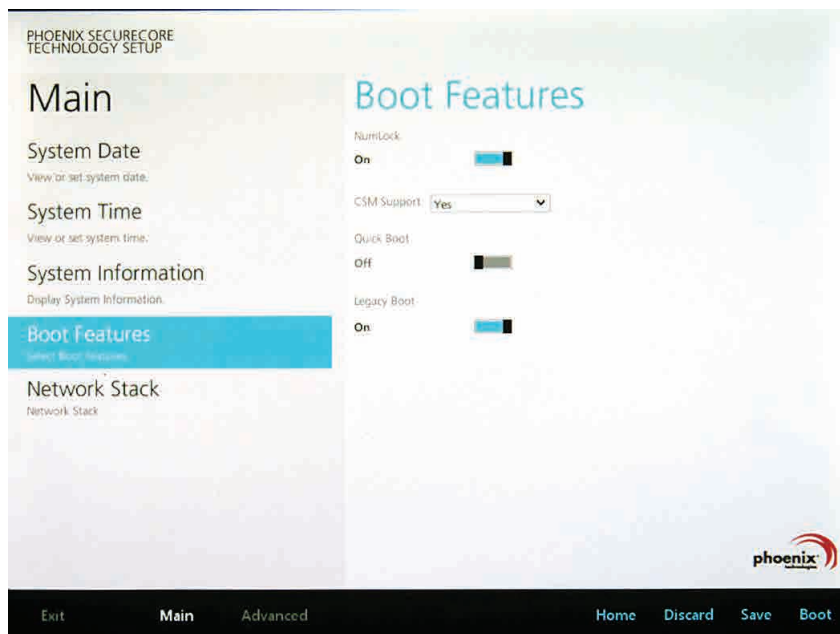
Figure 101. Main > Boot Features



■ Step 2 Enable Legacy Boot

1. Access the BIOS Setup Utility, see “Accessing the BIOS Setup Utility” on page 58.
2. Navigate to **APP Menu > Main > Boot Features**.
3. Locate the **Legacy Boot** setting and tap on the menu to select **On** enable legacy boot.

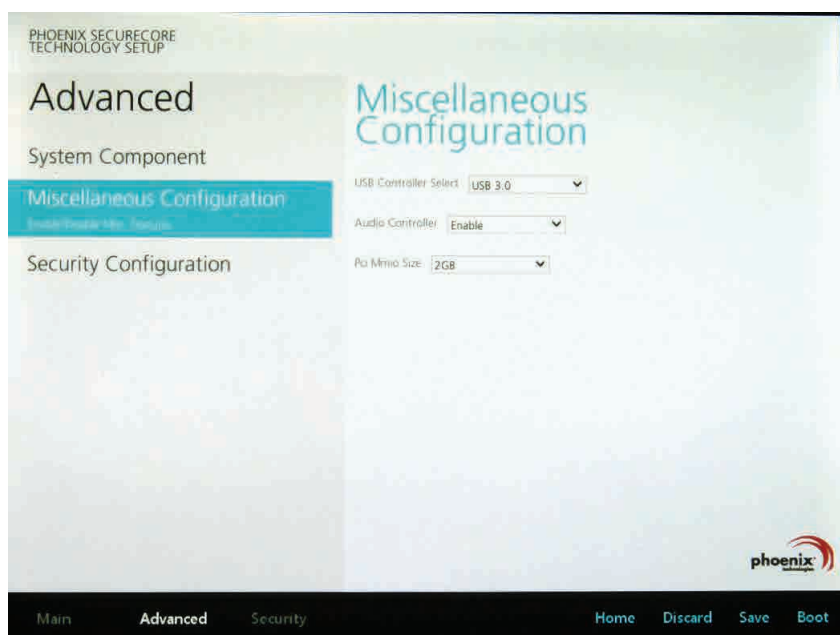
Figure 102. Main > Boot Features



■ Step 3: Enable USB 2.0 Support

1. Access the BIOS Setup Utility, see “Accessing the BIOS Setup Utility” on page 58.
2. Navigate to **APP Menu > Advanced > Miscellaneous Configuration**.
3. Locate the **USB Controller Select** drop-down menu and tap on it.
4. Tap **USB 2.0** from the menu list. USB 2.0 is now enabled for the device.

Figure 103. Advanced > Miscellaneous Configuration

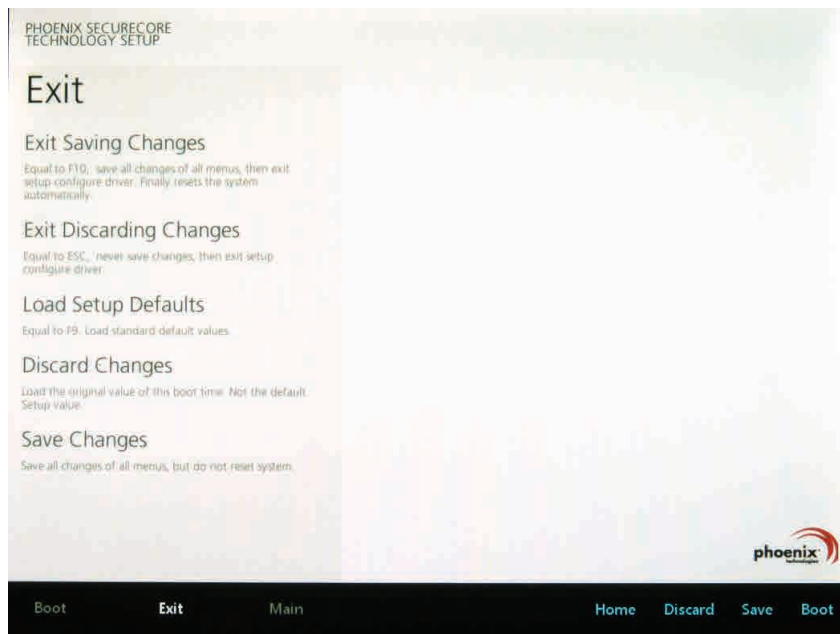


■ Step 4: Save the Settings

After you configure BIOS, you will need to save the settings.

1. Navigate to **APP Menu > Exit** and tap **Exit Saving Changes**.

Figure 104. Exit the BIOS Utility



2. A prompt display, tap **Yes** to save the configuration.

The BIOS settings are configured and the Windows 7 operating system can be installed.

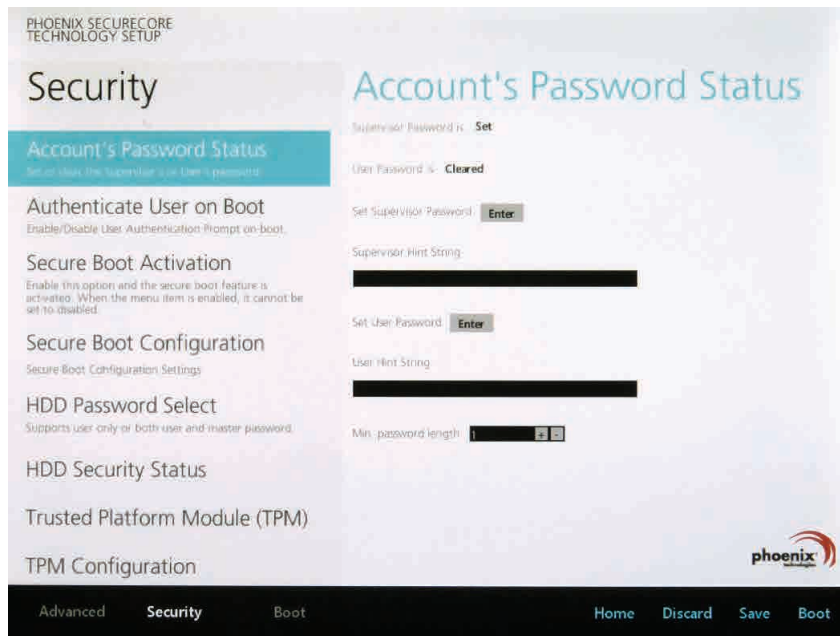
BIOS Passwords

Setting Up a Supervisor Password

To setup a supervisor password, follow the procedure as described:

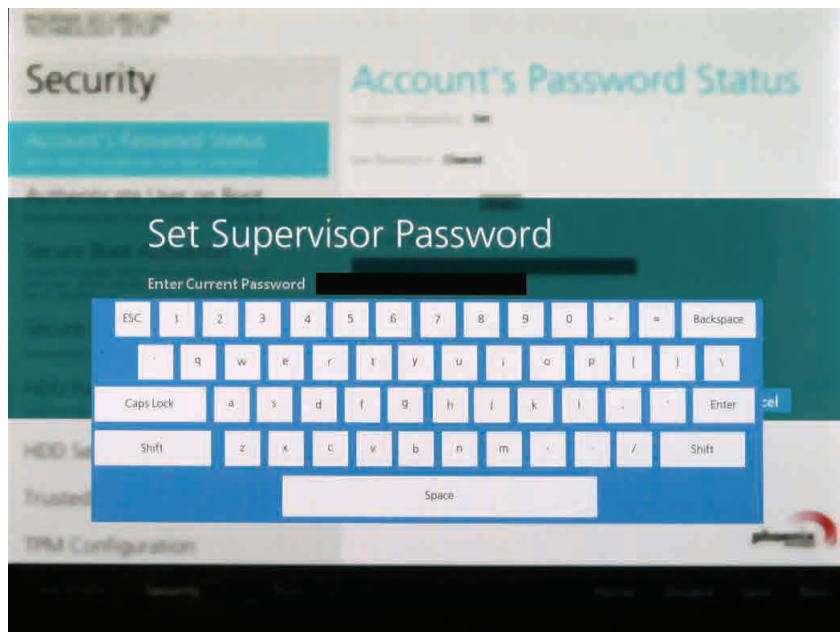
1. Go to **APP Menu > Security > Account's Password Status**.
2. Tap the **Enter** icon next to **Setup the Supervisor Password** to access the virtual keyboard.

Figure 105. Security > Account's Password Status



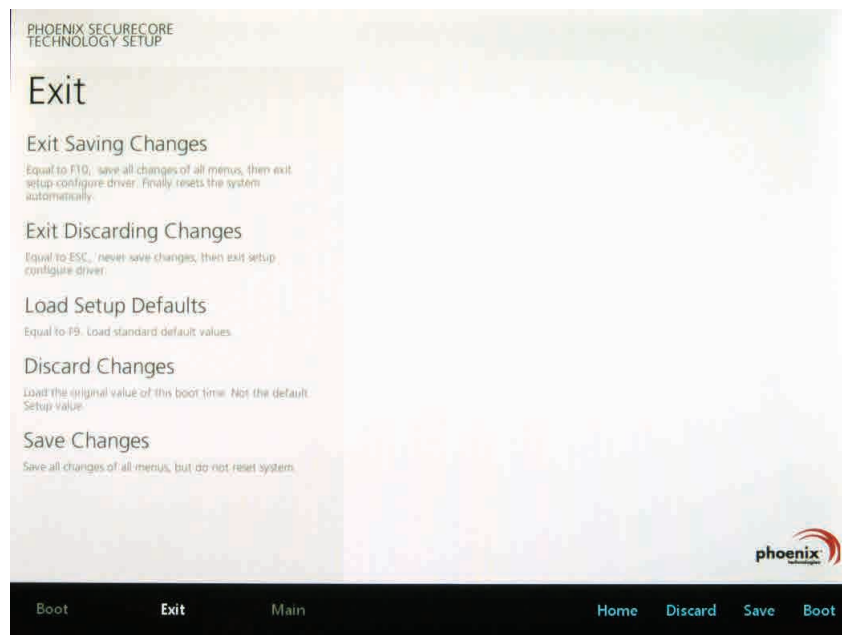
3. Tap the password to use for the Supervisor profile and tap **Enter**.

Figure 106. Set Supervisor Password



4. Verification of the password is required. Tap the same password again and tap **Enter** to confirm the new password.
5. Navigate to **APP Menu > Exit**.

Figure 107. Exit Screen



6. Tap **Exit Saving Changes** to display the confirmation screen.
7. Tap **Yes** to save the new configuration settings.

After setting the Supervisor password, the password is required to access the BIOS Setup Utility.

Changing a Supervisor Password

1. Navigate to **APP Menu > Security > Account's Password Status**.
2. Tap the **Enter** icon next to **Setup Supervisor Password**.
3. Enter the current supervisor password.
4. Enter a new password.
5. Enter the new password again to confirm.
6. Go to **APP Menu > Exit**.
7. Tap **Exit Saving Changes** and tap **Yes** to save the configuration.

Resetting a Supervisor Password

A supervisor password can not be reset. In the event that you forget the supervisory password, you will need to reflash the BIOS to enter the BIOS menus. Refer to “*Updating BIOS*” on page 65 to reflash the BIOS.

EC and BIOS

Updating BIOS

This procedure allows you to update and reflash the system BIOS. Both procedures follow the same steps as described in the following.



Make sure to protect your device from power loss during the BIOS update procedure to prevent irreparable damage to your system's mainboard.

For this procedure, it is highly recommended to connect the device to the AC adapter to prevent a sudden loss of power during the BIOS updating process.

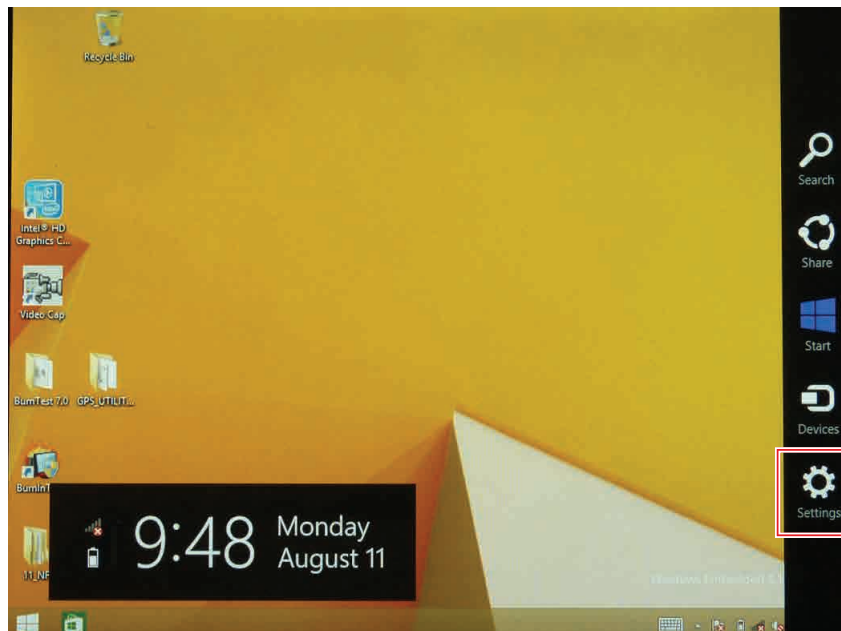
1. Contact your technical sales or technical representative to obtain the correct BIOS file.
2. Copy the BIOS file on to the USB device.
3. Connect the USB device to one of the device's USB ports and power on the PM-522.



A USB keyboard is required for entering command.

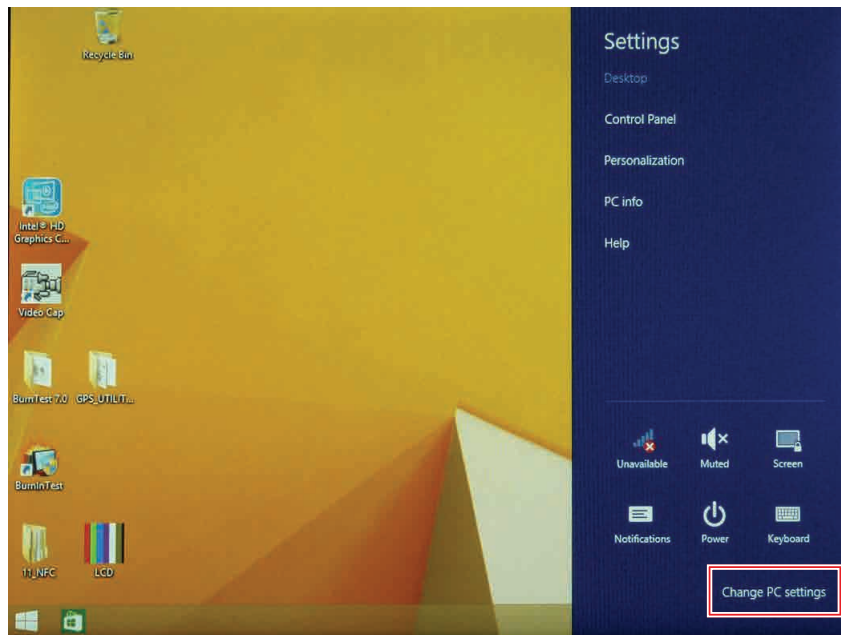
4. Once the device is on and the Windows 8 Home screen displays, open the Charms bar by sliding your finger inward from the screen's right edge. The Charms bar displays.
5. Tap **Settings** from the displayed menus. Alternatively, you can press the RF setting key to open the Charms bar.

Figure 108. Charms Bar > Settings



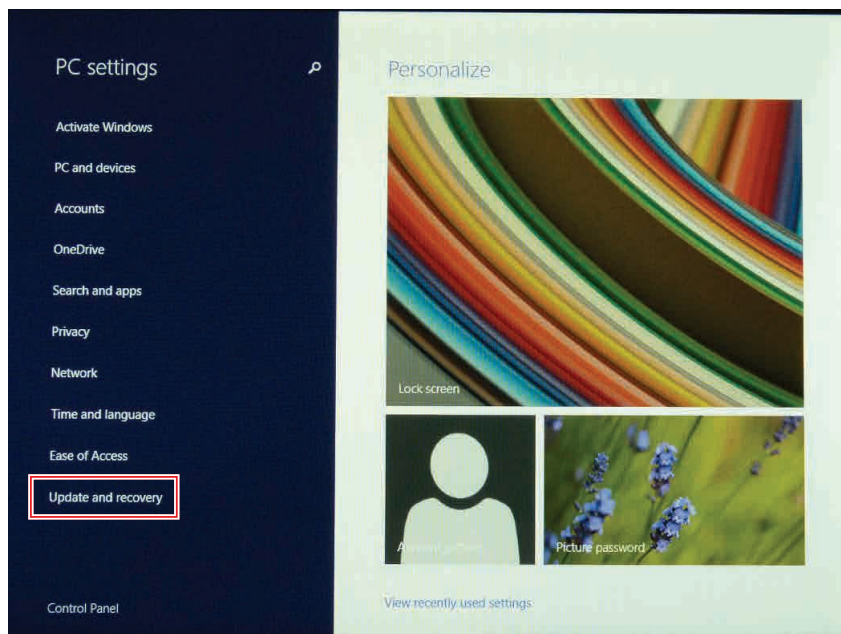
6. Tap **Change PC settings**.

Figure 109. Change PC Settings



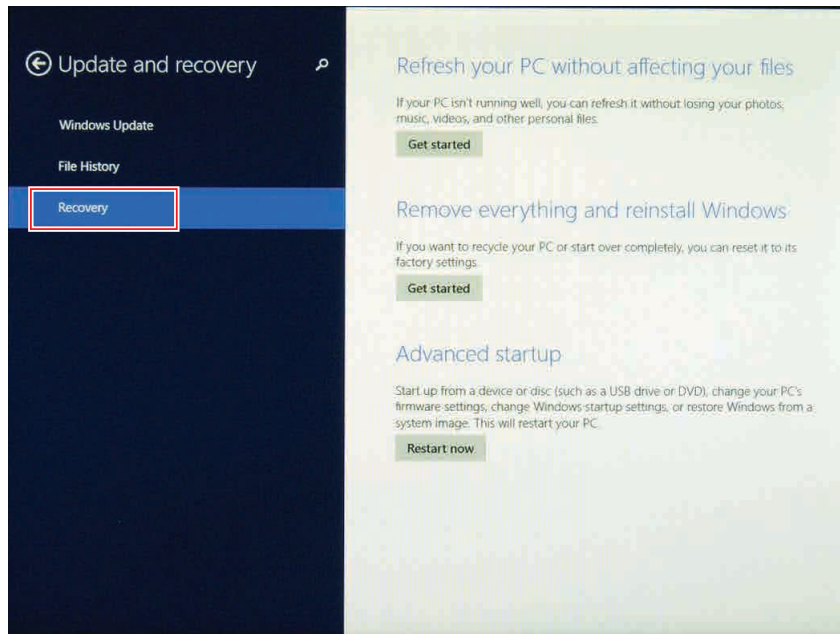
7. From the PC settings menu, tap **Update and recovery** to continue.

Figure 110. Update and Recovery



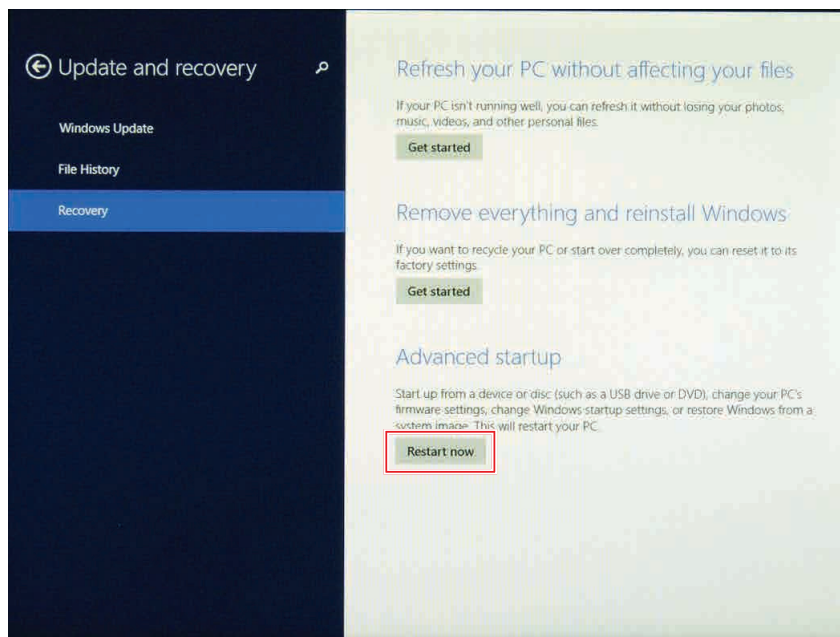
- From the **Update and recovery** screen, tap **Recovery**.
The **Advanced startup** option displays.

Figure 111. Recovery



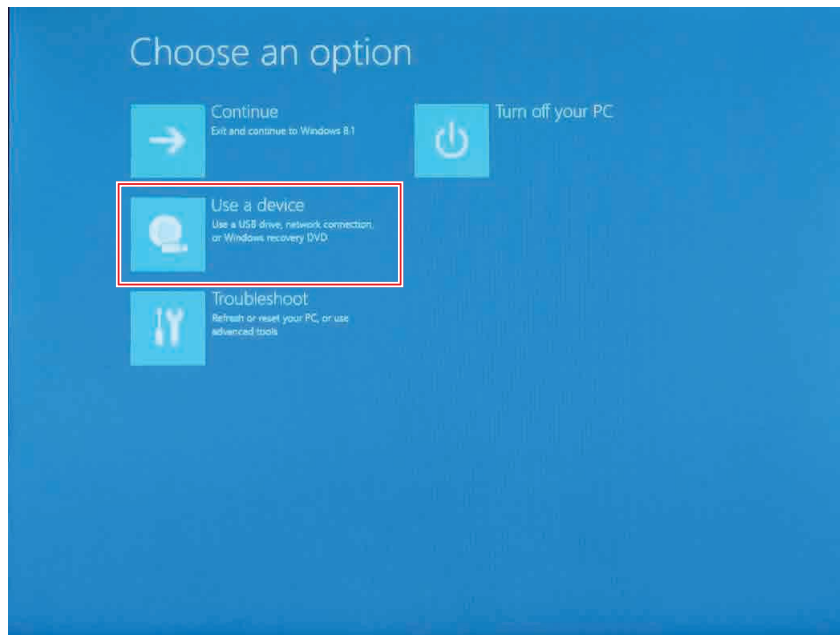
- Under **Advanced startup**, tap **Restart now**.

Figure 112. Restart Now



10. Tap **Use a device** to select a boot up preference.

Figure 113. Use a Device

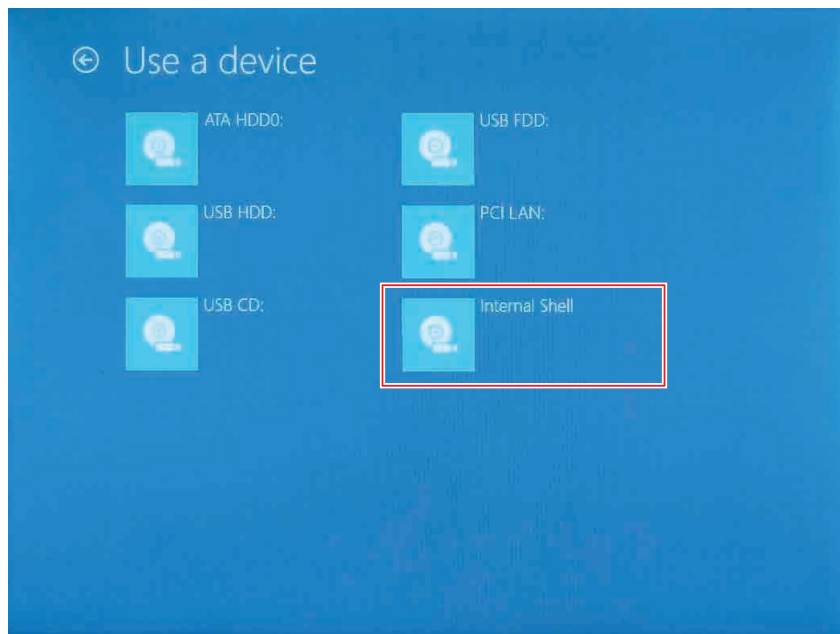


11. From the **Use a device** menu, tap **Internal Shell** to open the command screen.



Make sure connect the PM-522 to the AC adapter to prevent a sudden loss of power.

Figure 114. Internal Shell



- In the command screen, enter `fs1` : to select the USB device already connected to the device. The command directs you to the USB device's root menu.

Figure 115. Internal Shell Command Screen

```
EFI Shell version 2.31 (4660.22136)
Current running mode 1.1.2
Device mapping table
fs0 :HardDisk - Alias hd19c blk0
      Acpi (PNP0A03,0)/Pci (1310)/Sata (0,0,0) /HD (Part2.Sig632A7C85-549A-4A90-A1FC-809CA105BF3A)
fs1 :Removable BlockDevice - Alias f20a0 blk1
      Acpi (PNP0A03,0)/Pci (1410)/Usb (0,0)
blk0 :HardDisk - Alias hd19c fs0
      Acpi (PNP0A03,0)/Pci (1310)/Sata (0,0,0) /HD (Part2.Sig632A7C85-549A-4A90-A1FC-809CA105BF3A)
blk1 :Removable BlockDevice - Alias f20a0 fs1
      Acpi (PNP0A03,0)/Pci (1410)/Usb (0,0)
blk2 :HardDisk - Alias (null)
      Acpi (PNP0A03,0)/Pci (1310)/Sata (0,0,0) /HD (Part1.Sig4BE671EF-27A4-4990-8B03-86B36FBB8EA7)
blk3 :HardDisk - Alias (null)
      Acpi (PNP0A03,0)/Pci (1310)/Sata (0,0,0) /HD (Part3.SigE75F2A22-F220-419B-BEC2-A05D73A37FC6)
blk4 :HardDisk - Alias (null)
      Acpi (PNP0A03,0)/Pci (1310)/Sata (0,0,0) /HD (Part4.Sig2CED8758-52B0-4BC6-B761-0965185E99B4)
blk5 :BlockDevice - Alias (null)
      Acpi (PNP0A03,0)/Pci (1310)/Sata (0,0,0)

Press ESC in 1 seconds to skip startup.nsh, any other key to continue.
Shell> _
```

- If the BIOS file is in a folder and not in the root directory, navigate to the target folder.
- Type `wf` (.nsh) and tap Enter. `wf` is the designated BIOS file.
Do not turn off your device or interfere with the reflash process until the process is complete.
- Reboot the PM-522.

The BIOS is now updated.

Updating EC



Connect the PM-522 to the AC adapter to prevent a sudden loss of power.

- Updating EC requires the use of the Internal Shell Command menu, refer to steps 1 to 12 of “Updating BIOS”.
- Enter the EC source file folder.
- In the source folder, enter `f`.
- Do not turn off your device or interfere with the reflash process until the process is complete.
- Reboot the PM-522.

Chapter 5. Troubleshooting

Use the troubleshooting tables in this section to fix problems with the Wi-Fi connection, 802.1x security, or general problems with operating the computer.



If you send the computer in for service, it is your responsibility to save the computer data and configuration. RuggON is responsible only for ensuring that the hardware matches the original configuration when repairing or replacing the computer.

Troubleshoot the Wi-Fi Connection

Use this troubleshooting table to help solve problems with your 802.11 radio connection.

- Q.** When you turn on the computer after it was suspended for a while (10 to 15 minutes or longer), it can no longer send or receive messages over the network.
- A.** Host may have deactivated or lost current terminal emulation session. In a TCP/IP direct connect network, turn off the “Keep Alive” message from host to maintain the TCP session while the computer is suspended.
- Q.** The computer is connected to the network and you move to a new site to collect data. Your computer now shows you are not connected to the network.
- A.** Move closer to an access point or to a different location to reestablish communications until you reconnect with the network.
- Q.** The computer appears to be connected to the network, but you cannot establish a terminal emulation session with the host computer.
- A.** There may be a problem with the host computer, or with the connection between the access point and the host computer. Check with the network administrator to make sure the host is running and allowing users to log in to the system.
- Q.** The computer appears to be connected to the network, but the host computer is not receiving any information from the computer.
- A.** There may be a problem with the connection between the access point and the host computer. Check with the network administrator or use your access point user’s manual.
- Q.** A network connection icon appears in the toolbar, but then disappears.
- A.** The computer may not be communicating with the intended access point. Make sure the network name matches the access point network name. The access point may not be communicating with the server. Ensure the access point is turned on, properly configured, and has 802.1x security enabled.

Troubleshoot Operating the Computer

Use this section to troubleshoot problems that may prevent you from being able to operate the computer.

Q. You press the Power button and nothing happens.

A. Make sure that power is connected to the computer.

Q. The computer appears to be locked up and you cannot enter data.

A. Restart the computer.

Call Product Support

Simple instructions please contact the dealer, contact ruggon representative, or leave a message visit the RuggON website at www.ruggon.com.

To better assist you have the following information ready:

- Configuration number
- Serial number
- Operating system, BIOS, and MCU versions
- Service pack version
- System component versions
- If you are using security, know the type and the full set of parameters

Chapter 6. Maintenance

Cleaning the Device



Danger to electric shock when cleaning or maintaining the PM-522.

To avoid electric shock, turn the PM-522 off and disconnect it from the power supply before cleaning or maintaining it.

Housing

- The housing of the PM-522 is best cleaned with a damp cloth.
- Use compressed air, a high-pressure cleaner or vacuum cleaner may damage the surface.
- Use a high-pressure cleaner, the additional risk of water entering the PM-522 may damage the electronics or touch screen.

Touch Screen

- Use neutral detergent or isopropyl alcohol on a clean soft cloth to clean the panel surface.
- Prevent using any kind of chemical solvent, acidic or alkali solution.

Returning the Device

Please put the contents in the original package gently when you need to return the PM-522.

Contacting RuggON

If you experience technical difficulties, please consult your distributor or contact the technical services department:

www.ruggon.com

