



Windows 7-Inch Rugged Tablet

USER MANUAL

Mesa 4 User Manual

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Cautions



WARNING! This symbol indicates that failure to follow directions could result in serious injury.



CAUTION: This symbol indicates that failure to follow directions could result in damage to equipment or loss of information.



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CHAPTER 1

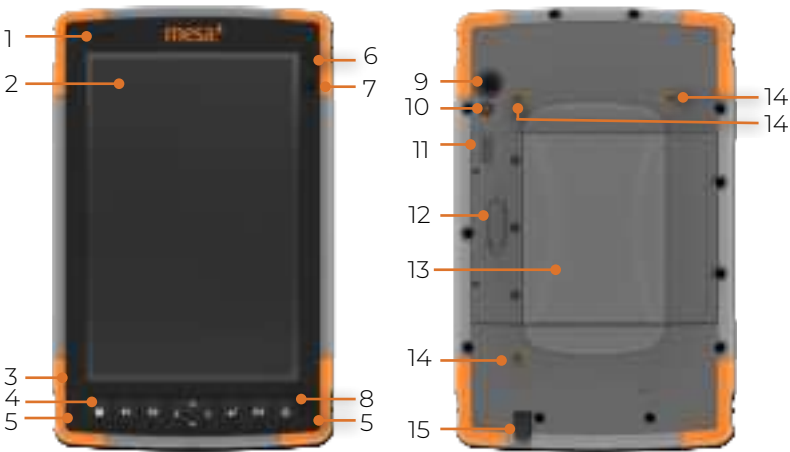
1. Getting Started

1.1 Overview

The Mesa 4 Rugged Tablet™ from Juniper Systems has the Windows 11 IoT Enterprise LTSC or Windows 11 Pro operating system. Standard features include a 7-inch (178 mm) display, capacitive touchscreen, keypad, front and rear cameras, Bluetooth, GPS/GNSS receiver, and Wi-Fi. Standard accessories include a lithium-ion battery pack, AC wall charger, hand strap, connector port cover, and fine hard-tip capacitive stylus and tether. Optional features include a 4G LTE data modem, RS-232 port, barcode imager, and UHF RFID module.

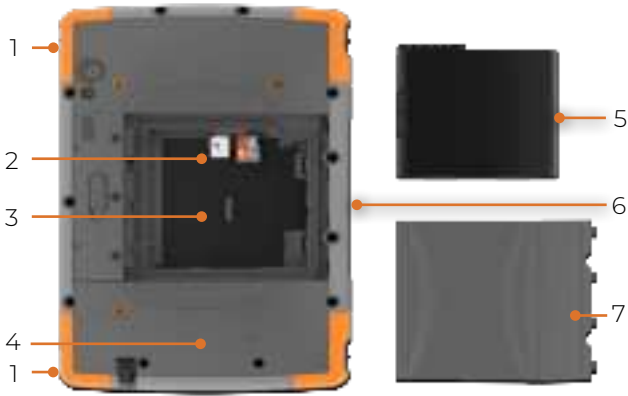
1.1.1 The Anatomy of the Mesa 4

Front and Back Features



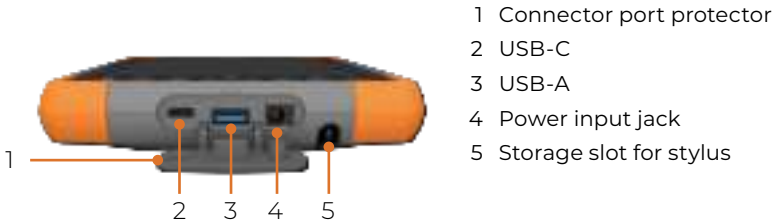
- | | |
|--|--|
| 1 Notification LEDs | 10 Camera flash |
| 2 Touchscreen and display | 11 Speaker |
| 3 Protective over-molded bumper (all four corners) | 12 Battery door lock |
| 4 Keypad | 13 Door to removable battery compartment and card slots |
| 5 Microphone (one on each side) | 14 External device attachment points (three on the back) |
| 6 Ambient light sensor | 15 Storage slot for stylus |
| 7 Front camera, 5 MP | |
| 8 Power button | |
| 9 Rear camera, 13 MP | |

Battery Compartment and Card Slots

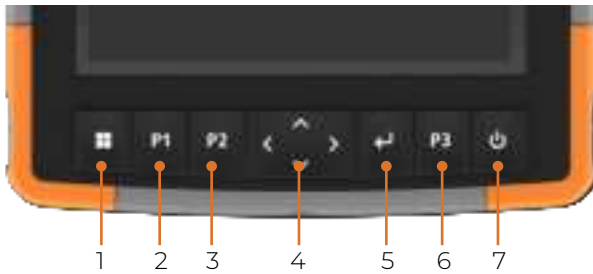


- | | |
|---|--|
| 1 Hand strap attachment (two on each side) | 4 Location of internal battery (not user accessible) |
| 2 Nano SIM card slot and Micro SD card slot | 5 Battery pack, removable |
| 3 Battery compartment | 6 Accessory connection pins |
| | 7 Battery door |

Connector Ports



Keypad



- | | |
|-------------------------------|--------------------------|
| 1 Windows Start screen | 5 Enter |
| 2 P1, volume down | 6 P3, on-screen keyboard |
| 3 P2, volume up | 7 Power/suspend |
| 4 Four-way directional navpad | |

The P1, P2, and P3 buttons are programmable. To assign other functions to the programmable buttons, see “Programmable Buttons” on page 11.

Perform Initial Tasks

When you receive your Mesa 4, perform the tasks outlined in this section before first use.

1.1.2 Review Documentation

This user’s manual and other documents, such as release notes, are available on our website at <https://junipersys.com/support/mesa-4/documentation>. View, download, and print documents as you desire. A PDF viewer is included with your Mesa 4 apps.

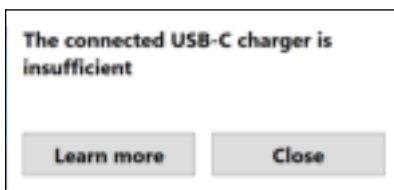
1.1.3 Charge the Battery Pack

The Mesa 4 comes with a rechargeable and removable Li-ion battery pack, which is installed in the Mesa 4 before shipping.

Before powering on the tablet for the first time, charge the battery pack at room temperature with the AC wall charger that came with the Mesa 4 or a USB-C charger until fully charged.

- **AC wall charger**—Attach the appropriate plug for your country to the AC wall charger that came with the Mesa 4 (or another approved charger from Juniper Systems). Plug the other end of the AC wall charger into the DC power jack on the Mesa 4. With an approved AC wall charger, the batteries cannot be overcharged."6.1.2 Wall Charger Warnings" on page 68
- **USB-C charger**—Insert the USB-C charger into the USB-C port on the Mesa 4. Connect the cable to a computer or wall charger. The USB-C charger must deliver 9–20 V with a minimum 27 W.

If the USB-C charger is insufficient to charge the Mesa 4, an error message appears.



To view the charger's voltage and watt delivery, tap **Learn More**.

While the battery pack is charging, the red LED on the front of the Mesa 4 blinks. When the battery pack is fully charged, the LED stops blinking.

1.1.4 Set Up Windows

When you power on the tablet for the first time, you are prompted to set up Windows. Follow the prompts to set up the tablet.

1.1.5 Attach the Hand Strap

A hand strap is included with the Mesa 4. This allows you to securely hold the Mesa 4. To attach the hand strap, fasten it to the two attachment points on the left or right side of the tablet, as shown in the images.



1



2



3

1.1.6 Attach the Stylus Tether

A fine hard-tipped capacitive stylus and tether are included with the Mesa 4. To attach the stylus tether,

1. Attach one end of the stylus tether to the stylus.
2. Push the free tether loop through one of the tether attachment points located by each corner on the Mesa.



3. Insert the stylus with the attached tether through this loop and tighten the loop.
4. Place the stylus into the stylus storage slot located on the bottom of the Mesa 4.

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CHAPTER 2

2. Standard Features

This chapter discusses the standard features included with every model of the Mesa 4.

2.1 Display

The Mesa 4 has a bright color display and capacitive touchscreen with a diagonal viewing area of 7 inches (178 mm).

To adjust the display settings, including the brightness, text size, and orientation, open Settings. Select **System > Display**.

*Note: To quickly adjust the display brightness, tap the **Network, Sound, or Battery** icons on the right side of the taskbar and move the Brightness slider.*

2.2 Camera

The Mesa 4 has a 13 MP rear camera with auto focus and flash and a 5 MP front camera.

You can capture both still images and videos using the camera application. Other options include a timer and brightness settings.

2.2.1 Photo and Video Library

Photos and videos are automatically stored in the Pictures folder. To access the Pictures folder, open File Explorer and select **Home** in the left navigation pane.

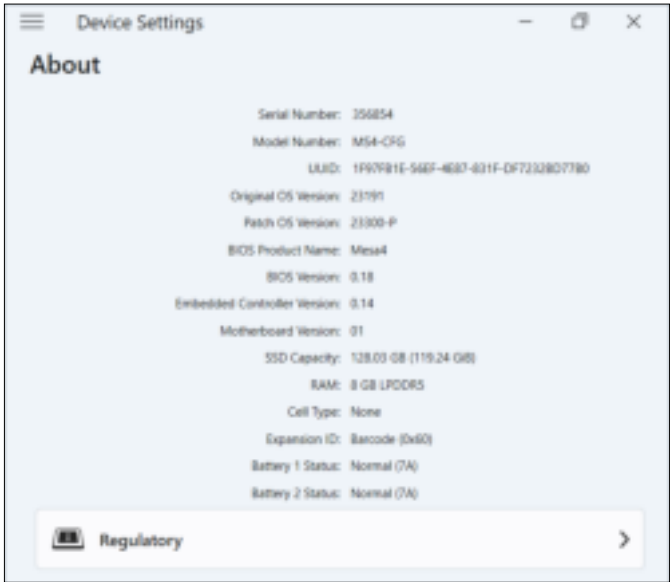
2.3 Device Settings App

Device Settings is a built-in app that allows you to view detailed information about your device, including the serial number, model number, and Juniper OS version. Device Settings also includes options to adjust the touchscreen profiles, define the programmable buttons, modify the GNSS settings, update the Mesa 4, and set up the optional RS-232 port.

For information on the GNSS settings, see “2.13 GPS/GNSS Receiver” on page 30. For information on the RS-232 port, see “3.5 RS-232 Port” on page 50.

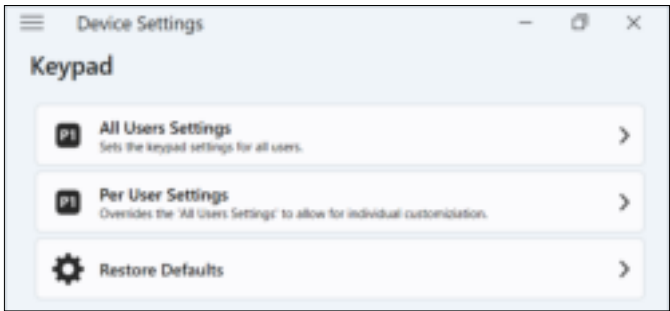
2.3.1 About

From the About screen in Device Settings, view the serial number, model number, Juniper OS version, product name, BIOS version, embedded UUID controller version, motherboard version, SSD capacity, cell type, expansion ID, and battery status of your tablet. The About screen also contains the regulatory information for the Mesa 4.



2.3.2 Keypad Settings

From the Keypad screen in Device Settings, customize the keypad backlight brightness, set the preferred function of each programmable button, and restore the default keypad settings.



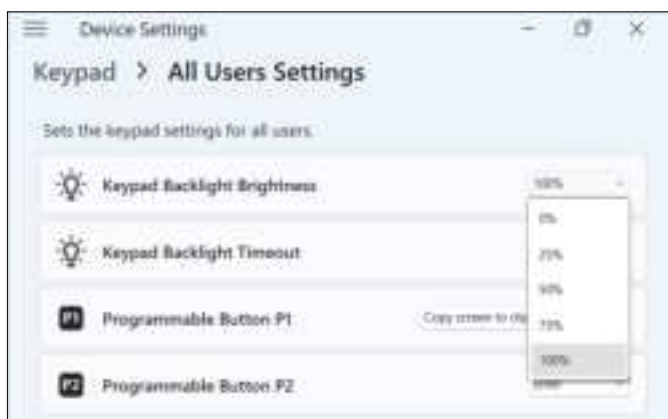
To modify the keypad settings,

1. Select **Device Settings > Keypad**.
 - Tap **All Users Settings** to make keypad changes for all users who sign in to the tablet.
 - Tap **Per User Settings** to customize keypad changes for your individual account. Per User Settings override All User Settings.
 - Tap **Restore Defaults** to restore the default settings for All Users or Per User.

Keypad Backlight Brightness

Adjust the keypad backlight brightness for All User Settings or Per User Settings.

1. Select the drop-down menu for **Keypad Backlight Brightness**.
2. Select a brightness from 0–100%.

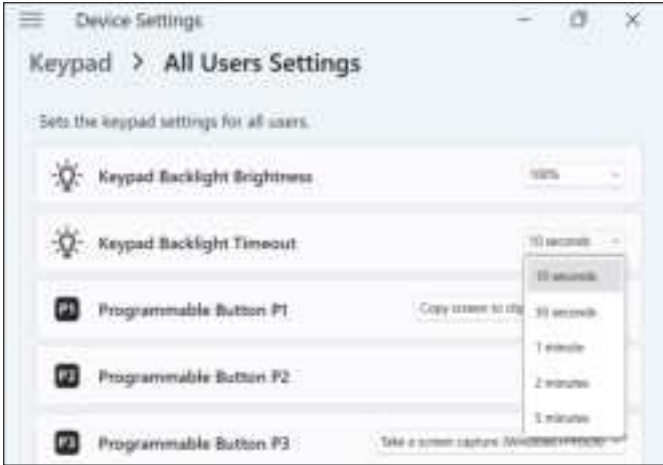


Keypad Backlight Timeout

Adjust the amount of time that the keypad remains lit for All User Settings or Per User Settings.

1. Select the drop-down menu for **Keypad Backlight Timeout**.

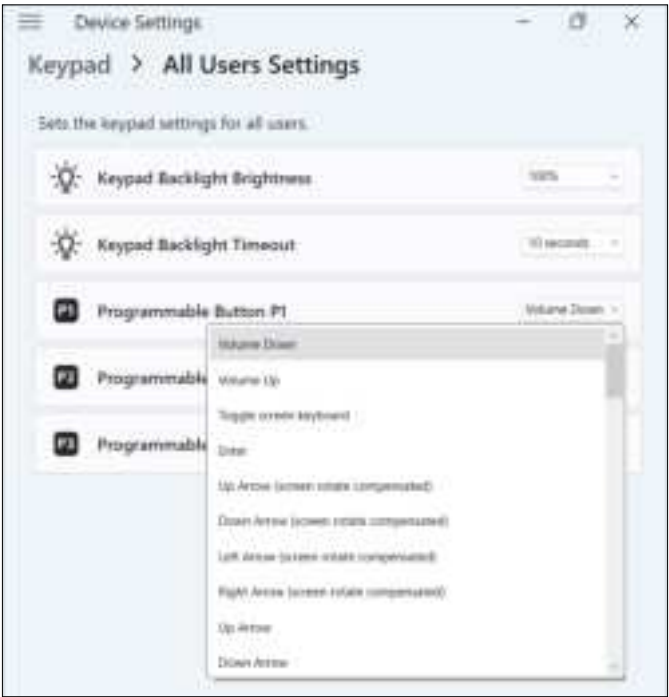
2. Select the amount of time that the keypad remains lit after it is inactive.



Programmable Buttons

The Mesa 4 has three programmable buttons on the keypad that can be used for various functions, such as turning up or down the volume, opening the camera, capturing screenshots, or closing an app.

Select the preferred function for each programmable button for All User Settings or Per User Settings.

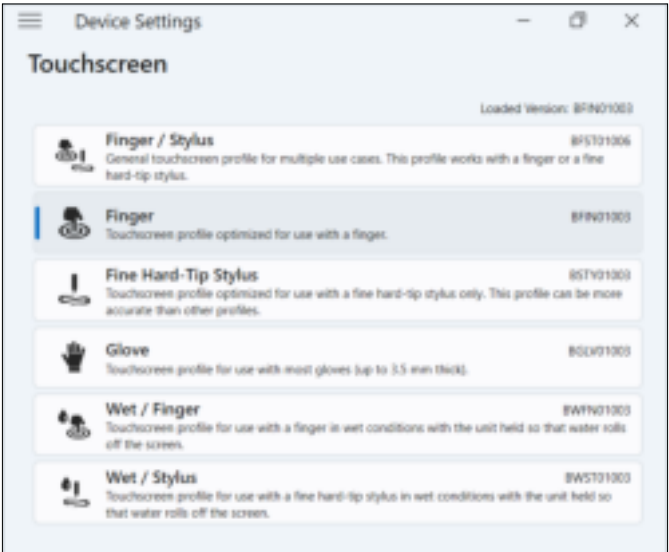


2.3.3 Touchscreen Profile Settings

The Mesa 4 has many touchscreen profiles available for customizing the tablet to fit your work environment.

To change the touchscreen profile,

- 1. Select **Device Settings > Touchscreen**.



- 2. Select a touchscreen profile. The profiles are detailed in the table below.

TOUCHSCREEN PROFILE	USAGE
Finger/Stylus	Works with either a finger or the fine hard-tipped stylus but is not optimized for either use. Use only in dry environments. Does not work with a gloved hand.
Finger	Optimized for finger touch. Use only in dry environments. Does not work with a gloved hand.
Fine Hard-Tip Stylus	Optimized for the fine hard-tipped stylus. Use in dry environments or in light moisture. Stylus works with a gloved hand.

TOUCHSCREEN PROFILE	USAGE
Glove	Optimized for a gloved finger. Use in dry environments or in light moisture.
Wet/Finger	Optimized for finger touch in wet environments, including rain, snow, and ice. Does not work with a gloved hand.
Wet/Stylus	Optimized for the fine hard-tipped stylus in wet environments, including rain, snow, and ice. Stylus works with a gloved hand.

Using the Mesa 4 in Wet Conditions

When using the Mesa 4 in wet conditions, keep it tilted at a 30° or higher angle to prevent water from pooling on the screen. The touchscreen does not work well when water droplets are greater than 1 in. (2.54 cm).

⚠ CAUTION: Pooling water reduces the touchscreen functionality and may cause false touches.

The Mesa 4 works in some salt water conditions, but salt water reduces the responsiveness of the touchscreen.

Using a Fine Hard-Tipped Stylus

The touchscreen profiles intended for a stylus work best with the fine hard-tipped stylus included with the Mesa 4. Touchscreen performance is not guaranteed with third-party styli or styli used with the Mesa 2 or 3. (The Mesa 4 stylus is distinguished from other Mesa styli by the gray bars on the sides.)

⚠ CAUTION: Do not use the Windows 11 screen calibration tool. It may degrade the touchscreen performance.

2.3.4 Touchscreen Settings

With Windows touch gestures enabled, you can

- Swipe from the right edge of the screen to open the Notification center.

- Swipe from the left edge of the screen to open Widgets.

When enabled, the edge swipe functionality can cause problems with some applications.

To quickly turn on/off edge swipe,

1. Open **Device Settings > Touchscreen**.
2. In Touchscreen settings, turn on/off **Allow edge swipe**.
3. Tap **Yes** to allow the Device Settings app to make changes to the tablet.
4. Sign out, then sign in for the setting to take effect.

2.3.5 Miscellaneous Settings

The Misc screen has settings for controlling power to the connection pins, preparing the Mesa 4 batteries for long-term storage, and restoring all device settings to default.



Docking Pads

The accessory connection pins connect to and power Mesa 4 accessories, such as the attachable keyboard and powered vehicle dock. Control the power to the connection pins by turning the docking pad power on or off.

To control power to the connection pins,

1. Select **Device Settings > Misc**.
 - **On**—Enables constant power to the connection pins. Set to On if you are using the attachable keyboard.

- **Off**—Disables power to the connection pins when no accessory is connected.

Note: In a wet environment, turning off the power to the connection pins when not in use slows corrosion.

Storage

Use the Storage feature to prepare the Mesa 4 tablet for long-term storage. For instructions, see “Long-Term Storage” on page 23.

Restore Device Settings to Defaults

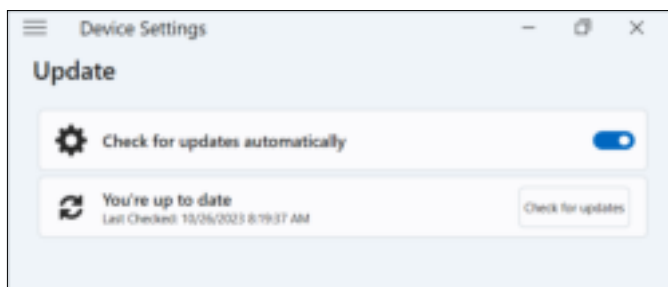
Tap **Restore defaults** to restore all settings in the Device Settings app to default.

2.3.6 Update the Mesa 4

You decide when and how to get the updates that keep your tablet running smoothly. Update the device-specific drivers, firmware, and applications from the Update screen in Device Settings.

To manage your options and see available updates,

1. Select **Device Settings > Update**.



*Note: To update the Windows OS, go to **Settings > Windows Update**.*

2.4 LED Activity Indicators

LED activity indicators are located on the front of the Mesa 4 in the upper-left corner. The lights function as explained below.

Red LED, solid

- Turns on when you put the tablet to sleep or power it off by pressing the power button . When the tablet completes the shutdown process, the red LED turns off. Do not remove the battery while the solid red light is on.
- Turns on when the tablet is plugged in for charging but the batteries are full (not charging) and the tablet is running or in sleep mode. If you power off the Mesa 4, the red LED light turns off.

Red LED, blinking

- Turns on when the tablet is plugged in and the battery is charging.

Amber light

- Turns on when either camera is in use.

Green LED

- Turns on when the system is booting or resuming from sleep mode. The LED turns off when the screen turns on. This LED indicator is programmable.

Blue LED

- Does not have an assigned function but can be programmed as desired.

Note: The green and blue LEDs are in the same location and do not show simultaneously. These LEDs are programmable, and sample code is available upon request.

2.5 Connector Ports

The Mesa 4 has a power input jack, a USB-A port, and a USB-C port. All ports are protected by the connector protector when not in use.

2.5.1 Connector Protector

The connector protector is a removable and replaceable dust cover. The connector protector is not required to maintain the seal of the connectors or tablet.

- To remove the connector protector, gently pull on the top of the protector and remove the rubber retainers from the holes.
- To replace the connector protector, insert the rubber retainers into the holes and push the protector into place.

Contact your sales representative if you need a new connector protector.

2.5.2 Power Input Jack

Use the power input jack and the Mesa 4 AC wall charger to charge the Mesa 4 tablet. The input jack is a nominal 12 V, 2.5 A, 30 W input. The allowable voltage range is 10.8–21.25 V with minimum of 2.5 A.

2.5.3 USB-A Port

Use the USB-A port to connect a USB drive, mouse, or other equipment.

2.5.4 USB-C Port

Use the USB-C port to transfer data and charge the tablet. If you charge the Mesa 4 from the USB-C port, the allowable charger range is 9–20 V with a minimum of 27 W.

2.6 Power Management

The Mesa 4 runs on battery power. The tablet uses a rechargeable Li-ion battery pack. Some tablets have an optional non-removable internal battery pack.

2.6.1 Charge the Battery Pack(s)

For tablets with a removable battery pack and an internal battery pack, the intelligent internal battery charging circuit charges the battery pack with the least amount of energy first. When this battery pack reaches the same level as the other battery pack, both batteries are charged at the same time until they are fully charged.

Charge the battery pack(s) with the AC wall charger that came with the Mesa 4 or a USB-C charger.

While the battery pack(s) are charging, the red LED on the front of the Mesa 4 blinks. When the battery pack(s) are fully charged, the red LED

- Turns off if the tablet is powered off.
- Changes to a solid red light if the tablet is powered on.

Battery packs charge most efficiently at room temperature and may not charge in extreme conditions.

2.6.2 Remove and Install the Battery Pack

Access the removable Li-ion battery pack from the back of the tablet. You can remove the battery pack for replacement or charging on an external battery charger. (See “3.8 Battery Charger” on page 54.)

ⓘ CAUTION: While the battery door is open, the Mesa 4 is not sealed against water and dust.

If you have the optional internal battery, you can hot swap the battery pack for another one while the tablet is running.

Note: To use a Mesa 3 battery pack in a Mesa 4 tablet, the battery pack must be updated to firmware version 7A or later. For more information on the Mesa 4 battery, go to <https://junipersys.com/batterymesa4>.

Remove the Battery Pack

To remove the battery pack,

1. Power off the tablet by holding the power button for five seconds until “Slide to shut down your PC” appears. Swipe to the bottom of the screen to power off the tablet. Wait until the red LED turns off.

ⓘ CAUTION: Always completely power off the tablet before removing the battery. Failure to do so may cause loss of data or damage to the tablet. EXCEPTION: If the Mesa 4 has an optional internal battery, you can safely remove the battery while the tablet is running.

2. Push in the battery lock switch, slide it to the unlocked position, and remove the door.

3. Pull up on the black tab on the battery pack to lift up the tabbed edge. Gently remove the battery pack.



Install the Battery Pack

To install the battery pack,

1. Hold the battery so that the black tab on the edge of the battery is up and facing the door latch.
2. Place the opposite edge into the battery compartment. Push it gently under the two battery catches.



3. Rotate the tabbed edge down until the battery sits flat in the compartment.

⚠ CAUTION: Do not insert the battery pack straight down. You can damage the tablet.

4. Replace the door and press down on it until the latch pops into the locked position.

2.6.3 Battery Status and Management

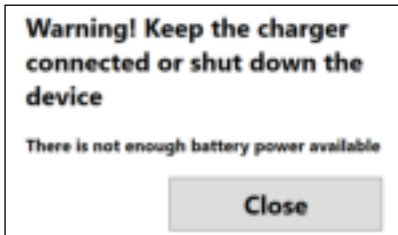
To view the battery life, tap the **Network**, **Sound**, or **Battery** icons on the right side of the taskbar. The cumulative amount of remaining battery life is displayed in the bottom left corner.



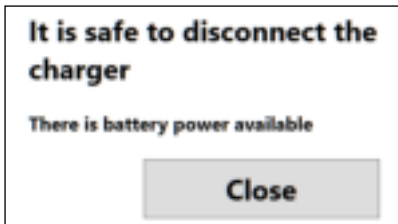
Tap the battery life percentage to open the power and battery settings. From this screen, you can view the charge level for each battery and the estimated time remaining for battery life.



If the Mesa 4 battery reaches a very low charge, the tablet hibernates to prevent further drain on the battery. To exit hibernation, charge the battery until the charge is sufficient to power the tablet. Then, press the power button.



If the battery is depleted and the tablet is running on external power, this message appears. Keep the charger connected or shut down the tablet until the battery charge is sufficient.



After the battery is charged enough to power the Mesa 4, you can safely disconnect the charger.

Battery Life

Battery life on a full charge with typical usage is 9–10 hours. You can extend the battery life by an additional 4–5 hours with the optional internal battery. The actual amount of battery life you experience can vary significantly depending on your usage of applications, backlight, and radios (such as Wi-Fi, cellular, GNSS, and Bluetooth).

Battery packs typically last 1,000 to 3,000 charging cycles and have a one-year shelf life. Recharge the battery packs at least once per year to prevent the batteries from discharging to a level that might damage or permanently reduce the capacity of the batteries.

⚠ CAUTION: Only use batteries designed for the Mesa 4 from an approved vendor. Using non-approved batteries may void your tablet warranty. The Mesa 4 must be returned to a certified repair center to replace the optional internal battery.

⚠ CAUTION: The tablet is not designed to run on external power without an installed battery. Doing so can damage internal components and void your tablet warranty if external power is lost.

2.6.4 Change the Power Mode

Windows power mode lets you choose how your tablet manages performance with power conservation. You determine what is important to you—getting the best battery life, best performance, or a balance between the two.

To change the power mode,

1. Select **Start**. Then select **Settings > System > Power & battery**.

Or, tap and hold **Start**, and then select **Power options**.

2. In **Power mode**, select the desired option.

2.6.5 Power Off the Mesa 4

When you power off the Mesa 4, it stops using battery power and the battery's charge level stabilizes. In sleep mode, the tablet continues to draw a small amount of power.

If you will not be using your Mesa 4 for more than a few days, power it off for short-term storage. If you do not plan to use the Mesa 4 for more than a month, follow the steps for long-term storage.

Short-Term Storage

To store the Mesa 4 for a few days,

1. Completely shut down the Mesa 4, using one of the following methods.
 - Select **Start**, and then select **Power > Shut down**.
 - Press and hold the power button for five seconds until the message "Slide to shut down your PC" appears. Swipe to the bottom of the screen to power off the tablet.

Long-Term Storage

If you do not plan to use the Mesa 4 for more than a month, use the storage feature to prepare the tablet for long-term storage. The storage feature sets the battery charge level at about 40% (the optimal charge level for storage) and electronically disconnects the battery from the Mesa 4.



CAUTION: Storing the battery pack at a high charge level or at an elevated temperature can permanently reduce the battery capacity and shorten battery life.

To prepare the Mesa 4 for long-term storage,

1. Go to **Device Settings > Misc**.
2. Turn on **Automatically prepare batteries for long term storage**. Follow the on-screen prompts.
3. Store the Mesa 4 in a cool, dry location. At this point, you can safely remove the battery from the tablet, if desired.
4. When you are ready to power on the Mesa 4, replace the battery pack. Plug in the tablet with the AC wall charger or USB-C charger. Then, press and hold the power button for about 1 second until the red LED turns on.

2.6.6 Power On the Mesa 4

Use the following processes for powering on the Mesa 4 tablet.

POWER STATE	PROCESS
Completely shutdown	Press and hold the power button for about 1 second until the red LED turns on and then release the button.
Sleep mode	Quickly press and release the power button. The tablet wakes from sleep mode. <i>Note: If the tablet was completely shutdown, quickly pressing and releasing the power button will not power on the tablet.</i>

2.7 Micro SD and Nano SIM Cards

The Mesa 4 has slots for a micro SD card and nano SIM card located in the battery compartment. The card slots hold the cards securely, so they will not come out or disconnect if the tablet is dropped.

2.7.1 Insert an SD or SIM Card

To insert a card,

1. Power off the tablet. Wait for the red LED to turn off.
Exception: If the Mesa 4 has the optional internal battery, you can safely insert an SD or SIM card while the tablet is powered on.
2. On the battery compartment, push in the battery lock switch, slide it to the unlocked position, and remove the door.

ⓘ CAUTION: The Mesa 4 is not sealed against water and dust when the battery door is open.

3. Remove the battery pack by pulling up on the black tab.
4. Use the label in the battery compartment to correctly align the card.
5. Push the card into the slot.



6. Replace the battery pack, and attach the battery door.

2.7.2 Remove an SD or SIM Card

To remove a card,

1. Eject the card from within Windows.
2. Power off the tablet. Wait for the red LED to turn off.
Exception: If the Mesa 4 has the optional internal battery, you can safely remove the card while the tablet is powered on.
3. Open the battery compartment, and remove the battery pack by pulling up on the black tab.
4. Push the card to eject it from the slot.

2.8 Audio Features

The Mesa 4 has the following audio features:

- **Speaker**—The speaker can provide audible indicators and program feedback in loud environments. You can listen to audio files and watch videos. For stereo audio, use Bluetooth headphones.
- **Microphone**—Use the microphone to record audio notes or include sound in a video.

2.9 Rugged

The Mesa 4 has earned an IP68 rating meaning it is protected against dust and the effects of continuous immersion in water.

 **CAUTION:** If the tablet is submerged in water or mud, rinse the ports with fresh water to remove any salt water or debris. Drain the ports. Allow them to dry before using the ports.

2.10 Sensors

2.10.1 Compass, Accelerometer, and Gyroscope

The Mesa 4 has a built-in compass, accelerometer, and gyroscope. The accelerometer assists the compass in determining direction, even if the tablet is not resting flat. The gyroscope senses change in angular motion. The compass, accelerometer, and gyroscope can also be used by other user applications.

Compass Calibration

Periodically calibrate the compass in your tablet to help maintain its performance.

To calibrate the compass,

1. Open an app that uses the compass.

2. Move the Mesa 4 around in the air so that it is oriented in different directions and angles. An effective method is to move the Mesa 4 back and forth making a sideways figure eight for approximately 10 seconds.



2.11 Bluetooth® Wireless Communication

The Mesa 4 has built-in Bluetooth® wireless technology, allowing you to connect to other wireless devices with Bluetooth technology.

2.11.1 Turn On or Off Bluetooth

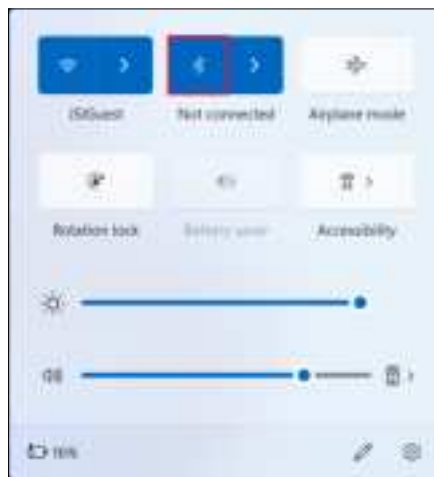
To turn on or off Bluetooth, use one of the following methods.

- From Settings, select **Bluetooth & devices**. Turn on or off **Bluetooth**.



- Tap the **Network**, **Sound**, or **Battery** icons on the right side of the taskbar. Tap the **Bluetooth** quick setting to turn it on or off. If Bluetooth is turned on without any

paired devices, the quick setting displays “Not connected.”



2.11.2 Pair a Bluetooth Device

To connect the Mesa 4 and another device with Bluetooth technology,

1. Power on both devices.
2. Place them within a few feet of each other. (The Mesa has long range Bluetooth, but the other device may not.)
3. Turn on the Bluetooth on both devices.
4. On the Mesa 4, tap the **Network**, **Sound**, or **Battery** icons on the right side of the taskbar.

5. Tap the arrow on the **Bluetooth** quick setting.



6. Select from the list of unpaired devices.
7. If prompted, enter the PIN or passcode of the paired device.

Note: If Bluetooth is on and the tablet enters sleep or hibernate mode, Bluetooth turns off to save battery power. The Bluetooth connection is resumed after the tablet powers on.

2.12 Wi-Fi Wireless Networking

The Mesa 4 has built-in Wi-Fi wireless networking to connect to the internet or an office network.

2.12.1 Connect to a Wi-Fi Network

To connect to Wi-Fi, the tablet must be in the range of a Wi-Fi access point. When Wi-Fi is turned on, the Mesa 4 automatically scans the area for available Wi-Fi networks.

To connect to a Wi-Fi network,

1. Tap the **Network**, **Sound**, or **Battery** icons on the right side of the taskbar.
2. Turn on the Wi-Fi (if needed) by tapping the **Wi-Fi** quick setting.

3. Tap the arrow on the **Wi-Fi** quick setting to view a list of available networks.



4. Select the desired network and tap **Connect**.
5. Enter the network security key or password and tap **Next**.

The Mesa 4 remembers the Wi-Fi network connections you create.

To manage the network and internet settings, open Settings and select **Network & internet**.

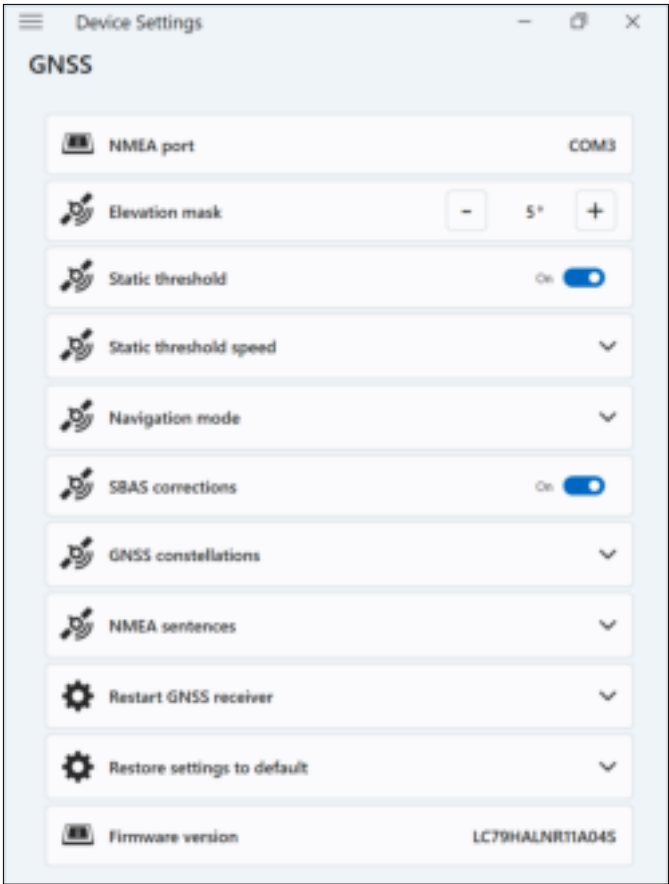
2.13 GPS/GNSS Receiver

Mesa 4 has a Quectel GNSS receiver with an internal antenna to provide position information. The internal antenna is at the top of the device under the Mesa 4 label and works with the tablet in portrait or landscape view. Putting your hand or another object over the antenna area reduces accuracy. The more items between the antenna and the satellites, the lower the accuracy becomes.

An external antenna port is available as an optional upgrade. If you add an external antenna, the receiver automatically detects and uses that antenna.

2.13.1 GNSS Settings

To change the GNSS settings, select **Device Settings > GNSS**.



Change the following settings to fit your application.

SETTING	ACTION
NMEA port	Displays the port that can be used by legacy applications to get raw NMEA messages.

SETTING	ACTION
Elevation mask	Enter the angle that the GNSS receiver uses to determine which satellites to include in location calculations. Satellites below the angle are not used by the receiver. Satellites that appear near the horizon (0° angle) are subject to signal fade and pick up more atmospheric noise. The satellite viewing area restricts as you increase the angle. The default angle is 5° above the horizon.
Static threshold	Turn on or off static threshold. Turn on static threshold when the GNSS receiver location is stationary or moving at low speeds.
Static threshold speed	If you turn on static threshold, set the maximum meters per second that the GNSS receiver can travel before the location data updates.
Navigation mode	Tap Navigation mode to expand the section. Select one of the following modes: ■ Normal is good for most applications and uses SBAS corrections on L1 frequencies. ■ Fitness is more accurate for slow moving applications, such as walking or jogging speeds. This mode uses L1 and L5 frequencies without SBAS corrections.
SBAS corrections	Turn on or off SBAS corrections. Satellite-Based Augmentation Systems (SBAS) provide accurate, real-time GNSS corrections and are especially helpful in environments where GNSS signals may be obstructed.

SETTING	ACTION
GNSS constellations	Select which GNSS constellations to use.
NMEA sentences	Tap NMEA sentences to expand the section. Select the NMEA sentences that you want the receiver to transmit to the device. The default NMEA sentences are good for basic location applications.
Restart GNSS receiver	Tap Restart to restart the GNSS receiver.
Restore settings to default	Tap Restore to restore the default GNSS settings.
Firmware version	Displays the GNSS firmware version.

2.13.2 GNSS Support

Integrated GNSS Support in Windows

The Windows operating system provides built-in support for GNSS devices. As part of that support, the Windows Sensor and Location platform provides a standard way for GNSS information to be made available to applications that have been designed using the Windows Sensor and Location application programming interfaces (APIs).

Legacy Support

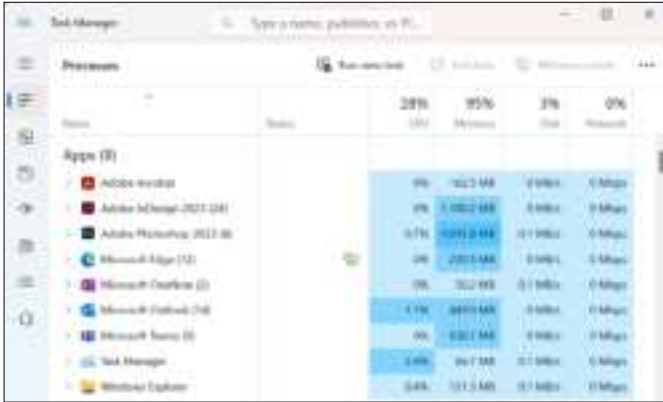
In addition to the Sensor and Location APIs, legacy applications can access NMEA data through a serial COM port interface. To view the allocated COM port, open **Device Settings > GNSS**.

2.14 Task Manager

The Task Manager displays the processes and programs currently running on the Mesa 4 and can be useful for managing and troubleshooting tasks.

To open the Task Manager,

1. Press and hold the Windows button on the keypad and then press the power button.
2. Select **Task Manager** from the list.



From the Task Manager, view performance data (such as CPU, memory use, and disk space) for apps and processes currently running on the Mesa 4.

2.15 Mesa 4 is Locked Up

If the Mesa 4 locks up, you can force the device to shut down.

Five-Second Shutdown

If the Mesa 4 will not respond and you cannot get to the Start menu, hold the power button for 5 seconds until the message “Slide to shut down your PC” appears. Swipe to the bottom of the screen to power off the tablet. To power on the tablet, press the power button.

Ten-Second Shutdown

If the Mesa 4 has been locked up for at least 5 minutes and did not respond to the 5-second shutdown, disconnect the Mesa 4 from all external power, including an AC wall charger, a USB-C charger, or a dock. Force the hardware to shut down by holding the power button for 10 seconds. To power on the tablet, press the power button.

Twenty-Second Shutdown

If the Mesa 4 has been locked up for at least 5 minutes and did not respond to the 10-second shutdown, press and hold the power button for 20 seconds. Release the power button and wait 30 more seconds for the electrical processes in the background to finish. The removable and internal batteries are electrically disconnected from the tablet, causing a complete shut down. To power on the tablet and connect the batteries, plug in the tablet with the AC wall charger or a USB-C charger and press the power button.

 **CAUTION: Power off the tablet by holding the power button for 10 or 20 seconds as a last resort. Forcing the power off loses unsaved data and may corrupt active data transfers to storage.**

2.15.1 Screen is Locked

If the screen is locked and requires you to press Ctrl+Alt+Del to sign in, press and hold the Windows button and then press the power button. (This button combination is the same as Ctrl+Alt+Del.)

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CHAPTER 3

3. Optional Features and Accessories

This chapter discusses the optional features and accessories that can be added to the Mesa 4.

3.1 4G LTE Data Modem

The 4G LTE data modem adds Wireless Wide Area Network data modem capability.

This modem supports all major service providers in North America, Europe, and many other regions of the world.

3.1.1 Set up a Data Account with a Wireless Provider

Contact a wireless provider to set up data service for the cellular data modem and obtain an account and a SIM card. You may need the following information when setting up an account:

- Billing Information and business ID, such as your Federal Tax ID or VAT number.
- The wireless services required. Specify that you need data service only. The Mesa 4 does not support voice or messaging services.
- The modem's IMEI number. To view the IMEI number, open **Device Settings > About**.

Diagnostics for the Cellular Modem

If your tablet is not connecting to the cellular network, use the Cellular Diagnostics tool on the Misc screen in the Device Settings app. For detailed instructions on using this tool, see <https://junipersys.com/support/article/17071>.

Install the SIM Card

For instructions on installing the SIM card, see “2.7 Micro SD and Nano SIM Cards” on page 24.



The Mesa 4 must be powered off before installing the SIM Card. EXCEPTION: If the Mesa 4 has the optional internal battery, you can safely insert the SIM card while the Mesa 4 is powered on.

3.2 Barcode Imager

The Mesa tablet is available with either a standard or long-range barcode imager. Both barcode imagers read 1D and 2D barcodes and import barcode data into programs running on the tablet. The barcode imager is located on the top of the tablet when in portrait mode.

Access the barcode imager from the Barcode Connector™ utility, a program included with the barcode imager. If the Barcode Connector is not available, download it from <https://junipersys.com/support/article/13028>.

3.2.1 Perform a Scan Test

To perform a scan test,

1. Open Barcode Connector.
2. From the Home screen, tap **Scan** or press the scan button on the keypad. (The default button is P2.)



3. Place the red aiming LED on or near the barcode.

If the scan is successful, the data appears in Scan Symbology Type and Scan Data.

3.2.2 Set Up Barcode Connector

From the Barcode Connector toolbar, you can open screens to customize barcode settings, such as scanning preferences, data format, and barcode types.



To expand or collapse the toolbar, tap the menu button .

Startup Settings

Tap **Home**  to open the Home screen and customize the startup settings.

- Select **Startup Barcode Connector on bootup** to open the Barcode Connector utility when you sign in to the tablet.
- Select **Start Barcode Connector minimized** to open and minimize the Barcode Connector utility when you sign in to the tablet. The keypad button and keyboard wedge function while the app is minimized.

User Settings

Tap **User**  to open the User screen and define user settings, such as the scan button, scan time, copy method, and keyboard wedge method.



Change the following settings to fit your application.

SETTING	ACTION
General	Customize the following settings. ■ In Barcode scan time, set the amount of time the barcode module attempts to read a barcode. ■ Select when you would like the module to beep.

SETTING	ACTION
Copy Method	Select one of the following. ■ Select Use copy/paste buffer to place barcode data (including prefix/suffix data) in the copy buffer, and then paste it wherever you place the cursor. ■ Select Use individual keystrokes to send each character (including prefix/suffix data) as an individual keystroke. <i>Note: The copy/paste buffer leaves the data in the copy buffer. If you are scanning sensitive data, select Use individual keystrokes.</i>
Keyboard Wedge Method	Select Use virtual-key codes or Use unicode characters to determine the method used to send keyboard data to the system.
Select Scan Button	Select P1, P2, or P3 as the barcode scan button. When you press the scan button, the module scans for tags.
Picklist Mode	Select Enable picklist mode to allow the barcode module to decode barcodes aligned with the center of the laser aiming pattern.
Enhanced LCD Screen Scanning	Select Enable enhanced LCD screen scanning to allow the barcode module to more easily read a barcode on an LCD screen.

SETTING	ACTION
Scan Consecutive Read Level	Determine how many times the module reads a barcode type before sending the data to the user. Enter a number from 1–4. 1—Codabar, MSI, Discrete 2 of 5, and Interleaved 2 of 5 need two consecutive reads. All other barcodes need only one read. 2—All code types must have two consecutive reads. 3—Codabar, MSI, Discrete 2 of 5, and Interleaved 2 of 5 needs three consecutive reads. All other barcodes only need two reads. 4—All code types must have three consecutive reads.
Reset to Default Barcode Settings	Tap Reset Settings to reset the Barcode Connector utility to the default settings.

Data Format

Tap **Data Format**  to open the Data Format screen and set the assigned prefix and suffixes for the barcode.

Barcode Types

The barcode imager reads 1D and 2D code types, composite codes, and postal codes. To open a screen for configuring a barcode type, tap the barcode type in the toolbar.



3.2.3 Read a Barcode

After you set up the Barcode Connector utility, you are ready to scan barcodes.

To scan a barcode,

1. Open and minimize Barcode Connector.
2. Open an app or a document where you want to receive the barcode data, and put the cursor where you want to place the data.
3. Aim the barcode imager at the barcode. The distance required between the barcode and Mesa 4 varies depending on the barcode being read.
4. Aim the red LED at the barcode.
5. Press the scan button.

If the scan is successful, the barcode information is placed in your app or document.

3.2.4 Troubleshoot the Barcode Imager

If the barcode imager is not functioning correctly, reset it to factory default settings.

1. Open the Barcode Connector utility.
2. Scan the Set Factory Default barcode (shown below).



3. Open the User screen, and tap **Reset Settings**.
4. Close the Barcode Connector utility.
5. Reopen the Barcode Connector utility and verify that correct functionality has been restored.

3.2.5 Clean the Barcode Window

Avoid scratching the barcode window to ensure optimal scanning. For cleaning, use clean water (tap is fine) to remove any debris and a microfiber cloth to remove smudges. When needed, use an ammonium-free window

cleaner to remove hard water marks. Spray the cleaner on the microfiber cloth and then wipe the window clean.

3.3 Pistol Grip

The Pistol Grip reduces strain and maximizes productivity for heavy barcode scanning applications. The grip meets MIL-STD-810G.

Note: For compatibility with the Pistol Grip, the Mesa 4 must have the electrical contacts on the case back.



To use the Pistol Grip,

1. Place the Mesa 4 with the back side up.
2. Line up the three screw holes and contacts on the Pistol Grip with the screw holes on the Mesa 4.
3. Use the three screws, included with the Pistol Grip, to attach it to the Mesa 4.
4. Use the Barcode Connector utility, as described in “3.2.3 Read a Barcode” on page 43.

3.3.1 Trigger Stages

The trigger has two stages.

- Pull the trigger halfway back to turn on the laser and aim the barcode imager at the barcode.

- Pull the trigger completely back to read the barcode.

Note: The Pistol Grip is not compatible with the RFID reader.

3.3.2 Holster

Juniper Systems offers an optional nylon Pistol Grip holster case that you can attach to a belt or shoulder strap.

3.4 RFID Reader

The RFID module on the Mesa 4 reads UHF RFID tags and imports the data into custom or standard programs running on the Mesa 4. Access the RFID reader from the RFID Connector™ utility, a program provided with the RFID reader.

3.4.1 Scan Test

To perform a scan test,

1. Open the RFID Connector utility.
2. Hold the Mesa 4 with the display side toward you and an RFID tag in front of the RFID reader.
3. From the Home screen, tap **Scan**. If the scan is successful, the data appears in Scan Data.



*Note: You can also test the scan function by putting the cursor in **Scan Data** and pressing the keypad button assigned to RFID scanning.*

3.4.2 RFID Reader Settings

From the RFID Connector toolbar, open screens to customize the RFID settings, such as scanning preferences, data format, and input methods.



To expand or collapse the toolbar, tap the menu button .

Startup Settings

Tap **Home**  to open the Home screen and customize the startup settings.

- Select **Startup RFID Connector on bootup** to open the RFID Connector utility when you sign in to the tablet.
- Select **Start RFID Connector minimized** to open and minimize the RFID Connector utility when you sign in to the tablet. The keypad button and keyboard wedge function while the app is minimized.

User Settings

Tap **User**  to open the User screen.



Change the RFID settings to fit your application.

SETTING	ACTION
General	Select when you would like the device to beep.

SETTING	ACTION
Copy Method	Select one of the following options. ■ Select Use copy/paste buffer to place RFID data (including prefix/suffix data) in the copy buffer, and then paste it wherever you place the cursor. ■ Select Use individual keystrokes to send each character (including prefix/suffix data) as individual keystrokes. <i>Note: The copy/paste buffer leaves the data in the copy buffer. If you are scanning sensitive data, select Use individual keystrokes.</i>
Keyboard Wedge Method	Select Virtual Key Codes or Unicode Characters to determine the method used to send data to the RFID module.
Select Scan Button	Select P1, P2, or P3 as the RFID scan button. While the RFID Connector utility is running, this setting overrides any other function assigned to that keypad button. For example, you can set P1 as the RFID scan button and assign P1 a different function in Device Settings. After the RFID Connector closes, P1 reverts to its other assigned function.
Tag Type	Select Gen 2 or ATA if the device has an ATA license.

SETTING	ACTION
Scan Type	Select one of the following options. ■ Select Single Scan to have the RFID module scan for as long as the scan time value is set. The module stops scanning when it reads a tag or the time elapses. ■ Select Continuous Scan to have the RFID module scan for as long as the scan time value is set. The module chains all the tags together (including prefixes and suffixes) sends the data at the end of the scan.
Scan Time and Power Level	Set the following options. ■ Move the Scan Time slider to determine the amount of time the RFID module attempts to scan a tag. ■ Move the Power Level slider to determine the amount of power you want the module to use. The higher the power level is set, the more range you will have. Use a lower power setting when you don't need as much range or the tags you are reading are close to the scanner. <i>Note: Worst Case Off Time is the maximum amount of time that the radio will remain off before it will allow another scan if the power is set higher than the regulatory threshold. The Mesa 4 regulatory threshold is the same as the maximum power of the RFID module, so this number will always be zero.</i>

Data Format

Tap **Data Format**  to open the Data Format screen and automatically assign a prefix and/or suffix to RFID tags.

3.4.3 Read an RFID Tag

To read an RFID tag,

1. Open and minimize the RFID Connector utility.
2. Open the document that you want to receive the tag data and put the cursor in the desired location.
3. Hold the Mesa 4 with the display facing you and the tag in front of the RFID reader.

The RFID reader is internal and roughly two inches to the right of the rear camera lens. Hold the Mesa 4 at a right angle to the tag in either portrait or landscape orientation.

The distance required between the tag and the RFID reader varies depending on the tag. The RFID reading range is between a few inches to three feet.

4. Press the scan button.

If the scan is successful, the barcode information is placed in your app or document.

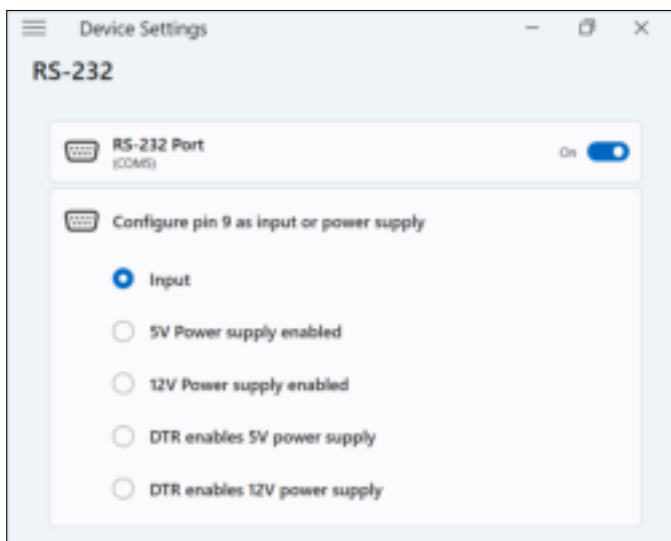
3.4.4 Antenna for RFID Reader

The RFID reader has a circularly polarized antenna, which allows you to hold the Mesa 4 in any orientation but has less range than a linear antenna.

3.5 RS-232 Port

The Mesa 4 with the RS-232 9-pin D-sub connector provides either 5 V DC or 12 V DC on pin 9, depending on the settings.

To adjust the RS-232 port configurations, select **Device Settings > RS-232**.



Change the settings to fit your application.

SETTING	ACTION
RS-232 Port	Turn on or off power to the port. If no RS-232 device is connected to the Mesa 4, power off the port to reduce corrosion to the pins and stop the port from drawing power. <i>Note: The assigned COM port displays below RS-232 Port.</i>

SETTING	ACTION
Configure pin 9 as input or power supply	Set the function of pin 9 (ring indicator) on the port. ■ Select Input (default setting) if your RS-232 device does not need to be powered from the RS-232 port. ■ Select 5 V power supply enabled or 12 V power supply enabled to supply power from pin 9 when the tablet is running or in sleep mode. The power supply is enabled automatically without needing any interaction with the COM port. ■ Select DTR enables 5 V power supply or DTR enables 12 V power supply if you want the power to be off until the RS-232 device opens the COM port and asserts the DTR signal. When the DTR signal de-asserts, the port is powered off. Use this option when you want to control the power on pin 9 programmatically.

3.6 Vehicle Dock

The Vehicle Dock is part of a mounting system that securely holds the Mesa 4 in place in vehicle-type settings and features a locking mechanism with a unique key. (Duplicate keys can be made for fleets.)

The dock is available in a powered and non-powered version. The powered dock has a 12 V DC power port, vehicle charger, and USB 2.0 port.



3.6.1 Mounting System

The Vehicle Dock requires an additional mounting arm for full mounting in your vehicle. The dock attaches to any 30 mm x 38 mm AMPS mounting system that suits your application (sold separately). Juniper Systems recommends products from RAM Mount (rammount.com) or ProClip (proclipusa.com).

To mount the system,

1. Attach the mounting system to the vehicle. If you are installing the powered vehicle dock, plug the 12 V charging cable into the vehicle power port and the dock.
2. If a hand strap is covering the pin contacts on the Mesa 4, unhook one end or remove it.
3. Hold the Mesa 4 horizontally with the docking pin contacts facing down. Place it over the dock alignment pins and press down until you feel and hear the lock engage.
4. Press the lock bar down until it engages the Mesa 4.

5. Push the lock button in. The Mesa 4 is now locked in the dock and cannot be accidentally removed.
6. To remove the Mesa 4, turn the key until the lock button pops out. Lift the lock bar, and remove the Mesa 4.

3.7 Attachable Rugged Keyboard

The Mesa 7-inch Attachable Rugged Keyboard is a textured, full QWERTY keyboard that snaps seamlessly to the side of your Mesa 4 tablet. The keyboard features a full alphanumeric keypad, navigation arrows, and 98 possible inputs. The keyboard is backlit and powered by the battery on your Mesa 4. For more information, see [Mesa 7-inch Attachable Rugged Keyboard](#).

3.8 Battery Charger

The Battery Charger allows you to charge spare battery packs for the Mesa 4.

3.8.1 Using the Battery Charger

Batteries charge best at room temperature (about 68°F/20°C). Batteries may not charge (or charge slowly) at temperatures below 32°F (0°C) or above 122°F (50°C).

Power the battery charger by using the AC wall charger provided with your Mesa 4. Insert the battery pack into the charger, orienting it so that the battery contacts meet the charging contacts in the battery charger. The LEDs will flash slowly, indicating the battery is charging. Each LED represents a 25% charge. When the four LEDs are solid red, the battery pack is fully charged.

Battery Charger LED Indicator

The LED indicates the charging status.

- **Blinking**—The battery pack is charging.
- **Solid**—The battery pack is fully charged.
- **Off**—There is no power to the Battery Charger. The battery is not charging.

3.9 Grounded Stylus

The grounded stylus is a wired stylus that plugs into the power input jack on the Mesa 4. This stylus works well in harsh, cold weather conditions and allows the user to wear gloves while using the touchscreen.

To install the grounded stylus,

1. Remove the connector cover from the ports.
2. Gently pull the curved rubber retainers from the holes where they are seated.

Note: Keep the connector for future use.



3. Insert the new connector cover.



4. Insert the stylus connector into the power input jack.



5. Loop the stylus cable around the hand strap to keep it from pulling out of the power input jack during use.
6. Place the stylus in the holder on the hand strap when not in use..



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CHAPTER 4

4. Storage, Maintenance, and Recycling

Follow the instructions in this chapter to properly maintain and recycle the Mesa 4.

4.1 Store the Mesa 4 and Battery Pack

When the tablet is not being charged and is in sleep mode, the tablet draws a small amount of power. This power draw maintains the memory (RAM) of the tablet in the same state it was in when it was awake. Charge the tablet each night or weekend when it is in sleep mode.

If the Mesa 4 battery reaches a very low charge, the tablet automatically hibernates to prevent further drain on the battery.

Note: Data and programs are secure as long as they have been saved, even if the battery pack becomes discharged. The tablet does not depend on the battery to store the data for extended periods.

4.1.1 Store the Mesa 4 for More than a Month

To store the tablet for more than a month, see “Long-Term Storage” on page 23.

4.2 Protect the Touchscreen

Protect the touchscreen from impact, pressure, or abrasive substances that could damage the screen. To further protect the touchscreen, apply a screen protector (optional accessory) using the directions that come in the package.

 **CAUTION: Replace the screen protector as recommended.**

4.3 Clean the Mesa 4

Make sure the battery door is securely installed. Remove the screen protector if you want to clean underneath it. Use warm water, a mild cleaning solution, and a soft bristle brush to gently clean the Mesa 4.

-  **CAUTION:** Do not direct a high-pressure stream of water at the device to clean it. This action could break the seal, causing water to get inside the device and voiding the warranty.
-  **CAUTION:** Exposure to some cleaning solutions may damage your device, including automotive brake cleaner, isopropyl alcohol, carburetor cleaner, and similar solutions. If you are uncertain about the strength or effect of a cleaner, apply a small amount to a less visible location as a test. If you notice any visual change, promptly rinse and wash with a known mild cleaning solution or with water.

4.4 Recycle the Mesa 4 and Batteries

When the Mesa 4 and Li-ion battery packs for your Mesa 4 reach the end of their service life, do not dispose of them in municipal waste. Always dispose of waste equipment at a designated electrical equipment recycling collection point.

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CHAPTER 5

5. Warranty and Repair Information

5.1 Limited Product Warranty

5.1.1 Two Year Warranty

Juniper Systems, Inc. ("JS") warrants that the Mesa 4 Rugged Tablet and optional internal battery shall be free from defects in materials and workmanship, under normal intended use, for a period of 24 months from the date of shipment, excepting that this warranty shall not apply to user replaceable battery packs, media containing tablet and desktop PC programs, user documentation, and any accessories.

5.1.2 Ninety Day Warranty

JS warrants that the following items shall be free from defects in materials and workmanship, under normal intended use, for a period of ninety (90) days from the date of shipment:

- User replaceable battery packs
- User documentation
- Accessories

5.1.3 Warranty Exclusions

This warranty shall not apply if:

- i. the product has been set up improperly or has been improperly installed or calibrated,
- ii. the product is operated in a manner that is not in accordance with the user documentation,
- iii. the product is used for a purpose other than for which it was designed,
- iv. the product has been used in environmental conditions outside of those specified for the product,
- v. the product has been subject to any modification, alteration, or change by or on behalf of customer (except and unless modified, changed or altered by JS or under direct supervision of JS),

- vi. the defect or malfunction results from misuse or accident,
- vii. the serial number on the product has been tampered with or removed, or
- viii. the product has been opened or tampered with in any way (such as the tamper evident VOID label indicating certified IP [Ingress Protection] seal area has been tampered with or removed).

Parts that are excessively worn are not covered under warranty. These may include, but are not limited to, the keyboard elastomer and switch matrix, hand straps, and the touch screen (if applicable).

This warranty is exclusive and JS will not assume and hereby expressly disclaims any further warranties, whether express or implied, including, without limitation, any warranty as to merchantability, fitness for a particular purpose, non-infringement or any warranties arising from the course of performance, dealing, or usage of trade. JS specifically makes no warranties as to the suitability of its products for any particular application. JS makes no warranties that

- its products will meet your requirements or will work in combination with any hardware or applications software products provided by third parties,
- the operation of its products will be uninterrupted or error free, or
- all defects in the product will be corrected.

JS shall not be responsible for software, firmware, information, or memory data contained in, stored on, or integrated with any products returned to JS for repair, whether under warranty or not.

5.1.4 Remedy

In the event a defect in materials or workmanship is discovered and reported to JS within the specified warranty period, after evaluation by a technician at a certified repair center, JS will, at its option, repair the defect or replace the defective part or product. Replacement products may be new or reconditioned. JS warrants any replaced or repaired product for a period of ninety (90) days from the date of

return shipment, or through the end of the original warranty period, whichever is longer.

5.1.5 Limitation of Liability

To the fullest extent allowed by law, the obligation of JS shall be limited to the repair or replacement of the product. JS shall in no event be liable for special, incidental, or consequential, indirect, special or punitive damages of any kind, or for loss of revenue or profits, loss of business, loss of information or data, or other financial loss arising out of or in connection with the sale, installation, maintenance, use, performance, failure, or interruption of any product. Any responsibility and/or liability of JS shall, in connection with a warranted product, be limited in the maximum amount to the original purchase price.

5.1.6 Governing Law

This warranty is governed by the laws of Utah, U.S.A. and excludes the United Nations Convention on Contracts for the International Sale of Goods. The courts of Utah shall have exclusive personal jurisdiction in case of any disputes arising out of or in connection with this warranty.

5.1.7 Warranty Repairs

Warranty information for the Mesa 4 Rugged Tablet is located on our website at <https://junipersys.com/support/mesa-4/my-product> then Warranty. You can check warranty status, view warranty terms and conditions, etc.

Standard repair orders and 3-Day Expedite Service repair orders are valid for 30 days from the date issued. 1-Day Expedite Service repair orders are valid for 7 days from the date issued. Wait to request a repair until you are ready to send the product.

Services and Materials Provided Under Warranty

- Analysis of problem by service technician
- Labor and materials required to fix defective parts
- Functional analysis performed after repair
- Shipping costs to return device to customer

JS strives to provide continued full repair services for our products for up to five years from the final production date of each product model. However, in some rare cases (depending on the repair need), it may not be possible to perform a repair due to an unforeseen discontinuation or lack of supplied parts from third-party vendors. Repair support for a product may continue beyond five years if obtaining replacement parts or tools remains economically feasible. Our policy is that we will do what is best and most beneficial for our customers and company.

5.2 Complete Care Service Plans

We offer service plan options that provide additional benefits through participating repair centers. Services include:

- Service plan coverage up to five years from the original product ship date.
- Up to a 50% discount on all charged repairs.
- Expedited repairs and return shipping at no additional charge.
- Replacement of worn and/or damaged parts at no additional charge.
- Complete comprehensive coverage to protect your investment even when accidents occur.
- Loaner product option when an expedited repair is not enough.
- Priority support through a personal account specialist.

For more information about our Complete Care service plans, go to our website at <https://junipersys.com/support/mesa-4/my-product> then Warranty/Complete Care Options or Warranty/Complete Care Terms and Conditions.

5.3 Repairs, Upgrades, and Evaluations



CAUTION: Do not attempt to repair the Mesa 4 yourself. This action voids the warranty.

Information about repairs, upgrades, and evaluations is located on our website at <https://junipersys.com/support/mesa-4/my-product> and then tap **Repairs**. You can locate a

repair center, submit a repair order, check repair status, view terms and conditions, get shipping instructions, and view lead times.

Before returning a tablet, submit a repair order from our website and wait for confirmation or contact a repair center directly. Be prepared to provide the following information:

- The product serial number. Found on the back of the Mesa 4, inside the battery compartment, or on the About screen in Device Settings.

Note: Before opening the battery door and removing the battery, see the proper procedure in “2.6.2 Remove and Install the Battery Pack” on page 19.

- Name and shipping address of company/university/agency.
- Best contact method (phone, fax, email, cell/mobile).
- Clear, highly-detailed description of the repair or upgrade.
- Credit card/purchase order number and billing address (for a repair or upgrade that is not covered by the standard warranty or an extended warranty policy).

5.4 System Information for your Mesa 4

You might be asked to provide additional information about your Mesa 4 when you contact a repair center. To view information like the operating system edition, OS build and serial number, select **Device Settings > About**. For additional information, open Settings and select **System > About**.

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Windows 7-Inch Rugged Tablet



CHAPTER 6

6. Warnings, Regulatory Information, Licensing

6.1 Product Warnings

Follow the warnings listed below to use the Mesa 4 and accessories safely.

6.1.1 Battery Warnings



WARNING! This device comes with a lithium-ion rechargeable battery pack. To reduce the risk of fire or burns, do not disassemble, crush, puncture, short external contacts, or expose the battery pack to fire.

Do not disassemble or open, crush, bend or deform, puncture or shred.

Do not modify or remanufacture, attempt to insert foreign objects into the battery, immerse or expose to water or other liquids, expose to fire, explosion or other hazard.

Only use the battery for the system for which it is specified.

Only use the battery with a charging system that has been qualified with the system per this standard. Use of an unqualified battery or charger may present a risk of fire, explosion, leakage, or other hazard.

Do not short circuit a battery or allow metallic conductive objects to contact battery terminals.

Replace the battery only with another battery that has been qualified with the system.

Use of an unqualified battery may present a risk of fire, explosion, leakage, or other hazard.

Promptly dispose of used batteries in accordance with local regulations.

Battery usage by children should be supervised.

Avoid dropping the battery. If the battery is dropped, especially on a hard surface, and the user suspects damage, take it to a service center for inspection.

Improper battery use may result in a fire, explosion or other hazard.

 **CAUTION:** Risk of explosion if the battery is replaced by an incorrect type.

6.1.2 Wall Charger Warnings



WARNING! To reduce the risk of personal injury, electrical shock, fire or damage to the equipment:

- Plug the AC wall charger into an electrical outlet that is easily accessible at all times.
- Do not place anything on the AC wall charger cord or any of the other cables. Arrange them so that no one may accidentally step on or trip over them.
- Do not pull on a cord or cable. When unplugging the AC wall charger from the electrical outlet, pull on the plug, not the cord.
- The AC wall charger must be approved by Juniper Systems, have an output rating of 12 V DC and a minimum 2.5 A, and be certified or listed by a nationally recognized testing laboratory. The AC wall charger provided with the Mesa 4 meets these criteria. Using any other external power source can damage your product and void your warranty.

6.1.3 Installation Warning

The Mesa 4 is not intended for outdoor installation.

6.1.4 Long-Range Barcode Reader Warnings

The long-range barcode reader is designated as a Class 2 laser during all procedures of operation. The laser can be activated by either

- The on-screen button in the Barcode Connector software
- The trigger on the optional pistol grip accessory

When a barcode is scanned, laser radiation exceeding the Class 1 AEL is emitted from the barcode reader window (as indicated in the image below).



The barcode reader does not require any maintenance to keep the product in compliance.



CAUTION: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.



WARNING! LASER LIGHT. DO NOT STARE INTO BEAM. CLASS 2 LASER PRODUCT. To reduce the risk of personal injury or damage to the equipment:

- Do not point the laser or allow laser light to be directed or reflected toward other people or reflective objects.
- Do not operate device if it is defective or damaged.
- Exposure of eyes or skin to laser radiation is a potential hazard.
- Service work is not allowed by the user or other unauthorized personnel. Service or repair is only permitted by factory authorized technicians.
- Do not open the device, except for access to the battery compartment for changing the battery, micro SD card, or nano SD card.

The long-range barcode reader complies with

- 21CFR1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 56, dated May 8, 2019
- EN60825-1:2014/A11:2021
- IEC 60825-1:2014 (Ed. 3.0)

The laser warning is located below the barcode reader window on the back of the Mesa.



The following labels are found in the inside the device in the battery compartment.

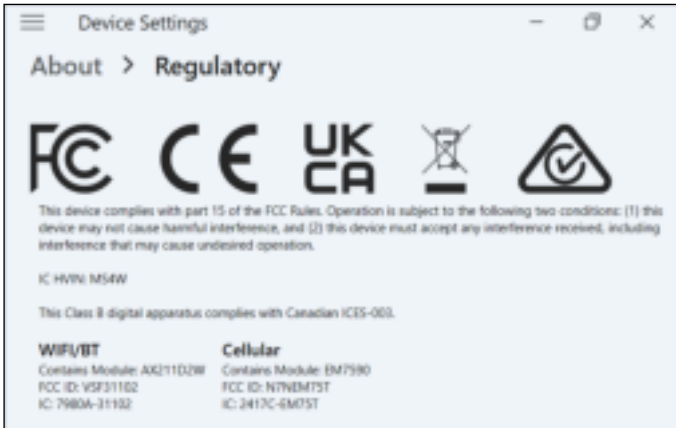


The long-range barcode reader for Mesa 4 is manufactured by Juniper Systems. The manufacturer's address is found on the battery door.



6.2 Regulatory Information

To access the regulatory information for the Mesa 4, go to **Device Settings > About > Regulatory**.



6.3 Certifications and Standards

6.3.1 United States

In compliance with the FCC rules 47 CFR 15.19(a)(3), the statements that follow must appear on the device or in the user documentation.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- The device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

In compliance with the FCC rules, 47 CFR 15.105(b), the user must be notified that this equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio

communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, 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.
- In compliance with the FCC rules, 47 CFR 15.21, the user must be notified that changes or modifications to the Rugged Tablet that are not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Only approved accessories may be used with this equipment. In general, all cables must be high quality, shielded, correctly terminated, and normally restricted to two meters in length. Wall chargers approved for this product employ special provisions to avoid radio interference and should not be altered or substituted.

6.3.2 Canada

In compliance with Industry Canada rules, the following statement must appear on the device or in the user documentation:

This Class B digital apparatus complies with Canadian ICES-003.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Canadian regulations restrict the use of channels in the band 5150 MHz to 5250 MHz to indoor use only. When this product is connected with an access point that is operating in this frequency range, or when using ad-hoc mode, the use of this product is restricted to indoor use only.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

La réglementation canadienne restreignent l'utilisation des canaux dans la bande 5150 MHz à 5250 MHz pour une utilisation en intérieur. Lorsque ce produit est connecté à un point d'accès qui fonctionne dans cette gamme de fréquences, ou lorsque vous utilisez le mode ad-hoc, l'utilisation de ce produit est limitée à une utilisation en intérieur.

6.3.3 Radio Frequency Safety

This equipment complies with radiation exposure limits set forth for an uncontrolled environment. This equipment is in direct contact with the body of the user under normal operating conditions. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Cet équipement est conforme aux limites d'exposition aux radiations dans un environnement non contrôlé. Cet équipement est en contact direct avec le corps de l'utilisateur dans des conditions de fonctionnement normales. Cet émetteur ne doit pas être co-localisées ou opérant en conjonction avec tout autre antenne ou transmetteur.

6.3.4 CE Marking (European Union)



Products bearing the CE marking comply with the EU Directive 2014/53/EU.

Declaration of Conformity

The Declaration of Conformity for CE Marking is available at:
<http://www.junipersys.com/doc>

6.3.5 Restricted Materials Conformity

The Mesa 4 conforms to the following restricted materials regulations:

- RoHS 2011/65/EU and 2015/863
- REACH 1907/2006 (Article 33, Article 67)
- EU POP 2019/1021
- California Proposition 65
- Canada Prohibition of Certain Toxic Substances
- TSCA

6.4 Licensing Information

Note: You must accept the enclosed software License and Warranty terms (www.microsoft.com/userterms).

This Product is licensed under the AVC, the VC-1 and the MPEG-4 Part 2 Visual patent portfolio licenses for the personal and non-commercial use of a consumer to (i) encode video in compliance with the above standards ("Video Standards") and/or (ii) decode AVC, VC-1 and MPEG-4 Part 2 Visual that was encoded by a consumer engaged in personal and non-commercial activity or was obtained from a video provider licensed to provide such video. None of the licenses extend to any other product regardless of whether such product is included with this product in a single article. No license is granted or will be implied for any other use. Additional information may be obtained from MPEG LA, LLC. (See www.mpegla.com.)

This Agreement does not, and the Windows Products do not, convey any right to use the Dolby technology portion of the foregoing Windows products or to make, reproduce, or sell the Dolby portion of such Windows products outside of the location of delivery under this Agreement. This Agreement does not grant and does not have the right to grant any rights to Dolby patents for any use of the Dolby portion of the product, or making or selling of such

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Any use of this product in any manner other than personal use that complies with the MPEG-2 standard for encoding video information for packaged media is expressly prohibited without a license under applicable patents in the MPEG-2 patent portfolio, which license is available from MPEG LA, LLC, 6312 S. Fiddlers Green Circle, Suite 400E, Greenwood Village, Colorado 80111 U.S.A.

Windows 11 is automatically updated, which is always enabled. Additional requirements may apply over time for updates. The operating system software and updates use significant storage space; user's storage capacity will be less. For additional information, see www.microsoft.com/en-us/windows/windows-11-specifications. Updates require high-speed internet and Microsoft account. Set up may require significant download; ISP fees apply.

Cortana is available in select countries; experience may vary by device.

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CHAPTER 7

7. Mesa 4 Rugged Tablet Specifications

Note: Specifications are subject to change without notice.

FEATURE	SPECIFICATION
Operating System	■ Microsoft® Windows 11 IoT Enterprise LTSC or Windows 11 Pro ■ English, French, German, Spanish, Brazilian Portuguese, Japanese, and Dutch are built in; other languages are available for download
Processor	■ Intel® Processor N200
Memory	■ 8 GB RAM or 16 GB LPDDR5 RAM (model specific)
Primary Data Storage	■ 128 GB or 256 GB SSD (model specific)
Micro SD Card Slot	■ Micro SD slot, user accessible
Physical Features	■ Dimensions, standard: 5.4 in. wide x 8.48 in. long x 1.36 in. thick (137 mm x 215 mm x 35 mm) ■ Weight: 1.5 to 2.0 lb (680-907 g) depending on battery configuration and internal options installed ■ Durable, chemical- and shock-resistant design ■ Easy-to-grip, impact-absorbing, over molded bumpers ■ Three mounting points on the back are size #4-40 UNC with a maximum depth of 3/16 in. (4.76 mm)

FEATURE	SPECIFICATION
Display	■ Active viewing area: 7 in. (178 mm) ■ WXGA 800 x 1280 pixel resolution ■ Backlit LCD ■ Brightness: 800 cd/m² ■ Outdoor viewable ■ Portrait or landscape orientation
Touchscreen	■ Capacitive multi-touch interface for use with gloves or fine-tip stylus in dry or wet conditions ■ Dragontrail™ HW cover glass for impact and scratch resistance ■ Touchscreen profile options
Keyboard	■ Programmable keys ■ LED backlit keys
Batteries	■ Rechargeable Li-ion battery pack: 7.2 V DC 6 Ah, 43.2 WHr ■ Run time: 9 hours or more ■ Charging time: 4 to 6 hours ■ Built-in battery intelligence ■ User-replaceable ■ Optional internal 21.6 Whr battery provides an additional 50% of runtime and hot-swap capability; not user replaceable or accessible
Ports	■ Power input jack: 10.8–21.25 V, 12 V nominal, minimum 2.5 A ■ USB-A: 1x USB 3 SuperSpeed ■ USB-C: 1x USB 3 SuperSpeed, 9 V–20 V, minimum 27 W
Wireless Connectivity	■ Bluetooth® wireless technology 5.3 (BR, EDR, BLE, class 1.5) ■ Wi-Fi 4, 5, 6, 6E (802.11 a/b/g/n/ac/ax, FIPS 140-2) ■ 4G LTE multi-carrier capable

FEATURE	SPECIFICATION
Audio	■ Mono speaker, loud and clear ■ Microphone, low noise
LED Activity Indicators	■ Red: power applied/charging status ■ Amber light: camera is in use ■ Green: system is booting/resuming from sleep ■ Blue: programmable
Standard Sensors	■ Ambient light sensor ■ Compass ■ Accelerometer ■ Gyroscope
Security Features	■ Firmware TPM (Trusted Platform Module) v2.0
Temperature Specifications	■ Operating temperature: -4°F to 122°F (-20°C to 50°C). ■ Storage temperature: -22°F to 158°F (-30°C to 70°C) ■ Battery charging temperature: 32°F to 122°F (0°C to 50°C)
Shock Resistance	■ Withstands multiple four-foot drops to concrete

FEATURE	SPECIFICATION
Environmental Ratings and Standards	■ IP68 rating (IEC 60529-01) ■ Water resistant and dust proof ■ Operating temperature: -22°F to 122°F (-30°C to 50°C) ■ Startup temperature: -4°F to 122°F (-20°C to 50°C) ■ Storage temperature: -22°F to 158°F (-30°F to 70°C) ■ Certified to MIL-STD-810H test procedures: Method 501.7 High Temperature Method 502.7 Low Temperature Method 514.8 Vibration Method 516.8 Procedure IV Drop ■ Designed to meet MIL-STD-810H test procedures: Method 500.6 Low Pressure (altitude) Method 503.7 Temperature Shock Method 506.5 Rain Method 507.6 Humidity Method 510.7 Sand and Dust
Certifications and Standards	■ FCC Class B ■ CE Marking ■ Industry Canada ■ Australia (ACMA) ■ Bluetooth® SIG qualification ■ IP68 water resistant and dust proof ■ Designed to MIL-STD-810H ■ RoHS 2 compliant ■ Mesa 4 is certified on AT&T networks ■ MIL-STD-461F: Complies with HERO emissions test IAW with safe distance requirements from AFI91-208

FEATURE	SPECIFICATION
Warranties	■ 24 months for Mesa 4 ■ 90 days for accessories ■ Extended service and maintenance plans
Configurations	All models and features for the Mesa 4 are configured for United States/ Canada, European Union, or Australia. Mesa 4 has a Quectel receiver and integrated antenna with optional external antenna port. The following configurations are available: ■ Storage: 128 GB or 256 GB SSD ■ RAM: 8 or 16 GB ■ Wi-Fi ■ Long-range Bluetooth® wireless technology ■ Rear and front cameras ■ Keypad ■ 4G LTE cell modem ■ Internal battery (optional) ■ Hot-swappable battery (optional if internal battery is added) ■ Barcode imager (optional) ■ RFID module (optional) ■ RS-232 port (optional) ■ External GNSS antenna port (optional)
Cameras	■ 13 MP rear camera with auto focus and flash ■ 5 MP front camera

FEATURE	SPECIFICATION
GPS/GNSS	■ L1/L5 dual frequency ■ Typical accuracy:* 2 m RMS under open sky 5 m RMS under canopy ■ Quectel receiver ■ Integrated antenna ■ Integrated real-time SBAS (WAAS, EGNOS, MSAS, GAGAN) ■ RAW data capture for post-processing ■ 1 PPS timing signal available on expansion interface 100 ns accuracy ■ Optional: MCX connection for external antenna Typical accuracy:* - 1 m RMS under open sky - 3 m RMS under canopy
4G LTE Data Modem (Optional)	■ Sierra Wireless EM7590 Global ■ Certified with Verizon, AT&T Network Ready, and PTCRB ■ 4G LTE Advanced Pro Cat-13 with 3G fallback ■ Nano SIM card slot inside battery compartment with card detect feature. ■ Does not support voice calls or SMS. ■ Supports 3G (DC-HSPA+, HSPA+, HSPA, UMTS) and FirstNet B14. For more details, see “4G LTE Data Modem - Additional Information” on page 86.

*Accuracy is subject to observation conditions, multipath environment, number of satellites in view, satellite geometry, and ionospheric activity.

FEATURE	SPECIFICATION
Built-in Barcode 1D/2D Imager (optional)	■ Imager: Zebra SE4710 Imager ■ Decoder: Zebra PL5000 ■ Symbologies: All common 1D, 2D (PDF417, MicroPDF417, Composite, RSS, TLC-39, Data matrix, QR code, Micro QR code, Aztec, Maxicode, Postal codes, etc.) ■ Visible aiming bullseye with low-light illumination ■ Barcode Connector™ utility: Wedge and configuration, SDK support available
Long-Range Barcode 1D/2D Imager and Decoder (optional)	■ Imager: SE5500 Imager ■ Sensor resolution: 2588 horizontal x 1520 vertical pixels in 4 MP mode or 1344 horizontal x 760 vertical pixels in 1 MP mode ■ Sensor: 4 MP for decoding barcodes and capturing high resolution images ■ Field of view: Adaptive FOV - Horizontal: 19° to 37° - Vertical 11° to 21° ■ Reading angles: - Skew tolerance: ±60° - Pitch angle: ±60° - Roll: 360° ■ Read range: 2.2 in.–40 ft ■ Symbologies: 1D and 2D barcodes ■ Aiming: - Green dash-dot-dash pattern on a rectangular background - Visible with low-light illumination - Wide

FEATURE	SPECIFICATION
Long-Range Barcode 1D/2D Imager and Decoder (optional) <i>(continued)</i>	■ Laser wavelength: 520 nm ■ Laser power classification: 8.8 μJ ■ Beam diameter: <3mm at aperture ■ Divergence: Not applicable ■ Mode of operation: Pulsed, 4 ms, 60 Hz ■ Maximum laser power: 2 mW, pulsed ■ Barcode Connector Utility: Wedge and configuration ■ Power: Active, low-power when tablet is in suspend mode ■ Physical features - Weight: 2 lb (925 g) - Weight with pistol grip: 2.2 lb (1036 g) - Dimensions: 5.4 in. wide x 8.48 in. long x 1.36 in. thick (137 mm x 215 mm x 35 mm)
Certifications and Standards for Long-Range Barcode Imager and Decoder	■ FCC Class B ■ CE Marking ■ Industry Canada ■ Australia (ACMA) ■ Bluetooth SIG qualification ■ IP68 water resistant and dustproof ■ Designed to MIL-STD-810H ■ RoHS 2 compliant ■ Mesa 4 is certified on AT&T networks ■ MIL-STD-461F: Complies with HERO emissions test IAW with safe distance requirements from AF191-208 ■ Hazloc Class I, II, III Div 2 ■ IEC 60825-1 Class 2 laser

FEATURE	SPECIFICATION
UHF RFID (optional)	■ Built-in UHF RFID module and antenna ■ Region-specific frequency (866 MHz or 920 MHz) ■ EPCglobal Gen 2 (ISO 18000-6C) protocol support ■ Wide output power range (0–30 dBm) ■ Read range depends on device/tag orientation and antenna
RS-232 (optional)	■ RS-232 9-pin D-sub connector port ■ Programmable 5 V or 12 V supply
Standard Accessories	■ Removable Li-ion battery ■ Adjustable hand strap ■ AC wall charger with international plug kit - Input: 100-240 V AC, 50/60 Hz, 0.8 A - Output: 12 V DC, 2.5 A ■ Capacitive fine-tip stylus with tether ■ Quick Start Guide ■ User Manual: Available in English, French, German, Spanish, and Brazilian Portuguese ■ Two-year warranty on Mesa 4

FEATURE	SPECIFICATION
Optional Accessories	■ Internal extended battery, 7.2 V @ 3 A, 21.6 WH Li-ion ■ Integrated UHF reader and antenna ■ Integrated RS-232 9-pin D-sub communication ■ Surveying pole clamp and mount ■ Pistol Grip for reading barcodes ■ Holster for Pistol Grip and Mesa 4 ■ Vehicle charger cable, 12 V vehicle power port, 6 ft ■ Non-powered vehicle mounting dock ■ Vehicle dock/pole mount, dock attachment ■ Shoulder strap ■ Travel charger ■ Serial cable ■ Holster carrying case ■ Flip cover fitted case ■ Four-point harness ■ Micro SD card ■ Screen protector (anti-glare, ultra-clear, or polarized)

4G LTE Data Modem - Additional Information

MODE	MODEL/REGION	FREQUENCY BANDS
LTE	Global	1–5, 7, 8, 12–14, 18–20, 25, 26, 28, 29, 32, 38–41, 66, 71
WCDMA/HSPA	Global	1, 2, 4, 5, 6, 8, 9, 19
FirstNet	North America	14

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